Senior Secondary School

SYLLABUS

BOARD OF SCHOOL & TECHNICAL EDUCATION

CHHATTISGARH

WWW.BSTECG.EDU.IN

SENIOR SECONDARY SCHOOL SYLLABUS

Effective From The Academic Session
For The Board Examination (Class XII)

Note : The Board reserves the right to amend Syllabi and Courses as and when it deems necessary. The Schools are required to strictly follow the Syllabi and text books prescribed by the Board for the academic sessions and examinations concerned. No deviation is permissible.

BOARD OF SCHOOL & TECHNICAL EDUCATION
CHHATTISGARH

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Syllabus updation is a continuous process and hence the Board brings out revised Syllabus every year. It is obligatory for the Schools and the students preparing for the Board's examination of a particular year to follow the syllabi, courses and the books prescribed by it for that year. No deviation from the ones prescribed is permissible. All concerned are, therefore, strongly advised to purchase the curriculum prescribed for the year concerned from the BSTE Headquarters or its Regional Offices for their information and use. Orders with the required price and postage can be placed with the Store Keeper (Publications) at the Headquarters or with the Regional Officer of the Zone as the case may be. Readers are also advised to refer to the details given at the end of this publication.

Published by Secretary, BSTE

ELIGIBILITY OF CANDIDATES

ELIGIBILITY OF CANDIDATES

1. Admission of Students to a school: Transfer/Migration of Students Admission: General Conditions:

1.1 A student seeking admission to any class in 'School' will be eligible for admission to that class only if he:-

(i) has been studying in a school recognised by or affiliated to this Board or any other recognised Board of Secondary Education in India;

(ii) has passed qualifying or equivalent qualifying examination making him eligible for admission to that class;

(iii) satisfies the requirements of age limits (minimum and maximum) as determined by the State/ U. T. Government and applicable to the place where the school is located; and

(iv) produces:-

(a) the School Leaving Certificate/transfer certificate signed by the Head of the Institution last attended and countersigned;

(b) document(s) in support of his having passed the qualifying or equivalent qualifying examination; and

(c) Date of Birth Certificate issued by the Registrar of Births and Deaths, where- ever existing, as proof of date of birth.

Explanation:-

(a) A person who has been studying in an institution which is not recognised by this Board or by any other recognised Board of Secondary Education or by the State/ U. T. Government of the concerned place shall not be admitted to any class or a “School” on the basis of Certificate(s) of such unrecognised institutions attended by him earlier.

(b) Qualifying Examination' means an examination-the passing of which makes a student eligible for admission to a particular class; and 'equivalent examination' means an examination conducted by any recognised Board of Secondary Education/Indian University or an institution recognised by or affiliated to such Board/University and is recognised by the Board equivalent to the corresponding examination conducted by this Board or conducted by a “School” affiliated to/recognised by this Board.

1.2 No student migrating from a school in a foreign country other than the school affiliated to this Board, shall be eligible for admission unless an eligibility certificate in respect of such a student has been obtained from this Board. For obtaining eligibility certificate from the Board, the Principal of the School to which admission is being sought will submit to the Board full details of the case and relevant documents with his own remarks/ recommendations. The eligibility certificate will be issued by the Board only after the Board is satisfied that the course of study undergone and examination passed is equivalent to corresponding class of this Board.

1.3 No person who is under the sentence of rustication or is expelled from any Board/ University/School or is debarred from appearing in the examination for whatever reason by any Board/University shall be admitted to any class in a School affiliated to this Board.

1.4 No student shall be admitted or promoted to any subsequent higher class in any school unless he has completed the regular course of study of the class to which he was admitted at the beginning of the academic session and has passed the examination at the end of the concerned academic session, qualifying him for promotion to the next higher class.

1.5 Admission: Specific Requirements

Admission to Class XI in a school shall be open only to such a student who has passed:-

(a) Secondary School Examination (Class X Examination) conducted by this Board; or

(b) An equivalent examination conducted by any other recognised Board of Secondary Education/Indian University and recognised by this Board as equivalent to its Secondary School Examination.

1.6 Admission to Class XII:

(i) No admission shall be taken in Class XII directly. Provided further that admission to Class XII in a school shall be open only to such a student who:
   (a) has completed a regular course of study for Class XI; and ,
   (b) has passed Class XI examination from a school affiliated to any valid Board.

(ii) A student who has completed a regular course of study for Class XI and has passed Class XI examination from this Board or an institution recognised by/affiliated to any recognised Board in India, can be admitted in class XII to a school only on transfer of the parent (s) or shifting of their families from one place to another, after procuring from the student the mark sheet and the Transfer Certificate duly countersigned by the Educational Authorities of the Board concerned. In case of such admissions, the school would obtain post facto approval of the Board within one month of the admission of the student.

1.7 Admission Procedure

(i) Successive numbers must be allotted to students on their admission and each student should retain this number throughout the whole of his career in the school. A student returning to the school after absence of any duration shall resume admission on his original number.

(ii) If a student applying for admission to a school has attended any other school, an authenticated copy of Transfer Certificate in the format given in the Examination Bye-Laws from his last school must be produced before his name can be entered in the admission Register.

(iii) In no case shall a student be admitted into a class higher than that for which he is entitled according to the Transfer Certificate.

(iv) A student shall not be allowed to migrate from one “School” to another during the session after his name has been sent up for the examination of the Board. This condition may be waived only in special circumstances by the Chairman.

(v) A student leaving his school at the end of a session or who is permitted by the school during the session shall on a payment of all dues, receive an authenticated copy of the Transfer Certificate up-to-date. A duplicate copy may be issued if the Head of the institution is satisfied that the original is lost but it shall always be so marked.

(vi) In case a student from an institution not affiliated to the Board seeks admission in a school affiliated to the Board, such a student shall produce a transfer certificate duly countersigned by an authority as indicated in the format given in Examination Bye-Laws.

1.8 Admission to Examinations

General

No candidate who has been expelled or is under the punishment or rustication or is debarred for appearing in or taking an examination for any reason whatsoever, shall be admitted to any examination of the Board.

BSTE Senior School Certificate Examinations:

1.9 Academic Qualification for Undertaking Examinations:

(i) A candidate for BSTE Senior School Certificate Examination should have:

(a) passed the Secondary School Examination (Class X) of this Board or an equivalent examination from any other recognised Board/University at least two years earlier than the year in which he/she would take Senior School Certificate Examination (Class XII) of the Board; and

(b) secured a grade higher than grade E in each of the subjects of internal assessment at Secondary School Examination (Class X) referred to at (a) above.

1.10 Admission to Examinations: Regular Candidates

BSTE Senior School Certificate Examination will be opened to such regular candidates who have submitted their duly completed application for admission to the concerned examination, and/or his name in the manner prescribed by the Board, along with the prescribed fee forwarded to the Controller of Examinations by the Head of the Institution/School with the following duly certified by such head:-

(i) that he possesses the academic qualifications as laid down in Examination Bye-Laws;

(ii) that he has not passed equivalent or higher examination of any other Board or University;

(iii) that he is on the active rolls of the School;

(iv) that he has completed a "regular Course of study" as defined and detailed in Examination Bye-Laws in a school in the subjects in which he would appear in the Examination;

(v) that he bears a good moral character and is of good conduct; and

(vi) that he satisfies all other provisions applicable to him/her, of the Examination Bye-Laws and any other provision made by the Board by governing admission to the examination concerned, if any.

1.11 A Regular Course of Study

(i) The expression "a regular course of study" referred to in the Bye-Law means at least 75% of attendance in the classes held counted from the day of commencing teaching of Class XI/ XII, as the case may be, upto the 1st of the Month preceding the month in which the examination of the School / Board commences. Candidates taking up a subject(s) involving practicals shall also be required to have put in at least 75% of the total attendance for practical work in the subject in the laboratory. Heads of institutions shall not allow a candidate who has offered subject(s) involving practicals to take the practical examination(s) unless the candidates fulfil the attendance requirements as given in this Rule.

(ii) The candidates who had failed in the same examination in the preceding year and who rejoin Class XI/XII shall be required to put in 75% of attendance calculated on the possible attendance from the 1st of the month following the publication of the results of that

examination by the School/Board upto the 1st of the month preceding the month in which the examination of the School / Board commences.

(iii) In the case of migration from other institutions, attendance at the institution/school recognised by the Education Department of the State/Union Territory from which the candidate migrates will be taken into account in calculating the required percentage of attendance.

1.12 Requirement of Attendance in Subjects of Internal Assessment

(i) No student from a School affiliated to the Board shall be eligible to take the examination unless he has completed 75% of attendance counted from the opening of Class XI/XII up to the 1st of the month preceding the month in which the examination commences in the subjects of internal assessment.

(ii) Exemption from W.E./ Art Education/P & HE may be granted to a candidate on medical grounds provided the application is supported by a certificate given by a Registered Medical Officer of the rank not below that of Asstt. Surgeon and forwarded by the Head of the School with his recommendations.

(iii) The Chairman shall have powers to condone shortage of attendances in subjects of internal assessment.

1.13 Rules for Condonation of shortage of Attendance

(i) If a candidate's attendance falls short of the prescribed percentage, the Head of the School may submit his name to the Board provisionally. If the candidate is still short of the required percentage of attendance within three weeks of the commencement of the examination, the Head of the Institution shall report the case to the Regional Officer concerned immediately. If in the opinion of the Head of the Institution, the candidate deserves special consideration, he may submit his recommendation to the Regional Officer concerned not later than three weeks before the commencement of the examination for condonation of shortage in attendance by the Chairman, BSTE who may issue orders as he may deem proper. The Head of the School in his letter requesting for condonation of shortage in attendance, should give the maximum possible attendance by a student counted from the day of commencing teaching of Class XII (beginning of the session) upto the 1st of the month preceding the month in which the examination of the Board commences, attendance by the candidate in question during the aforesaid period and the percentage of attendance by such a candidate during the aforesaid period.

(ii) Shortage upto 15% only may be condoned by the Chairman. Cases of candidates with attendance below 60% in Class XII shall be considered for condonation of shortage of attendance by the Chairman only in exceptional circumstances created on medical grounds, such as candidate suffering from serious diseases like Cancer, AIDS, T.B. or any other disease or injury requiring long period of hospitalization.

(iii) The Principal shall refer a case of shortage within the above prescribed limit of condonation to the Board, either with the recommendations or with valid reasons for not recommending the case.

(iv) The following may be considered valid reasons for recommending the cases of the candidates with attendance less than the prescribed percentage:

(a) prolonged illness;
(b) loss of Father/Mother or some other such incident leading to his absence from the school and meriting special considerations;
(c) any other reason of similar serious nature; and
(d) authorised participation in sponsored tournaments and Sports Meets of not less than inter school level and NCC/NSS Camps including the days of journeys for such participation shall be counted as full attendance.

1.14 Detaining of Eligible Candidates

In no case the Heads of affiliated schools shall detain eligible candidates from appearing at the examination of the Board.

1.15 A Private Course of Study

(Class XII) Examination:

(i) A candidate who had failed at the any Senior School Certificate Examination of the Board will be eligible to reappear at a subsequent examination as private candidate in the syllabus and text books as prescribed for the examination of the year in which he/she will reappear.
(a) Candidates who had failed at any Secondary School Examination of the Board;
(b) Teachers serving in educational institutions affiliated to the Board
(c) Women candidates who are not able to go regular school
(d) Candidates who are unable to join a Secondary School for any reasons BSTE compelling them to appear at the examinations as a private candidate.
(e) Physically handicapped students on producing reasonable evidence of having difficulty to attend normal institutions in the subjects not involving practical training / examination.
(f) Candidates from any tribal area across the country & world.
(g) All that candidates who are not able to pay regular school fee
(i) A private candidate must submit within the prescribed date to the Regional Officer concerned, an application in the form prescribed together with the prescribed fee for the examination and three copies of the passport size photograph duly signed by the candidate and countersigned by one of the authorities mentioned at (i) above.
(ii) If the application of a private candidate is received after the prescribed date, he shall pay late fee as prescribed.
(viii) Private Candidates shall not be allowed to offer for their examination a subject (even if the subject is recognised for the examination) which is not being taught in an affiliated institution.

2. SCHEME OF EXAMINATIONS AND PASS CRITERIA

2.1 General Conditions

(i) The Scheme of Examinations and Pass Criteria for BSTE,CG, Senior School Certificate Examination conducted by the Board, shall be as laid down from time to time.
(ii) Class XI examination shall be conducted internally by the schools themselves.
(iii) The Board will conduct the external examination at the end of Class XII.
(iv) Class XII examination will be based on the syllabi as prescribed by the Board for Class XII from time to time.
(v) Number of papers, duration of examination and marks for each subject/paper will be as

specified in the curriculum for the year.

(vi) The examination would be conducted in theory as well as in practicals, depending upon the nature of the subject(s) and the marks/grades allotted shall be as prescribed in the curriculum.

(vi) Marks/grades shall be awarded for individual subjects and the aggregate marks shall not be given.

2.2 Grading

(i) Assessment of theory/practical papers in external subjects shall be in numerical scores. In addition to numerical scores, the Board shall indicate grade in the marks sheets issued to the candidates in case of subjects of external examinations. In case of internal assessment subject only grades shall be shown.

(ii) Letter grades on a nine-point scale shall be used.

(iii) The grades shall be derived from scores in case of subjects of external examination. In case of subjects of internal assessment, they shall be awarded by the schools.

(iv) The qualifying marks in each subject of external examination shall be 33% at Senior School Certificate Examination. However, at Senior School Certificate Examination, in a subject involving practical work, a candidate must obtain 33% marks in the theory and 33% marks in the practical separately in addition to 33% marks in aggregate, in order to qualify in that subject.

(v) Grading of Subjects will be as follow :

A-I For % Between 91 to 100
A-2 For % Between 81 to 90
B-1 For % Between 76 to 80
B-2 For % Between 71 to 75
C-l For % Between 61 to 70
C-2 For % Between 51 to 60
D-l For % Between 41 to 50
D-2 For % Between 33 to 40
E Failed Candidates

2.3 Merit Certificates

(i) The Board will award Merit Certificates in each subject to the top 0.1 % of candidates passing that subject, provided that they have passed the examination as per the pass criteria of the Board.

(ii) The number of Merit Certificates in a subject, will be determined by rounding of the number of candidates passing the subject to the nearest multiple of thousand. If the number of candidates passing a subject is less than 500, no merit certificate will be issued.

(iii) In the matter of a tie, if one student gets a Merit Certificate, all candidates getting that score will get the Merit Certificate.

2.4 Scheme of Examination (Senior School Certificate Examination)

(i) The Board shall conduct examination in all subjects except General Studies, Work Experience, Physical and Health Education, which will be assessed internally by the schools.

(ii) In all subjects examined by the Board, a student will be given one paper each carrying 100 marks for 3 hours. However, in subjects requiring practical examination, there will be a theory paper and practical examinations as required in the syllabi and courses.

(iii) In Work Experience, General Studies and Physical and Health Education, the Schools will maintain cumulative records of student's periodical achievements and progress during the year. These records are subject to the scrutiny of the Board as and when deemed fit.

(iv) A candidate from a recognised school who has some physical deformity or is otherwise unable to take part in Work Experience and Physical and Health Education, may be granted exemption by the Chairman on the recommendation of the Head of the institution, supported by the medical certificate from a Medical Officer of the rank not below an Assistant Surgeon.

(v) Private/Patrachar Vidyalaya and candidates sponsored by Adult School shall be exempted from Work Experience, General Studies and Physical and Health Education.

(vi) A candidate may offer an additional subject which can be either a language at elective level or another elective subject as prescribed in the Scheme of Studies, subject to the conditions laid down in the Pass Criteria.

2.5 Pass Criteria (Senior School Certificate Examination)

(i) A candidate will be eligible to get the pass certificate of the Board, if he/she gets a grade higher than E in all subjects of internal assessment unless he/she is exempted. Failing this, result of the external examination will be with held but not for a period of more than one year.

(ii) In order to be declared as having passed the examination, a candidate shall obtain a grade higher than E (i.e. at least 33% marks) in all the five subjects of external examination in the main or at the end of the compartmental examination. The pass marks in each subject of external examination shall be 33%. In case of a subject involving practical work a candidate must obtain 33% marks in theory and 33% marks in practical separately in addition to 33% marks in aggregate in order to qualify in that subject.

(iii) No overall division/distinction/aggregate shall be awarded.

(iv) In respect of a candidate offering an additional subject, the following norms shall be applied:

(a) A language offered as an additional subject may replace a language in the event of a candidate failing in the same provided after replacement the candidate has English/ Hindi as one of the languages.

(b) An elective subject offered as an additional subject may replace one of the elective subjects offered by the candidate. It may also replace a language provided after replacement the candidate has English/Hindi as one of the languages.

(c) Additional language offered at elective level may replace an elective subject provided after replacement, the number of languages offered shall not exceed two.

(v) Candidates exempted from one or more subjects of internal examination shall be eligible for appearing in external examination and result shall be declared subject to fulfilment of other conditions laid down in the Pass Criteria.

(vi) In order to be declared as having passed the Class XI Examination a candidate shall

obtain 33% marks in all the subjects. The pass marks in each subject of examination shall be 33%. In case of subject involving practical work a candidate must obtain 33% marks in theory and 33% in practical separately in addition to 33% marks in aggregate in order to qualify in that subject.

2.6 Eligibility for Compartment in Senior School Certificate Examination

A candidate failing in one of the five subjects of external examination shall be placed in compartment in that subject provided he/she qualifies in all the subjects of internal assessment.

2.7 Compartment Examination for Senior School Certificate Examination

(i) A candidate placed in Compartment may reappear at Compartment Examination to be held in Next by the board The candidate will be declared 'PASS' provided he/she qualifies the compartmental subjects in which he/she had failed.

(ii) A candiate who does not appear or fails at one or all the four chances of compartment shall be treated to have failed in the examination and shall be required to reappear in all the subjects at the subsequent annual examination of the Board as per syllabi and courses laid down for the examination concerned in order to pass the examination. The candidate's practical marks/internal assessment marks ob-tained in the 'Main examination will be carried over till the fifth chance compartmental examination. The candidate shall have the option to appear at the practical examination in the subjects involving practical or retain their previous marks in one more annual examination after the Fifth Chance Com-partment.

(iii) Syllabi and Courses for the Compartmental Candidates in Examination shall be the same as applicable to the candidates of full subjects appearing at the examination.

(iv) For subjects involving practical work, in case the candidate has passed in practical at the main examination he/she shall appear only in theory part and previous practical marks will be carried forward and accounted for. In case a candidate has failed in practical he / she shall have to appear in theory and practical both irrespective of the fact that he / she has already cleared the theory examination.

2.10 Improvement of performance - Senior School Certificate Examination

(i) A candidate who has passed an examination of the Board may reappear for improvement of performance in the succeeding year only; however, a candidate who has passed an examination of the Board under Vocational Scheme may reappear for improvement of performance in the main examination in the succeeding year or the following year provided they have not pursued higher studies in the mean time. They will appear as private candidates.

Those reappearing for the whole examination may, however, appear as regular candidates also if admitted by the school as regular students. The candidate (s) appearing for improvement of performance can appear in the subject (s) only in which they have been

declared pass and not in the subject in which they have been declared fail.

(ii) For subjects involving practical work, in case the candidate has passed in practical at the main examination, he/she shall be allowed to appear in theory part only and marks in practical obtained at the main examination shall be carried forward and accounted for. In case a candidate has failed in practical, he/she shall have to appear in theory and practical both irrespective of the fact that he/she has already cleared the theory examination.

(iii) Candidates who appear for improvement of performance will be issued only Statement of Marks reflecting the marks of the improvement examination.

(iv) A candidate appearing for Improvement of Performance in one or more subjects can not appear for additional subject simultaneously.

2.11 Medium of Instruction

The medium of instruction in general in all the schools affiliated with the board shall either be English or Hindi.

ENGLISH

(Code No.111)

Class XII

BRIEF

The course is intended to give students a high level of competence in English with an emphasis on the study of literary texts and will provide extensive exposure to a variety of rich texts of world literature as well as to Indian writings in English, including classics, and develop sensitivity to the creative and imaginative uses of English and give them a taste for reading with delight and discernment. The course will be pitched at a level which the students may find challenging.

The course is primarily designed to equip the students to pursue higher studies in English literature and English language at the college level and prepare students to become teachers of English.

Objectives

The general objectives at this stage are:

to provide extensive exposure to a variety of writings in English including some classics. to develop sensitivity to literary and creative uses of language.

to further expand the learners' vocabulary resources through the use of dictionary, thesaurus and encyclopaedia.

to develop a taste for reading with discernment and delight.

to initiate the study of formal English grammar and elementary linguistics and phonetics.

to enable learners to translate texts from mother tongue into English and vice versa.

to critically examine a text and comment on different aspects of it.

At the end of this stage the Elective Course would ensure that the learner grasps the global meaning of the text, its gist and understands how its theme and sub-theme relate.

relates the details to the message in it; for example, how the details support a generalization or the conclusion either by classification or by contrast and comparison.

comprehends details, locates and identifies facts, arguments, logical relationships, generalization, conclusions, etc.

draws inferences, supplies missing details, predicts outcomes, grasps the significance of particular details and interprets what he/she reads.

assesses the attitude and bias of the author.

infers the meanings of words and phrases from the context; differentiates between apparent

synonyms and appreciates the nuances of words.

appreciates stylistic nuances, the lexical structure, its literal and figurative use and analyses a variety of texts.

identifies different styles of writing like humorous, satirical, contemplative, ironical and burlesque.

does text-based writing (writing in response to questions or tasks based on prescribed as well as 'unseen' texts).

develops the advanced skills of reasoning, making inferences, judgements, etc.

develops familiarity with the poetic uses of language including features of language through which artistic effect is achieved.

to develop sensitivity to the literary and creative uses of language.

to further expand the learners' vocabulary resources through the use of dictionary, thesaurus and encyclopaedia.

to develop a taste for reading with discernment and delight.

to initiate the study of formal English grammar and elementary linguistics and phonetics.

to enable learners to translate texts from mother tongue into English and vice versa.

to critically examine a text and comment on different aspects of it.

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relates the details to the message in it; for example, how the details support a generalization or the conclusion either by classification or by contrast and comparison.

comprehends details, locates and identifies facts, arguments, logical relationships, generalizations, conclusions, etc.

draws inferences, supplies missing details, predicts outcomes, grasps the significance of particular details and interprets what he/she reads.

assesses the attitude and bias of the author.

infers the meanings of words and phrases from the context; differentiates between apparent synonyms and appreciates the nuances of words.

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does text-based writing (writing in response to questions or tasks based on prescribed as well as 'unseen' texts).

develops the advanced skills of reasoning, making inferences, judgements, etc.

develops familiarity with the poetic uses of language including features of language through which artistic effect is achieved.

Methods and Techniques

The techniques used for teaching should promote habits of self-learning and reduce dependence on the teacher. The multi-skill, learner-centred, activity based approach already recommended for the previous stages of education, is still in place, though it will be used in such a way that silent reading of prescribed/selected texts for comprehension will receive greater focus as one of the activities. Learners will be trained to read independently and intelligently, interacting actively with texts and other reference materials (dictionary, thesaurus, encyclopaedia, etc.) where necessary. Some pre- reading activity will generally be required, and course books should suggest those. The reading of texts should be followed by post reading activities. It is important to remember that every text can generate different readings.

Students should be encouraged to interpret texts in different ways, present their views of critics on a literary text and express their own reactions to them. Some projects may be assigned to students from time to time. For instance, students may be asked to put together a few literary pieces on a given theme from English as well as regional literatures.

One Paper **3 Hours** **Marks: 100**

Unitwise Weightage

Units		Marks
1.	Reading an unseen passage and poem	20
2.	Writing	20
3.	Applied Grammar	10
4.	Texts for detailed study	40
5.	Fiction	10

		Marks	**Periods**
1.	Reading an unseen passage and poem	20	35
(a)	One literary or discursive passage of about 500-600 words followed by short questions	12	
(b)	A poem of about 15 lines followed by short questions to test interpretation and appreciation	8	
2.	**Writing**	**20**	**30**
(a)	One essay on argumentative/discursive topic (150-200 words)	10	
(b)	To write a composition such as an article, report, speech		

(150-200 words)	10		
3. Applied Grammar	**10**		**10**
(a) Editing and error correction of words and sentences	05		
(b) Changing the narration of a given input	05		
4. Texts for detailed study	**40**		**100**
(a) Two passages or extracts followed by short answer type questions for comprehension, interpretation, drawing inferences	(4× 2)	08	
(b) Two out of three questions to be answered in 100 words each testing global comprehension	(6+6)	12	
(c) Five out of six questions to be answered in about 60 words each testing comprehension, characterisation, interpretation	(3+3)	4 x 5 = 20	
5. Fiction	**10**		**30**
(a) One out of two questions to be answered in about 60 words each seeking comments, interpretation	04		
(b) One question in about 100 words to test evaluation and appreciation of characters, events, episodes and interpersonal relationships	06		

Books prescribed

1. Kaleidoscope- Text book published by NCERT
2. Fiction- Novel: Tiger for Malgudi by R.K. Narayan

or

The Financial Expert by R. K. Narayan

हिन्दी

(Code No.112)

CLASS XII

			अंक
(क)	अपठित बोध (गद्यांश और काव्यांश–बोध)	12+8	20
(ख)	रचनात्मक लेखन एवं जन–संचार माध्यम • **अभिव्यक्ति और माध्यम** (प्रिंट माध्यम संपादकीय, रिपोर्ट, आलेख, फीचर–लेखन)	10+5+5+5	25
(ग)	• पाठ्य पुस्तक : • **आरोह** (भाग–2) (काव्यांश–20 गद्यांश–20)		40
	• पूरक पुस्तक : **वितान** (भाग–2)		15
			100

क	**अपठित बोध :**		**20**
1.	काव्यांश–बोध पर आधारित पाँच लघूत्तरात्मक प्रश्न		10
2.	गद्यांश–बोध पर आधारित बोध, प्रयोग, रचनांतरण, शीर्षक आदि पर लघूत्तरात्मक प्रश्न		10
ख	**रचनात्मक लेखन एवं जन–संचार माध्यम:**		**25**
3.	निबंध		10
	जन–संचार की निम्नलिखित विधाओं पर दो प्रश्न–		
4.	रिपोर्ट		05
5.	आलेख		05
6.	फीचर लेखन (जीवन–संदर्भो से जुड़ी घटनाओं और स्थितियों पर फीचर–लेखन)		05
ग	**आरोह भाग–2 (काव्य –भाग और गद्य–भाग)**	**(20+20)**	**40**
7.	दो काव्यांशों में से किसी एक पर अर्थग्रहण के चार/पाँच प्रश्न		10
8.	काव्यांश के सौंदर्यबोध पर दो प्रश्न के स्थान पर विकल्प दिया जाएगा। किसी एक काव्यांश के तीनो प्रश्नों के उत्तर देने होंगे।	(2+2+2)	06
9.	कविताओं की विषय–वस्तु से संबंधित तीन में से दो लघूत्तरात्मक प्रश्न	(2+2)	04
10.	दो में से किसी एक गद्यांश पर आधारित अर्थ–ग्रहण के चार प्रश्न	(2+2+2+2)	08
11.	पाठों की विषय वस्तु पर आधारित पांच में से चार बोधात्मक प्रश्न	(3+3+3+3)	12

पूरक पुस्तक : वितान भाग 2 **15**

12.	पाठों की विषयवस्तु पर आधारित तीन में से दो बोधात्मक प्रश्न	(3+3)	06
13.	विचार/संदेश पर आधारित तीन में से दो लघूत्तरात्मक प्रश्न	(2+2)	04
14.	विषयवस्तु पर आधारित दो में से एक निबंधात्मक प्रश्न		05

निर्धारित पुस्तकें:

(i) **आरोह भाग–2** एन.सी.ई.आर.टी. द्वारा प्रकाशित

(ii) **वितान भाग–2** एन.सी.ई.आर.टी. द्वारा प्रकाशित

(iii) **'अभिव्यक्ति और माध्यम'** एन.सी.ई.आर.टी. द्वारा प्रकाशित

SANSKRIT

(Code No.113)

CLASS XII

पाठ्यक्रम : परीक्षानिर्देशाश्च
(केन्द्रिकम्)

एकम् प्रश्नपत्रम् **अवधिः होरात्रयम्** **पूर्णाङ्काः100**

अस्मिन् प्रश्नपत्रे चत्वारः खण्डाः भविष्यन्ति

खण्डः "क" अपठितांश-अवबोधनम्	**10**
खण्डः "ख" रचनात्मककार्यम्	**15**
खण्डः "ग" अनुप्रयुक्तव्याकरणम्	**30**
खण्डः "घ"	**45**
(अ) पठितांश-अवबोधनम्	35
(ब) संस्कृतसाहित्येतिहासस्य परिचयः	10

