



GOA BOARD OF SECONDARY AND HIGHER SECONDARY EDUCATION

(A Corporate Statutory Body Constituted by an Act of the State Legislature)

ALTO BETIM – GOA 403 521

Website: www.gbshse.gov.in

email: goaboard@dataone.in

Phone (0832) 2417593

CIRCULAR NO.15

GBSHSE/VOC/

Date: 19th May, 2011

To,
The Heads of all recognized
Higher Secondary Schools
Under the jurisdiction
of this Board

Sir/Madam,

The Board has granted approval for implementation of the following revised material for std.XII (Vocational) from the Academic year 2011-2012.

- 1) Revised distribution of portion for 1st Mid Term, 1st Terminal Examination for English (Communication Skills) Std.XII in view of implementation of grading is as below:-
“In Section B for paragraph writing clear cut specifications should be given for every paragraph. Each paragraph should include one topic sentence and 04 supporting ideas which should be written in about 75 words”.
- 2) The Board has also granted post-facto approval with regard to the Internal Assessment Scheme in General Foundation Course for Std. XII (Vocational) notified vide this Office letter No.GBSHSE/ACAD/BOS/10/6356 dated 07/06/2010 and Circular No.33 dated 3/9/2010 regarding Grading for public Examination of HSSC (Vocational), the Internal Assessment Scheme in General Foundation Course should be read as “Two assignments are compulsory as part of Unit I as per Circular No.20 dated 21/6/2005. Unit II would continue to be a case study/Project Report of an Entrepreneurial concern”.
- 3) Changes on the existing criteria for Assessment Assignment/Projects for Std. XII in view of grading for English (Communication Skills)
- 4) Subject wise guidelines for Project/Assignment for Std.XII in the following Vocational courses:-
 1. **Commercial Garment Designing and Making Course** (Subjects)
 - 1) Fashion Marketing and Unit Management
 - 2) Dyeing and Printing
 - 3) Apparel Designing and Decoration
 - 4) Clothing Construction
 2. **Catering and Restaurant Management Course** (Subjects)
 3. **Bakery and Confectionery Course** (Subjects)
 - 1) Food Production
 - 2) Food and Beverage Service
 - 3) Bakery (Common for both CRM & B & C Course)
 - 4) Hygiene (Common for both CRM & B & C Course)
 - 5) Confectionery
 - 6) Food Costing and Accounting

4. Horticulture Course (Subjects)

- 1) Floriculture and Landscaping
- 2) Commercial Crops
- 3) Chemistry (Vocational)
- 4) Biology (Vocational)

5) Revised Distribution of Topics and Marks for Mid Term, First Term and Final Examination for Std. XII in the following subjects:-

- 1) Office Procedure and Practice
- 2) Dyeing and Printing
- 3) Advanced Apparel Designing and Decoration
- 4) Commercial Clothing
- 5) Food Production
- 6) Food and Beverage Service
- 7) Bakery
- 8) Hygiene
- 9) Mathematics (Voc)
- 10) Data Base Management System
- 11) Industrial Electronics & Instrumentation

(Material enclosed)

The heads of Institutions are hereby requested to collect the material listed at Sr.No.1 to 5 from Board's office through their representative, with a letter of authority mentioning the courses offered by the Institution within one week of receipt of this circular.

The content of this Circular be brought to the notice of all concerned.

Yours faithfully,

(D. R. Bhagat)
Secretary

Encl: as above

Copy for information to:-

- 1) Director of Education, Panaji
- 2) Director of SIE Alto Betim
- 3) All the Asstt. Directors of Education(North/South/Central Zone)
- 4) All heads of the section
- 5) Guard file

Criteria for assessment assignment/Project for Class XII
Subject: English (Communication Skills)

Q.No	Description	Marks	Objective	Difficulty Level
2.1	<p>Descriptive Paragraph (Module A)</p> <ul style="list-style-type: none"> * Topic sentence with dominant impression * Support sentences to add to dominant impression should contain words conveying sensory images * Logical order e.g. top to down, inside to outside far to near * Grammatical accuracy/spelling (No marks if the written matter does not deal with the topic assigned) 	<p style="text-align: center;">01</p> <p style="text-align: center;">02</p> <p style="text-align: center;">01</p> <p style="text-align: center;">01</p> <hr style="width: 20%; margin: 0 auto;"/> <p style="text-align: center;">05</p>	<p>W3 & W1 Synthesis</p>	<p>Easy</p>
2.2	<p>Narration (Module B)</p> <ul style="list-style-type: none"> * Topic Sentence with controlling idea * Supporting sentences Events in time sequence * Grammatical accuracy/+ Spelling (No marks are to be given if the written matter does not relate to the topic assigned) 	<p style="text-align: center;">01</p> <p style="text-align: center;">02</p> <p style="text-align: center;">01</p> <p style="text-align: center;">01</p> <hr style="width: 20%; margin: 0 auto;"/> <p style="text-align: center;">05</p>	<p>W1 & W2 Synthesis</p>	<p>Easy</p>