प्रतिखण्डं विस्तृतविवरणम्

खण्डः 'क'
(अपठितांशावबोधनम्)

80-100 शब्दपरिमितः एकसरलः अपठितः गद्यांशः। **10**

प्रश्नवैविध्यम्

(i)	एकपदेन उत्तरम्	2
(ii)	पूर्णवाक्येन उत्तरम्	2
(iii)	सर्वनामस्थाने संज्ञाप्रयोगः	1
(iv)	कर्तृक्रिया-पदचयनम्	1
(v)	विशेषण-विशेष्य/पर्याय/विलोमादिचयनम्	2
(vi)	समुचितशीर्षकप्रदानम्	2

खण्डः 'ख'
(संस्कृतेन रचनात्मकं लिखितकार्यम्) 15

(i) **अनौपचारिकं पत्रम्/प्रार्थनापत्रम्** 5

(ii) **लघुकथा (शब्दसूचीसाहाय्येन, रिक्तस्थानपूर्ति-माध्यमेन)** 5

(iii) **संकेताधारितम् अनुच्छेदलेखनम्**
(चित्रमधिकृत्य/निर्दिष्टशब्दसूची-साहाय्येन) 5

खण्डः 'ग'
(अनुप्रयुक्तव्याकरणम्) 30

(i) पाठाधारिताः सन्धिच्छेदाः (2 2 2) 6
स्वरसन्धिः, व्यंजनसन्धिः, विसर्गसन्धिः

(ii) पाठाधारितसमस्तपदानां विग्रहाः 6
अव्ययीभावः, द्विगुः, द्वन्द्वः, तत्पुरुषः, कर्मधारयः, बहुव्रीहिः

(iii) प्रत्ययाः
अधोलिखितप्रत्ययययोगेन वाक्यसंयोजनम्/ सङ्केताधारितरिक्तस्थानपूर्तिः

(अ) **कृत्–** क्त, क्तवतु, क्त्वा, तुमुन्, ल्यप्, तव्यत्, अनीयर्, क्तिन्, शतृ, शानच् 5

(आ) **तद्धित–** मतुप्, इन्, ठक्, ठञ्, त्व, तल्, 3

(iv) अन्वितिः
कर्त्ता – क्रिया-अन्वितिः/विशेषण-विशेष्य-अन्वितिः 5

(v) उपपदविभक्तिप्रयोगः (पाठ्यपुस्तकम् आधृत्य) 5

खण्डः 'घ' 50
भागः (I)
(पठितांश-अवबोधनम्) 35

(अ) अंशत्रयम् **15**

(i) एकः गद्यांशः 5

(ii) एकः नाट्यांशः 5

(iii) एकः पद्यांशः 5

प्रश्नवैविध्यम्–

(i)	एकपदेन उत्तरम्	1	
(ii)	पूर्णवाक्येन उत्तरम्	1	
(iii)	विशेषण-विशेष्य-अन्वितिः/पर्याय/विलोमादिचयनम्	1	
(iv)	सर्वनामस्थाने संज्ञाप्रयोगः	1	
(v)	कर्तृ-क्रिया-पदचयनम्	1	
आ (i)	उद्धृतांशानाम् प्रसङ्गसन्दर्भलेखनम् कः कम् कथयति/सन्दर्भग्रन्थस्य लेखकस्य च नामोल्लेखनम्		4
(ii)	प्रदत्ते भावार्थत्रये शुद्धभावार्थचयनम् / प्रदत्ते भावार्थे रिक्तस्थानपूर्तिः		4
(iii)	उद्धृतश्लोकानाम् अन्वयेषु रिक्तस्थानपूर्तिः		4
(iv)	प्रदत्तवाक्यानां क्रमायोजनम्		4
(v)	प्रदत्तपंक्तिषु प्रसङ्गानुसारं श्लिष्टपदानाम्/पदानाम् अर्थलेखनम्		4

खण्डः घ
भागः (II)
(सामान्यः संस्कृतसाहित्यपरिचयः)

			10
1.	(अ)	पाठ्यपुस्तके संकलितपाठ्यांशानां कवीनां कृतीनां संस्कृतेन परिचयः	(1x5)
	(आ)	संस्कृते गद्य-पद्य-नाटकादिविधानां मुख्यविशेषतानां परिचयः	5

पुस्तकानि

- **ऋतिका (द्वितीयः भागः)** (पाठ्यपुस्तकम्) (के.मा.शि.सं. द्वारा प्रकाशितम्)
- **व्याकरणसौरभम्** (सन्दर्भपुस्तकम्) (रा. शै. अनु. प्र. परिषदा प्रकाशितम्) (संशोधितसंस्करणम्)
- **रचनानुवादकौमुदी** (सन्दर्भपुस्तकम्) कपिलदेवद्विवेदीलिखितम् विश्वविद्यालयप्रकाशनम्, वाराणसी
- **संस्कृतसाहित्यपरिचयः** (सन्दर्भपुस्तकम्) (रा. शै. अनु. प्र. परि. द्वारा प्रकाशितम् (संशोधितसंस्करणम्)

URDU

(Code No.114)

Class XII

BRIEF

One Paper **3 Hours** **Marks : 100**

			Suggested
Section A		**Marks 60**	**Periods :210**
1. Reading Skills :		10	25
(i)	Comprehension of an unseen passage (factual) of about 150 words followed by five questions.		
2.	Writing Skills :	50	101
(i)	Essay 15		
(ii)	Letter writing (Personal, business and official connected with daily life and application writing)	10	
(iii)	Precis Writing	10	
(iv)	Sentence making with the help of idiomatic phrases	10	
(v)	Advertisements	5	
Section B :		**Marks : 40**	
A. Book I		20	42
Jangal Ki Ek Rat			
(i)	One out of two extracts from the prescribed book followed by short answer type questions forcomprehension.	7	
(ii)	One essay type question (100 words) on content/theme of the prescribed book.	5	
(iii)	Four short answer type questions on the prescribed book	8	
B. Book II		20	42
Heroine Ki Talash			
(i)	One Essay type question (100 words) on theme/content	10	
(ii)	Four short answer type questions on characters/events/evaluative nature	10	

Prescribed Text Book :

1. Jangal Ki Ek Rat by Rehan Ahmed Abbasi published by Maktaba Payam-e-Ta'leem, N. Delhi.
2. Heroine Ki Talash by Prof. M. Mujeeb published by Maktaba Jamia, New Delhi.

Recommended Book :

1. Urdu Qawaid, published by the NCERT, New Delhi.

TIBETAN

(Code No.115)

Class XII

BRIEF

One Paper **Time : 3 hours** **Marks : 100**

Section A

1. Applied Grammar : 20

Suggested References :

Rtag 'Jug from Si tu'i Zhal lung, Published by Tibetan Culture Printing Press, Dharamsala, H.P.

Section B

Reading an unseen passage or poem 10

(a) One literary or discursive passage of about 250-300 words or a poem of about 8 lines

Section C

Composition and Writing 15

Essay and Letter Writing

(i) Essay : Topic related to personal experiences, reflective matter like patriotism and democracy etc.

(ii) Letter writing : Topic relating to Professional, Occupational, Official, Social interest.

Section D

Literature

Prose 15

Prescribed book :

Bod du rig gnas dar tshul mdor bsdus bshad pa by Muge Samten, Published by the Tibetan Cultral Printing Press, Dharamsala, H.P.

Poetry 15

Prescribed book :

Snyan-ngag-me-long (ThirdAlankara) Published by the Tibetan Cultural Printing Press, Dharamsala, H.P. Published by the Tibetan Cultural Printing Press, Dharamsala, H.P.

Drama 15

Prescribed Book : Ri dvags kyi gtam gyi nges 'byung gi pho nya by - Longchen Ramjampa, Published by Tibetan Cultural Printing Press, Dharamshala,H.P.

Rapid Reading 10

Sing ga la yi lo rgyus by Gendun Chophel, Published by the Tibetan Cultral Printing Press, Dharamsala H.P.

TELUGU

(Code No.116)

Class XII

BRIEF

One Paper	**3Hours**		**Max. Marks :100**
		Marks	Periods
SECTION A (Grammar)		**22**	**70**
1.	Prosody and Rhetorics		
(i)	Prosody	5	
(ii)	Alankaras	10	

Metre: Champakamala, Utpalamala, Mattebha, Shardula, Ataveladi, Tetagiti, Kandamu and Seesamu

Alankaras: Upama, Rupaka, Arthantaranyasa, Slesha and Kramalankara

2.	Translation of given passage not exceeding 10 sentences in English into Telugu (Abstract passage should be avoided)	7	
SECTION B			
Unseen Reading Comprehension		10	20
SECTION C			
Composition and Writing			
Descriptive and Narrative essays		10	40
SECTION D			
Literature		58	80

Prescribed Book: For both prose and poetry Intermediate Telugu II year Sahitee Manjusha-part II Printed and Published by TeluguAkadami and Board of Intermediate Education, Andhra Pradesh (2004 Edition)

1.	Prose: From prescribed text and non-detailed text.	22

Lessons to be studied:

1. Ammamma
2. Abhyudaya Kavita
3. Anuvaada Sahityamu

(i) Explanation with reference to the context 1x4 =4

(ii) Two Questions &Answers 2x5=10

Non-detailed Text:

Alluri Sitaramaraju Natakam (Telugu upavachakam Printed and published by TeluguAkademi and Board of Intermediate Education Hyderabad.A.P. (2004 Edition)

II Essay Type Questions 8

III Poetry & figures of speech from prescribed text 20

Lessons to be studied:

1. Girika Balyam
2. Subhashitalu
3. Mutyala saralu

(i) Meaning of Verse 8

(ii) One reference to the context 4

(iii) One long answer question 8

IV. History of Literature 16

From PrabandhaAge to ModernAge

(i) Only the following poets to be studied: Peddana, Dhurjati, Chemakura, Kandukuri, Rayaprolu, Sri Sri, Tirupati Venkata Kavulu and Viswanatha Satyanarayana

(ii) Salient features of Satakas (Neeti and Bhakti) Novel and Drama

One long answer type question 8

Two short answer type question 2x4=8

Recommended Books:

(i) Andhra Vangmaya Charitra-Dr. D.V.Avadhani, Andhra Saraswata Parishad, Tilak Road, Hyderabad

(ii) History of Telugu Literature by

(a) Dr. G. Nagaiah-Vol.I

(b) Dr. Dvana Sastry

TAMIL

(Code No.117)

Class XII

BRIEF

One Paper **Time : 3 hours** **Max. Marks : 100**

LANGUAGE

	Marks	Periods
Section A : Grammar :	**30**	
Letter writing :		
Grammar :	15	
1. Correction of Errors	5	
2. Vallinam Migum Idangal	5	
3. Do as directed	5	

Thanvinai, peravinai, Seivinai, Seyapattuvinai, Udan Paattuvinai. Edhirmaraivinai, Nerkuttrru,Ayar Kurtru, Thani Vakkiyam. Thodar Vakkiyam, Kalavai Vakkiyam.

Letter Writing	**10**	**20**

Paraattuk Kaditham,Aarudhal Kaditham Sirappu Nigazhchigallukku

Azhaippu Kaditham, Vinnappak Kaditham, Muraieettu Kaditham

Section B

Unseen reading and comprehension	**10**	**30**

Patthi vina vidai

Neerkaanal (Karpanai)

(or) Patthi or Seyyul Pagudi Koduthu vinaAmaithal

Section C

Composition and Essay Writing	**15**	**20**

(Literature, Science, CurrentAffairs)

LITERATURE

SECTION A

Prose from prescribed text (Answer only two questions.	**20**	**40**

Following lessons) :lessonno:

1. Vuyar thanich Chemmozhi-by Paridhimaar Kalainjar

2. Samarasam by Thiru-vi-ka

3. Kavidhai-Prof.S.Vaiapurippillai

4. Vaazhkai-by Illavazhaganaar

5. Neethe noolgalil Ilakkia Nayam by Dr. A. Chidambaranathan.

SECTION B	**15**	**35**

Poetry and figures of speech from prescribed text

Poetry Section

Questions	10
Annotation	05

1. Vazhthu

(i) Irai vazhthu

(ii) Mozhi Vazhthu

(iii) Naattu Vazhthu

2. Thokai Nuulkal

(i) Purunaanuru

(ii) Aganaannuru

(iii) Kurunthogai

3. Thirukural: Sainanriarithal, Porraiudaimai,Arrivudaimai, Vinaithitpam.

4. Thodarnelai seijul

(i) Silappadhikaaram

(ii) Kamba Ramayanam

(iv) Pandian Parisu

SECTION C		**15**	**35**

Kathai Kovai (Non-detailed text book) class-XII part-I Tamil

Short Story 1-5 stories

Only two questions

(i)	Essay type question	10
(ii)	Character	05

Story no:

1. Paalvannam Pillai-by Pudumai Pithan
2. Aayaa-T. Janakiraman
3. Mookkappillaiveettu Virundhu-by Vallikannan
4. Chattai-Jeyakanthan
5. Veli-Rajam Krishnan

Text Books:

1. Podhu Thamizh Text Book Class XII Edition 2005 (Published by Tamilnadu Text Book Society)
2. Kathai Kovai-non-detailed Text book Class XII-Edition 2005 (published by Tamilnadu Text Book Society)

SPANISH

(Code No.118)

Class XII

BRIEF

One Paper **Time : 3 hours** **Marks : 100**

Section A	**Marks**	**Periods**
Applied Grammar	**45**	**80**

(i) The subjunctive mood (present and past), its use as an independent clause and with conditional clauses.

(ii) Use of the gerund and the participle.

(iii) Active and Passive voice and the uses of "se"

Section B

Reading Comprehension	15	35

An unseen passage of about 200 words with 4 to 5 questions to be answered in Spanish from the passage.

Section C

Composition and Writing	15	30

A short composition (using the subjunctive Mood also) in Spanish on a topic related to the life around (200 words)

Section D

(Culture/Literature in Prose)	25	35

Simple questions on well-known Spanish works, authors, customs, festivals, etc. based on the prescribed texts.

Prescribed texts :

Espanol sin fronteras, Nivel Intermedio, by Jesus Sanchez Lobato, Concha Moreno Garcia and Isabel Santos Gargallo, SGEL, Madrid, 1998.

Recommended Textbook:

Nuevo Ven 2, By Francisco Castro, Fernando Marin, Reyes Morales, Edelsa, Madrid, 2004.

SINDHI

(Code No.119)

Class XII

BRIEF

One Paper	**3 Hours**	**Marks : 100**
Unit/Areas of Learning	Marks	Periods
A. Advanced Reading Skills	10	35
B. Effective Writing Skills	20	45
C. Prosody, Rhetorics and forms of Literature	20	45
D. Literature	50	85

LANGUAGE

	Marks	Periods
Section A : Advanced Reading Skills	10	30

1. An unseen passage of 150 words followed by3-4 short questions to test comprehension. 2 marks may be allocated for testing vocabulary.

2 mark may be allocated for providing a suitable heading.

Section B : Effective Writing Skills	**20**	**45**

(i) Report writing (150 words)

(ii) Essay writing (200 words)

Section C : Prosody, Rhetorics and forms of Literature	**20**	**45**
(i) Prosody	05	

Doha, Soratha, Rola, Chaupai, and Kundali

(ii) Figures of speech	05	

Anuprasa, Slesha, Yamaka, Upama, Rupaka, Atishayokti, Sandeha, Utpreksha, Upalaksha Virodhabhasa, Vyajastuti

(iii) Forms of Literature	10	

Novel, Short story, Essay, Drama, Poetry

Suggested references :

(i) Alankar aur Chanda by Dr. Motilal Jotwani

(ii) Sahita Ji Parakha by Jagdish Lachhani

LITERATURE :50

Section D

(a) Novel	10	25

Ahe-na-Ahe by Prof. Ram Panjwani published by
Lok Sewa Mandal,Apollo Street, Bombay, available from Kamla High School, Khar, Bombay-52

(b) Short Stories	20	35

Visaryan na Visiran by Loknath, published by Sindhi Book Trust, Delhi

(c) Yuvak Bharti for Class XII (1995 Edition) published by	20	30

Maharashtra State,
Text Book Bureau Pune.

The following prose and poetry lessons are prescribed for study (list enclosed).

Prose lessons to be studied.

1. Dinu Ya DharmuLal Chand Jagtayani
2. Kudarat-ain-KadirBhojaraj Nagrani
3. Pahinja Pahinja DapJaswant Kumar
4. Sindhi Sahita ja Char ThambhaMangaram Malkani
5. Ama tu na VanuPopti Hiranandani
6. Pathar Jo DushmanuMohan Kalpana

Poetry lessons to be studied.

1. MaruiShah Latif
2. Samia Ja SalokSami
3. BaharuKishinchand Bewas
4. DahakauParasram Ziya
5. Khayaban TuAahiIndar Bhojwani
6. Aman JaAasarPrabhu Vafa

RUSSIAN

(Code No.120)

Class XII

BRIEF

One Paper **Time : 3 hours** **Marks : 100**

Section A	**Marks**	**Periods**
Applied Grammar	45	80
(Based on the lessons from the prescribed text book)		
Section B		
Reading Comprehension	15	35
An unseen passage of about 150-200 words with 4-5 short answer type questions based on the passages		
Section C		
Composition and writing	15	30
An essay of about 100-120 words in Russian on a topic to related to real life		
Section D		
Questions based on the texts From the prescribed text book requiring answers in Russian	15	25
Section E		
Translation	10	10
(A) From Russian into English (Unknown text or Sentences)		
(B) From English in to Russian (Unknown text or Sentences)		
Prescribed book :		
Russian for Children :		
“Russkii Yazyk”		
(Text Book for foreign students by M.N. Vityutnev and others (Book-VI) : Lesson 1-15		

PUNJABI

(Code No.121)

Class XII

BRIEF

One Paper	**3 Hours**	**Marks : 100**	**Periods : 200**
Unit/Areas of Learning		Marks	Periods
A. Reading Skills (Comprehension of an unseenpassage)		10	30
B. Writing Skills		25	55
C. AppliedGrammar		15	40
D. Literature		50	75

LANGUAGE Marks Suggested

Periods

Section A : Reading Skills	**10**	**30**

One unseen passage of about 150 words followed by 4-5 questions to test comprehension and inferring meanings.Asuggestive heading may be asked and vocabulary may be tested.

Section B : Writing Skills	**25**	**55**
1. An essay of 200-225 words on a current topic related to social or culturalissue	10	
2. Story building, composing messages and factual description of people, places or objects in 100-125 words	07	
3. Letter to the editor (100-125 words)	08	

Section C : Applied Grammar	**15**	**40**
1. Idioms	03	
2. Proverbs	02	
3. Marking punctuation marks in a small paragraph	03	
4. Analysis of Sentences	04	
5. Correction of Sentences	03	

Section D : Literature **50**

Poetry 15 30

1. Four short type questions based on one out of two extracts taken from the poem (4x2)=08
2. One out of two long questions to test factual comprehension and interpretation 07

Drama **15** **30**

1. Four short type questions based on one out of two extracts taken from drama(4x2)=0 8
2. A long question to test the theme, plot, character and setting based on the drama 07

Short Story **10** **15**

1. 2-3 short type questions based on one out of two extracts taken from the story 05
2. A question to test the theme/character based on 05
   the short story. History of Punjabi Literature 10

The origin, growth, development and characteristics of Punjabi Literature with special reference to the following literature movements and forms : Adikal, Gurmat Kav, Sufi Kav, Modern Poetry, Novel, Drama, Prose and Short Story.

Texts and Courses in Literature :

Poetry :

Kav Kirti published by Guru Nanak Dev University, Amritsar The following poets are to be studied

1.	Bhai Veer Singh	2.	Dhani Ram Chatrik
3.	Puran Singh	4.	Prof. Mohan Singh
5.	Amrita Pritam	6.	Pritam Singh Safir
7.	Bawa Balwant	8.	Harbhajan Singh
9.	Shiv Kumar	10.	Tara Singh

Drama :

Shobha Shakti by Dr. Harcharan Singh, Published by Arsee Publishers, Pleasure Garden Chandni Chowk, Delhi.

Short Story

Katha Kahani, published by Punjabi Academy, New Delhi-55

PERSIAN

(Code No.122)

Class XII

BRIEF

One Paper	**3 Hours**	**Marks : 100**	**Periods : 240**
Unit/Areas of Learning		**Marks**	**Periods**
A. Advanced Reading Skills		10	35
B. Effective Writing Skills		20	45
C. AppliedGrammar		20	45
D. Literature		50	115
Language		**Marks**	**Suggested Periods**
Section A : Advanced Reading Skills		10	35
An unseen passage of 150 words followed by 3-4 short questions to test comprehension. 2 marks may be allocated for testing vocabulary. 1 mark may be allocated for providing a suitable heading.			
Section B : Effective Writing Skills		20	45
In this section various questions on given input will be asked as under :			
(i)	Letter writing/Essay writing	05	
(ii)	Objective type questions will be asked	05	
(iii)	Summarizing of prescribed lesson into English, Urdu or Hindi/Persian	10	
Section C : Applied Grammar		20	45
1.	Definition of the following with examples :	10	
(i)	Nouns		
(ii)	Pronouns		
(iii)	Prepositions		
(iv)	Verb		
2.	Formation of the following from the infinitives Imperatives Aorists (Muzare)	05	
3.	Ismi Fail, Ismi Mafood,Adjectives Singular/Plurals	05	

Section D : Literature **50**

Prose and Poetry

I. Prescribed book :

1. Farsi-wa-Dustoor Part I, Kitab-e-Awwal (1977) by Dr. Zahara-e-Khanlari (kia), Published by Idara-Adabiyate-I-Dilli, Jayyed Press, Delhi-110006

A. Prose :

Lessons to be studied :

1. Tarrar-e-Amanatdar
2. Qissa I Kodak-ie-Moosa (Part I)
3. Qissa I Kodak-ie-Moosa (Part II)
4. Shobban wa Gusfand
5. Qissa I Gule Khandan wa Durre GiryanParts I, II, III
6. Guwahie Darrakht
7. Dasture Zabane Farsi
   WabastaeAjzai Jumla Muzafi' Ilaih
8. Dasture Zabane Farsi
   Wabastai Fel (Qaid)

B. Poetry :

Poems to be studied :

1. Mazandaran
2. NageeneAngushtri
3. Kitab

II. Book recommended for reading :

Amoozish-e-Zaban-e-Farsi Book IV by Dr. Yedullah Samarch. Published by Intesharate Benul MillaliAl Hoda, available at Iran Culture House, 18, Tilak Marg, New Delhi.

A. Prose :

1. Rawabete Misr wa Libi
2. Nohmeen Ijlasee Saran
3. Khanawada wa Kudake Nabina

B. Poetry :

1. Waqti Ki Ishq Nist.

ORIYA

(Code No.123)

Class XII

BRIEF

One Paper **Time : 3 hours** **Marks : 100**

Unitwise Allocation

Unit/Areas of Learning	Marks
1. Reading Skills	10
2. Writing Skills	25
3. Applied Grammar, Prosody and Rhetorics	15
4. Literature	50

LANGUAGE	**Marks**	**Suggested Periods**
Section A : Reading Skills	10	35
Unseen Passage for Reading/Comprehension followed by 4 to 5 questions. 1 mark may be allocated for suitable heading.	10	
Section B : Writing Skills	25	45
1. Essay on Current topics (Social and Cultural issues) (250 to 300 words)	10	
2. Letter to the Editor of Newspaper	08	
3. Factual description of place or object	07	
Section C : Applied Grammar, Prosody and Rhetorics	**15**	**45**
(i) Applied Grammar	09	
1. Transformation of sentences (Simple, Complex, Compound)	03	
2. Idioms and Proverbs	03	
3. Correction of errors in words	03	
(ii) Prosody and Rhetorics	06	
1. Prosody (Sama, Bisama, Matra bruta)		
2. Rhetorics (Anuprasa, Rupak)		
Section D : Literature	**50**	**35**
Prose : Prescribed Text : Gadya Dhara, Orissa State Bureau of Text Book preparation and Production, Bhubaneswar, 2006	20	
1. Swadhina Chinta — Biswanath Kar		
2. Odia Jati Kie — Gopabandhu Das		

3.	Kshyama	Mayadhar Mansingh
4.	Manisa (2)	Bhubaneswar Behera
5.	Jatira Jibana O Samskruti	Golak Bihari Dhal
6.	Madhu Sandhan	Chandra Sekhar Rath

Questions :

1.	Long answer type question (one out of two)	08
2.	Short answer type questions (two out of four)	05
3.	Explanation (one out of two)	07

Poetry : Prescribed text : Padya Dhara, Orissa State Bureau of Text Book 2020 Preparation and Production,
Bhubaneswar, 2006
Enu Kapota
Guru Moro - Jagannath Das
Jagate Kebala - Baladev Rath
Mo Jibana Pachhe Narke Padithau
- Bhima Bhoi Mu Hata Bahuda
- Fakir Mohan Senapati
Barsa - Radhanath Roy
Utkala Kamala
- Godabarisha Mohapatra
Chhota Mora Ganti - Sachidananda Routroy
Grama Patha - Binod Chandra Nayak
Sarata Rutura Janma - Guru Prasad Mohanty

Questions :

1.	Long answer type question to test the factual comprehension and interpretation (one out of two)	08
2.	Short answer type questions (two out of four)	05
3.	Explanation (one out of two)	07

Drama :

Buxi Jagabandhu by Manoranjan Das, Dasarathi Pustakalya, Cuttack-2

Questions :

1. Short answer type questions to test knowledge on the theme, plot, character, settings and technique. (two out of four)

NEPALI

(Code No.124)

Class XII

BRIEF

Class XII

One Paper	**Time : 3 hours**	**Marks : 100**
Section A : Grammar		15
Section B : Reading (Unseen)		10
Section C : Composition & Writing		15
Section D : Literature		60
Prose		30
Poetry		10
Drama		20

A. Grammar (Suggested chapters) 15

(i) Chhanda :Anustup, Totak, Indrabajraa, Shikharini, Basantatilaka, Sardulvikridit.

(ii) Alankaar :Anupras, Upama, Rupak, Slesh, Vakrokti, Utpreksha.

Reference Book : Madhyamik Nepali Vyakaran ra Rachna.

B. Reading Unseen : 10

C. Composition & Writing : (Suggested chapters) : 15

(a) Patra Rachana : Vyaktigat, Vyaparik, Daftari, and Smarak Patra.

(b) Nibandha Rachana : Aatmaparak, Vicharatmak.

Reference Book : Madhyamik Nepali Vyakaran ra Rachana.

D. Literature : (Prose) : 30

Stories : 20

(i) Machhako molShiva Kumar Rai

(ii) Pipako HawaldarMatrika Prasad Koirala

(iii) Rupko MulyaBal Krishna Sam

(iv) Chaprasi Achha Rai Rasik

Gangtok, Sikkim 10

Essay :

(i) Abhagi Jiniyas Deokota Raj Narayan Pradhan

(ii) NamasteyTara Nath Sharma

(iii) Pyaro SapanaRam Krishna Sharma

Reference Book : Nibanda Sangraha published by Janapakchha Prakashan Gangtok, Sikkim

Language-Literature : Nepali Bhasako Utpati

Reference Book : Nepali Sahitya ParichayaPurna Rai

Poetry : Ritu VicharLekhnath Poudyal 10

Reference Book : Ritu Vichar

Drama : (Suggested chapters) : 10

(i) Natak saadharan parichaya

(ii) Nepali Natakko Vikash Katha

(iii) Ekanki Boksi Balkrishna Sam

Reference Book : Nepali Ekanki SangrahaSiksha Vibhag, Sikkim Sarkar.

UPANYASH : Daak Bangla : by Shivakumar Rai 10

MIZO

(Code No.125)

Class XII

BRIEF

One Paper	**Time : 3 hours**	**Marks : 100**	**Periods**
Section A		**40**	
Grammar		15	
1.	Prefix and Suffix	5	10
2.	Borrowed words into Mizo from other languages	5	10
3.	Double adverb/adjectival adverb	5	10
Section			
Composition and Writing		25	50
1.	Idioms and phrases	10	20
2.	Essay writing on real life experience	8	16
3.	Reports of events and incidents,	7	14
Section			
Literature		60	
Prose		20	40

1. Lung in MalsawmnaH. Lallungmuana
2. Zinkawng rapthlak zawhtuteR.L. Thanmawia
3. Mizo tawng khawvelC. Sangzuala
4. Tunge Mizo Z.T. Sangkhuma
5. Val upa Darchhawna
6. Pi Puke duh loh thil James Do khusma
7. Thamna leh ahlutna Lalthangliana

Poetry	**20**	**40**
1. Lungdawh hia V. Hawla		
2. Khuanu leng chawiHrawva		
3. Zunphur thing tin Damhauhva		
4. Lenna khua hmun loLalzova		
5. Laikhum zala ka dawn pawhimVankhama		
6. Tunah a thar hmangaihnaR.L. Kamlala		
7. Zo linan hla Thanga		
8. Raltaing I kai VeAngRokunga		
Drama	**10**	**30**
ZothansangiVanneitluanga		
Fiction		
Chhingpuii Kaphleia	10	20

Prescribed books :

1. LentlangExpert committee on Mizo language

MANIPURI

(Code No.126)

Class XII

BRIEF

One Paper **Time : 3 hours** **Max. Marks : 100**

			Marks	Periods
1. a)	**Grammar**		**10**	**15**
(i)	Pharase and clause			
(ii)	Sentences and its Transformations			
(iii)	Shandhi and Samas (Compound words)			
Manipuri Grammar Published by Council of Higher Education, Manipur.				
b)	**Composition**		**10**	
(i)	Comprehension			
(ii)	Amplification (Idioms and Proverbs)			
2.	**Prose and Poetry**		**40**	**75**
A. Prose				
(i)	Expanation of the passages from the text.	(1x8)	8	
(ii)	Short messages / answers	(2x4)	8	
(iii)	Questions on the text long	(2x8)	16	
(iv)	Very Short answers	(2x4)	8	
Lessons to be studied : (05)				
(i)	Potsangbam Khongnang	by Asangbam Minaketan Singh		
(ii)	Lei Langba	by Sinam Krishna Mohan Singh		
(iii)	Akoibagi Phibham Ngak Senba	by Dr. B. Manihar Sharma		
(iv)	Eigi Thahoudraba Heitup Lalu	by M.K. Binodini Devi		
(v)	Hijam Irabot	S. Nilbir Sharma Shastri		
Prescribed book : Apunba Manipuri Wareng Sheireng, Published by Council of Higher Sec. Edu. , Manipur				
B. Poetry			40	75
(i)	Explanations of passages (from the text)	(1x8)	8	
(ii)	Questions on the text.			
(a)	Long messages/answers	(2x8)	16	
(b)	Short messages/answers	(2x4)	8	
(c)	Very short answer	(4x2)	8	
C. The following Poems are recommended as :			**10**	**25**
a)	Meitei Kabi	by Khwairakpam Chaoba Singh		
b)	Lei Longba	by Laishram Samarendra Songh		
c)	Anouba	by R.K. Srendrajit Singh		
d)	Komrei	by Khumanthem Ibohal Singh		
e)	Dikhougi Torbanda	by Hijam Irabot		
f)	Anouba Thunglaba Jiba	by Thangjam Ibopishak		

Prescribed book :

Apunba Manipuri Wareng Sheireng, Published by Council of Higher Sec. Edu., Manipur

MALAYALAM

(Code No.127)

Class XII

BRIEF

One Paper **Time : 3 hours** **Max. Marks : 100**

		Marks	Periods
1.	**Grammar**	**25**	**60**

Elementary metres and alankaras

1. Upama
2. Utpreksha
3. Atishyokthi
4. Rupakam

2.	**Writing Skills**	**25**	**50**

A general study of newspapers/magazines and periodicals in the language with the object of writing

(i)	Reportsofsimpleevents	05
(ii)	Letter to Editor	10
(iii)	Comprehension of an unseen passage followed by short answer question	10

3.	**Prose, Poetry**	**50**	**80**

1. Text book : 'SAHITYA DARPANAM'Collection of Essays, Stories and Poems Prescribed by SCERT., Govt. of Kerala Pub. by All Saints International CMS College Road, Kottayam,Kerala (2005 Edition.)

2. Moulana Abul Kalam Azad (Biography) by Dr. M. Leelavathy Pub. by Lipi Publications, Kozhikode Prescribed by SCERT, Govt. of Kerala (2003 Edition.)

3. Vidura Bhiksha by Ulloor (Poem) Prescribed by SCERT Govt. of Kerala (Complete text) Pub. by Ulloor Publications, Thiravanthapuram, Kerala.

LIMBOO

(Code No.128)

Class XII

BRIEF

One Paper **Time : 3 hours** **Marks : 100** **Periods**

Section A

Grammar **25**

Prescribed book :

'Thangsing Yakthung Huppan Nu Itchap, published by the Department of Education, Text Book Unit, Government of Sikkim, Gangtok.

Lessons to be studied :

Akhelyemrey, Papmana Cam, Losok Chokma Theem, Mellengwaba Sutla Pammeyporey, Pothak, Yakppeba sutla, Eklengley Ikugo., Iklenrey kguo, Thokmabho.

Section B

Reading (Unseen) 10

Section C

Composition & Writing : 15

(i) Essay writing 5

(Related to personal experience, scientific development and social themes)

(ii) Letter writing 5

(Related to public, professional, social interest)

(iii) Paragraph writing 5

Section D

Literature

Prose 25

Prescribed Text Book :

Patila Sung : Published by The Department of Education, Text Book Unit, Government of Sikkim,

Gangtok.
Lessons to be studied : 10

Sarumba Kapoben, Rinclrenbuugba Thong, Hatta E-Kurekwao, Yemnu Mengammarcy Thoborey Kuham.
Prescribed Tex Book : Kheda-e-kheda, Published by the Department of Education, Text Book Unit, Government of Sikkim, Gangtok.

Lessons to be studied :

Adangba, Khuney Pangbhe Menukhen, Phungley Kumelluug, 10
Hillirey Itchi

Poetry15

Prescribed book :
Sammila Sung, Published by the Department of Education, Text Book Unit, Government of Sikkim, Gangtok.

Poems to be Studied :

Him chogum, Sappon, Khench-Yakthuug Bekkey Lahre, Khuneyh, Tehthongleemmo... Mik Tagiba Niyarah.

Drama **10**

Prescribed book :

Thothama, Published by Shri P.S. Subba, Published by the Department of Education, Text Book Unit, Government of Sikkim, Gangtok

LEPCHA

(Code No.129)

Class XII

BRIEF

One Paper	**Time : 3 hours**	**Marks : 100**	**Periods**
Grammar		25	

Prescribed text book :

Mootunchee Reengthyum un Reeng Chhuktaom :ALepcha Grammar and Composition, Published by the Text Book Unit, Department of Education,
Government of Sikkim, Gangtok.

Lessons to be studied :

(i) Parts of speech (in detail)

(ii) Precis Writing

(iii) Phrases and Idioms

Section B

Reading

(Comprehension from unseen passage) 10

Section 'C'

Composition & Writing 15

(i) Essay Writing

(ii) Paragraph Writing

(iii) Letter Writing

Section D

Literature : 50

(I). Prose : 20

Prescribed text book :

Kaongchhen Punaul, Published by the Text Book Unit,
Department of Education, Government of Sikkim, Gangtok.

Lessons to be studied :

(i) VAARTAOSAGYAUTAONG

(ii) KAONKI BOORNAON THHO

(iii) VALENTINE PUNAUL

(iv) HUDOSAAAKAKAKASU DOONGIT CHHUTBA

(v) AYAKASUAJYO THHOOKSASUNG KAAT

(v) NAMKO.

(II) Poetry : 15

Prescribed text book :

Chhyogyoo : Chhukdaong ; Published by the Text Book Unit,

Department of Education, Government of Sikkim, Gangtok.

Lessons to be studied :

(i) THHYAKPEY MUNYINBOO CHHUKDAONGJONG KASUSAMURAO

(ii) SAAKSAOMAALSOSAONGAAREKA

(iii) KASU MIKSHIMKA HAO

(iv) TADODOMATAOMBA

(v) KHAY-BOOMSAUN TOONG-DORJEE

(III) Drama **15**

Prescribed text book :

Thhongaom Kaat Nahaan : Published by the Text Book Unit, Department of Education,

Government of Sikkim, Gangtok.

KASHMIRI

(Code No.130)

Class XII

BRIEF

One Paper	**Time : 3 hours**	**Marks : 100**	**Suggested Periods : 210**
Unit/Areas of Learning		Marks	Periods
A. Advanced Reading Skills		10	35
B. Effective Writing Skills		20	45
C. Applied Grammar and Translation		20	45
D. Literature and Criticism		50	85

LANGUAGES Marks Suggested

Periods

Section A : Advanced Reading Skills	**10**	**35**
(i) An unseen passage of 150 words followed by 4 short question to text comprehension and to provide a suitable heading		
Section B : Effective Writing Skills	**20**	**45**
(i) Creativewriting (writing story on a given theme)	08	20
(ii) An essay of the following nature (Descriptive/Narrative/Scientific/Literary)	12	25
Section C : Applied Grammar and Translation	20	45
(i) Making of compound sentences from simple sentences	05	11
(ii) Correct of tense	05	11
(iii) Identification of noun phrases and verb phrases	05	11
(iv) Translation of a passage of 50 words/5 sentences (from English into Kashmiri)	05	12
Section D : Literature and Criticism	**50**	**85**
1. Prose	12	25
(i) Explanation of a prose passage out of two with reference to their context	05	
(ii) Sum and substance of a lesson with alterantive	07	

Lessons to be studied :

(i) Vanka
(ii) Dante
(iii) Taph
(iv) Tote Senz Kath
(v) Shekhsiyat
(vi) Kasheere hund Ound Foukh

2.	**Poetry**	**10**	**25**
(i)	Explanation of an excerpt with reference to context (alternative to be provided)	04	
(ii)	Sum and substance of a poem	06	

Poems to be studied :

(i) Faryaad
(ii) Noshlab chhai phairan Bagus
(iii) Akh Proon Shahar
(iv) Aka Nandun
(v) Bulbulas Kun
(vi) Hqndi phanoos

3.	**Identification of new words/images in a given extract.**		
4.	**Criticism**	**10**	**15**

Question shall be based on the exercises of the lesson
(alternative to be provided)

(i) Discussion on the theme of a poem.
(ii) Sum and Substance of oue poem out of the two offered

5.	**Objective type questions**	**10**	**05**

(i) An objective/question of ten items based on the text.

Every item shall have four probable answers and the
candidate shall be asked to write the most appropriate answer.

Book Prescribed :

Kashur Nisab (for Class XII) published by the J&K State Board of School Education 1986 Edition.

GERMAN

(Code No.131)

Class XII

BRIEF

One Paper **Time : 3 hours** **Marks : 100**

Section A		Marks	Periods
1.	Applied Grammar based on the prescribed lessons	45	80
Section B			
2.	Comprehension of an unseen text in German (answers to short questions in German)	15	35
Section C			
3.	Composition : A brief essay in German (in about 150 to 200 words) on a topic of everyday experiences	20	35
Section D			
4.	Questions based on the prescribed lessons (to be answered in German)	20	30

Book prescribed :

Prescribed books :

Tangram (Deutsch als Fremdsprache),

(Max Hueber Verlag) Book - B1/1, Lesson 3&4 Book B 1/2 Lessons 5&8

Suggested References for class XI and class XII : Moment Mal II

(Christian Lemke et al) Lamgensche. dt. 1998

Dictionaries recommended :

1. Langenscheidt : Teschenwoerterbuch
2. K.M. Sharma : GermanHindi Dictionary
3. Cassell's GermanEnglish/English-German Dictionary
4. Collins GermanEnglish/English-German Dictionary

BHUTIA

(Code No.132)

Class XII

BRIEF

One Paper **Time : 3 hours** **Marks : 100**

Section A

1. Applied Grammar **25**

Use of Parts of Speech in sentences, Case ending and conjunction of verbs with their forms used in various kinds of sentences.

Section B

2. Reading (Unseen) **10**

Comprehension of an unseen passage in Bhutia.

Section C

3. Composition and Writing **15**

(a) Essay

(b) Letter Writing

Suggested Reference :

Lho-Yeg Sumtag dang Dritsom : Published by Text Book Unit,

Department of Education, Government of Sikkim, Gangtok.

Section D

1. Prose **20**

Lessons to be studied :

(i) Dra Gyur Lochen Bero Chana

(ii) Dhatoi Zamling Dhi Ghen Khig

(iii) Sampa Chenpoi Takmo-lo Lue Zeenho (iv) Yegi

(v) Sherab lay Tshondue Ghal-Chhi

(vi) CHO BYA-GO PAI KOR

(vii) GAGKOI LABJYA

(viii)DRUBPOI LABJYA

(ix) DHENPO ZIHIKOR

Prescribed book :

Lho-Yeg-Tsiglhug : Published by Text Book Unit, Department of Education, Government of Sikkim, Gangtok.

2. POETRY 15

Prescribed book :

Lho-Yeg-Tsichath : Published by Text Book Unit, Department of Education, Government of Sikkim, Gangtok.

3. DRAMA 15

Prescribed book :

Khandui Phumu Dawa Zangmui Namthar : Published by Text Book Unit, Department of Education, Government of Sikkim, Gangtok.

ARABIC

(Code No.133)

Class XII

BRIEF

One Paper	**3 Hours**	**Marks : 100**	**Suggested Periods : 210**
Unit/Areas of Learning		**Marks**	**Periods**
A. Advanced Reading Skills		10	35
B. Effective Writing Skills		20	45
C. AppliedGrammar		20	45
D. Literature		50	85
Language		**Marks**	**Suggested Periods**
Section A : Advanced Reading Skills		**10**	**35**

1. An unseen passage of 150 words followed by 3-4 short questions to test comprehension. 2 marks may be allocated for testing vocabulary. 1 mark may be allocated for providing a suitable heading.

Section B : Effective Writing Skills	**20**	**45**

In this section various questions on given input will be asked as under :

(i)	Letter writing on a given topic	10
(ii)	An essay on a given topic (150-200 words)	10

Section C : Applied Grammar	**20**	**45**

Variety of questions as listed below will be included involving the application of grammar items in syllabus :

(i) I'laal (In Mithaal,Ajwaf and Naaqis)

(ii) Ibdal-Mahmoozul Faa,A'in and Laam

(iii) Idgham-Muda" af

(iv) Use ofAsmaa-Mausoolah

(v) Khasiyat-AbwaabAl ThulaathiAl Mujarrad

(vi) Khasiyat-Abwaab Mazid Fih (If'aal, Taf'eel, Mufaa'alah, Tafa"ul, Istif'aal) (vii) Murakkab 'Adadi (Adad and Ma dood)

(viii) Jumla Shartiyyah

(ix) Jumla Nidaaiyah

Literature

Section D :	**50**	
Prose :	35	60
Duroos ul Lughatilil-Arabia Lighairin-Natiqueen Biha, Part III by Dr. V.Abdul Rahim		
Text	30	
Diacritical marking of any text passages	05	
Poetry :	15	25

Prescribed book :

Al-Qiraa'at-ur Rasheedah Part II and III Abdul Fattah and Ali Omar (Egyptian Edition 1949) available at M. Rashid & Sons. Urdu Bazar, Jama Masjid, Delhi-110006

Poems to be studied :

1. Al-Babghaa' II/49
2. Ajwaad-ul-'e -Arab ... . III/89 (Poetry only)
3. Al-'Ankaboot Waz-Zubabah III/90
4. Al-lkhwaan III/120

FRENCH

(Code No.134)

Class XII

BRIEF

One Paper	**3 Hours**	**Marks 100**	**Periods**
Section A: Applied Grammar		**25**	**50**

- filling up blanks with appropriate parts of speech - Transformation of sentences
- Sentence correction (not involving punctuation and spelling) Based on chapter 18-30 of Prescribed book

Section B: Comprehension/Reading	**25**	**30**
-One passage from the Prescribed book (Prose/Poetry)15		
-One unseen passage	10	

(variety of comprehension questions including short answer questions and vocabulary/word attack)

Section C: Writing skills/composition	**20**	**40**
- Writing a story based on outlines provided (120 words)	10	
- One unaided composition based on the topics in the prescribed book (120 words)	10	

Section D: Literature	**30**	

(Short answer questions on Prescribed text)

Prose	**20**	**40**

Comprehension of the Prescribed text (Chapter 18-30)

Poetry

Poems to be studied:	**10**	**20**

1. Rienn'est beau-Ch. Peguy
2. Avec ton parapluie-F.Jammes
3. Le Petit Train-Emile Henriot
4. La Petite Ville-Ake Noailles
5. Si la Garonne-Gustave Nadaud

Prescribed book: Cours de Langue et civilization Francaises II by G. Mauger, Pub: Hachette (Chapter 18-30)

MATHEMATICS

(Code No.441)

Class XII

BRIEF

The Syllabus in the subject of Mathematics has undergone changes from time to time in accordance with growth of the subject and emerging needs of the society. Senior Secondary stage is a launching stage from where the students go either for higher academic education in Mathematics or for professional courses like engineering, physical and Bioscience, commerce or computer applications. The present revised syllabus has been designed in accordance with National Curriculum Frame work 2005 and as per guidelines given in Focus Group on Teaching of Mathematics 2005 which is to meet the emerging needs of all categories of students. Motivating the topics from real life situations and other subject areas, greater emphasis has been laid on application of various concepts.

Objectives

The broad objectives of teaching Mathematics at senior school stage intend to help the pupil:

to acquire knowledge and critical understanding, particularly by way of motivation and visualization, of basic concepts, terms, principles, symbols and mastery of underlying processes and skills.

to feel the flow of reasons while proving a result or solving a problem.

to apply the knowledge and skills acquired to solve problems and wherever possible, by more than one method.

to develop positive attitude to think, analyze and articulate logically.

to develop interest in the subject by participating in related competitions.

to acquaint students with different aspects of mathematics used in daily life.

to develop an interest in students to study mathematics as a discipline.

to develop awareness of the need for national integration, protection of environment, observance of small family norms, removal of social barriers, elimination of sex biases.

to develop reverence and respect towards great Mathematicians for their contributions to the field of Mathematics.

One Paper	**Three Hours**	**Marks: 100**
Units		Marks
I.	RELATIONS AND FUNCTIONS	10
II.	ALGEBRA	13
III.	CALCULUS	44
IV.	VECTORS AND THREE - DIMENSIONAL GEOMETRY	17
V.	LINEAR PROGRAMMING	06
VI.	PROBABILITY	10

UNIT I. RELATIONS AND FUNCTIONS

1. Relations and Functions : (10) Periods

Types of relations: reflexive, symmetric, transitive and equivalence relations. One to one and onto functions, composite functions, inverse of a function. Binary operations.

2. Inverse Trigonometric Functions: (12) Periods

Definition, range, domain, principal value branches. Graphs of inverse trigonometric functions. Elementary properties of inverse trigonometric functions.

UNIT-II: ALGEBRA

1. Matrices: (18) Periods

Concept, notation, order, equality, types of matrices, zero matrix, transpose of a matrix, symmetric and skew symmetric matrices. Addition, multiplication and scalar multiplication of matrices, simple properties of addition, multiplication and scalar multiplication. Non-commutativity of multiplication of matrices and existence of non-zero matrices whose product is the zero matrix (restrict to square matrices of order

2). Concept of elementary row and column operations. Invertible matrices and proof of the uniqueness of inverse, if it exists; (Here all matrices will have real entries).

2. Determinants: (20) Periods

Determinant of a square matrix (up to 3 x 3 matrices), properties of determinants, minors, cofactors and applications of determinants in finding the area of a triangle. Adjoint and inverse of a square matrix. Consistency, inconsistency and number of solutions of system of linear equations by examples, solving system of linear equations in two or three variables (having unique solution) using inverse of a matrix.

UNIT-III: CALCULUS

1. Continuity and Differentiability: (18) Periods

Continuity and differentiability, derivative of composite functions, chain rule, derivatives of inverse trigonometric functions, derivative of implicit function.Concept of exponential and logarithmic functions and their derivative. Logarithmic differentiation. Derivative of functions expressed in parametric forms. Second order derivatives. Rolle's and Lagrange's Mean Value Theorems (without proof) and their geometric interpretations.

2. Applications of Derivatives: (10) Periods

Applications of derivatives: rate of change, increasing/decreasing functions, tangents & normals, approximation, maxima and minima (first derivative test motivated geometrically and second derivative test given as a provable tool). Simple problems (that illustrate basic principles and understanding of the subject as well as real-life situations).

3. Integrals: (20) Periods

Integration as inverse process of differentiation. Integration of a variaty of functions by substitution, by partial fractions and by parts, only simple integrals of the type

$$\int \frac{dx}{x^2 \pm a^2}, \int \frac{dx}{\sqrt{x^2 \pm a^2}}, \int \frac{dx}{\sqrt{a^2 - x^2}}, \int \frac{dx}{ax^2 + bx^2 + c}, \int \frac{dx}{\sqrt{ax^2 + bx + c}}$$

$$\int \frac{(px+q)}{ax^2 + bx + c} dx, \int \frac{(px+q)}{\sqrt{ax^2 + bx + c}} dx, \int \sqrt{a^2 \pm x^2}\, dx \text{ and } \int \sqrt{x^2 - a^2}\, dx$$

to be evaluated.

Definite integrals as a limit of a sum, Fundamental Theorem of Calculus (without proof). Basic properties of definite integrals and evaluation of definite integrals.

4. Applications of the Integrals: (10) Periods

Applications in finding the area under simple curves, especially lines, areas of circles/ parabolas/ellipses (in standard form only), area between the two above said curves (the region should be clearly identifiable).

5. Differential Equations: (10) Periods

Definition, order and degree, general and particular solutions of a differential equation. Formation of differential equation whose general solution is given. Solution of differential equations by method of separation of variables, homogeneous differential equations of first order and first degree. Solutions of linear differential equation of the type:

$\frac{dy}{dx}$ + py = q, where p and q are functions of x.

UNIT-IV: VECTORS AND THREE-DIMENSIONAL GEOMETRY

1. Vectors: (12) Periods

Vectors and scalars, magnitude and direction of a vector. Direction cosines/ratios of vectors. Types of vectors (equal, unit, zero, parallel and collinear vectors), position vector of a point, negative of a vector, components of a vector, addition of vectors, multiplication of a vector by a scalar, position vector of a point dividing a line segment in a given ratio. Scalar (dot) product of vectors, projection of a vector on a line. Vector (cross) product of vectors.

2. Three - dimensional Geometry: (12) Periods

Direction cosines/ratios of a line joining two points. Cartesian and vector equation of a line, coplanar and skew lines, shortest distance between two lines. Cartesian and vector equation of a plane. Angle between (i) two lines, (ii) two planes. (iii) a line and a plane. Distance of a point from a plane.

UNIT-V: LINEAR PROGRAMMING

1. Linear Programming: (12) Periods

Introduction, definition of related terminology such as constraints, objective function, optimization, different types of linear programming (L.P.) problems, mathematical formulation of L.P. problems, graphical method of solution for problems in two variables, feasible and infeasible regions, feasible and infeasible solutions, optimal feasible solutions (up to three non-trivial constraints).

UNIT-VI: PROBABILITY

1. Probability: (18) Periods

Multiplication theorem on probability. Conditional probability, independent events, total probability, Baye's theorem, Random variable and its probability distribution, mean and variance of haphazard variable. Repeated independent (Bernoulli) trials and Binomial distribution.

Recommended Textbooks.

1) Mathematics Part I - Textbook for Class XII, NCERT Publication
2) Mathematics Part II - Textbook for Class XII, NCERT Publication

PHYSICS

(Code No.442)

Class XII

BRIEF

Senior Secondary stage of school education is a stage of transition from general education to discipline-based focus on curriculum. The present updated syllabus keeps in view the rigour and depth of disciplinary approach as well as the comprehension level of learners. Due care has also been taken that the syllabus is not heavy and is at the same time, comparable to the international standards. Salient features of the syllabus include:

Emphasis on basic conceptual understanding of the content.

Emphasis on use of SI units, symbols, nomenclature of physical quantities and formulations as per international standards.

Providing logical sequencing of units of the subject matter and proper placement of concepts with their linkage for better learning.

Reducing the curriculum load by eliminating overlapping of concepts/ content within the discipline and other disciplines.

Promotion of process-skills, problem-solving abilities and applications of Physics concepts.

Besides, the syllabus also attempts to

strengthen the concepts developed at the secondary stage to provide firm foundation for further learning in the subject.

expose the learners to different processes used in Physics-related industrial and technological applications.

develop process-skills and experimental, observational, manipulative, decision making and investigatory skills in the learners.

promote problem solving abilities and creative thinking in learners.

develop conceptual competence in the learners and make them realize and appreciate the interface of Physics with other disciplines.

(Theory)

One Paper **Time: 3 Hours** **70 Marks**

Unit I	Electrostatics	08
Unit II	Current Electricity	07
Unit III	Magnetic effect of current & Magnetism	08
Unit IV	Electromagnetic Induction and Alternating current	08
Unit V	Electromagnetic Waves	03
Unit VI	Optics	14
Unit VII	Dual Nature of Matter	04
Unit VIII	Atoms and Nuclei	06
Unit IX	Electronic Devices	07
Unit X	Communication Systems	05

Unit I: Electrostatics **(Periods 25)**

Electric Charges; Conservation of charge, Coulomb's law-force between two point charges, forces between multiple charges; superposition principle and continuous charge distribution.

Electric field, electric field due to a point charge, electric field lines; electric dipole, electric field due to a dipole; torque on a dipole in uniform electric field.

Electric flux, statement of Gauss's theorem and its applications to find field due to infinitely long straight wire, uniformly charged infinite plane sheet and uniformly charged thin spherical shell (field inside and outside).

Electric potential, potential difference, electric potential due to a point charge, a dipole and system of charges; equipotential surfaces, electrical potential energy of a system of two point charges and of electric dipole in an electrostatic field.

Conductors and insulators, free charges and bound charges inside a conductor. Dielectrics and electric polarisation, capacitors and capacitance, combination of capacitors in series and in parallel, capacitance of a parallel plate capacitor with and without dielectric medium between the plates, energy stored in a capacitor. Van de Graaff generator.

Unit II: Current Electricity **(Periods 22)**

Electric current, flow of electric charges in a metallic conductor, drift velocity, mobility and their relation with electric current; Ohm's law, electrical resistance, V-I characteristics (linear and non-linear), electrical energy and power, electrical resistivity and conductivity. Carbon resistors, colour code for carbon resistors; series and parallel combinations of resistors; temperature dependence of resistance.

Internal resistance of a cell, potential difference and emf of a cell, combination of cells in series and in parallel.

Kirchhoff's laws and simple applications. Wheatstone bridge, metre bridge.

Potentiometer - principle and its applications to measure potential difference and for comparing emf of two cells; measurement of internal resistance of a cell.

Unit III: Magnetic Effects of Current and Magnetism (Periods 25)

Concept of magnetic field, Oersted's experiment.

Biot - Savart law and its application to current carrying circular loop.

Ampere's law and its applications to infinitely long straight wire, straight and toroidal solenoids. Force on a moving charge in uniform magnetic and electric fields. Cyclotron. Force on a current-carrying conductor in a uniform magnetic field. Force between two parallel current-carrying conductors-definition of ampere. Torque experienced by a current loop in uniform magnetic field; moving coil galvanometer-its current sensitivity and conversion to ammeter and voltmeter.

Current loop as a magnetic dipole and its magnetic dipole moment. Magnetic dipole moment of a revolving electron. Magnetic field intensity due to a magnetic dipole (bar magnet) along its axis and perpendicular to its axis. Torque on a magnetic dipole (bar magnet) in a uniform magnetic field; bar magnet as an equivalent solenoid, magnetic field lines; Earth's magnetic field and magnetic elements. Para-, dia- and ferro - magnetic substances, with examples. Electromagnets and factors affecting their strengths. Permanent magnets.

Unit IV: Electromagnetic Induction and Alternating Currents (Periods 20)

Electromagnetic induction; Faraday's law, induced emf and current; Lenz's Law, Eddy currents. Self and mutual inductance.

Need for displacement current.

Alternating currents, peak and rms value of alternating current/voltage; reactance and impedance; LC oscillations (qualitative treatment only), LCR series circuit, resonance; power in AC circuits, wattless current.

Unit V: Electromagnetic waves (Periods 4)

Displacement current, Electromagnetic waves and their characteristics (qualitative ideas only). Transverse nature of electromagnetic waves.

Electromagnetic spectrum (radio waves, microwaves, infrared, visible, ultraviolet, X-rays, gamma rays) including elementary facts about their uses.

Unit VI: Optics (Periods 30)

Reflection of light, spherical mirrors, mirror formula. Refraction of light, total internal

reflection and its applications, optical fibres, refraction at spherical surfaces, lenses, thin lens formula, lensmaker's formula. Magnification, power of a lens, combination of thin lenses in contact. Refraction and dispersion of light through a prism.

Scattering of light - blue colour of the sky and reddish appearance of the sun at sunrise and sunset.

Optical instruments: Human eye, image formation and accommodation, correction of eye defects (myopia, hypermetropia, presbyopia and astigmatism) using lenses. Microscopes and astronomical telescopes (reflecting and refracting) and their magnifying powers.