Q.No	Description	Marks	Objective	Difficulty Level
2.3	Exposition (Module C) * Topic Sentence with controlling idea * Stage wise/ Stepwise writing e.g. stages in a process should be correctly sequenced * Coherence of ideas * Grammatical Accuracy/Spelling (No marks are to be given if the written matter does not relate to the topic assigned)	01 02 01 01 <hr/> 05	W1 & W2 W3 Synthesis	Average
2.4	Argument (Module D) * Topic sentence with controlling idea expressing viewpoint of the writer * Points for and against the proposition each in a full sentence * Concluding statement to sum up view that gives point/focus to events * Grammatical Accuracy/Spelling (No marks are to be given if the written matter does not relate to the topic assigned)	01 02 01 01 <hr/> 05	W1 & W2 W3 Synthesis	Difficult
2.5	Persuasion (Module E) * Topic Sentence with appealing/emotional/dramatic/Controlling idea * Support Sentence with facts/metaphors/Similes should anticipate objections * Appealing/Emotional concluding Sentence * Grammatical accuracy/Spelling (No marks are to be given if the written matter does not relate to the topic assigned)	01 02 01 01 <hr/> 05	W1 & W2 W3 Synthesis	Difficult

FORMAT

Internal Assessment Scheme (Revised)

Course: Commerce Based Course

SUBJECT: OFFICE PROCEDURE AND PRACTICE – STD: XII

Theory: 50 Marks

1) Distribution of portion for 1ST Mid Term Test and 1st Terminal Examination

Chapter No	Topic	Weightage For Board Exams	Weightage For 1st Mid Term Exams	Weightage For 1st Terminal Exams
Unit I	Office machines & Furniture	07	10	07
Unit II	Office Forms & Stationery	04	07	07
Unit III	Office Manuals (Upto contents of office Manuals)	04	03	07
Unit III	From – Types of Manuals			
Unit IV	Office Systems & Procedures	03	--	03
Unit V	Concept of Communication & Correspondence	07	--	08
Unit VI	Mechanical Systems	05	--	08
		30 marks	20 marks	40 marks

N.B However the entire portion with the existing topic-wise weightage will be tested for the Board Examination.

- 2) For the 1st Mid Term 25% of the syllabus should be completed and the Mid Term Test question paper should be of 20 marks, the same is to be converted out of 10 marks
- 3) For the 1st Term 60% of the syllabus should be completed. The 1st Term question paper should be of 40 marks

N.B. The teacher is free to suggest additional assignments/projects or even accept assignments/projects suggested by the student, related to syllabus of the subject. Suggested projects/assignments should be of a similar nature as proposed by the Board of Studies

FORMAT

Internal Assessment Scheme (Revised)

Course: Catering and Restaurant Management

SUBJECT: FOOD PRODUCTION – STD: XII

Theory: 50 Marks

1) Distribution of portion for 1ST Mid Term Test and 1st Terminal Examination

Sr. No	Topic	Weightage For Board Exams	Weightage For 1st Mid Term Exams	Weightage For 1st Terminal Exams
01	Meat	15	20	15
02	Fish	08		08
03	Vegetables	06		06
04	Larder	06		06
05	Pastas	05		05
06	Sandwiches	06		
07	Accompaniments and garnishes	04		
		50marks	20 marks	40 marks

N.B However the entire portion with the existing topic-wise weight age will be tested for the Board Examination.

- 2) For the 1st Mid Term 25% of the syllabus should be completed and the Mid Term Test question paper should be of 20 marks, the same is to be converted out of 10 marks
- 3) For the 1st Term 60% of the syllabus should be completed. The 1st Term question paper should be of 40 marks

N.B. The teacher is free to suggest additional assignments/projects or even accept assignments/projects suggested by the student, related to syllabus of the subject. Suggested projects/assignments should be of a similar nature as proposed by the Board of Studies

FORMAT

Internal Assessment Scheme (Revised)

Course: Catering and Restaurant Management

SUBJECT: FOOD AND BEVERAGE SERVICE – STD: XII

Theory: 50 Marks

1) Distribution of portion for 1ST Mid Term Test and 1st Terminal Examination

Sr. No	Topic	Weightage For Board Exams	Weightage For 1st Mid Term Exams	Weightage For 1st Terminal Exams
01	Variety of Menu	08	10	08
02	Horsd' ocuvres	04	04	04
03	Tobacco	06	06	06
04	Banquet & Function Orgnisation	07		10
05	Simple control System	10		12
06	Non Alcoholic Beverages	05		
07	Alcoholic Beverages	10		
		50marks	20 marks	40 marks

N.B However the entire portion with the existing topic-wise weight age will be tested for the Board Examination.