Wave optics: wave front and Huygens' principle, reflection and refraction of plane wave at a plane surface using wave fronts. Proof of laws of reflection and refraction using Huygens' principle. Interference, Young's double slit experiment and expression for fringe width, coherent sources and sustained interference of light. Diffraction due to a single slit, width of central maximum. Resolving power of microscopes and astronomical telescopes. Polarisation, plane polarised light; Brewster's law, uses of plane polarised light and Polaroids.

Unit VII: Dual Nature of Matter and Radiation (Periods 8)

Dual nature of radiation. Photoelectric effect, Hertz and Lenard's observations; Einstein's photoelectric equation-particle nature of light.

Matter waves-wave nature of particles, de Broglie relation. Davisson-Germer experiment.

Unit VIII: Atoms & Nuclei (Periods 18)

Alpha-particle scattering experiment; Rutherford's model of atom; Bohr model, energy levels, hydrogen spectrum.

Composition and size of nucleus, atomic masses, isotopes, isobars; isotones. Radioactivityalpha, beta and gamma particles/rays and their properties; radioactive decay law. Mass-energy relation, mass defect; binding energy per nucleon and its variation with mass number; nuclear fission, nuclear reactor, nuclear fusion.

Unit IX: Electronic Devices (Periods 18)

Semiconductors; semiconductor diode - I-V characteristics in forward and reverse bias, diode as a rectifier; I-V characteristics of LED, photodiode, solar cell, and Zener diode; Zener diode as a voltage regulator. Junction transistor, transistor action, characteristics of a transistor; transistor as an amplifier (common emitter configuration) and oscillator. Logic gates (OR, AND, NOT, NAND and NOR). Transistor as a switch.

Unit X: Communication Systems (Periods 10)

Elements of a communication system (block diagram only); bandwidth of signals (speech, TV and digital data); bandwidth of transmission medium. Propagation of electromagnetic waves in the atmosphere, sky and space wave propagation. Need for modulation. Production and detection of an amplitude-modulated wave.

PRACTICALS

Every student will perform 10 experiments (5 from each section) & 8 activities (4 from each section) during the academic year. Two demonstration experiments must be performed by the teacher with participation of students. The students will maintain a record of these demonstration experiments.

SECTION A

Experiments

1. To determine resistance per cm of a given wire by plotting a graph of potential difference versus current.
2. To find resistance of a given wire using metre bridge and hence determine the specific resistance of its material.
3. To verify the laws of combination (series/parallel) of resistances using a metre bridge.
4. To compare the emf of two given primary cells using potentiometer.
5. To determine the internal resistance of given primary cell using potentiometer.
6. To determine resistance of a galvanometer by half-deflection method and to find its figure of merit.
7. To convert the given galvanometer (of known resistance and figure of merit) into an ammeter and voltmeter of desired range and to verify the same.
8. To find the frequency of the a.c. mains with a sonometer.

Activities

1. To measure the resistance and impedance of an inductor with or without iron core.
2. To measure resistance, voltage (AC/DC), current (AC) and check continuity of a given circuit using multimeter.
3. To assemble a household circuit comprising three bulbs, three (on/off) switches, a fuse and a power source.
4. To assemble the components of a given electrical circuit.
5. To study the variation in potential drop with length of a wire for a steady current.
6. To draw the diagram of a given open circuit comprising at least a battery, resistor/rheostat, key, ammeter and voltmeter. Mark the components that are not connected in proper order and correct the circuit and also the circuit diagram.

SECTION B

Experiments

1. To find the value of v for different values of u in case of a concave mirror and to find the focal length.
2. To find the focal length of a convex lens by plotting graphs between u and v or between l/u and l/v.
3. To find the focal length of a convex mirror, using a convex lens.
4. To find the focal length of a concave lens, using a convex lens.
5. To determine angle of minimum deviation for a given prism by plotting a graph between angle of incidence and angle of deviation.
6. To determine refractive index of a glass slab using a travelling microscope.
7. To find refractive index of a liquid by using (i) concave mirror, (ii) convex lens and plane mirror.
8. To draw the I-V characteristic curve of a p-n junction in forward bias and reverse bias.
9. To draw the characteristic curve of a zener diode and to determine its reverse break down voltage.
10. To study the characteristics of a common - emitter npn or pnp transistor and to find out the values of current and voltage gains.

Activities

1. To study effect of intensity of light (by varying distance of the source) on an L.D.R.
2. To identify a diode, an LED, a transistor, and IC, a resistor and a capacitor from mixed collection of such items.
3. Use of multimeter to (i) identify base of transistor. (ii) distinguish between npn and pnp type transistors. (iii) see the unidirectional flow of current in case of a diode and an LED. (iv) check whether a given electronic component (e.g. diode, transistor or I C) is in working order.
4. To observe refraction and lateral deviation of a beam of light incident obliquely on a glass slab.
5. To observe polarization of light using two Polaroids.
6. To observe diffraction of light due to a thin slit.

7. To study the nature and size of the image formed by (i) convex lens (ii) concave mirror, on a screen by using a candle and a screen (for different distances of the candle from the lens/ mirror).
8. To obtain a lens combination with the specified focal length by using two lenses from the given set of lenses.

B. Evaluation Scheme for Practical Examination:

One experiment from any one section		**8 Marks**
Two activities (one from each section)	(4+4)	8 Marks
Practical record (experiments & activities)		6 Marks
Record of demonstration experiments & Viva based on these experiments		3 Marks
Viva on experiments & activities		5 Marks

Recommended Textbooks.

1. Physics Part-I, Textbook for XII, Published by NCERT
2. Physics Part-II, Textbook for XII, Published by NCERT

CHEMISTRY

(Code No.443)

Class XII

BRIEF

Higher Secondary is the most crucial stage of school education because at this juncture specialized discipline based, content-oriented courses are introduced. Students reach this stage after 10 years of general education and opt for Chemistry with a purpose of pursuing their career in basic sciences or professional courses like medicine, engineering, technology and study courses in applied areas of science and technology at tertiary level. Therefore, there is a need to provide learners with sufficient conceptual background of Chemistry, which will make them competent to meet the challenges of academic and professional courses after the higher secondary stage.

The new and updated curriculum is based on disciplinary approach with rigour and depth taking care that the syllabus is not heavy and at the same time it is comparable to the international level. The knowledge related to the subject of Chemistry has undergone tremendous changes during the past one decade. Many new areas like synthetic materials, bio-molecules, natural resources, industrial chemistry are coming in a big way and deserve to be an integral part of chemistry syllabus at senior secondary stage At international level, new formulations and nomenclature of elements and compounds, symbols and units of physical quantities floated by scientific bodies like IUPAC and CGPM are of immense importance and need to be incorporated in the updated syllabus. The revised syllabus takes care of all these aspects. Greater emphasis has been laid on use of new nomenclature, symbols and formulations, teaching of fundamental concepts, applications of concepts in chemistry to industry/ technology, logical sequencing of units, removal of obsolete content and repetition etc.

OBJECTIVES

The broad objectives of teaching Chemistry at Senior Secondary Stage are to help the learners: to promote understanding of basic facts and concepts in chemistry while retaining the excitement of chemistry.

to make students capable of studying chemistry in academic and professional courses (such as medicine, engineering, technology) at tertiary level.

to expose the students to various emerging new areas of chemistry and apprise them with their relevance in their future studies and their application in various spheres of chemical sciences and technology.

to equip students to face various changes related to health, nutrition, environment, population, weather, industries and agriculture.

to develop problem solving skills in students.

to expose the students to different processes used in industries and their technological applications.

to apprise students with interface of chemistry with other disciplines of science such as physics, biology, geology, engineering etc.

to acquaint students with different aspects of chemistry used in daily life. to develop an interest in students to study chemistry as a discipline.

Class XII (Theory)

One Paper **Time: 3 Hours** **70 marks**

Unit No.	**Title**	**Marks**
Unit I	Solid State	4
Unit II	Solutions	5
Unit III	Electrochemistry	5
Unit IV	Chemical kinetics	5
Unit V	Surface chemistry	4
Unit VI	General principles and processes of Isolation of Elements	3
Unit VII	p-Block Elements	8
Unit VIII	d- and f- Block Elements	5
Unit IX	Coordination Compounds	3
Unit X	Haloalkanes and Haloarenes	4
Unit XI	Alcohols, Phenols and Ethers	4
Unit XII	Aldehydes, Ketones and Carboxylic acids	6
Unit XIII	Organic Compounds containing Nitrogen	4
Unit XIV	Biomolecules	4
Unit XV	Polymers	3
Unit XVI	Chemistry in Everyday life	3

Unit I: Solid State **(Periods 12)**

Classification of solids based on different binding forces: molecular, ionic, covalent and metallic solids, amorphous and crystalline solids (elementary idea), unit cell in two dimensional and three dimensional lattices, calculation of density of unit cell, packing in solids, voids, number of atoms per unit cell in a cubic unit cell, point defects, electrical and magnetic properties.

Unit II: Solutions (Periods 12)

Types of solutions, expression of concentration of solutions of solids in liquids, solubility of gases in liquids, solid solutions, colligative properties - relative lowering of vapour pressure, elevation of Boiling Point, depression of freezing point, osmotic pressure, determination of molecular masses using colligative properties, abnormal molecular mass.

Unit III: Electrochemistry (Periods 14)

Redox reactions, conductance in electrolytic solutions, specific and molar conductivity variations of conductivity with concentration, Kohlrausch's Law, electrolysis and laws of electrolysis (elementary idea), dry cell - electrolytic cells and Galvanic cells; lead accumulator, EMF of a cell, standard electrode potential, Nernst equation and its application to chemical cells, fuel cells; corrosion.

Unit IV: Chemical Kinetics (Periods 12)

Rate of a reaction (average and instantaneous), factors affecting rate of reaction; concentration, temperature, catalyst; order and molecularity of a reaction; rate law and specific rate constant, integrated rate equations and half life (only for zero and first order reactions); concept of collision theory (elementary idea, no mathematical treatment)

Unit V: Surface Chemistry (Periods 8)

Adsorption - physisorption and chemisorption; factors affecting adsorption of gases on solids; catalysis : homogenous and heterogeneous, activity and selectivity: enzyme catalysis; colloidal state: distinction between true solutions, colloids and suspensions; lyophilic, lyophobic, multimolecular and macromolecular colloids; properties of colloids; Tyndall effect, Brownian movement, electrophoresis, coagulation; emulsion - types of emulsions.

Unit VI: General Principles and Processes of Isolation of Elements (Periods 8)

Principles and methods of extraction - concentration, oxidation, reduction electrolytic method and refining; occurrence and principles of extraction of aluminium, copper, zinc and iron.

Unit VII: p-Block Elements (Periods 14)

Group 15 elements: General introduction, electronic configuration, occurrence, oxidation states, trends in physical and chemical properties; nitrogen - preparation, properties and uses; compounds of nitrogen: preparation and properties of ammonia and nitric acid, oxides of nitrogen (structure only); Phosphorous-allotropic forms; compounds .of phosphorous: preparation and properties of phosphine, halides (PCl_3, PCl_5) and oxoacids (elementary idea only)

Group 16 elements: General introduction, electronic configuration, oxidation states, occurrence, trends in physical and chemical properties; dioxygen: preparation, properties and uses; simple oxides; Ozone. Sulphur - allotropic forms; compounds of sulphur: preparation, properties and uses of sulphur dioxide; sulphuric acid: industrial process of manufacture, properties and uses, oxoacids of sulphur (structures only).

Group 17 elements: General introduction, electronic configuration, oxidation states, occurrence, trends in physical and chemical properties; compounds of halogens: preparation, properties and uses of chlorine and hydrochloric acid, interhalogen compounds, oxoacids of halogens (structures only).

Group 18 elements: General introduction, electronic configuration. Occurrence, trends in physical and chemical properties, uses.

Unit VIII: d and f Block Elements (Period 14)

General introduction ,electronic configuration, occurrence and characteristics of transition metals, general trends in properties of the first row transition metals - metallic character, ionization enthalpy, oxidation states, ionic radii, colour catalytic property, magnetic properties, interstitial compounds, alloy formation preparation and properties of K2Cr2O7 and KMnO4.

Lanthanoids - electronic configuration, oxidation states, chemical reactivity and lanthanoid contraction.

Actinoids - Electronic configuration, oxidation states.

Unit IX: Coordination Compounds (Period 12)

Coordination compounds - Introduction, ligands, coordination number, colour, magnetic properties and shapes, IUPAC nomenclature of mononuclear coordination compounds. bonding; isomerism, importance of coordination compounds (in qualitative analysis, extraction of metals and biological systems).

Unit X: Haloalkanes and Haloarenes. (Periods 12)

Haloalkanes:

Nomenclature, nature of C-X bond, physical and chemical properties, mechanism of substitution reactions.

Haloarenes:

Nature of C-X bond, substitution reactions (directive influence of halogen for monosubstituted compounds only)

Uses and environmental effects of - dichloromethane, trichloromethane, tetrachloromethane, iodoform, freons, DDT.

Unit XI: Alcohols, Phenols and Ethers (Periods 12)

Alcohols: Nomenclature, methods of preparation, physical and chemical properties (of primary alcohols only); identification of primary, secondary and tertiary alcohols; mechanism of dehydration, uses of methanol and ethanol.

Phenols : Nomenclature, methods of preparation, physical and chemical properties, acidic nature of phenol, electrophillic substitution reactions, uses of phenols.

Ethers: Nomenclature, methods of preparation, physical and chemical properties, uses.

Unit XII: Aldehydes, Ketones and Carboxylic Acids (Periods 12)

Aldehydes and Ketones: Nomenclature, nature of carbonyl group, methods of preparation, physical and chemical properties mechanism of nucleophilic addition, reactivity of alpha hydrogen in aldehydes; uses.

Carboxylic Acids: Nomenclature, acidic nature, methods of preparation, physical and chemical properties; uses.

Unit XIII: Organic compounds containing Nitrogen (Periods 10)

Amines: Nomenclature, classification, structure, methods of preparation, physical and chemical properties, uses, identification of primary, secondary and tertiary amines.

Cyanides and Isocyanides - will be mentioned at relevant places in context.

Diazonium salts: Preparation, chemical reactions and importance in synthetic organic chemistry.

Unit XIV: Biomolecules (Periods 12)

Carbohydrates - Classification (aldoses and ketoses), monosaccahrides (glucose and fructose), oligosaccharides (sucrose, lactose, maltose), polysaccharides (starch, cellulose, glycogen); importance.

Proteins - Elementary idea of α - amino acids, peptide bond, polypeptides, proteins, structure of amines-primary, secondary, tertiary structure and quaternary structures (qualitative idea only), denaturation of proteins; enzymes.

Vitamins -Classification and functions.

Nucleic Acids: DNA and RNA .

Unit XV: Polymers (Periods 8)

Classification - natural and synthetic, methods of polymerization (addition and condensation), copolymerization. Some important polymers: natural and synthetic like polythene, nylon, polyesters, bakelite, rubber.

Unit XVI: Chemistry in Everyday life: (Period 8)

1. Chemicals in medicines - analgesics, tranquilizers, antiseptics, disinfectants, antimicrobials, antifertility drugs, antibiotics, antacids, antihistamines.
2. Chemicals in food - preservatives, artificial sweetening agents.
3. Cleansing agents - soaps and detergents, cleansing action.

PRACTICAL

Evaluation Scheme for Examination	**Marks**
Volumetric Analysis	10
Salt Analysis	6
Content Based Experiment	4
Class record and viva	5
Investigatory Project	5

PRACTICAL SYLLABUS

A. Surface Chemistry. (Periods 6)

(a) Preparation of one lyophilic and one lyophobic sol.

Lyophilic sol - starch, egg albumin and gum

Lyophobic sol - aluminium hydroxide, ferric hydroxide, arsenous sulphide.

(b) Study of the role of emulsifying agents in stabilizing the emulsions of different oils.

B. Chemical Kinetics (Periods 4)

(a) Effect of concentration and temperature on the rate of reaction between sodium thiosulphate and hydrochloric acid.

(b) Study of reaction rates of any one of the following:

(i) Reaction of iodide ion with hydrogen peroxide at room temperature using different concentration of iodide ions.

(ii) Reaction between potassium iodate, KIO3 and sodium sulphite: (Na2SO3) using starch solution as indicator (clock reaction).

C. Thermochemistry (Periods 4)

Any one of the following experiments

i) Enthalpy of dissolution of copper sulphate or potassium nitrate.

ii) Enthalpy of neutralization of strong acid (HC1) and strong base (NaOH)

iii) Determination of enthalpy change during interaction (Hydrogen bond formation) between acetone and chloroform

D. Electrochemistry (Period 2)

Variation of cell potential in Zn/Zn2+||Cu2+/Cu with change in concentration of electrolytes (CuSO4 or ZnSO4) at room temperature.

E. Chromatography (Periods 2)

i) Separation of pigments from extracts of leaves and flowers by paper chromatography and determination of Rf values.

ii) Separation of constituents present in an inorganic mixture containing two cations only (constituents having large difference in Rf values to be provided).

F. Preparation of Inorganic Compounds (Periods 4)

i) Preparation of double salt of ferrous ammonium sulphate or potash alum.

ii) Preparation of potassium ferric oxalate.

G. Preparation of Organic Compounds (Periods 4)

Preparation of any two of the following compounds

i) Acetanilide

ii) Di-benzal acetone

iii) p-Nitroacetanilide.

iv) Aniline yellow or 2 - Napthol aniline dye.

v) Iodoform

H. Tests for the functional groups present in organic compounds: (Periods 6)

Unsaturation, alcoholic, phenolic, aldehydic, ketonic, carboxylic and amino (primary) groups.

I. Characteristic tests of carbohydrates, fats and proteins in pure samples and their detection in given food stuffs. (Periods 4)

J. Determination of concentration/molarity of $KMnO_4$ solution

by titrating it against a standard solution of: (Periods 8)

i) Oxalic acid,

ii) Ferrous ammonium sulphate

(Students will be required to prepare standard solutions by weighing themselves).

K. Qualitative analysis (Periods 14)

Determination of one cation and one anion in a given salt.

Cations - Pb^{2+}, Cu^{2+}, As^{3+}, Al^{3+}, Fe^{3+}, Mn^{2+}, Zn^{2+}, Co^{2+}, Ni^{2+}, Ca^{2+}, Sr^{2+}, Ba^{2+}, Mg^{2+}, NH_4^+

Anions - CO_3^{2-}, S^{2-}, SO_3^{2-}, SO_4^{2-}, NO_2^-, NO_3^-, Cl^-, Br^-, I^-, PO_4^{3-}; $C_2O_4^{2-}$, CH_3COO^-

(Note: Insoluble salts excluded)

PROJECT

Scientific investigations involving laboratory testing and collecting information from other sources.

A few suggested Projects.

Study of presence of oxalate ions in guava fruit at different stages of ripening. Study of quantity of casein present in different samples of milk.

Preparation of soybean milk and its comparison with the natural milk with respect to curd formation, effect of temperature, etc.

Study of the effect of potassium bisulphate as food preservative under various conditions (temperature, concentration, time etc.) :

Study of digestion of starch by salivary amylase and, effect of pH and temperature on it. Comparative study of the rate of fermentation of following materials: wheat flour, gram flour, potato juice, carrot juice etc.

Extraction of essential oils present in Saunf (aniseed), Ajwain (carum), Illaichi (cardamom). Study of common food adulterants in fat, oil, butter, sugar, turmeric powder, chilli powder and pepper.

Note: Any investigatory project, which involves about 10 periods of work, can be chosen with the approval of the teacher.

Recommended Textbooks.

1. Chemistry Part - I, Published by NCERT
2. Chemistry Part - II, Published by NCERT

BIOLOGY

(Code No.444)

Class XII

BRIEF

The present syllabus reinforces the ideas introduced in the lower classes while the students learn new concepts besides getting an exposure to contemporary areas of the subject. The syllabus also aims at emphasizing the underlying principles that are common to both animals and plants as well as highlighting the relationships of biology with other areas of knowledge. The format of the syllabus allows a simple, clear, consequential flow of concepts without any jarring jumps. The syllabus also stresses the connection of the study of Biology to real life problems, use of biological discoveries/ innovations in everyday life - in environment, nature, medicine, health and agriculture. The updated syllabus also focuses on reducing the curriculum load while ensuring that ample opportunities and scope for learning and appreciating basic concepts of the subject continues to be available within its framework.

The prescribed syllabus is expected to promote understanding of basic principles of biology learning of emerging knowledge and its relevance to individual and society encourage rational/specific attitude to issues related to population, environment and development enhance awareness about environmental issues and problems and the appropriate solutions create awareness amongst the learners about variations amongst the living and developing respect for the diversities and to appreciate that the most complex biological phenomenon are also built on essentially simple processes.

It is expected that the students would get an exposure to various branches of Biology in the syllabus in a more contextual and friendly manner as they study its various units.

Biology

One Paper **Time: 3 Hours** **Marks : 70**

Unit		**Marks**
1.	Reproduction	14
2.	Genetics and evolution	18
3.	Biology and human Welfare	14
4.	Biotechnology and its applications	10
5.	Ecology and environment	14

UNIT-I

I REPRODUCTION

Reproduction in organisms : Asexual and sexual reproduction. Sexual reproduction in flowering plants : Structure of flower, pollination, fertilization, development of seeds and fruits, apomixis and polyembryony.

Human reproduction : Reproductive system in male and female, menstrual cycle, production of gametes, fertilization, implantation, embryo development, pregnancy, parturition and lactation.

Reproductive Health : Population and birth control, contraception and MTP; sexually transmitted diseases, infertility.

UNIT-II

II GENETICS AND EVOLUTION

Mendelian inheritance.

Chromosome theory of inheritance, deviations from Mendelian ratio (gene interaction-incomplete dominance, co-dominance, multiple alleles).

Sex determination in human beings: XX, XY.

Linkage and crossing over.

Inheritance pattern : Mendelian disorders and chromosomal disorders in humans.

DNA and RNA, search for genetic material, replication, transcription, genetic code, translation.

Gene expression and regulation.

Genome and Human Genome Project.

DNA fingerprinting.

Evolution: Origin of life, theories and evidences, adaptive radiation, mechanism of Evolution, origin and evolution of man.

UNIT -III

III BIOLOGY AND HUMAN WELFARE

Basic concepts of immunology, vaccines.

Pathogens, Parasites

Cancer and AIDS

Adolescence and drug / alcohol abuse.

Plant breeding, tissue culture, single cell protein, food production, animal husbandry.

Mircobes in household food processing, industrial production, sewage treatment, energy generation, biocontrol agents and biofertilizers.

UNIT -IV

IV BIOTECHNOLOGY AND ITS APPLICATION

Principles and Processes; Recombinant DNA technology; Application in Health and Agriculture; genetically modified (GM) organisms; biosafety issues.

UNIT -V

V ECOLOGY & ENVIRONMENT

Ecosystems : components, types, energy flow, nutrient cycling and ecosystem services.

Organism and Population : Organisms and its environment, population and ecological adaptations. Centres of diversity and conservation for biodiverity, Biosphere reserves, National parks and sancturaries. Environmental issues.

Practicals

Time: 3 Hours **Marks : 30** **60 Periods**

1. Experiments and spotting 20 marks
2. Record of one investigatory project and Viva based on the project 5 marks
3. Class record and Viva based on experiments 5 marks

List of Experiments

1. Disect the given flower and display different whorls. Disect anther and ovary to show number of chambers.
2. Study pollen germination on a slide.
3. Collect and study soil from at least two different sites and study them for texture, moisture content, pH and water holding capacity of soil. Correlate with the kinds of plants found in them.
4. Collect water from two different water bodies around you and study them for pH, clarity and presence of any living organisms.
5. Study the presence of suspended particulate matter in air at the two widely different sites.
6. Study of plant population density by quadrat method.
7. Study of plant population frequency by quadrat method.
8. Prepare a temporary mount of onion root tip to study mitosis
9. To study the effect of the different temperatures and three different pH on the activity of salivary amylase on starch.

Study/observation of the following (Spotting)

1. Study of flowers adapted to pollination by different agencies (wind, insect)
2. Study of pollen germination on stigma through a permanent slide.
3. Study and identify stages of gamete development i.e. T.S. testis and T.S. ovary through permanent slides. (from any mammal)
4. Study meiosis in onion bud cell or grass hopper testis through permanent slide.
5. Study of T.S. of blastula through permanent slide.
6. Study Mendelian inheritance using seeds of different colour/size of any plant.
7. Study prepared pedigree charts of genetic traits such as rolling of tongue, blood groups, widow's peak, colour blindness.
8. Exercise on controlled pollination-Emasculation, tagging and bagging.
9. To identify common disease causing organisms like Ascaris, Entamoeba, Plasmodium, Ringworm through permanent slide or specimen. Comment on symptoms of diseases that they cause.
10. Study two plants and two animals found in xerophytic condition. Comment upon their adaptations/morphological.
11. Study plants and animals found in aquatic conditions. Comment upon their adaptations/ morphological.

Recommended Textbooks

A text book in Biology, Published by NCERT

HISTORY

(Code No.445)

Class XII

BRIEF

Through a focus on a series of critical historical issues and debates (class XI) or on a range of important historical sources (class XII), the students would be introduced to a set of important historical events and processes. A discussion of these themes, it is hoped, would allow students not only to know about these events and processes, but also to discover the excitement of doing history.

Objectives

Effort in these senior secondary classes would be to emphasize to students that history is a critical discipline, a process of enquiry, a way of knowing about the past, rather than just a collection of facts. The syllabus would help them understand the process through which historians write history, by choosing and assembling different types of evidence, and by reading their sources critically. They will appreciate how historians follow the trails that lead to the past, and how historical knowledge develops

The syllabus would also enable students to relate/compare developments in different situations, analyze connection between similar processes located in different time periods, and discover the relationship between different methods of social enquiry within different social sciences.

The syllabus in class XI is organized around some major themes in world history. The themes have been selected so as to (i) focus on some important developments in different spheres - political, social, cultural and economic, (ii) study not only the grand narratives of development - urbanization, industrialization and modernization but also to know about the processes of displacements and marginalization. Through the study of these themes students will acquire a sense of the wider historical processes as well as an idea of the specific debates around them.

The treatment of each theme in class XI would include (a) a road picture of the theme under discussion, (b) a more detailed focus on one region of study, (c) an introduction to a critical debate associated with the issue.

In class XII the focus will shift to a detailed study of some themes in Ancient, Medieval and Modern Indian history. The object would be to study a set of these themes in some detail and depth rather than survey the entire chronological span of Indian .history. In this sense the course will be built on the knowledge that the students have acquired in the earlier classes.

Each theme in class XII will also introduce the student to one type of source for the study of history.

Through such a study students would begin to see what different types of sources can reveal and what they cannot tell. They would come to know how historians analyze these sources, the problems and difficulties of interpreting each type of source, 'and the way a larger picture of an event, a historical process, or a historical figure, is built by looking at different types of sources.

Each theme for class XII will be organized around four subheads: (a) a detailed overview of the events, issues and processes under discussion, (b) a summary of the present state of research on the theme, (c) an account of how knowledge about the theme has been acquired, (d) an excerpt from a primary source related to the theme, explaining how it has been used by historians.

While the themes in both these classes (XI and XII) are arranged in a broad chronological sequence, there are overlaps between them. This is intended to convey a sense that chronological divides and periodization do not always operate in a neat fashion.

In the textbooks each theme would be located in a specific time and place. But these discussions would be situated within a wider context by (a) plotting the specific event within time-lines, (b) discussing the particular event or process in relation to developments in other places and other times.

Time: 3 hours

Paper One	100 Marks
Units	Marks
Section A: Archaeology & Ancient India Units 1 - 4	25
Section B: Medieval India Units 5 - 9	30
Section C: Modern India Units 10 - 15	35
Unit 16 : Map Work	10

Themes in Indian History

Themes	Objectives
SECTION A: ARCHAEOLOGY & ANCIENT INDIA **1. The Story of the First Cities: Harappan Archaeology.** **Broad overview:** Early urban centres. Story of discovery: Harappan civilization **Excerpt:** Archaeological report on a major site. Discussion: how it has been utilized by archaeologists/historians.	Familiarize the learner with early urban centres as economic and social institutions. Introduce the ways in which new data can lead to a revision of existing notions of history. Illustrate how archaeological reports are analyzed and interpreted by scholars.
2. Political and Economic History: How Inscriptions tell a story. **Broad overview:** Political and economic history from the Mauryan to the Gupta period. **Story of discovery:** Inscriptions and the decipherment of the script. Shifts in the under- standing of political and economic history. **Excerpt:** Asokan inscription and Gupta period land grant. **Discussion:** Interpretation of inscriptions by historians.	Familiarize the learner with major trends in the political and economic history of the subcontinent. Introduce inscriptional analysis and the ways in which these have shaped the understanding of political and economic processes.
3. Social Histories: Using the Mahabharata **Broad overview:** Issues in social history, including caste, class, kinship and gender. **Story of discovery:** Transmission and publications of the Mahabharat. Excerpt: from the Mahabharata, illustrating how it has been used by historians. **Discussion:** Other sources for reconstructing social history.	Familiarize the learner with issues in social history. Introduce strategies of textual analysis and their use in reconstructing social history.
4.A History of Buddhism: Sanchi StupaBroad overview: (a) A brief review of religious histories of Vedic religion, Jainism, Vaisnavism, Saivism. (b) Focus on Buddhism. Story of discovery: Sanchi stupa Excerpt: Reproduction of sculptures from Sanchi. Discussion: Ways in which sculpture has been interpreted by historians, other sources for reconstructing the history of Buddhism.	Discuss the major religious developments in early India. Introduce strategies of visual analysis and their use in reconstructing histories of religion.

Themes in Indian History

Themes	Objectives
SECTION B: MEDIEVAL INDIA **5. Agrarian Relations: The Ain-i- Akbari** **Broad overview:** (a) Structure of agrarian relations in the 16th and 17th centuries. (b) Patterns of change over the period. **Story of Discovery:** Account of the compilation and translation of Ain-i-Akbari. Excerpt: from the Ain-i-Akbari **Discussion:** Ways in which historians have used the text to reconstruct history.	Discuss developments in agrarian relations. Discuss how to supplement official documents with other sources.
6. The Mughal Court: Reconstructing Histories through Chronicles **Broad Overview:** (a) Outline of political history 15th-17th centuries. (b) Discussion of the Mughal court and politics. **Story of Discovery:** Account of the production of court chronicles, and 'their subsequent. translation and transmission. **Excerpts:** from the Akbarnama and Padshahnama. **Discussion:** Ways in which historians have used the texts to reconstruct political histories.	Familiarize the learner with the major landmarks in political history Show how chronicles and other sources are used to reconstruct the histories of political institutions
7. New Architecture: HampiBroad Overview: (a) Outline of new buildings during Vijayanagar period-temples, forts, irrigation facilities. (b) Relationship between architecture and the political system.. Story of Discovery: Account of how Hampi was found. **Excerpt:** Visuals of buildings at Hampi **Discussion:** Ways in which historians have analyzed and interpreted these structures.	Familiarize the learner with the new buildings that were built during the time. Discuss the ways in which architecture can be analyzed to reconstruct history.
8. Religious Histories: The Bhakti-Sufi tradition **Broad Overview:** (a) Outline of religious developments during this period. (b) Ideas and practices of the Bhakti-Sufi saints. Story of Transmission: How Bhakti-Sufi compositions have been preserved. **Excerpt:** Extracts from selected Bhakti Sufi **works. Discussion:** Ways in which these have been interpreted by historians.	Familiarize the learner with religious developments. Discuss ways of analyzing devotional literature as sources of history.

Themes in Indian History

Themes	Objectives
9. Medieval Society Through Travellers' Accounts **Broad Overview:** Outline of social and cultural life as they appear in travellers' accounts. **Story of their writings:** A discussion of where they travelled, why they travelled, what they wrote, and for whom they wrote. **Excerpts:** from Alberuni, Ibn Batuta, Bernier. **Discussion:** What these travel accounts can tell us and how they have been interpreted by historians.	Familiarize the learner with the salient features of social histories described by the travellers. Discuss how travellers' accounts can be used as sources of social history.
SECTION C: MODERN INDIA 10. Colonialism and-Rural Society: Evidence from Official Reports **Broad overview :** (a). Life of zamindars, peasants and artisans in the late 18 century (b) East India Company, revenue settlements and surveys. (c) Changes over the nineteenth century. **Story of official records:** An account of why official investigations into rural societies were under taken and the types of records and reports produced. **Excerpts:** From Firminger's Fifth Report, Accounts of Frances Buchanan-Hamilton, and Deccan Riots Report, **Discussion:** What the official records tell and do not tell, and how they have been used by historians.	Discuss how colonialism affected Zamindars, peasants and artisans. Understand the problems and limits of using official sources for understanding the lives of people.
11. Representations of 1857Broad **Overview:** (a) The events of 1857-58. (b) How these events were recorded and narrated. **Focus:** Lucknow. **Excerpts:** Pictures of 1857. Extracts from contemporary accounts. **Discussion:** How the pictures of 1857 shaped British opinion of what had happened.	Discuss how the events of 1857 are being reinterpreted. Discuss how visual material can be used by historians

Themes	Objectives
12. Colonialism and Indian Towns: Town Plans and Municipal Reports **Broad Overview:** The growth of Mumbai, Chennai, hill stations and cantonments in the 18th and 19th century.	Familiarize the learner with the history of modern urban centres.
Excerpts: Photographs and paintings. Plans of cities. Extract from town plan reports. Focus on Kolkata town planning. Discussion: How the above sources can be used to reconstruct the history of towns. What these sources do not reveal.	Discuss how urban histories can be written by drawing on different types of sources.
13. Mahatma Gandhi through Contemporary Eyes **Broad Overview:** (a) The nationalist movement 1918 - 48, (b) The nature of Gandhian politics and leadership. **Focus:** Mahatma Gandhi in 1931. Excerpts: Reports from English and Indian language newspapers and other contemporary writings. Discussion: How newspapers can be a source of history.	Familiarize the learner with significant elements of the nationalist movement and the nature of Gandhian leadership. Discuss how Gandhi was perceived by different groups. Discuss how historians need to read and interpret newspapers, diaries and letters as historical source.
14. Partition through Oral Sources Broad Overview: (a) The history of the 1940s; (b) Nationalism. Communalism and Partition. Focus: Punjab and Bengal. Excerpts: Oral testimonies of those who experienced partition. Discussion: Ways in which these have been analyzed to reconstruct the history of the event.	Discuss the last decade of the national movement, the growth of communalism and the story of Partition. Understand the events through the experience of those who lived through these years of communal violence. Show the possibilities and limits of oral sources.
15. The Making of the Constitution Broad Overview: (a) Independence and the new nation state. (b) The making of the constitution. . Focus: The Constitutional Assembly debates. Excerpts: from the debates. Discussion: What such debates reveal and how they can be analyzed.	Familiarize students with the history of the early years after independence. Discuss how the founding ideals of the new nation state were debated and formulated. Understand how such debates and discussions can be read by historians.
16. Map Work on Units 1-15	

Recommended text books :

1. Themes in Indian History, Published by NCERT
2. History Part-II, Published by NCERT 3. History Part-III, Published by NCERT

GEOGRAPHY

(Code No.446)

Class XII

BRIEF

Geography is introduced as an elective subject at the senior secondary stage. After ten years of general education, students branch out at the beginning of this stage and are exposed to the rigours of the discipline for the first time. Being an entry point for the higher education, students choose geography for pursuing their academic interest and, therefore, need a broader and deeper understanding of the subject. For others, geographical knowledge is useful in daily lives because it is a valuable medium for the education of young people. Its contribution lies in the content, cognitive processes, skills and values that geography promotes and thus helps the students explore, understand and evaluate the environmental and social dimensions of the world in a better manner.

Since geography explores the relationship between people and their environment, it includes studies of physical and human environments and their interactions at different scales-local, state/region, nation and the world. The fundamental principles responsible for the varieties in the distributional pattern of physical and human features and phenomena over the earth's surface need to be understood properly. Application of these principles would be taken up through selected case studies from the world and India. Thus, the physical and human environment of India and study of some issues from a geographical point of view will be covered in greater detail. Students will be exposed to different methods used in geographical investigations.

Objectives

The course in geography will help learners:

Familiarise themselves with the terms, key concepts and basic principles of geography;

Search for, recognize and understand the processes and patterns of the spatial arrangement of the natural as well as human features and phenomena on the earth's surface;

Understand and analyse the inter-relationship between physical and human environments and their impact;

Apply geographical knowledge and methods of inquiry to new situations or problems at different levels-local, regional, national and global;

Develop geographical skills, relating to collection, processing and analysis of data/ information and preparation of report including maps and graphs and use of computers whereas possible; and

Utilize geographical knowledge in understanding issues concerning the community such as environmental issues, socio-economic concerns, gender and become responsible and effective member of the community.

One Theory Paper	**3 Hours**	**70 Marks**
A. Fundamentals of Human Geography		**35 Marks**
Unit 1: Human Geography		3
Unit 2: People		5
Unit 3: Human Activities		10
Unit 4: Transport, Communication & Trade		10
Unit 5: Human settlements		5
Unit 6: Map Work		2
B. India: People and Economy		**35 Marks**
Unit 7: People		5
Unit 8: Human Settlements		4
Unit 9: Resources and Development		12
Unit 10: Transport, Communication and International Trade		7
Unit 11: Geographical Perspective on selected issues and problems		4
Unit 12: Map Work		3
C. Practical Work		**30 Marks**
Unit 1: Processing of Data and Thematic Mapping		15
Unit 2: Field study or Spatial Information Technology		10
Unit 3: Practical Record Book and Viva Voce		5

A. Fundamentals of Human Geography	**(70 Periods)**	**35 Marks**
Unit 1: Human Geography: Nature and Scope	Periods 3	
Unit 2: People	Periods 15	

Population distribution, density and growth

Population change-spatial patterns and structure; determinants of population change; Age-sex ratio; rural-urban composition;

Human development - concept; selected indicators, international comparisons

Unit 3: Human Activities **Periods 25**

Primary activities - concept and changing trends; gathering, pastoral, mining, subsistence agriculture, modern agriculture; people engaged in agricultural and allied activities - some examples from selected countries.

Secondary activities-concept; manufacturing: types - household, small scale, large scale; agro based and mineral based industries; people engaged in secondary activities - some examples from selected countries.

Tertiary activities-concept; trade, transport and communication; services; people engaged in tertiary activities - some examples from selected countries

Quaternary activities-concept; knowledge based industries; people engaged in quaternary activities - some examples from selected countries

Unit 4: Transport, Communication and Trade **Periods 19**

Land transport - roads, railways; trans-continental railways. Water transport- inland waterways; major ocean routes. Air transport- Intercontinental air routes.

Oil and gas pipelines.

Satellite communication and cyber space.

International trade-Bases and changing patterns; ports as gateways of international trade, role of WTO in International trade.

Unit 5: Human Settlements **Periods 8**

Settlement types - rural and urban; morphology of cities (case study); distribution of mega cities; problems of human settlements in developing countries.

Unit 6: Map Work on identification of features based on above units on

the outline Political map of World.

Part B. India: People and Economy 70 Periods

Unit 7: People **Periods 12**

Population : distribution, density and growth; composition of population - linguistic, religious; sex, rural-urban and occupational- polulation change through time and regional variations;

Migration: international, national-causes and consequences;

Human development: selected indicators and regional patterns; Population, environment and development.

Unit 8: Human Settlements **Periods 8**

Rural settlements - types and distribution;

Urban settlements - types, distribution and functional classification.

Unit 9: Resources and Development **Periods 28**

Land resources- general land use; agricultural land use, Distribution of major crops (Wheat, Rice, Tea, Coffee, Cotton, Jute, Sugar cane and Rubber), agricultural development and problems.

Water resources-availability and utilization-irrigation, domestic, industrial and other uses; scarcity of water and conservation methods-rain water harvesting and watershed management (one case study related with participatory watershed management to be introduced).

Mineral and energy resources: distribution of metallic (Ironore, Copper, Bauxite, Manganese) non-metallic (Mica, Salt) minerals; conventional (Coal, Petroleum, Natural gas and Hydro electricity) and non-conventional energy sources (solar, wind, biogas).

Industries - types, industrial location and clustering; distribution and changing pattern of selected industries-iron and steel, cotton textiles, sugar, petrochemicals, and knowledge based industries; impact of liberalization, privatisation and globalisation on industrial location;

Planning in India- target area planning (case study); idea of sustainable development (case study)

Unit 10: Transport, Communication and International Trade Periods 12

Transport and communication-roads, railways, waterways and airways: oil and gas pipelines; national electric grids; communication networkings - radio, television, satellite and internet;

International trade- changing pattern of India's foreign trade; sea ports and their hinterland and airports,

Unit 11: Geographical Perspective on Selected Issues and Problems (One case study to be introduced for each topic) Periods 10

Environmental pollution; urban-waste disposal.

Urbanisation rural-urban migration; problem of slum. Land Degradation.

Unit 12: Map work on locating and labelling of features based on above units on outline political map of India 3 Marks

C. Practical Work

Unit I : Processing of Data and Thematic Mapping (Periods 20)

Sources of data.

Tabulating and processing of data; calculation of averages, measures of central tendency, deviation and rank correlation;

Representation of data- construction of diagrams: bars, circles and flowchart; thematic maps;

construction of dot; choropleth and isopleth maps.

Use of computers in data processing and mapping.

Unit II: Field Study or Spatial Information Technology (Periods 10)

Field visit and study: map orientation, observation and preparation of sketch; survey on any one of the local concerns; pollution, ground water changes, land use and land-use changes, poverty, energy issues, soil degradation, impact of floods and drought, catchment area of school, Market survey and Household survey (any one topic of local concern may be taken up for the study; observation and questionnaire survey may be adopted for the data collection; collected data may be tabulated and analysed with diagrams and maps).

OR

Spatial Information Technology

Introduction to GIS; hardware requirements and software modules; data formats; raster and vector data, data input, editing & topology building; data analysis; overlay & buffer.

Recommended text books:

1. Fundamentals of Human Geogrphy, Published by NCERT
2. India - Poeple and Economy, Published by NCERT
3. Practical Work in Geography, Published by NCERT

SOCIOLOGY

(Code No.447)

Class XII

BRIEF

Sociology is introduced as an elective subject at the senior secondary stage. The syllabus is designed to help learners to reflect on what they hear and see in the course of everyday life and develop a constructive attitude towards society in change; to equip a learner with concepts and theoretical skills for the purpose. The curriculum of Sociology at this stage should enable the learner to understand dynamics of human behaviour in all its complexities and manifestations. The learners of today need answers and explanations to satisfy the questions that arise in their minds while trying to understand social world. Therefore, there is a need to develop an analytical approach towards the social structure so that they can meaningfully participate in the process of social change. There is scope in the syllabus not only for interactive learning, based on exercises and project work but also for teachers and students to jointly innovate new ways of learning.

Sociology studies society. The child's familiarity with the society in which she /he lives in makes the study of sociology a double edged experience. At one level sociology studies institutions such as family and kinship, class, caste and tribe religion and region- contexts with which children are familiar of, even if differentially. For India is a society which is varied both horizontally and vertically. The effort in the books will be to grapple overtly with this both as a source of strength and as a site for interrogation.

Significantly the intellectual legacy of sociology equips the discipline with a plural perspective that overtly engages with the need for defamiliarization, to unlearn and question the given. This interrogative and critical character of sociology also makes it possible to understand both other cultures as well as relearn about one's own culture.

This plural perspective makes for an inbuilt richness and openness that not too many other disciplines in practice share. From its very inception sociology has had mutually enriching and contesting traditions of an interpretative method that openly takes into account 'subjectivity' and causal explanations that pay due importance to establishing causal correspondences with

considerable sophistication. Not surprisingly its field work tradition also entails large scale survey methods as well as a rich ethnographic tradition. Indeed Indian sociology, in particular has bridged this distinction between what has often been seen as distinct approaches of sociology and social anthropology. The syllabus provides ample opportunity to make the child familiar with the excitement of field work as well as its theoretical significance for the very discipline of sociology.

The plural legacy of sociology also enables a bird's eye view and a worm's eye view of the society the child lives in. This is particularly true today when the local is inextricably defined and shaped by macro global processes.

The syllabus proceeds with the assumption that gender as an organizing principle of society cannot be treated as an add on topic but is fundamental to the manner that all chapters shall be dealt with. The chapters shall seek for a child centric approach that makes it possible to connect the

lived reality of children with social structures and social processes that sociology studies.

A conscious effort will be made to build into the chapters a scope for exploration of society that makes learning a process of discovery. A way towards this is to deal with sociological concepts not as givens but a product of societal actions humanly constructed and therefore open to questioning.

OBJECTIVES

1. To enable learners to relate classroom teaching to their outside environment.
2. To introduce them to the basic concepts of sociology that would enable them to observe and interpret social life.
3. To be aware of the complexity of social processes.
4. To appreciate diversity in society in India and the world at large.
5. To build the capacity of students to understand and analyze the changes in contemporary Indian society.

One Paper Theory **3 Hours** **Marks 80**

Unitwise Weightage

Units

1.	Introducing Indian Society	Non evaluative
2.	Demographic Structure & Indian Society	6
3.	Social Institutions-Continuity and change	6
4.	Market as a Social Institution	6
5.	Pattern of Social Inequality and Exclusion	6
6.	Challenges of Cultural Deiversity	8
7.	Suggestions for Project Work	Non evaluative

Change and Development in Indian Society

8.	Structural Change	6
9.	Cultural Change	6
10.	The Story of Democracy	6
11.	Change and Development in Rural Society	6
12.	Change and Development in Industrial Society	6
13.	Globalization and Social Change	6
14.	Mass Media and Communications	6
15.	Social Movements	6

Practical Examination

Max. Marks 20 **Time allotted : 3hrs**

Unitwise Weightage

A. Project (undertaken during the academic year at school level) 07 marks

i.	Statement of the purpose	:	2 marks
ii.	Methodology / Technique	:	2 marks
iii.	Conclusion	:	3 marks

B.	Viva - based on the project work		05 marks
C.	Research design		08 marks
i.	Overall format	:	1 mark
ii	Research Question/Hypothesis	:	1 mark
iii.	Choice of technique	:	2 mark
iv.	Detailed procedure for implementation of technique	:	2 mark
v.	Limitations of the above technique	:	2 mark

B & C to be administered on the day of the external examination

INDIAN SOCIETY **Marks 58**

Unit 1: Introducing Indian Society (Periods 10)

Colonialism, Nationalism, Class and Community

Unit 2: Demographic Structure And Indian Society (Periods 10)

Rural-Urban Linkages and Divisions

Unit 3: Social Institutions: Continuity & Change (Periods 14)

Family and Kinship

The Caste System

Unit 4: Market As A Social Institution (Periods 10)

Market as a Social Institution

Unit 5: Pattern of Social Inquality & Exclusion (Periods 24)

Caste Prejudice, Scheduled Castes and Other Backward Classes

Marginalization of Tribal Communities

The Struggle for Women's Equality

The Protection of Religious Minorities

Caring for the Differently Abled

Unit 6: The Challenges Of Cultural Diversity (Periods 12)

Problems of Communalism, Regionalism, Casteism & Patriarchy Role of the State in a Plural and Unequal Society

What We Share

Unit 7: Suggestions For Project Work (Periods 18)

B. CHANGE AND DEVELOPMENT IN INDIA

Unit 8: Structural Change (Periods 10)

Colonialism, Industrialization, Urbanization.

Unit 9: Cultural Change (Periods 12)

Modernization, Westernization, Sanskritisation, Secularization . Social Reform Movements & Laws

Unit 10 : The Story Of Democracy (Periods 22)

The Constitution as an instrument of Social Change

Parties, Pressure Groups and Democratic Politics

Panchayati Raj and the Challenges of Social Transformation

Unit 11: Change And Development In Rural Society

(Periods 10)

Land Reforms, Green Revolution and Agrarian Society

Unit 12: Change And Development In Industrial Society

(Periods 14)

From Planned Industrialization to Liberalization Changes in the Class Structure

Unit 13: Globalisation And Social Change (Periods 12)

Unit 14: Mass Media And Communication Process (Periods 12)

Unit 15: Social Movements (Periods 22)

Class-Based Movements: Workers, Peasants.

Caste-Based Movements: Dalit Movement, Backward Castes, Trends in Upper Caste Responses.

Women's Movements in Independent India. Tribal Movements.

Environmental Movements.

Recommended textbooks

1. Indian Society - Sociology, Published by NCERT

ECONOMICS

(Code No.448)

Class XII

BRIEF

Economics is one of the social sciences, which has great influence on every human being. As economic life and the economy go through changes, the need to ground education in children's own experience becomes essential. While doing so, it is imperative to provide them opportunities to acquire analytical skills to observe and understand the economic realities.

At senior secondary stage, the learners are in a position to understand abstract ideas, exercise the power of thinking and to develop their own perception. It is at this stage, the learners are exposed to the rigour of the discipline of economics in a systematic way.

The economics courses are introduced in such a way that in the initial stage, the learners are introduced to the economic realities that the nation is facing today along with some basic statistical tools to understand these broader economic realities. In the later stage, the learners are introduced to economics as a theory of abstraction.

The economics courses also contain many projects and activities. These will provide opportunities for the learners to explore various economic issues both from their day-to-day life and also from issues, which are broader and invisible in nature. The academic skills that they learn in these courses would help to develop the projects and activities. The syllabus is also expected to provide opportunities to use information and communication technologies to facilitate their learning process.

OBJECTIVES

1. Understanding of some basic economic concepts and development of economic reasoning which the learners can apply in their day-to-day life as citizens, workers and consumers.
2. Realisation of learners' role in nation building and sensitivity to the economic issues that the nation is facing today.
3. Equipment with basic tools of economics and statistics to analyse economic issues. This is pertinent for even those who may not pursue this course beyond senior secondary stage.
4. Development of understanding that there can be more than one views on any economic issue and necessary skills to argue logically with reasoning.

Paper 1	**3 Hours**	**100 Marks**
Units	**Periods**	**Marks**
Part A : Introductory Microeconomics		
1 Introduction	10	4
2. Consumer Equilibrium and Demand	32	18
3. Producer Behaviour and Supply	32	18
4. Forms of Market and Price Determination	22	10
5. Simple applications of Tools of demand and supply	8	-
Part B : Introductory Macroeconomics		
6. National Income and Related Aggregates	30	15
7. Money and Banking	18	8
8. Determination of Income and Employment	25	12
9. Government Budget and the Economy	17	8
10. Balance of Payments	14	7

Part A : Introductory Microeconomics

Unit 1: Introduction **10 Periods**

What is an economy? Central problems of an economy : what, how and for whom to produce; concepts of production possibility frontier and opportunity cost.

Distinctions between (a) planned and market economies, (b) positive and normative perspectives in economics, and (c) microeconomics and macroeconomics .

(Non-evaluative topics: Some basic tools in the study of economics - equation of a line, slope of a line, slope of a curve.)

Unit 2: Consumer Equilibrium and Demand **32 Periods**

Consumer's equilibrium - meaning of utility, marginal utility, law of diminishing marginal utility, conditions of consumer's equilibrium using marginal utility analysis.

Indifference curve analysis of consumer's equilibrium-the consumer's budget (budget set and budget line), preferences of the consumer (indifference curve, indifference map) and conditions of consumer's equilibrium.

Demand, market demand, determinants of demand, demand schedule, demand curve,

movement along and shifts in the demand curve; price elasticity of demand - factors affecting price elasticity of demand; measurenment of price elasticity of demand - (a) percentage-change method and (b) geometric method (linear demand curve); relationship between price elasticity of demand and total expenditure.

Unit 3: Producer Behaviour and Supply 32 Periods

Production function: Total Product, Average Product and Marginal Product. Returns to a Factor.

Cost and Revenue: Short run costs - total cost, total fixed cost, total variable cost; Average fixed cost, average variable cost and marginal cost-meaning and their relationship.

Revenue - total, average and marginal revenue.

Producer's equilibrium-meaning and its conditions-under (a) total revenue-total cost approach and (b) marginal revenue-marginal cost approach.

Supply, market supply, determinants of supply, supply schedule, supply curve, movements along and shifts in supply curve, price elasticity of supply; measurement of price elasticity of supply - (a) percentagechange method and (b) geometric methods.

Unit 4: Forms of Market and Price Determination 22 Periods

Perfect competition - meaning and features.

Market Equilibrium under perfect competition - Determination of equilibrium price, Effects of shifts in demand and supply.

Non - Competitive Markets - monopoly, monopolistic competition, oligopoly - their meanings and features.

Unit 5: Simple applications of Tools of demand and supply 8 Periods

(not to be examined)

Part B : Introductory Microeconomics

Unit 6: National Income and related aggregates 30 Periods

Macroeconomics: Its meaning.

Some basic concepts of macroeconomics: consumption goods, capital goods, final goods, intermediate goods; stocks and flows; gross investment and depreciation. Circular flow of income; Methods of calculating National Income - Value Added or Product method, Expenditure method, Income method.

Concepts and aggregates related to National Income:

Gross National Product (GNP), Net National Product (NNP), Gross and Net Domestic Product (GDP and NDP) - at market price, at factor cost; National Disposable Income (gross and net), Private Income, Personal Income and Personal Disposable Income; Real and Nominal GDP.

GDP and Welfare

Unit 7: Money and Banking **18 Periods**

Money - its meaning and function.

Supply of money - Currency held by the public and net demand deposits held by commercial banks. Money creation by the commercial banking system.

Central banking and its functions (example of the Reserve Bank of India).

Unit 8: Determination of Income and Employment **25 Periods**

Aggregate demand and its components.

Propensity to consume and propensity to save (average and marginal).

Short-run fixed price in product market, equilibrium output; investment or output multiplier and the multiplier mechanism.

Meaning of full employment and involuntary unemployment.

Problems of excess demand and deficient demand; measures to correct them - change in government spending, availability of credit.

Unit 9: Government Budget and the Economy **17 Periods**

Government budget - meaning, objectives and components.

Classification of receipts - revenue receipt and capital receipt; classification of expenditure - revenue expenditure and capital expenditure.

Various measures of government deficit - revenue deficit, fiscal deficit, primary deficit:their meaning and implications.

Fiscal policy and its role (non-evaluative topic).

Unit 10: Balance of Payments **14 Periods**

Balance of payments account - meaning and components; balance of payments deficit-meaning.

Foreign exchange rate - meaning of fixed and flexible rates and managed floating.

Determination of exchange rate in a free market.

BUSINESS STUDIES

(Code No.449)

Class XII

BRIEF

The courses in Business Studies and Accountancy are introduced at + 2 stage of Senior Secondary Education as formal commerce education is provided after first ten years of schooling. Therefore, it becomes necessary that instructions in these subjects are given in such a manner that students have a good understanding of the principles and practices bearing in business (trade and industry) as well as their relationship with the society.

Business is a dynamic process that brings together technology, natural resources and human initiative in a constantly changing global environment. To understand the framework in which a business operates, a detailed study of the organisation and management of business processes and its interaction with the environment is required. Globalisation has changed the way firms transact their business. Information Technology is becoming a part of business operations in more and more organisations. Computerised systems are fast replacing other systems. E-business and other related concepts are picking up fast which need to be emphasized in the curriculum.

The course in Business Studies will prepare students to analyse, manage, evaluate and respond to changes which affect business. It provides a way of looking at and interacting with the business environment. It recognizes the fact that business influences and is influenced by social, political, legal and economic forces. It allows students to appreciate that business is an integral component of society and develops an understanding of many social and ethical issues.

Therefore, to acquire basic knowledge of the business world, a course in Business Studies would be useful. It also informs students of a range of study and work options and bridges the gap between school and work.

Objectives

To develop in students an understanding of the processes of business and its environment;

To acquaint students with the dynamic nature and inter-dependent aspects of business;

To develop an interest in the theory and practice of business, trade and industry;

To familiarize students with theoretical foundations of organizing, managing and handling operations of a business firm;

To help students appreciate the economic and social significance of business activity and

the social cost and benefits arising therefrom;

To acquaint students with the practice of managing the operations and resources of business;

To prepare students to function more effectively and responsibly as consumers, employers, employees and citizens;

To help students in making the transition from school to the world of work including self-employment;

To develop in students a business attitude and skills to be precise and articulate.

Business Studies Syllabus

One Paper	**3 Hours**	**100 Marks**
Unitwise Weightage		
Units	Periods	Marks
Part A : Principles and Functions of Management		
1. Nature and Significance of Management	14	7
2. Principles of Management	14	7
3. Business Environment	10	5
4. Planning	14	7
5. Organizing	16	10
6. Staffing	16	8
7. Directing	22	10
8. Controlling	14	6
Part B: Business Finance and Marketing		
9. Financial Management	22	12
10. Financial Markets	20	8
11. Marketing Management	30	14
12. Consumer Protection	16	6

Part A: Principles and Functions of Management

Unit I: Nature and significance of Management **(Periods 14)**

Management - concept, objectives, importance

Management as Science, Art, Profession.

Levels of management

Management functions - planning, organizing, staffing, directing and controlling

Coordination - nature and importance

Unit 2: Principles of Management **(Periods 14)**

Principles of Management - meaning, nature and significance

Fayol's principles of management

Taylor's Scientific Management - Principles and Techniques

Unit 3: Business Environment (Periods 10)

Business Environment - meaning and importance

Dimensions of Business Environment - Economic, Social, Technological, Political and Legal Economic Environment in India; Impact of Government policy changes on business and industry, with special reference to adoption of the policies of liberalization, privatization and globalisation

Unit 4: Planning (Periods 14)

Meaning, features, importance, limitations

Planning process

Types of Plans - Objectives, Strategy, Policy, Procedure, Method, Rule, Budget, Programme.