- 2) For the 1st Mid Term 25% of the syllabus should be completed and the Mid Term Test question paper should be of 20 marks, the same is to be converted out of 10 marks
- 3) For the 1st Term 60% of the syllabus should be completed. The 1st Term question paper should be of 40 marks

FORMAT

Internal Assessment Scheme (Revised)

Course: Catering and Restaurant Management

SUBJECT: Bakery – STD: XII

Theory: 50 Marks

1) Distribution of portion for 1ST Mid Term Test and 1st Terminal Examination

Sr. No	Topic	Weightage For Board Exams	Weightage For 1st Mid Term Exams	Weightage For 1st Terminal Exams
01	Bread Diseases	12	12	12
02	Staleness in bread	10	08	13
03	Bread Improvers	13		15
04	Bakery Unit Layout	15		
		50 marks	20 marks	40 marks

N.B However the entire portion with the existing topic-wise weight age will be tested for the Board Examination.

- 2) For the 1st Mid Term 25% of the syllabus should be completed and the Mid Term Test question paper should be of 20 marks, the same is to be converted out of 10 marks
- 3) For the 1st Term 60% of the syllabus should be completed. The 1st Term question paper should be of 40 marks

FORMAT

Internal Assessment Scheme (Revised)

Course: Catering and Restaurant Management

SUBJECT: Hygiene – STD: XII

Theory: 50 Marks

1) Distribution of portion for 1ST Mid Term Test and 1st Terminal Examination

Sr. No	Topic	Weightage For Board Exams	Weightage For 1st Mid Term Exams	Weightage For 1st Terminal Exams
01	Pestt Control	14	14	14
02	Storage of food	06	06	06
03	Garbage Disposal	08		08
04	Care of premises and Equipments	08		08
05	Municipal Health Laws	04		04
06	Dishwashing	06		
07	Digestion, Absorption and metabolism of food	04		
		50 marks	20 marks	40 marks

N.B However the entire portion with the existing topic-wise weight age will be tested for the Board Examination.

- 2) For the 1st Mid Term 25% of the syllabus should be completed and the Mid Term Test question paper should be of 20 marks, the same is to be converted out of 10 marks
- 3) For the 1st Term 60% of the syllabus should be completed. The 1st Term question paper should be of 40 marks

FORMAT

Internal Assessment Scheme (Revised)

Course: Commercial Garment Designing and Making

SUBJECT: Commercial Clothing – STD: XII

Theory: 50 Marks

1) Distribution of portion for 1ST Mid Term Test and 1st Terminal Examination

Question no and Chapter no.	Topic	Weightage For Board Exams	Weightage For 1 st Mid Term Exams	Weightage For 1 st Terminal Exams	
Q.01	1. >	Paper Patterns	05	08	05
	2. >	Information on Paper patterns	05	06	06
Q.02	3. >	Principles of pattern drafting and pattern alterations	05	06	06
	4. >	Preparation of fabric for cutting	05	--	06
Q.3	5. >	Laying the pattern on fabric cutting, marking and stay stitching	05	--	06
	6. >	Garment fitting and assembling	05	--	06
Q.04	7. >	Sleeves (making patterns for different types of sleeves, sleeveless styles with modified arm holes, styles with sleeve and bodice combined)	05	--	05
	8. >	Collars	05	--	--
	9. >	Skirts (only adaptations)	02	--	--
	10. >	Linings and Interfacings, Fabric selection, selecting fabric to suit the person dress styles and occasion, Precautions to be taken while working with different kinds of fabric	08	--	--
		50marks	20 marks	40 marks	

N.B 1) However the entire portion with the existing topic-wise weight age will be tested for the Board

Examination.

2) For the 1st Mid Term 30% of the syllabus should be completed and the Mid Term Test question paper should be of 20 marks, the same is to be converted out of 20 marks. The same to be converted out of 10 marks

3) For the 1st Term 70% of the syllabus should be completed. The 1st Term question paper should be of 40 marks

N.B. The teacher is free to suggest additional assignments/projects or even accept assignments/projects suggested by the student, related to syllabus of the subject. Suggested projects/assignments should be of a similar nature as proposed by the Board of Studies.