Unit 5: Organising (Periods 16)

Meaning and importance.

Steps in the process of organising.

Structure of organization - functional and divisional.

Formal and informal organization.

Delegation: meaning, elements and importance.

Decentralization: meaning and importance.

Unit 6: Staffing (Periods 16)

Meaning and importance of staffing

Staffing as a part of Human Resource Management

Staffing process

Recruitment - meaning and sources

Selection - meaning and process

Training and Development - meaning and need. Methods of training

Unit 7: Directing (Periods 22)

Meaning, importance and principles

Elements of Directing

- Supervision - meaning and importance
- Motivation - meaning and importance, Maslow's hierarchy of needs; Financial and non-financial incentives.
- Leadership - meaning, importance; qualities of a good leader
- Communication - meaning and importance, formal and informal communication; barriers to effective communication.

Unit 8: Controlling **(Periods 14)**

Meaning and importance

Relationship between planning and controlling

Steps in the process of control

Techniques of controlling : budgetary control,

Part B : Business Finance and Marketing

Unit 9: Financial Management **(Periods 22)**

Meaning, role, objectives of financial management

Financial decisions : meaning and factors affecting

Financial planning - meaning and importance.

Capital Structure - meaning and factors

Fixed and Working Capital -Meaning and factors affecting its requirements.

Unit 10: Financial Markets **(Periods 20)**

Concept of Financial Market: Money Market and its instruments.

Capital market and types - primary and secondary market.

Distinction between capital market and money market.

Stock Exchange - meaning, functions, NSEl, OCTEI, Trading Procedure.

Securities and Exchange Board of India (SEBI)- Objectives, Functions.

Unit 11: Marketing Management **(Periods 30)**

Marketing - meaning, functions and role, marketing and selling

Marketing management philosophies.

Marketing mix - elements

- Product - nature, classification, branding, labeling and packaging
- Price - Factors determining fixation of price
- Physical distribution: Elements; Channels of distribution : types, function, choice of channels
- Promotion -Elements of promotion mix; Advertising - role, limitations, objections against advertising. Personal selling - meaning, importance; Sales promotion - merits, limitations, methods ; Publicity - meaning and role.

Unit 12: Consumer Protection **(Periods 16)**

Importance of consumer protection

Consumer rights

Consumer responsibilities

Ways and means of consumer protection - Consumer awareness and legal redressal with reference to Consumer Protection Act.

Role of consumer organizations and NGOs.

Recommended text books :

1. Business Studies - I, Published by NCERT
2. Business Studies - II

ACCOUNTANCY

(Code No.450)

BRIEF

The course in Accountancy is introduced at + 2 stage of Senior Secondary education, as formal commerce education is provided after first ten years of schooling. With the fast changing economic scenario and business environment in a state of continuous flux, elementary business education along with accountancy as the language of business and as a source of financial information has carved out a place for itself at the Senior Secondary stage. Its syllabus content should give students a firm foundation in basic accounting principles and methodology and also acquaint them with the changes taking place in the presentation and analysis of accounting information, keeping in view the development of accounting standards and use of computers.

Against this background, the course puts emphasis on developing basic understanding about the nature and purpose of the accounting information and its use in the conduct of business operations. This would help to develop among students logical reasoning, careful analysis and considered judgement.

Accounting as an information system aids in providing financial information. The emphasis at Class XI is placed on basic concepts and process of accounting leading to the preparation of accounts for a sole proprietorship firm. Computerised accounting is becoming more and more popular with increasing awareness about use of computers in business. Keeping this in view, the students are exposed compulsorily to the basic knowledge about computers and its use in accounting in the same year.

In class XII, Accounting for Not for Profit Organisations, Partnership Firms and companies are to be taught as a compulsory part. Students will also be given an opportunity to understand further about Computerized Accounting System, as an optional course to Analysis of Financial Statements.

Objectives :

To familiarise the students with accounting as an information system;

To acquaint the students with basic concepts of accounting and accounting standards;

To develop the skills of using accounting equation in processing business transactions;

To develop an understanding about recording of business transactions and preparation of financial statements;

To enable the students with accounting for reconstitution of partnership firms;

To enable the students to understand and analyse the financial statements; and

To familiarize students with the fundamentals of computerized system of accounting.

One Paper	**3 Hours**		**80 Marks**
Unit		**Periods**	**Marks**
Part A : Accounting for not for Profit Organisations, Partnership Firms and Companies			
1.	Accounting for not for profit organizations.	22	10
2.	Accounting for Partnership Firms	14	5
3.	Reconstitution of Partnership	34	20
4.	Accounting for Share Capital and Debenture	54	25
Part B: Financial Statement Analysis			
5.	Analysis of Financial Statements	33	12
6.	Cash Flow Statement	33	8
7.	Project Work	18	20
	Unit 1 : Project File — 4 marks		
	Unit 2 : Written Test — 12 marks (one hour)		
	Unit 3 : Viva Voce' — 4 marks		
OR			
Part C: Computerized Accounting			
5.	Overview of Computerized Accounting System	12	5
6.	Accounting using Database Management System (DBMS)	26	8
7.	Accounting Applications of Electronic Spread sheet	24	7
8.	Practical Work in Computerized Accounting	22	20
	Unit 1 : File — 4 marks		
	Unit 2 : Practical Examination — 12 marks (one hours)		
	Unit 3 : Viva Voce' — 4 marks		

Part A:

Accounting for Not-For-Profit Organisations, Partnership Firms and Companies. (Periods 124)

Unit 1: Accounting for Not-for-profit Organisations (Periods 22)

Meaning and features of not for profit organisations.

Meaning and features of fundbased acccounting.

Receipts and payments Account

Preparation of Income and Expenditure Account and Balance Sheet from Receipt and Payment Account with additional information.

Unit 2: Accounting for Partnership firms (Periods 14)

Nature of Partnership firm, Partnership Deed-meaning, importance.

Partners' Capital Accounts : Fixed vs Fluctuating Capital, Division of Profit among partners, Profit and Loss Appropriation Account including past adjustments.

Unit 3: Reconstitution of Partnership (Periods 34)

Changes in Profit Sharing Ratio among the existing partners-Sacrificing Ratio and Gaining Ratio.

Accounting for Revaluation of Assets and Liabilities and distribution of reserves(Accumulated Profits).

Goodwill: Nature, Factors affecting and methods of valuation: Average profit, Super profitand Capitalisation methods.

Admission of a Partner: Effect of Admission of Partner, Change in Profit Sharing Ratio,Accounting Treatment for Goodwill (as per AS 10), Revaluation of Assets and Liabilities,Adjustment of Capitals.

Retirement/Death of a Partner: Change in Profit Sharing ratio, accounting treatment of Good will, Revaluation of Assets and Liabilities, Adjustment of Capitals.Dissolution of a partnership firm.

Unit 4: Accounting for Share Capital and Debenture (Periods 54)

Share Capital: Meaning and Types.

Accounting for share capital: Issue and Allotment of Equity and Preference Shares; public subscription of shares : over subscription and under subscription; issue at par,

premium and at discount; calls in advance, calls in arrears, issue of shares for consideration other than cash. Meaning of Private placement of shares and employee stock option plan.

Forfeiture of shares : accounting treatment, re-issue of forfeited shares.

Presentation of Share Capital in company's Balance Sheet.

Issue of debentures at par; Premium and at discount; writing of discount and loss on issue of debentures; Issue of debentures as collatoral security; issue of debentures for consideration other than cash.

Redemption of debentures; sources : out of profits - debenture redemption reserve / sinking fund; out of capital-methods : lump sum payment, draw by lots, purchase in the open market and conversion (excluding cum-interest and ex-interest).

Part B: Financial Statement Analysis

Unit 5: Analysis of Financial Statements (Periods 33)

Financial Statements of a Company: preparation of simple balance sheet of a company in the prescribed form with major headings only.

Financial Statement Analysis: meaning, significance, limitations,

Tools for Financial Statement Analysis: Comparative Statements, Common Size Statements,

Accounting Ratios: meaning and objectives, types of ratios:

Liquidity Ratios:	Current Ratio, Liquid Ratio
Solvency Ratios:	Debt to Equity, Total Assets to Debt, Proprietary Ratio
Activity Ratios:	Inventory Turnover, Debtors Turnover, Payables Turnover, Working Capital Turnover, Fixed Assets Turnover,
Profitability Ratio:	Gross Profit, Operating, Net Profit, Return on Investment, Earning Per Share, Dividend per Share, Price Earning Ratio

Unit 6: Cash Flow Statement (Periods 33)

Cash Flow Statement: Meaning and objectives, preparation, adjustments related to depreciation, dividend and tax, sale and purchase of non-current assets (as per revised standard issued by ICAI)

Unit 7: Project Work in Accounting (Periods 18)

OR

Part C: Computerised Accounting (Periods 84)

Unit 5: Overview of Computerized Accounting System (Periods 12)

Concept and types of Computerised Accounting System (CAS)

Features of a Computerized Accounting System

Structure of a Computerised Accounting System

Unit 6: Accounting using Database Management System (DBMS) (Periods 26)

Concept of DBMS

Objects in DBMS: Tables, Queries, Forms, Reports

Creating data tables for accounting

Using queries, forms and reports for generating accounting information.

Applications of DBMS in generating accounting information such as shareholders' records, sales reports, customers' profile, suppliers' profile, payroll, employees' profile, petty cash register.

Unit 7: Accounting Applications of Electronic Spreadsheet (Periods 24)

Concept of an Electronic Spreadsheet (ES)

Features offered by Electronic Spreadsheet

Applications of Electronic Spreadsheet in generating accounting information, preparing depreciation schedule, loan repayment schedule, payroll accounting and other such applications.

Recommended text books

1. Accountancy - I, Publishing by NCERT
2. Accountancy - II, Publishing by NCERT

PHILOSOPHY

(Code No.451)

Class XII

BRIEF

OBJECTIVES

Philosophy, a theoretical enterprise with practical applications, aims at understanding the nature and meaning of life and Reality. It is considered to be the mother of all branches of knowledge. The nature of Philosophy is that in it no answer is left unquestioned. It attempts to understand and explain the fundamental axioms and presuppositions which are taken for granted by all branches of knowledge. The +2 syllabus is designed to give the students a glimpse of the nature of problems and the way they are dealt with in its various branches-Logic, Ethics, Classical Indian Philosophy and Western Philosophy.

CLASS XII (THEORY)

One Theory Paper **Time: 3 Hours** **100 Marks**

Unitwise Weightage

Units	Marks
A. INDIAN PHILOSOPHY	50
1. Nature and Schools of Indian Philosophy	10
2. Philosophy of the Bhagvad Gita	10
3. Buddhism, Jainism	10
4. Nyaya-Vaisesika and Samkhya- Yoga	10
5. Advaita Vedanta	10
B. WESTERN PHILOSOPHY	50
6. Knowledge and truth	10
7. The causal Principle.	10
8. Nature of Reality	10
9. Realism and Idealism	10
C. Applied Philosophy	
10. Environmental Ethics, Professional Ethics and Philosophy of Education	10

A. INDIAN PHILOSOPHY -

Unit 1:Nature and Schools of Indian Philosophy; some basic issues

Rta, Karma, Four Purusarthas : Dharma, Artha, Kama, Moksa 24 Pds,

Unit2: Philosophy of the Bhagavad Gita; Karma Yoga (Anasakta Karma),

Svadharama, Lokasamgraha 24 Pds.

Unit 3 : Buddhism, Jainism 24 Pds.

Four noble truths and eight-fold path; Theory of dependent origination. Anekantavada and syadvada.

Unit 4 : Nyaya - Vaisesika and Samkhya - Yoga **24 Pds**

Nyaya theory of Pramanas. Yoga- The Eight-fold Practice. Samkhya Theory of Three Gumas Vaisesika Theory of Padarthas '.

Unit 5: Advaita Vedanta **24 Pds.**

The nature of Atman, Brahman and the world.

B. WESTERN PHILOSOPHY

Unit 6 : Knowledge and truth

Rationalism, Empiricism and Kant's Critical Philosophy

Unit 7 : The Causal Principle **24 Pds.**

Nature of Cause

Aristotle's theory of four-fold causation cause-effect relationship: entailment regularity succession.

Unit 8: Nature of Reality

Proofs for the existence of God **24 Pds.**

Ontological, Teleological and Cosmological arguments.

Unit 9 : Realism and Idealism **24 Pds.**

Mind-Body Problem

C. Applied Philosophy

Unit 10: Environmental Ethics and Professional Ethics **24 Pds.**

(a) Study of Physical, Mental and Spiritual Environments

(b) Medical and Business Ethics.

(c) Philosophy of Education

Suggested References:

1. John Patrick
2. John Hospers
3. D.M. Datta and S.C. Chatterjee
4. M. Hiriyanna
5. A.C. Ewing
6. H. Titus
7. C.D. Sharma
8. William Lillie
9. S.R. Bhatta and Anu Mehrotra
10. Shri Aurobindo

Introduction to Philosophy

Introduction to Philosophical Analysis

Introduction to Indian Philosophy

Essentials of Indian Philosophy

Fundamental Questions of Philosophy

Living issues in Philosophy

A Critical Survey of Indian Philosophy

An Introduction to Ethics

Buddhists Epistemology, (Greenwood

Publishing House, Connecticus, USA)

On Education, Pondicherry

ENVIRONMENTAL SCIENCE

(Code No.453)

Class XII

BRIEF

Unit I **(Periods:50)** **[18marks]**

BIODIVERSITY

a) Concepts and Values of Biodiversity: Concepts of biodiversity; Species of various gene pools; Biodiversity in an ecosystem; Values of biodiversity; Why value biodiversity.

b) Types of Biodiversity (Ecosystem, Species and Genetic): Ecosystem diversity including Marine ecosystem and Estuarine ecosystem; Species diversity; Genetic diversity.

c) Interdependence between Species: Interactions between plants and animals; Species Interaction-Mutualism, Symbiosis, Commensalisms, Protocooperation, Predation, Parasitism, Amensalism and Antibiosis, Competition, Aggregations, Allelochemistry.

d) Economic Potential of Biodiversity: Introduction; Economic potential of plant diversity; Economic importance of animal diversity.

e) Loss of Biodiversity (Threatened, Endangered and Existing Species): Introduction; Causes leading to loss of biodiversity; Threatened, endangered and extinct species.

f) Strategies for Conservation of Biodiversity: Introduction; Conservation Strategies and its Importance.

Unit - II **(Periods: 20)** **[16marks]**

ENVIRONMENTAL MANAGEMENT

a) Need for Environmental Development Vis - A - Vis Development: Introduction; Development levels and environmental impacts.

b) Legal Provisions and Environmental Management : Introduction; Legislation for Environmental Protection

c) Approaches for Environmental Management : Some environmental approaches

Unit - III **Periods: 20)** **[16 marks]**

SUSTAINABLE AGRICULTURE

a) Need for Sustainable Agriculture: Key components in the industrialization of modern agriculture.

b) Green Revolution: Impact of green revolution on the environment; Ecological impacts; Sociological impacts.

c) Impact of Agrochemicals on Environment

d) Management of Agriculture Produce: Storage and preservation; Transportation.

Unit - IV **Periods: 30)** **[20 marks]**

SUSTAINABLE DEVELOPMENT

a) Concept of Sustainable Development: Introduction

b) Concept of Sustainable Consumption: Lessons on Sustainable Consumption; Contemporary concept of sustainable consumption.

c) Challenges for Sustainable Development: Economic considerations- Need for sound economic policies; Political considerations- Requirements foe effective measures & approaches; Social considerations- Need for a transformation in social conditions.

d) Role of Individual and Community

Exemplar Activities (Internal Assessment) [30 marks]

Students must undertake at least one activity in a year. Teachers may design their own set of activities keeping in view the overall objectives of teaching and learning of Environmental education at this stage. Activities may be planned and designed depending upon the local situations, available resources and environmental issues of concern. The learners should be encouraged to initiate action on their own. As illustrations activities may be of the following types:

To study the changes that have taken place in a given land area during a specific time in respect of number of houses and families and determine the effects on civic amenities like availability of water, electricity and fuels, drainage system, disposal of wastes, etc.

To study the practices followed in the region for storage, preservation, transportation and processing of perishable or nonperishable farm products and to assess the extent of wastage due to faulty practices.

To study the status of an endangered species listed for the region by collecting information through different sources and observation, if possible and to assess the reasons for its diminishing number. Suggests ways and means to protect the species.

Conduct a survey of plants and trees in the locality and collect information

about their cultural, economic and medicinal values. Prepare action plans for the propagation of trees that are most valuable for use.

Prepare plans for beautification of the school campus or a park in the locality. Identify suitable plants and trees for the same.

Prepare a flow chart to show different steps involved in the supply of tap water from the source to houses in the locality. Plan and execute campaign to educate the society about the implications of wastage of water in terms of energy.

RECOMMENDED BOOKS :

FRANK ENVIRONMENTAL EDUCATION recommended by NCERT; Frank Bros. & Co.

BOOK FOR REFERENCES:

ECOLOGY & ENVIRONMENT by P. D. Sharma; Rastogi Publications; Seventh Edition-1999.

ENVIRONMENTAL BIOLOGY by P. D. Sharma; Rastogi Publications; Second Edition- 1999.

MAN & HIS ENVIRONMENT by Dr. S. R. Joshi & N. Joshi; Gautam Bros. & Co; 1999 Edition.

FUNDAMENTALS OF ENVIRONMENTAL SCIENCE by G. S. Dhaliwal, G. S. Sangha & T. K. Rahlan; Kalyani Publications; 2004 Edition

Relevant Journals and Periodicals of Local Environmental Concerns

PRACTICALS / ACTIVITIES

It is not possible to include practical but due to the lack of infrastructures in many schools especially in rural areas and in schools having hundreds of learners which include the Arts and the Commerce stream besides the Science streams in most institutions, with no teacher appointed specifically for this subject for being a newly introduced subject. However, in lieu of this, Exemplar Activities may be designed by teachers, keeping in view the overall objectives of teaching and learning of Environmental Education and Environmental Sciences. These Activities are to be assign to students so as to undertake at least one activity in a year.

DRAWING/PAINTING

(Code No.455)

Class XII

BRIEF

The course in Painting at Senior Secondary stage as an elective subject is aimed to develop aesthetic sense of the students through the understanding of various important well known aspects and modes of visual art expression in India's rich cultural heritage from the period Indus valley to the present time. It also encompasses practical exercises in drawing and painting to develop their mental faculties of observation, imagination, creation and physical skills required for its expressions.

Objectives

(A) Theory (History of Indian Art)

The objective of including the history of Indian Art for the students is to familiarise them with the various styles and modes of art expressions from different parts of India. This would enrich their vision and enable them to appreciate and develop an aesthetic sensibility to enjoy the beauty of nature and life. The students will also have an opportunity to observe and study the evolution of its mutations and synthesis with other style and the rise of an altogether new style. The students should be made aware of art as a human experience. The teachers should be able to expose them to the wide range of artistic impressions, the media and the tools used. The history of Indian Art is a long one. Hence the students would be acquainted with brief glimpses of the development of Indian Visual Art as are required for concept formation. Examples included in the course of study are selected because of their aesthetic qualities and are intended purely as guidelines.

(B) Practicals

The purpose of introducing practical exercises :in Painting is to help and enable the students:

- To develop skill of using drawing and painting material (surface, tools and equipments etc.) effectively.
- To sharpen their observation skills through study of common objects and various geometrical and non-geometrical forms found in life and nature.
- To develop their skills to draw and paint these observations:
- To develop an understanding of Painting-Composition (The use of the elements and the principles of painting -composition);
- To create the forms and the colour schemes in imagination with an ability to express them effectively in drawing and painting;
- To express the different feelings and moods of life and nature in lines, forms and colours.

CLASS XII (THEORY)

One Theory Paper **Time: 1 Hour** **30 Marks**

Unitwise Weightage

Units	Marks
History of Indian Art	
1. The Rajasthani and Pahari Schools of Miniature Painting	10
2. The Mughal and Deccan Schools of Miniature Painting	10
3. The Bengal School of Painting and the Modern Trends in Indian Art	10

Unit 1:The Rajasthani and Pahari Schools of Miniature Painting

(16th Century A.D. to 19th Century A.D.)24 Pds.

Introduction to Indian Miniature Schools: Western-Indian, Pala, Rajasthani, Mughal, Central India, Deccan and Pahari.

(A) The Rajasthani School :

(1) Origin and Development

(2) Sub-Schools-Mewar, Bundi, Jodhpur, Bikaner, Kishangarh and Jaipur

(3) Main features of the Rajasthani School

(4) Study of the following Rajasthani Paintings:

Title	**Painter**	**Sub-School**
Maru-Ragini	Sahibdin	Mewar
Raja Aniruddha Singh Hara	Utkal Ram	Bundi
Chaugan Players	Dana	Jodhpur
Krishna on swing	Nuruddin	Bikaner
Radha (Bani- Thani)	Nihal Chand	Kishangarh
Bharat meets Rama at Chitrakut	Guman	Jaipur

(B) The Pahari School:

(1) Origin and development

(2) Sub-Schools-Basohli and Kangra

(3) Main features of the Pahari School

(4) Study of the following Pahari Paintings:

Title	Painter	Sub-School
Krishna with Gopis	Unknown	Basohli
Raga Megha	Unknown	Kangra

Unit 2: The Mughal and Deccan Schools of Miniature Painting (16th Century AD to 19th Century A.D.) 24 Pds.

(A) The Mughal School

(1) Origin and development

(2) Main features of the Mughal School

(3) Study of the following Mughal Paintings:

Title	Painter	Period
Krishna Lifting Mount Goverdhan	Miskin	Akbar
Babur Crossing the River Sone	Jagnath	Akbar
Jahangir Holding the Picture of Madona	Abul Hassan	Jahangir
Falcon on a Bird Rest	Ustad Mansoor	Jahangir
Kabir and Raidas	Ustad Faquirullah Khan	Shahjahan
Marriage Procession of Dara Shikoh	Haji Madni Mughal	Provincial (Avadh)

(B) The Deccan School

(1) Origin and development

(2) Main features of the Deccan School

(3) Study of the following Deccan Paintings:

Title	Painter	Sub-School
Dancers	Unknown	Hyderabad
Chand Bibi Playing Polo (Chaugan)	Unknown	Gol Konda

Unit 3: The Bengal School Painting and the Modern trends in Indian Art 24 Pds.

(A) (I) A. New Era in Indian Art-an introduction

B. Study of the following painting

(i) Rama Vanquishing the pride of the ocean-Raja Ravi Varma

(2) Evolution of the Indian National Flag (First - 1906, Middle - 1921 and Final 1947 stages) : Study of the form and the colour scheme

(B) (1) Introduction to the Bengal School of Painting

(i) Origin and development of the Bengal School of painting

(ii) Main features of the Bengal School of painting

(2) Contribution of Indian artists in the struggle for National Freedom Movement

(3) Study of the following paintings of the Bengal school:

(i) Journey's End - Abanindranath Tagore

(ii) Parthasarthi - Nandlal Bose

(iii) Radhika - M.A.R. Chughtai

(C) The Modern Trends in Indian Art

Introduction

(1) Study of the following Paintings:

(i) Magician-Gaganendranath Tagore

(ii) Mother and child-Jamini Roy

(iii) Woman Face-Rabindranath Tagore

(iv) Three Girls-Amrita Sher Gil

(2) Study of the following pieces of Sculpture:

(i) Triumph of Labour-D.P. Roychowdhury

(ii) Santhal Family-Ramkinker Vaij

(3) Study of the following work of contemporary (modern) Indian Art'

A. Paintings

(i) Mother Teresa-M.F. Husain.

(ii) Birth of Poetry-K.K. Hebbar

(iii) Gossip-N.S. Bendre

(iv) Untitled-G.R. Santosh

(v) Diagonal- Tyeb Mehta

(4) Graphic-prints:

(i) Whirl pool-Krishna Reddy

(ii) Children-Somnath Hore

(iii) Devi-Jyoti Bhatt

(iv) Of Walls-Anupam Sud

(v) Man, Woman and Tree K. Laxma Goud

(5) Sculptures

(i) Standing Woman-Dhanraj Bhagat

(ii) Cries Un-heard-Amar Nath Sehgal

(iii) Ganesha- P.V.Jankiram

(iv) Figure- Sankho Chaudhuri

(v) Chatturmukhi- Aekka Yada Giri Rao

CLASS XII (PRACTICAL)

One Paper **Time: 3 Hours** **70 Marks**

Unitwise Weightage

Units	**Marks**
1. Nature, and Object Study	25
2. Painting Composition	25
3. Sessional Work	20

Unit 1: Nature and Object study **60 Pds.**

Studies on the basis of exercises done in class XI with two or three objects and drapery for background. Exercises in pencil with light and shade and in full colour from a fixed point of view.

Unit 2: Painting **60 Pds.**

Imaginative painting based on subjects from Life and or Nature in water and poster colours with colour values.

Unit 3: Sessional Work **48 Pds.**

(a) Five selected Nature and object Study exercises in any media done during the session, including minimum of two still life exercises. (10)

(b)Two selected works of paintings done by the candidate during the year (10)

These selected works prepared during the course by the candidate and certified by the school authorities as the work done in the school will be placed before the examiners for assessment.

Note: The time-table to be so framed as to allow the students to work continuously for minimum of two periods at a stretch.

HOME SCIENCE

(Code No.456)

Class XII

BRIEF

Home Science as a discipline aims to empower learners by developing understanding of four different areas, namely:

Food and Nutrition

Human Development

Community Resource Management and Extension

Fabric and Apparel Science

The subject helps students to understand changing needs of Indian society, academic principles as well as develop professional skills.

This would make them competent to meet challenges of becoming a responsible citizen.

OBJECTIVES

The Syllabus at Senior Secondary level develops in the learners an understanding that the knowledge and skills acquired through Home Science facilitates development of self, family and community. It endeavours to -

1. acquaint learners with the basics of human development with specific reference to self and child.
2. help develop skills of judicious management of various resources.
3. enable learners to become alert and aware consumers.
4. impart knowledge of nutrition and lifestyles to enable prevention and management of disease.
5. inculcate healthy food habits.
6. help develop understanding of textiles for selection and care of clothes.
7. develop skills of communication to assist in advocacy and dissemination of knowledge to community.

COURSE STRUCTURE

(THEORY)

One Paper (Theory) **Time: 3 Hours** **70 Marks**

Unit		Marks
I.	Know Little Children	17
II.	Nutrition for Self and Family (contd.)	17
III.	Money Management and Consumer Education	17
IV.	My Apparel	17
V.	Things I can do with my Home Science Training	2

Unit I: Know Little Children (0-3 years) **(Periods 34)**

Some specific characteristics: physical and motor-height, weight and body proportions; motor development during 0-3 months, 3-6 months, 6-9 months, 9-12 months and 1-3 years (milestones only); social and emotional developments; recognition of people around; socialization, expression of emotions; cognitive development; learning through concrete operations and language development.

Protection from preventable diseases: immunization - concept and types (natural and acquired), breast feeding (one of the ways to develop natural immunity); immunization chart; symptoms and incubation period of childhood diseases - TB, DPT, polio, measles, cholera, diarrhoea.

Special needs of disadvantaged and disabled children: socially disadvantaged, physically handicapped (partially blind & deaf, affected/missing limb): characteristics & needs.

Substitute care at home and outside: siblings, grand parents, neighbours creche, day care centres etc: Integrated Child Development Scheme (ICDS) - objectives and functions.

Unit II : Nutrition for Self and Family **(Periods 36)**

Planning meals for the family: meaning and importance of meal planning, principles and factors affecting meal planning, planning meals for the family; keeping in mind the needs of individual members, including children, pregnant women, lactating mother, members suffering from fever and diarrhoea; role and preparation of ORS.

Ways to ensure good health for the family: using safe drinking water-importance of potable water for good health, qualities of safe drinking water; household methods of making water safe for drinking; boiling, filtering, use of alum and chlorine tablet role of hygiene for food handlers at home level. Safety against food adulteration, definition and meaning of food

adulteration as given by PFA; common adulterants present in cereals, pulses, milk and milk products, fats and oils, sugar, jaggery, honey, spices and condiments. Ill effects of some of the adulterants present in the foods: kesari dal, metanil yellow, argemone seeds.

Unit III : Money Management and Consumer Education (Periods 36)

Family Income: various sources of family income: (i) money income, (ii) real income, direct and indirect; Supplementing family income-need & ways; need and procedure for keeping household accounts.

Savings and Investment: meaning and importance of savings; ways/methods of investmentbanks, post-office, LIC, Units, PPF, PF; basis for selection of method of investment risk, security, profit, tax saving.

Consumer Protection and Education: meaning, problems faced by consumer, Consumer Protection Act (1986) and Services; Consumer aids: levels, standardization marks, advertising, guidebooks/leaflets, Consumer redressal forum.

Unit IV: My Apparel (Periods 35)

Clothing and its relation to personality: Elements of line, colour, texture: elements of design: balance, rhythm, proportion, harmony, emphasis; factors that influence the selection of clothes: personality, age, climate, occupation, figure, occasion, fashion; selection and purchase of fabrics. Purpose, quality, cost, season, reliable shop.

Checking size and quality in ready-made garments, need and criteria: seams, hem, plackets, fasteners, workmanship, design, drape.

Care of clothes: General principles and precautions to be followed while removing stains and washing: Cleansing agents: soaps and detergents (basic differences); Storage of clothes.

Unit V: Things I can do with my Home Science Education (Periods 3)

Application of knowledge of Home Science in everyday life.

Usefulness of some of the skills learnt here for supplementing family income.

Skills learnt here can be gainfully used for employment (self-employment, apprenticeship).

Further training required to make this field a career: various sources and facilities available for training.

PRACTICAL

Time: 3 Hours **30 Marks**

Unit		Marks
I.	Know Little Children	3
II.	Nutrition for Self and Family (contd.)	1

III. Money Management and Consumer Education 3

IV. My Apparel 6

V. Things I can do with my Home Science Training

Record 5

Viva 2

Unit I : Know Little Children (0-3 years) (Periods 2)

Activity: Observe a child in neighbourhood or at home for various milestones of physical and motor developments and prepare a chart.

Practical: Make an interview schedule for working mother.

Activity: Interview three mothers working outside the home to find out their arrangements of substitute care for their children (0-3 yrs) in their absence.

Practical-Prepare of chart of mile stones

Practical: Prepare a chart for immunization of a child.

Unit II : Nutrition for Self and Family (Periods 22)

Practicals: Plan meals for the family and carry out modifications to suit individual needs including persons suffering from fever or diarrhoea and for pregnant and lactating mother. Prepare and serve one dish.

Practical: Preparation of oral dehydration solution

Practical: Simple tests for checking adulteration in-

(i) Cereals

(ii) Pulses

(iii) Milk and milk products

(iv) Tea leaves

(v) Dhania powder

(vi) Red chillies

(vii) Haldi powder

(viii) Gur (Jaggery)

(ix) Black Pepper (Whole)

Unit III: Money management and Consumer Education (Periods 8)

Activity: Open an account. Find out and report how an account is opened in a bank and post office. Collect and fill forms.

Activity: Read and evaluate labels of any four household items bearing different standardization marks. Practical: Fill bank/post office forms

Practical: Prepare one label each for four household items/products bearing different standardization marks.

Unit IV : My Apparel **(Periods 42)**

Practical : Make sample of

(a) basic stitches and seams:

(i) Running Stitch

(ii) Hemming

(iii) Blind stitch

(iv) Inter-locking

(b) Fasteners - Buttons and hooks.

(c) Patch work

or make an apron and incorporate all the above (a, b, and c). Practical: Examine quality in ready-made garments.

Practicals: Relative effect of temperature of water on the clothes during the process of washing clothes (cold, lukeworm, hot). Draw conclusions and how this knowledge is helpful.

Practical:

Removal of stains of -

(i) Tea stain

(ii) Coffee stain

(iii) Curry

(iv) Grease

(v) Ball point ink

(vi) Lipstick

(vii) Blood

Practical: Make a soap/detergent (liquid /powder/cake) Instructions to the Examiners:

Group A

1. Three marks are allotted to Q. No. 1 in group A and Know little Children. Any question can be selected from the list of questions given in Group A. 3 marks for correct chart of milestones/ immunisation/interview schedule for working mothers.

Group B

2. Eight marks are allotted to Q. No. 2 in Group 2 in Group B on 'Nutrition for Self and Family'. Any question can be selected from the list of questions given in Group B Part (a). Further sub-division of eight marks :

(i) Planning and selection of foods according to specific requirements 2 Marks

(ii) Preparation of one dish 3 Marks

(iii) Service 2 Marks

(iv) Work place and method of work 1 Mark

3. Three marks are allotted for question No. 3 from Group B Part (b and c). Further Sub-division of three marks:

(i) Preparation of oral dehydration solution 3 Marks

or

detection of adulterant

1 mark for correct test

2 marks for correct identification of adulterant.

4. Three marks are allotted to Q. No. 4 from Group C on Money management and consumer education. Further sub-division of three marks:

Selection of correct form 1 Mark

Correct filling of form 2 Marks

or

Preparation of label 2 Marks

Correct quality mark according to the product 1 Mark

5. Three marks are allotted to Q. No. 5 from Group D part (a) on 'My Apparel'.

Three Marks for checking of quality of ready-made garment

or

Three Marks for correct reporting of effect of temperature on a particular cloth.

6. Three Marks are allotted to Q. No. 6 from Group D (part d+e). Further sub-division of two marks Selection of correct detergent

Removal of stain - using chemicals/detergents/bleach 1 Mark

or

Selection of correct ingredients 1 Mark

Preparation of soap/detergent 1 Mark

7. Class Record 5 Marks

8. Viva - questions should be related to practicals conducted during the examination 2 Marks

General Instructions:

A. Out of the several alternatives given in each group of questions only one is to be assigned

to the group.

B. Preparation of dish means-methodical procedure, economical use of ingredient and finished product.

C. Neat work

D. In all, six questions are to be selected.

1 from Group A		3 Marks
2 from Group B	8 + 3	11 Marks
1 from Group C		3 Marks
2 from Group 3 + 3		6 Marks
Record		5 Marks
Viva		2 Marks

List of Questions

Q. No. I : List of questions regarding the experiments from Group A (Unit I parts a, b and c). 3 Marks

1. Prepare a chart to record the milestones of physical development of child from 0-1 year.
2. Prepare a chart to record the milestones of language development of a child from 0-3 years.
3. Prepare a chart to record the milestones of motor development of a child from 0-3 years.
4. Prepare an immunisation chart for a child from 0-3 years.
5. Prepare an interview schedule for a working mother to find out the arrangement for her pre-school child in her absence.

Q. No. II : List of questions regarding the experiments from Group B (Unit II part a).

8 Marks

1. Plan meal for a family and suggest modifications for: any one of the following:
   a lactating mother / a pregnant woman / a person suffering from diarrhoea / a person suffering from fever Prepare one of the modified dishes.

Q. No. III : List of questions regarding the experiments from Group B (Unit II parts b and c). 3 Marks

1. Prepare oral rehydration solution. (ORS)
2. Test adulteration and identify the adulterant in one of the following:

(i) Cereals

(ii) Pulses

(iii) Milk and Milk Products

(iv) Tea leaves

(v) Dhania Powder

(vi) Gur (Jaggery)

(vii) Haldi Powder

(viii) Black Pepper (Whole)

Q. No. IV : List of questions regarding the experiments from Group C (Unit III parts a and b). 3 Marks

1. Select and fill form for one of the following:

(a) To withdraw small amount of money.

(b) To withdraw large amount of money.

(c) To open an account in post office/bank.

(d) To deposit money in cash / cheque.

2. Prepare label for any food product with proper quality mark.

Q. No. V : List of questions regarding the experiments from Group D (Unit IV parts a, b and c) 3 Marks

1. Make a sample of any one of the following:

(i) Hemming

(ii) Running stitch

(iii) Blind stitch

(iv) Inter locking

(v) Fasteners - buttons or hook

2. Examine two points (seams fasteners, patch, embroidery, finishing of edges) in a ready-made garment and write your observations.

3. Test the effect of temperature of water (hot, lukewarm and cold on cotton / wool/silk / nylon /terricot cloth) and record your observations.

Q. No. VII : List of questions regarding the experiments from Group D (Unit IV parts c and d). 3 Marks

1. Remove one of the following stains from a cotton cloth.

(i) Tea stain

(ii) Coffee stain

(iii) Curry stain

(iv) Grease

(v) Ball point ink

(vi) Lipstick

(vii) Blood

2. Prepare liquid soap

3. Prepare powder detergent

List of articles to be supplied by the centre:

1. Cooking utensils for each candidate - Dekchi (saucepan) with cover, Karahi, Tawa, Chakla-Belen, Karchi, Karahi, Spoons, Frying Spoons, Fry pan, Stove or Gas Burner, Match box, Pressure Cooker.

2. Sample of adulterated food.

3. Chemicals and reagents for detection of adulteration.

4. Sample of stain.

5. Reagents for removal of stains.

6. Dry and fresh ingredients according to the question paper set e.g. besan, dal, vegetables, milk, spices etc.

7. Different types of bank and post-office forms.

8. Drawing sheets and plain papers. .

9. Gum.

10. Samples of different types of cloth (to test effect of temperature of water).

11. Ingredients for preparation of soaps and detergents.

12. Water arrangements.

List of articles to be brought by the candidates:

1. Serving utensils and cutlery.

2. Table cloth, napkin, tray.

3. Tray

4. Painting colours and brushes, felt pen, eraser, scale, scissors.

5. Cloth (10 cm x 10 cm) (for sample of stitches).

6. Any ready-made garment (may be used).

7. Needle and thread.

8. Hooks and buttons.

9. Dusters - 2

10. Newspapers - 2 sheets

11. Class record or sessional work.

AGRICULTURE

(Code No.457)

BRIEF

CLASS XII (THEORY)

One Theory Paper | Time: 3 Hours | 70 Marks

Unitwise Weightage

	Units	**Marks**
1.	Crop Production	40
2.	Horticulture	30

Unit 1: Crop Production **96 Pds.**

Introduction 08 Pds.

(a) Targets and achievement in foodgrain production in India since independence and its future projections, sustainable crop production, commercialisation of agriculture and its scope in India.

(b) Classification of field crops based on their utility-cereals, pulses, oils seeds, fibre, sugar and forage crops.

Soil, Soil fertility, Fertilizers and Manures 24 Pds.

(a) Soil, soil pH, Soil texture, soil structure, soil organisms, soil tilth, soil fertility and soil health.

(b) Essential plant nutrients, their functions and deficiency symptoms.

(c) Soil types of India and their characteristics.

(d) Organic nature, common fertilizers including straight, complex, fertilizer mixtures and biofertilizers; integrated nutrient management system.

Irrigation and Drainage 24 Pds.

(a) Sources of irrigation (rain, canals, tanks, rivers, wells, tubewells).

(b) Scheduling of imagination based on critical stages of growth, time interval, soil moisture content and weather parameters.

(c) Water requirement of crops.

(d) Methods of irrigation and drainage.

(e) Watershed management

Weed Control 8 Pds.

Principles of weed control, methods of weed control (cultural, mechanical, chemical, biological and Integrated weed management).

Crops 32 Pds.

Seed bed preparation, seed treatment, time and method of sowing/planting, seed rate; dose method and time of fertilizer application, irrigation, interculture and weed control; common pests and diseases, caused by bacteria, fungi virus and nematod, integrated pest management, harvesting, threshing, post harvest technology: storage, processing and marketing of major field crops-Rice, wheat, maize, sorghum, pearlmillet, groundnut, mustard, pigeonpea, gram, sugarcane, cotton berseem.

Unit 2: Horticulture 72 Pds.

(a) Importance of fruits and vegetables in human diet, Crop diversification & processing Industry.

(b) Orchard-location and layout, ornamental gardening and kitchen garden.

(c) Planting system, training, pruning, intercroping, protection from frost and sunburn.

(d) Trees, shrubs, climbers, annuals, perennials-definition and examples. Propagation by seed, cutting, budding, layering and grafting.

(e) Cultivation practices, processing and marketing of:

(i) Fruits - mango, papaya, banana, guava, citrus, grapes.

(ii) Vegetables - Radish, carrot, potato, onion, cauliflower, brinjal, tomato, spinach and cabbage.

(iii) Flowers - Gladiolus, canna, chrysanthemums, roses and marigold.

(f) Principles and methods of fruit and vegetable preservation.

(g) Preparation of jellies, jams, ketchup, chips and their packing.

CLASS XII (PRACTICALS)

One Paper **Time : 3 Hours** **30 Marks**

Unitwise Weightage

	Units	Marks
A.	Field Crop and Horticulture Practicals	10 + 6
B.	Observation	05
C.	Collection and visits	07
D.	Viva Voce	02

A. Field crop Practicals **38 Pds.**

(a) To find out germination percentage of crop seeds.

(b) Soil sampling and determination of soil pH.

(c) Preparation of nursery and seed beds.

(d) Seed treatment with fungicides and microbial culture.

(e) Layout of irrigation and drainage channels.

(f) Calculation of fertilizer requirement of crops on the basis of nutrient needs.

(g) Methods of fertilizer application including use of bio-fertilizers.

(h) Methods of sowing/planting.

(i) Interculture operation-weeding, earthing.

(j) Preparation of FYM and Compost.

(k) Uses of sprayers and dusters for pest control and nutrient spray.

(l) Harvesting of field crops.

(m) Determination of moisture content of crop seeds.

(n) To find out 100-grain weight of crop seeds.

Horticulture Practical

(a) Layout of the school garden.

(b) Preparation for nursery raising, pot filling and planting.

(c) Propagation by cutting, layering, grafting and budding.

(d) Pruning and training of trees.

(e) Establishment and maintenance of school lawn.

(f) Preparation of tomato ketchup, jam, jelly, chips of fruits/vegetables.

B. Observation **16 Pds.**

(a) Identification of seeds of crops.

(b) Identification of plants of various crops and weeds.

(c) Identification of manures and fertilizers.

(d) Identification of different types of tools and implements.

(e) Identification of common local pests and diseases of plants.

(f) Identification of different types of ornamental trees, annuals, biennials, perennials.

C. Collection and visits **18 Pds.**

(a) Preparation of herbarium of crop and weed plants.

(b) Collection and preservation of important crop pests and diseased plant parts.

(c) Practical record.

(d) Participation in and visit to crop demonstrations, field operation, field days, agriculture fairs organised in the locality by the local extension agencies.

(e) Visit to the important orchards of the locality, state research farms/seed multiplication farms and agricultural Universities/Agricultural Colleges, food processing industry.

Note: Students should submit a written report on the basis of experience acquired during their visits.

D. Viva Voce

Agriculture Practicals

A. List of Practicals **18 Pds.**

1. Seed treatment against the pest indicated.
2. Find out 1000 grain weight of crop seeds provided.
3. Prepare a layout plan of a farm of 10 hectares or a school garden of one hectare/ irrigation and drainage channels in a hectare of field.
4. Taking soil sample for soil moisture/pH determination.
5. Prepare an ideal seed bed/Nursery bed for the grain or vegetable crop indicated.
6. Calculate the fertilizer requirement for given area of the crop indicated.
7. Calculate the quantity of pesticide required for a given area against the pest indicated of a certain field crop. Also demonstrate the method of its application.
8. Demonstrate how would you prepare an ideal compost with the farm waste material provided.
9. Prepare the vegetable/fruit products indicated.
10. Demonstrate the ideal method of propagation of the plant indicated.

11. Identity the specimens and write two lines comment on each of them.
12. Practical records, collection, sessional work, maintenance of potted plants and reports on visits.
13. Viva-Voce.

General guidelines for evaluation

1. (i) The examiner may give anyone out of the first 7 practical exercises. It will carry 10 marks.

(ii) He will alot one out of the next two practicals (8 & 9) which will carry 6 marks.

(iii) For identification the teacher may provide 5 items, each item will carry one mark. (1/2 mark for identification and 1/2 mark for 2 lines comment) (5 marks)

(iv) Practical records and maintenance of potted plants will carry 2 marks each. For collection, sessional work and visit reports, one mark each. (7 marks)

(v) Viva Voce will carry 2 marks

2. In case of practicals, fruits preservation and methods of propagation, the student will have to write the procedure adopted and the necessary precautions to be taken in the answer sheet provided.

Suggested References

1. Garden Flowers, by V. Swaroop, National Book Trust of India.
2. Sashya Vigyan Ke Moolbhoot Sidhant, by U.K. Verma, Hindi Granth Academy, Patna (Bihar).
3. Modern Techniques of raising field crops, by Chhida Singh, Oxford and IBH Publishing Co., New Delhi.
4. Manures and Fertilizers, by K.S. Yawalkar, J.P. Agarwal and S. Bokde.
5. Fruits by Ranjeet Singh, National Book Trust, New Delhi.
6. Vegetable by B. Chaudhuri, National Book Trust, New Delhi.
7. Important Breeds of Cattle and Buffaloes, ICAR, New Delhi.
8. Hand Book of Agriculture, ICAR, New Delhi.
9. Hand Book of Animal Husbandry, ICAR, New Delhi.

BIOTECHNOLOGY

(Code No.458)

Class XII

BRIEF

An unprecedented growth of human knowledge in the field of Biological Sciences coupled with equally significant developments in the field of technology have brought significant changes into existing social and economic systems. The emerging field of Biotechnology is likely to further enhance the applications of Science and Technology in the service of human welfare. Modern Biotechnology processes encompass a wide range of new products such as antibiotics, vaccines, monoclonal antibodies and many more. Furthermore, developments in recombinant DNA technology have yielded numerous new useful products in the fields of healthcare and agriculture.

The present syllabus takes care of all these aspects. Due emphasis has been laid on familiarizing the learners with the fundamental concepts, basic techniques and their applications. It is expected that the knowledge gained through the study of different topics and the skills acquired through the prescribed practical work will make the learners competent to meet the challenges of academic as well as professional courses after studying the subect at senior secondary stage.

OBJECTIVES

The broad objectives of teaching Biotechnology at senior secondary level are:

To help the learners know and understand basic facts and concepts in the subject at elementary stage.

To expose the students to different basic processes and basic techniques used in Biotechnology

To farmiliarize the learners to understand the relationship of the subject to health, nutrition, environment, agriculture and industry etc.

To develop conceptual competence in the learners so as to cope up with professional courses in future career.

To acquaint students with different applications of Biotechnology in everyday life. To develop an interest in students to study biotechnology as a discipline.

CLASS XII

(THEORY)

One paper **Time: 3Hours** **Total Marks : 70**

Unit V: Protein and Gene Manipulation **Marks 40**

Chapter I: Protein Structure and Engineering **15 Marks**

Introduction to the world of Proteins

3-D Shape of Proteins

Structure Function relationship in Proteins

Purification of Proteins

Characterization of Proteins

Protein based products

Designing Proteins

Proteomics

Chapter II: Recombinant DNA Technology **15 Marks**

Introduction

Tools of rDNA Technology

Making Recombinant DNA

DNA Library

Introduction of Recombinant DNA into host cells Identification of recombinants

Polymerase Chains Reaction (PCR)

DNA Probes

Hybridization Techniques

DNA Sequencing

Site-directed mutagenesis

Chapter III: Genomics and Bioinformatics **10 Marks**

Introduction

Genome Sequencing Projects

Gene Prodiction and counting

Genome similarity, SNP's and comparative genomics Functional Genomics

History of Bioinformatics

Sequences and Nomenclature

Information Sources

Analysis using Bioinformatics tools.

Unit VI : Cell Culture Technology **10 Marks**

Chapter I: Microbial Culture and Applications

Introduction

Microbial Culture Techniques

Measurement and Kinetics of microbial Growth Scale up of microbial process

Isolation of microbial products

Strain isolation and Improvement

Applications of microbial culture technology Bioethics in microbial technology

Chapter II: Plant Cell Culture and Applications **10 Marks**

Instruction

Cell and Tissue Culture Techniques

Applications of Cell and Tissue Culture

Gene Transfer Methods in Plants

Transgenic Plants with Beneficial Traits

Diagnostics in Agriculture and Molecular Breeding Bioethics in Plant Genetic Engineering

Chapter III: Animal Cell Culture and Applications **10 Marks**

Introduction

Animal Cell Culture Techniques

Characterisation of Cell Lines

Scale-up of Animal Culture Process

Applicationsof Animal Cell Culture

Stem Cell Technology

Bioethics of Genetic Engineering in Animals

Practicals

Note: Every student will be required to do the following experiments during the academic session

List of Experiments

1. Isolation of bacterial plasmid DNA and its detection by gel eletrophoresis
2. Restriction digestion of plasmid DNA and its analysis by gel electrophoresis
3. Bacterial transformation using any plasmid
4. Data retrival and data base search using internet site NCBI
5. Download a DNA and protein sequence from internet, analyse and comment on it.
6. Cell viability assay (using Evans blue Stain)

7. Determination of blood groups.
8. Estimation of DNA
9. Ion-exchange chromatography for proteins.
10. Reading of a DNA sequencing gel and arrive at the sequence.
11. Estimation of blood glucuse by enzymatic method (GOD/POD)
12. Project work.

Scheme of Evaluation:

Time: 3 Hours **Max. Marks 30**

The scheme of evaluation at the end of the session will be as under:

A.	Two experiments	:	6+6 (only one computer bassed practical)
	Practical record	:	04
	Viva on Practicals	:	04
B.	Project work	:	
	Write up	:	05
	Viva on project	:	05

Recommended Books:

1. A Textbook of Biotechnology-Class XI: published by NCERT
2. A Laboratory Manual of Biotechnology-Class XI:published by NCERT
3. A Textbook of Biotechnology-Class XII: published by NCERT
4. A Laboratory Manual of Biotechnology-ClassXII: published by NCERT

COMPUTER SCIENCE

(Code No.459)

Class XII

BRIEF

Learning Objectives:

1. To develop logic for problem solving
2. To understand the concept of Object Oriented Methodology
3. To implement Object Oriented Programming using C++
4. To understand the concept of working with Relational Database
5. To understand the basic concept of algebra of logic
6. To understand and explore the world of communication and networks
7. To understand the concept of Web Services
8. To understand localisation issues

Competencies:

The student will be proficient in the following:

1. Identification of a Computer System
2. Problem Solving using object oriented programming
3. Designing an efficient logic using object oriented approach for solution development handling
4. Database handling
5. Logic Circuit designing
6. Network concepts and Web Services

Class XII (Theory)

Duration: 3 hours Total Marks: 70

Unit No.	Unit Name	Marks
1.	PROGRAMMING IN C++	30
2.	DATA STRUCTURE	14
3.	DATABASE AND SQL	8
4.	BOOLEAN ALGEBRA	8
5.	COMMUNICATION AND OPEN SOURCE CONCEPTS	10

UNIT 1: PROGRAMMING IN C++

REVIEW: C++ covered In Class -XI,

Object Oriented Programming:

Concept of Object Oriented Programming - Data hiding, Data encapsulation, Class and Object, Abstract class and Concrete class, Polymorphism (Implementation of polymorphism using Function overloading as an example in C++); Inheritance, Advantages of Object Oriented Programming over earlier programming methodologies,

Implementation of Object Oriented Programming concepts in C++:

Definition of a class, Members of a class - Data Members and Member Functions (methods), Using Private and Public visibility modes, default visibility mode (private); Member function definition: inside class definition and outside class definition using scope resolution operator (::); Declaration of objects as instances of a class; accessing members from object(s), Array of type class, Objects as function arguments - pass by value and pass by reference;

Constructor and Destructor:

Constructor: Special Characteristics, Declaration and Definition of a constructor, Default Constructor, Overloaded Constructors, Copy Constructor, Constructor with default arguments; Destructor: Special Characteristics, Declaration and definition of destructor;

Inheritance (Extending Classes):

Concept of Inheritance, Base Class, Derived Class, Defining derived classes, protected visibility mode; Single level inheritance, Multilevel inheritance and Multiple inheritance, Privately derived, Publicly derived and Protectedly derived class, accessibility of members from objects and within derived class(es);

Data File Handling:

Need for a data file, Types of data files - Text file and Binary file;

Text File: Basic file operations on text file: Creating/Writing text into file, Reading and manipulation of text from an already existing text File (accessing sequentially);

Binary File: Creation of file, Writing data into file, Searching for required data from file, Appending data to a file, Insertion of data in sorted file, Deletion of data from file, Modification of data in a file; Implementation of above mentioned data file handling in C++; Components of C++ to be used with file handling: Header file: fstream.h; ifstream, ofstream, fstream classes;

Opening a text file in in, out, and app modes; Using cascading operators for writing text to the file and reading text from the file; open(), get(), put(), getline() and close() functions; Detecting end-of-file (with or without using eof() function); Opening a binary file using in, out, and app modes; open(), read(), write() and close() functions; Detecting end-of-file (with or without using eof() function); tellg(), tellp(), seekg(), seekp() functions Pointers:

Declaration and Initialization of Pointers; Dynamic memory allocation/deallocation operators: new, delete; Pointers and Arrays: Array of Pointers, Pointer to an array (1 dimensional array), Function returning a pointer, Reference variables and use of alias; Function call by reference. Pointer to structures: Deference operator: *, ->; self referencial structures;

UNIT 2: DATA STRUCTURES

Arrays:

One and two Dimensional arrays: Sequential allocation and address calculation;

One dimensional array: Traversal, Searching (Linear, Binary Search), Insertion of an element in an array, deletion of an element from an array, Sorting (Insertion, Selection, Bubble sort), concatenation of two linear arrays, merging of two sorted arrays; Two-dimensional arrays: Traversal, Finding sum/difference of two NxM arrays containing numeric values, Interchanging Row and Column elements in a two dimensional array; Stack (Array and Linked implementation of Stack):

Operations on Stack (PUSH and POP) and its Implementation in C++, Converting expressions from INFIX to POSTFIX notation and evaluation of Postfix expression;

Queue: (Circular Array and Linked Implementation):

Operations on Queue (Insert and Delete) and its Implementation in C++.

UNIT 3: DATABASES AND SQL

Database Concepts:

Relational data model: Concept of domain, tuple, relation, key, primary key, alternate key, candidate key; Relational algebra: Selection, Projection, Union and Cartesian product;

Structured Query Language: General Concepts: Advantages of using SQL, Data Definition Language and Data Manipulation Language;

Data types: NUMBER, CHARACTER, DATE;

SQL commands:

CREATE TABLE, DROP TABLE, ALTER TABLE, UPDATE...SET..., INSERT, DELETE;

SELECT, DISTINCT, FROM, WHERE, IN, BETWEEN, GROUP BY, HAVING, ORDER BY; SQL functions: SUM, AVG, COUNT, MAX and MIN;

Note: Implementation of the above mentioned commands could be done on any SQL supported

software on one or two tables.

UNIT 4: BOOLEAN ALGEBRA

Binary-valued Quantities, Boolean Variable, Boolean Constant and Boolean Operators: AND, OR, NOT; Truth Tables; Closure Property, Commutative Law, Associative Law, Identity law, Inverse law, Principle of Duality, Idem potent Law, Distributive Law, Absorption Law, Involution law, DeMorgan's Law and their applications;

Obtaining Sum of Product (SOP) and Product of Sum (POS) form from the Truth Table, Reducing Boolean Expression (SOP and POS) to its minimal form, Use of Karnaugh Map for minimisation of Boolean expressions (up to 4 variables);

Basic Logic Gates (NOT, AND, OR, NAND, NOR) and their use in circuits.

UNIT 5: COMMUNICATION AND OPEN SOURCE CONCEPTS

Evolution of Networking: ARPANET, Internet, Interspace;

Different ways of sending data across the network with reference to switching techniques;

Data Communication terminologies:

Concept of Channel, Baud, Bandwidth (Hz, KHz, MHz) and Data transfer rate (bps, kbps, Mbps, Gbps, Tbps);

Transmission media:

Twisted pair cable, coaxial cable, optical fiber, infrared, radio link, microwave link and satellite link.

Network devices:

Modem, RJ45 connector, Ethernet Card, Hub, Switch, Gateway;

Network Topologies and types:

Bus, Star, Tree; Concepts of LAN, WAN, MAN

Network Protocol:

TCP/IP, File Transfer Protocol (FTP), PPP, Level-Remote Login (Telnet), Internet, Wireless/ Mobile Communication, GSM, CDMA, WLL, 3G, SMS, Voice mail, Application Electronic Mail, Chat, Video Conferencing;

Network Security Concepts:

Threats and prevention from Viruses, Worms, Trojan horse, Spams Use of Cookies, Protection using Firewall;

India IT Act, Cyber Law, Cyber Crimes, IPR issues, Hacking.