FORMAT

Internal Assessment Scheme(Revised)

Course: Commercial Garment Designing and Making

SUBJECT: Advanced Apparel Designing and Decoration – STD: XII

Theory: 50 Marks

1) Distribution of portion for 1ST Mid Term Test and 1st Terminal Examination

Chapter no.	Topic	Weightage For Board Exams	Weightage For 1st Mid Term Exams	Weightage For 1st Terminal Exams
1	Clothing consideration	10 marks	14 marks	12 marks
2.	Fashion	10 marks	06 marks	08 marks
3.	Fashion Glossary Selecting Fashion & Family Clothing	06 marks 04 marks	-- --	08 marks 04 marks
4.	Figures	10 marks	--	08 marks
5.	Costumes	10 marks	--	--
		50marks	20 marks	40 marks

N.B However the entire portion with the existing topic-wise weight age will be tested for the Board Examination.

- 2) For the 1st Mid Term 30% of the syllabus should be completed and the Mid Term Test question paper should be of 20 marks, the same is to be converted out of 20 marks. The same to be converted out of 10 marks
- 3) For the 1st Term 70% of the syllabus should be completed. The 1st Term question paper should be of 40 marks

N.B. The teacher is free to suggest additional assignments/projects or even accept assignments/projects suggested by the student, related to syllabus of the subject. Suggested projects/assignments should be of a similar nature as proposed by the Board of Studies.

FORMAT

Internal Assessment Scheme (Revised)

Course: Commercial Garment Designing and Making

SUBJECT: Dyeing and Printing – STD: XII

Theory: 50 Marks

1) Distribution of portion for 1ST Mid Term Test and 1st Terminal Examination

Chapter no.	Topic	Weightage For Board Exams	Weightage For 1 st Mid Term Exams	Weightage For 1 st Terminal Exams
1	Tie & dye	10 marks	10 marks	12 marks
2.	Batik	10 marks	10 marks	12 marks
3.	Co lour	04 marks	--	04 marks
4.	Block Printing	06 marks	--	06 marks
5.	Stencil Printing	10 marks	--	06 marks
6.	Screen Printing	06 marks	--	
7.	Other methods of Printing (Marble Printing, Discharge Printing & Fabric Painting)	04 marks	--	
		50marks	20 marks	40 marks

N.B However the entire portion with the existing topic-wise weight age will be tested for the Board Examination.

- 2) For the 1st Mid Term 30% of the syllabus should be completed and the Mid Term Test question paper should be of 20 marks, the same is to be converted out of 20 marks. The same to be converted out of 10 marks
- 3) For the 1st Term 70% of the syllabus should be completed. The 1st Term question paper should be of 40 marks

N.B. The teacher is free to suggest additional assignments/projects or even accept assignments/projects suggested by the student, related to syllabus of the subject. Suggested projects/assignments should be of a similar nature as proposed by the Board of Studies.

FORMAT

Internal Assessment Scheme (Revised)

Course: Computer Technique

SUBJECT: Mathematics (Voc) – STD: XII

Theory: 50 Marks

1) Distribution of portion for 1ST Mid Term Test and 1st Terminal Examination

Sr. No	Topic	Weightage For Board Exams	Weightage For 1 st Mid Term Exams	Weightage For 1 st Terminal Exams
4	Correlation and Regression	04 marks	08 marks	04 marks
10	Numerical Methods 1	06 marks	06 marks	06 marks
2	Linear programming problem	04 marks	04 marks	07 marks
3	Probability	02 marks	02 marks	02 marks
5	Limit and Continuity	03 marks		09 marks
6	Derivative	08 marks		12 marks
7	Integration	06 marks		
8	Definite Integral Numerical Methods 2	03 marks 03 marks		
9	Differential Equation	03 marks		
1	Matrices	08 marks		
		50 marks	20 marks	40 marks

N.B 1) However the entire portion with the existing topic-wise weight age will be tested for the Board Examination.

- 2) For the 1st Mid Term 25% of the syllabus should be completed and the Mid Term Test question paper should be of 20 marks, the same is to be converted out of 10 marks
- 3) For the 1st Term 60% of the syllabus should be completed. The 1st Term question paper should be of 40 marks

Chapter 10 of Numerical Methods is divided two parts. Numerical part 1 consisting of Difference tables and Language and Inverse Interpolation consisting of 6 marks.

Numerical part2 consist of Simpson's and Trapezoidal Rule with 3 marks included in the Chapter Definite Integral. Two More Chapters Linear Programming Problems and Probability were included in First Midterm Examinations.