Web Servers;

Hyper Text Markup Lanuage (HTML), extensible Markup Language (XML); Hyper Text Transfer Protocol (HTTP); Domain Names; URL; Protocol Address; Website, Web browser, Web Servers;

Web Hosting, WEb Scripting - Client side (VB script, Java Script, PHP) and Server side (ASP, JSP, PHP)

Open Source Terminologies:

Open Source Software, Freeware, Shareware, Proprietary software, FLOSS, GNU, FSF, OSI;

Class XII (Practicals)

Duration: 3 hours **Total Marks: 30**

1. Programming in C++ 10

One programming problem in C++ to be developed and tested in Computer during the examination. Marks are allotted on the basis of following:

Logic	:	5 Marks
Documentation /Indentation	:	2 Marks
Output presentation	:	3 Marks

Notes: The types of problems to be given will be of application type from the following topics Arrays (One dimensional and two dimensional) Array of structure Stack using arrays and linked implementation Queue using arrays (circular) and linked implementation Binary File operations (Creation, Displaying, Searching and modification) Text File operations (Creation, Displaying and modification)

2. SQL Commands **05**

Five Query questions based on a particular Table/Reaction to be tested practically on Computer during the examination. The command along with the result must be written in the answer sheet.

3. Project Work **05**

The project has to be developed in C++ language with Object Oriented Technology and also should have use of Data files. (The project is required to be developed in a group of 1-2 students)

Presentation on the computer

Project report (Listing, Sample, Outputs, Documentation)

Viva

4. Practical File **05**

Must have minimum 20 programs from the following topics Arrays (One dimensional and two dimensional, sorting, searching, merging, deletion'& insertion of elements)

Arrays of structures, Arrays of Objects

Stacks using arrays and linked implementation

Queues using arrays (linear and circular) and linked implementation File (Binary and Text) operations (Creation, Updation, Query)

Any computational based problems

15 SQL commands along with the output based on any table/relation: 3 Marks

5. Viva Voce 05

Viva will be asked from syllabus covered in class XII and the project developed by student.

GUIDELINES FOR PROJECTS (Class XI and XII)

1. Preamble

1.1 The academic course in Computer Science includes one Project in each year. The Purpose behind this is to consolidate the concepts and practices imparted during the course and to serve as a record of competence.

1.2 A group of two students/three students as team may be allowed to work on one project.

2. Project content

2.1 Project for class XI can be selected from the topics mentioned in syllabus or domains on the similar lines.

2.2 Project for class XII should ensure the coverage of following areas of curriculum:

a. Problem Solving

b. Data Structure

c. Object Oriented Programming in C++

d. Data File Handling

Theme of the project can be

Any subsystem of a System Software or Tool

Any Scientific or a fairly complex algorithmic situation.

Business oriented problems like Banking, Library information system, Hotel or Hospital management system, Transport query system

Quizzes/Games;

Tutor/Computer Aided Learning Systems

2.3 The aim of the project is to highlight the abilities of algorithmic formulation, modular programming,

optimized code preparation, systematic documentation and other associated aspects of Software Development.

2.4 The assessment would be through the project demonstration and the Project Report, which

should portray Programming Style, Structured Design, Minimum Coupling, High Cohesion, Good documentation of the code to ensure readability and ease of maintenance.

Suggested Reference Books

Computer Organisation and Boolean Algebra

1. Rajaraman, FUNDAMENTALS OF COMPUTERS 4th Edition, Prentice Hall of India.
2. Peter Norton, INTRODUCTION TO COMPUTER 4th Edition, Tata McGraw Hill
3. J. Shelly & Roger Hunt, COMPUTER STUDIES, Wheeler's Publication.
4. C.S. French, COMPUTER STUDIES, Arnold Publishers.
5. Thomas C. Bartee, DIGITAL COMPUTER FUNDAMENTALS, McGraw Hill International.

Problem Solving and Programming in C++

Note: Prior knowledge of C is not required in the learning of C++, eventhough reference about C are made in some of the books.

1. Robert Lofore, OBJECT ORIENTED PROGRAMMING IN TURBO C++, Galgotia Publications Pvt. Ltd.
2. David Parsons, OBJECT ORIENTED PROGRAMMING WITH C++, BPB Publications.
3. Bjarne Stroutrup, THE C++ PROGRAMMING LANGUGE, Adison Wesley.

Data Structures

1. M.A. Weiss, Data Structures and Algorithm Analysis in C++. the Benjamin/Cummings Pub. Co., Inc.
2. Scott Rober Ladd, C++ COMPONENTS AND ALGORITHMS, BPB Publications.
3. Sartaj & Sahni, Fundamentals of Data Structure, Galgotia Book Source

Database Management System and SQL

1. C.J. Data, DATABASE PRIMER, Adison Wesley.
2. Martin Gruber, UNDERSTANDING SQL, BPB Publications.
3. Sheldon M. Dunn x Base Cross Reference Handbook, First Authorised Asian Edition 93, Tech. Publications Pvt. Ltd.

Computer Network

1. A.S. Tanenbaum, Computer Network 4th Edition, Prentice Hall of India P.Ltd.
2. Williams Stalling, Data Communication and Networks 5th Edition, Prentice Hall of India P. Ltd.
3. Hancock, Network Concept and Architectures, BPB Publications.

FASHION STUDIES

(Code No.460)

Class XII

BRIEF

Fashion is dynamic and ever changing. It is one of the most powerful forces in our lives. It influences every facet of our lifestyle at a particular period in time e.g. the clothes we wear, the music we listen, the food we eat, where we go for holiday or the car we drive in etc.

Fashion is a big business and key driver for several industries e.g. apparel, accessories, textiles, automobiles etc.

The purpose of the course 'Fashion Studies' is to tell the students about the fundamentals of fashion design. Fashion Design as a profession includes the entire process of designing and producing fashion apparels from the fibre and yarn stage to the finished product. The course will give an overview of fashion design and elaborate on different aspects like elements of design, history of fashion, fabrics, understanding of the body, pattern development and garment construction.

Unit - I: History of Fashion **15 Marks** **40 Periods**

Objectives of the course

To give an overview of the history of fashion from ancient civilisation through the ages to the present.

To emphasise on the socio-economic and political factors influencing clothing and fashion.

Learning outcome

After finishing the course, the students shall be able

To understand the history of fashion through the ages

To be aware of origin of various trends

To differentiate the style of apparel in different cultures

To appreciate the differences that some of the important events have made on fashion

Course content

' Theories of clothing - adornment, protection, identification and ritualistic. ' Concept of fashion

Body decoration, painting, scarification

Draping - Greco-Roman, Indian and other continents

Stitched garments - war uniforms, amours inspired

Comparison of western and oriental war uniforms

' Influence of world wars on fashion - post war fashion in its most primitive sense became generalized to larger groups of people as society became organized in classes each having a different role in economic, social and intellectual development.

' Influence of industrial revolution-the twentieth century has witnessed a new situation with industrial revolution where textiles and clothes traditionally custom made are now being mass produced.

' Automation and the various technical and scientific developments shaping the finest classless society m many centuries.

' Evolution of Indian fashion in the last century.

Teaching Methodology: Illustrated lectures with slides and visuals

Reference Text: Kaleidoscope of fashion, by Mehar Castilino

Ancient Indian Costume, by Roshan Alkazi

Unit - II. Basic Pattern Development 20 Marks (Theory) 80 Periods

15 Marks (Practical)

Objectives of the course

To introduce students to the world of fashion designing through pattern development.

To explain important skill that enable the designer to convert a design sketch into a three dimensional form.

To develop basic blocks for bodice, sleeve and skirt.

To understand and implement the concept of test fits and to convert paper patterns into muslin.

Learning outcome

After finishing the course, the students shall be able

To understand the basic skill of pattern making

To understand and appreciate the concept of fit and balance

To develop basic blocks from measurement charts

To test fit the pattern

To Develop patterns for simple designs using basic blocks

Course content

Methods of measuring body and dress form.

Relationship of sizes and measurements.

Tools of pattern making.

Common terms used in pattern development.

Introduction to Pattern Development for womens wear - how patterns are made and developed,

the importance of fit and balance and methods of achieving it.

Basic bodice - developed from the standard measurement chart and test fitted on the dress form.

Marking the important details such as darts, seam allowances, notches, grain lines etc.

Marking of garment details i.e. Armholes, Necklines- V, U, round, boat, square.

Develop basic sleeve block and set into the armhole of the basic bodice.

Develop basic skirt block with one dart or two darts.

Basic of collar development and drafting basic collars like Peter Pan and Chinese.

Dart manipulation. the mechanism of shifting darts from one position to another or into a seam by slash and spread method.

Final product: Student will learn to develop patterns from basic blocks for simple designs for skirts and blouses.

Teaching Methodology: Illustrated lectures with slides, visuals and demonstrations where ever required.

Evaluation Criteria

Understanding of the assignment given

Quality of the work submitted

Daily assessment to be done after each student presents their work Marks would be given for level of improvement of work

10% marks to be given for punctuality, regularity and sincerity Timely completion of the project.

Reference Text Pattern making by Helen Armstrong

Pattern making for women's wear by Winifred Aldrich Pattern making by Pamela Stringer.

Unit. III: Elements of Fashion **15 Marks** **40 Periods**

Objectives of the course

To introduce students to the basic elements of fashion:

To teach students about movement of fashion, fashion cycle, categories of clothing etc.

To sensitise students about different items of garments in each category i.e. menswear, womenswear and chilrenswear

To teach students the difference between high fashion and mass fashion To distinguish between custom made & ready to wear

Learning outcome

After finishing the course, the students shall be able

To understand the elements of fashion

To be aware of movement of fashion

To understand the fashion cycle

To know the various categories of menswear, womenswear and childrenswear

To understand the difference between hi-fashion & mass fashion and custom made & ready to wear.

Course content

Menswear, women's wear and kidswear

Menswear - shirts, trousers, formal jackets, suit and sporty suit

Womenswear-dresses, blouses, skirts, trousers, kameezes, saris and blouses

Kids wear - categories of children for 0-15 years and various governments like frocks, skirts, blouses, trousers, dungarees, jackets etc. highlighting the need of age group for which they are designed.

Trims used for the fashion apparel

Hi-fashion-custom and ready to wear

Mass fashion-ready to wear

Teaching Methodology: Illustrated lectures with slides and visuals.

Reference Text: Concept to consumer by Gini Stephens Frings Encyclopaedia of Fashion details

Unit - IV: Basics of Garment Making **20 Marks (Theory)** **80 Periods**

15 Marks (Practical)

Objectives of the course

To assemble a garment

To construct a bodice using different seams

To make a placket for bodice opening

To finish a neckline by both piping and facing

To set in a sleeve in the arm hole

To put gathers or pleats in the skirt and finish the waist with a waist band or attach a bodice.

Learning outcome

After finishing the course, the students shall be able

To join various parts of the garment and construct a complete garment

To finish a bodice

To set in the sleeve

To stitch a skirt

Course content

Understanding fabric types and selection of underlining, interfacing, inter-lining and lining.

Marking methods and preparing fabric for cutting Pattern layout and cutting of special fabrics

Assembling of bodice using different seams and appropriate finish for side seam and shoulder seams.

Concept of slit and seam plackets. Various plackets and placement of fasteners on different parts of the garment.

Appropriate neckline finishes with piping, bias facing and shaped facing. Importance and use of stay stitching.

Sleeve attachment to the bodice by setting in the sleeve into armhole. Assembling of skirts, finishing gathers and pleats in a waistband.

Final product

Constructing a skirt and blouse using pattern template.

Teaching Methodology: Illustrated lectures with slides, visuals and demonstrations whereever required.

Evaluation Criteria

Understanding of the assignment given

Quality of the work submitted

Daily assessment to be done after each student presents their work Marks would be given for level of improvement of work

10% marks to be given for punctuality, regularity and sincerity Timely completion of the project.

Reference Text: Encyclopaedia of dressmaking by Marshall Cavendish

Readers Digest book of Sewing Encyclopaedia of Sewing

PRACTICAL

Prepare draft and test fit according to the measurements of the dressform the following-

womenswear basic block, sleeve block, skirt block, collars - Chinese and Peterpan

Exercises on dart manipulation using slash and spread method

Garment stitching and finishing

- Darts
- Waist bands
- Pockets
- Placket - slit and seam
- Neckline finish
- Sleeve attachments
- Construction of garment - skirt and blouse using pattern templates End term project
- Viva voce and portfolio

LAB REQUIREMENT FOR A BATCH OF 30 STUDENTS

Lab size - 35ft x 20 ft. (minimum)

AC environment

Item	**Nos.**
Industrial sewing machines with power (costs at least Rs. 4,500/- each)	30
Pattern making tables 5 ft x 4 ft (cork top)	8 (4 students/tab)
Dress forms (half) costs Rs. 8000/- each	30 (one per student)
Steam irons @ Rs. 1000/-	4
Ironing boards @ Rs. 500/-	4
Soft boards	All around the wall
Stools	30
White board	1
Black board	1

Approximate cost will be Rs. 5,00,000/-

Selection criteria of school

They should have ability to provide appropriate environment, space, equipment, machinery and maintenance, trained faculty, exclusive library for the course, willingness to upgrade facility and faculty.

INFORMATION TECHNOLOGY

(Code No.461)

Class XII

BRIEF

Learning Objectives:

1. To understand the application development environm-ent.
2. To gain programming Skills in GUI Programming Tool and Database Creation in RDBMS.
3. To design, program and develop database application using GUI Programming Tool and RDBMS.
4. To learn database connectivity using Visual Basic as Front-end tool.
5. To develop ability to use the Open Source Technology.

Competencies:

1. Student will become familiar with Application Development
2. Student will be able to develop & debug programs Independently.
3. Student can use SQL for storing and retrieving data from the RDBMS.
4. Ability to arrive at a normalized design of tables and other database objects in RDBMS.
5. Student will be able to develop a Client Server Application using Front end and Back end tools.

Duration: 3 hours **Total Marks: 70**

Unit No	**Unit Name**	**Marks**
1.	BUSINESS COMPUTING	10
2.	PROGRAMMING	30
3.	RELATIONAL DATABASE MANAGEMENT SYSTEM	30

UNIT 1: BUSINESS COMPUTING

Introduction to Open Source based software:

Terminology: OSS, FLOSS, GNU, FSF, OSI, W3C.

Definitions: Open Source Software, Freeware, Shareware, Proprietary software, Localisation, UNICODE

Softwares : Linux, Mozilla web browser, Apache server, MySQL, Postgres, Pango, OpenOffice, Tomcat, PHP, Python

Websites: www.sourceforge.net, www.openrdf.org, www.opensource.org, www.linux.com, www.linuxindia.net, www.gnu.org.

General concepts, User interfaces (Front End), Underlying Database (Back End), Integration of User Interface and Database;

More application areas of Databases:

Inventory control, Financial Accounting, Pay-Accounting System, Invoicing Management System, Personal Management System / HRD System, Fees Management system, Result Analysis System, Admission Management System, Income Tax Management System;

Advanced Program Development Methodology: System Development Life Cycle, Relational Database Concept, Relational Database, Management System, Data Models (Entity Relationship Model), Entity and Entity Set, Attributes (Single, Composite and Multi-Valued), Relationship (One-to-One, One-to-Many and Many-to-Many), Entity Relationship Modeling Conventions, Communicating with an RDBMS using SQL, Relational Database Management System, SQL Statements, About programming language in SQL.

Data Dictionary, Data Warehousing, Data Mining, Meta Data;

Object Modeling: Introduction to object oriented modeling using Unified Modeling Language (Concepts only).

Client Server Computing: Concept of Client Server Computing.

UNIT 2: PROGRAMMING: Visual Basic

Programming Fundamentals

Modules: Modules in Visual Basic- Form Modules, Standard Modules, and Class Modules;

Procedures: Procedures (General, Event, Function, Property);

Control Structures:

Revision of Decision Structure - IF, IF-THEN-ELSE, Select Case;

Revision of Looping Structure- Do While…Loop, Do…Loop While, For…Next, For Each…Next;

Functions: Concept of Functions, Defining and Use of User Defined functions, function to perform calculations, Parameterized Functions;

Library Functions (System Functions)

String Function: Space( ), Str( ), Right( ), Left( ), Mid( ), InStr( ), Len( ), Ltrim( ), Rtrim( ), Ucase(), Lcase( ), String( );

Numeric Function: Sgn( ), Val( ), Int( );

Time-Related Function: Now( ), Time( ), Minute( ), Month( ); Miscellaneous Function: MsgBox( ), InputBox( );

Types of forms: Single Document Interface (SDI) and Multiple Document Interface (MDI);

MDI Applications: Creating MDI form and Child form, Arranging Child Forms;
Accessing database from ORACLE using ODBC or ADO or OLEDB to connect with database. Data Control: Accessing Data with the Data Control, Using Data-Aware Controls, Using Data Control Properties - Database Name, Exclusive, Options, Read Only, Record Source, Data Control Methods - Refresh, UpdateControls, UpdateRecord; Bound Controls: Adding Bound Text and Bound Label Controls. Data-Bound list Boxes, Grids, and Sub-Forms
ADO (ActiveX Data Objects): Connection Object, Command Object, and RecordSet Object, Special ADO Properties - Connection String (using single table), Command Text, Command Types, Cursor Locations, Cursor Types, Lock Types, Mode Types.
ADO Data Control: Simple Data linking using ADO Data Control Methods, ADO Data Control Events.

UNIT 3: RELATIONAL DATABASE MANAGEMENT SYSTEM

Database Fundamentals
Concept of Database Transaction, Committing a Transaction, Concept of "All or None" in a Transaction, Network Protocols Required (TCP/IP) for Data Communication, Stored Procedures, Concept of Database Fragmentation and Distributed Databases.
PL/SQL (Programming Language in SQL)
Importance of Writing Procedures, Declaring Variables: About PL/SQL, PL/SQL Block Structure, Program Constructs, Use of Variables, Handling Variables in PL/SQL, Types of Variables, Declaration, Naming Rules, Assigning Values to Variables, Initialization, and Keywords, Scalar Data types, Base Scalar Data Types, Scalar Variable Declaration, %TYPE attribute: for variable declaration, Declaring Boolean Variables, PL/SQL Record Structure, Referencing Non-PL/SQL variables, DBMS_OUTPUT.PUT_LINE;
Writing Executable Statements: PL/SQL Block Syntax and Guidelines, SQL functions in Code, SQL Functions in PL/SQL, PL/SQL Functions, Data type Conversion, Nested Blocks and Variable Scope, Operators in PL/SQL, Using Bind Variables, Programming Guidelines, Determining Variable Scope, SQL Statements in PL/SQL, Retrieving data in PL/SQL, Manipulating Data using PL/SQL, Inserting Data, Updating Data, Deleting Data, Naming Conventions, Commit and Rollback Statements, SQL Cursor, and Cursor Attributes;
Writing Control Structures: Controlling PL/SQL Flow of Execution, IF statements, IFTHENELSE Statement Execution Flow, IF-THEN-ELSIF Statement Execution Flow, Building Logical Conditions, Logic Tables, Boolean Conditions, Iterative Control: LOOP Statement, Basic Loop, FOR Loop, While Loop; Creating Procedures: Overview of Procedures, Syntax for Creating Procedures, Developing Stored Procedures and its Advantages, Creating a Stored Procedure, Procedure Parameter Modes,

Creating Procedures with Parameters, IN and OUT parameters and Usage, DEFAULT Option for Parameters, Removing Stored Procedures;

Writing Cursors: Introduction to Cursors (Implicit and Explicit), Explicit Cursor Functions, Controlling Explicit Cursors, Declaring, Opening and Closing the Cursor, Fetching data from the Cursor, Explicit Cursor Attributes (%ISOPEN, %NOTFOUND, %ROWCOUNT), controlling multiple fetches, Cursors and Records, Cursor FOR Loops, Cursor FOR Loops using Sub Queries.

Triggers: Types of Triggers: Row-Level Triggers, Statement Level Triggers, BEFORE and AFTER Triggers, INSTEAD of Triggers, Valid Trigger Type, Trigger Syntax, Combining Trigger Types, Enabling and Disabling Trigger, Replacing Trigger, Dropping a Trigger.

Development of Data Base Applications (Application Domain): Student database for school, Employee database for a company, Library Database for Library Student database management system for school, Employee database management system for a company, Library Database management system for Library, Railway Reservation System, Hotel Reservation, Inventory Control System;

Class XII (Practical)

Duration: 3 Hours **Total Marks 30**

1. Hands on experience **15**

A problem should be given covering the following features

1. Start a Standard Exe Project and it should contain MDI form with Menu Bar and Tool Bar (with Images)
2. Table structure in the database for the application with Constraints (Primary Key, Foreign Key, Check, and Unique).
3. A New Form to place an ADO component on it, for accessing data in table Stored Procedure to perform transactions/ conditional update
4. Trigger (any)
5. Making executable files of the project.

2. Records **05**

1. Create an Application using Visual Basic for Students Information System Having a Student Table in Relational Database and a Student Data Form in Visual Basic to enter data into the database.
2. Create an Application using Visual Basic for Criminals Information System Having a Criminal Table in Relational Database and a Criminals Data Entry Form in Visual Basic to enter data into the database. The Data entry form should contain form level and Field level checks using procedures.
3. Create an Application using Visual Basic for Nursing Home Automation System having

Linked tables (for example: Patient, Employee, Bill) in Relational Database and a required Data Entry Forms in Visual Basic to enter data into the database. The Data entry form should contain form level and Field level checks using procedures. Use of Bound Controls and Sub-Forms are to be encouraged in this application.

4. Create a database handling application for Student Expert System. Following features are to be incorporated in the application:

a. Create following linked tables of Student in the Relational Database.

i. StudentMaster : containing general information about the student.

ii. StudentDetail: Table to store data having details such as Class, Section, Marks and other relevant information.

iii. StudentFeeDetail: Should contain details like Financial Year, Class, Fee, FeeStatus(such as Paid and UnPaid)

iv. Accounts: General Accounts table to store fee collection details such as received from, date, chequeno and other relevant information.

b. The database should have Procedures to update data, Insert data and to perform other database transactions.

c. Database triggers should also be defined wherever automatic data modification is required.

d. Visual basic forms for data entry.

e. Procedures in Visual Basic to perform Database Transactions and Commit changes made

f. Reporting tool to make the MIS reports, required to analyse data entry.

3. Project 05

The following case study is to be adopted for the development of project

A book publishing company B R Publishing Group is in existence since1950. They were untouched with latest technological inventions. They are still using a traditional approach of bookkeeping and accounts maintenance.

A company, Nova technology, introduced themselves as system integrator and developers who can change existing working system into the latest concept of paper less office. They wanted few details from the company about its working. The details are as under:

Name of the company is B R Publishing Group.

The company is having 20 employees. One Managing Director, Two Managers (Work manager and Marketing Manager) and 17 employees who work as a team for book publishing.

The company publishes books in different Indian languages and different topics. Every book involves an Author and its detail.

The book is sold in the market at a variable discount options Book Seller: 30%

Schools: 20%'

Customer: 15%

The company is maintaining information about Author and all its details such as Personal Information, Royalty etc.

The company manages information about the book such as Book Name, Author, Quantity Sold, Quantity in Stock, etc.

The company maintains Customer (Book Sellers) information. Books Sold, Subject, Language, and Amount Pending etc.

Reports are required at different levels, such as Customer Listing

Book Listing

Language Wise Book Listing

Topic Wise Book Listing

Pending Amount Listing (Customer Wise, Book Wise) Author Royalty Detail

Bill Generation etc.

As a developer you are required to design the project and develop it as per customer needs (Developer can also visit a publishing company to collect customer details and live data). Suitable assumptions can be made during implementation. A proper normalized database is to be maintained in the RDBMS and the front end is to be developed using advanced interface controls. User-friendly interface is to be generated.

Note: This is a sample case study. Similar type of cases can be developed on different application areas such as Library, Hospital, Transport Authority, Transporters, Wholesale Merchants, and Chemist Shops etc. The cases to be developed should preferably be obtained from live situations.

4. Viva Voce 05

Five questions from topics covered in the syllabus

Reference Books:

Mastering Visual Basic 6 - Petroutsos (BPB)

Programming in Visual Basic 6 - Bay Ross (BPB) Visual Basic 6 Complete - Sybex (BPB)

Successful Projects in Visual Basic - Christopher (BPB)

Oracle8: The Complete Reference - George Koch, Kevin Loney (TMHP) Visual Basic Black Book (IDG)

Programming in Visual Basic - McBride (BPB) Learn Oracle 8i - Ramalho (BPB)

TEACH YOURSELF SQL / PL SQL USING ORACL 8i & 9i with SQL J - BAYROSS (BPB)

Visual Basic and ORACLE SSI Press

Oracle Programming with Visual Basic - Snowdon (BPB) Quan Book 'O' Level all Vol. - DOEACC (BPB)

PHYSICAL EDUCATION

(Code No.462)

Class XII

BRIEF

It covers the following:

I. Eligibility conditions for admission to the course II. Conditions for granting affiliation to the schools for offering Physical Education as an elective subject III. Theory syllabus for class XI (Part A & B) IV. Theory syllabus for class XII (Part A & B). V. Part C - Practical - Distribution of marks for the activity practical syllabus. VI. Norms for Physical Fitness Test for admission to Physical Education in class XI & for testing Physical Fitness for Girls of classes XI & XII VII. Norms for Physical Fitness Test for admission to Physical Education in class XI & for testing Physical Fitness for Boys of classes XI & XII VIII. List of content of syllabus; Work load/teaching components; maximum marks allotment; paper setting and nature of questions setting exams IX. Guidelines for evaluation of Physical Education theory paper X. Guidelines for Physical Education Teachers.

I. ELIGIBILITY CONDITIONS FOR ADMISSION TO THE COURSE

The following category of students will be permitted to join the course:

(i) Those who have represented the school in the Inter School Sports & Games Competitions\ in any Game/Sport.

(ii) Those who do not represent the school but are keen to join the course should undergo a physical fitness test and secure a minimum of 40% marks.

(iii) Those granted permission to join the course should be medically fit to follow a prescribed programme of physical education.

(iv) The unit of a class in physical education and health education should not exceed 40 students.

(v) Instructional hours and duration of the period should be strictly as per the norms of the Board.

II. CONDITIONS FOR GRANTING AFFILIATION TO
SCHOOLS FOR OFFERING PHYSICAL EDUCATION
AS AN ELECTIVE SUBJECT.

Only those schools satisfying the following conditions will be permitted to offer physical education as a course of study at +2 stage as an elective subject:

(i) The school should have adequate open space to accommodate at least 200 M track and play fields for minimum three games/sports.

(ii) The teacher handling the elective programme of physical education should hold a Master Degree in Physical Education.

(iii) The school should provide adequate funds for physical education and health education for purchase of equipments, books on physical education and also for the maintenance of sports facilities.

PHYSICAL EDUCATION

Class XII - Theory Max.Marks 70

PART - A

1. PHYSICAL FITNESS & WELLNESS

1.1 Meaning & Importance of Physical Fitness & Wellness

1.2 Components of Physical Fitness & Wellness

1.3 Factors Affecting Physical Fitness & Wellness

1.4 Principles of Physical Fitness Development

1.5 Means of Fitness Development - Aerobic & Anaerobic, Sports, Yoga &

Recreational Activities

2. TRAINING METHODS

2.1 Meaning & Concept of Training

2.2 Methods of Training

2.3 Methods of Strength Development - Isometric & Isokinetic Exercises

2.4 Methods of Endurance Development - Continuous Method, Interval Training & Fartlek.

2.5 Methods of Speed Development - Acceleration Run & Pace Races

2.6 Circuit Training

3. SOCIOLOGICAL ASPECTS OF PHYSICAL EDUCATION

3.1 Meaning of Sociology & Sports Sociology

3.2 Games & Sports as Man's Cultural Heritage

3.3 Socialization, Leadership, Value Education through Physical Education Programme & Olympic Movement

4. SPORTS & ENVIRONMENT

4.1 Meaning & Need for Environment in Physical Education Programme

4.2 Essential Elements of Positive Environment

4.3 Role of Individual in Improvement of Environment for Prevention of Sports Related Accidents

5. YOGA

5.1 Meaning & Importance of Yoga

5.2 Yoga as an Indian Heritage

5.3 Elements of Yoga

5.4 Role of Yoga in Sports

OR

Following sub topics relate to any one Game/Sport of choice of student out of these disciplines: Athletics, Basketball, Cricket, Football, Judo, Table Tennis, Tennis & Volleyball.

UNIT I

1.1 History of the Game/Sport

1.2 Latest General Rules of the Game/Sport

1.3 Measurement of Play Fields and Specifications of Related Sports Equipments

1.4 Fundamental Skills of the Game/Sport

1.5 Related Sports Terminologies

UNIT 2

2.1 Important Tournaments and Venues

2.2 Sports Personalities

2.3 Sports Awards

2.4 Various Sports Organizations

2.5 First Aid & Rehabilitation of Sports Injuries

PRACTICAL

Max.Marks 30

The Activity Practical Syllabus has been divided into three parts & the marks allotted for each part are as follows:

(i)	Physical Fitness Test (Compulsory):	10 Marks
(ii)	Skill of chosen Sport/Game:	15 Marks
(iii)	Viva & Record Book(File) :	05 Marks

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