FORMAT

Internal Assessment Scheme (Revised)

Course: Electronic Technology/MREEDA

SUBJECT: Industrial Electronic and Instrumentation – STD: XII

Theory: 50 Marks

1) Distribution of portion for 1ST Mid Term Test and 1st Terminal Examination

Sr. No	Topic	Weightage For Board Exams	Weightage For 1st Mid Term Exams	Weightage For 1st Terminal Exams
1.	Cathode Ray Oscilloscope	03 marks	05 marks	04 marks
2.	Photo Electric Cells	05 marks	08 marks	07 marks
3.	Display Devices	04 marks		05 marks
4.	Electronic Timers	06 marks	07 marks	08 marks
5.	Motors	07 marks		08 marks
6.	Transducers	07 marks		08 marks
	Total:	32 marks	20 marks	40 marks

N.B However the entire portion with the existing topic-wise weight age will be tested for the Board Examination.

- 2) For the 1st Mid Term 25% of the syllabus should be completed and the Mid Term Test question paper should be of 20 marks, the same is to be converted out of 10 marks
- 3) For the 1st Term 60% of the syllabus should be completed. The 1st Term question paper should be of 40 marks

N.B. The teacher is free to suggest additional assignments/projects or even accept assignments/projects suggested by the student, related to syllabus of the subject. Suggested projects/assignments should be of a similar nature as proposed by the Board of Studies.

GUIDELINES FOR PROJECT/ASSIGNMENTS STD: XII

Course: Commercial Garment Designing and Making

Existing syllabus

- 1) Fashion Marketing and Unit Management
- 2) Dyeing and Printing
- 3) Apparel Designing and Decoration
- 4) Clothing Construction

Total 4 Projects/Assignment for Std.XII should be given one for every unit for each student.
Maximum marks for each project/Assignments 5.

Distribution of marks

Innovative/ideas	2 marks
Color combination	1 ½ marks
Finish/Presentation	1 ½ marks

Report of the project should be written in the journal with minialine sketches/photographs of the same

Note

The project marks are part of year's practical work. Marks obtained in year round practical should be converted into grades.

GUIDELINES FOR PROJECT/ASSIGNMENTS STD: XII

Course: 1) Catering and Restaurant Management 2) Bakery and Confectionery

Subjects:-

- 1) Food Production
- 2) Food and Beverage Service
- 3) Bakery
- 4) Hygiene
- 5) Confectionery
- 6) Food Costing and Accounting

PROJECT/ASSIGNMENTS

The purpose of Project is to seek answers to problems through the application of scientific methodology which guarantees that the information is reliable and unbiased. This information is utilized to make conclusions and recommend solutions. Good research project/assignment depends on addressing key points based on a checklist approach. Some elementary factors need to be kept in mind while preparing a research and deciding the topic, these could be based on it relevance, feasibility, coverage, accuracy and research, objectivity and ethics.

Based on the above principles, the research project would be prepared by a student under guidance of a faculty member, familiar with the scientific research methodology.

The research would clearly spell out the objective, its findings the methodology adopted, a conclusion and recommendation.

The research project will then be presented to a panel of internal and external examiner through a report and viva voce.

<u>Marking Scheme</u>	
Project/Assignment	20 marks
Topic	03 marks
Meaning and objectives of Project/Assignment	03 marks
Relevance, feasibility, coverage, accuracy, Objectivity and ethics (reliable information)	08 marks
Conclusions and recommended solutions	03 marks
Viva	03 marks

Maximum marks 20

Only two evaluations (exams) to be held. One for the 1st term which include Unit I and Unit II, and IInd Term which include Unit III and Unit IV.

1st Term Practicals = 40 marks

2nd Term Practicals = 40 marks

Project/Assignments = 20 marks

Note: The project marks are part of academic year practical work. Marks obtained year round practical work should be converted into grades

GUIDELINES FOR PROJECT/ASSIGNMENTS STD: XII

Course: Horticulture

Subjects: 1) Floriculture and Landscaping 2) Commercial Crops

Total two Project/Assignments for Std.XII should be given, one in each term for every group of maximum 5 students

Maximum marks for each assignments project will be 10

While sending the practical marks to the Board, session wise, marks obtained in project/Assignment should be added to it.

Distribution of marks should be as follows:-

Session I – Maximum marks 50

Unit I-	20 marks
Unit II-	20 marks
Assignment/Project – 1	10 marks

Total:	50 marks

Similarly for Session II – Maximum marks 50

Unit III-	20 marks
Unit IV-	20 marks
Assignment/Project – 2	10 marks

Total:	50 marks

NOTE: The project marks 5 are part of year's practical work marks obtained in year round practical work should be converted into grades

GUIDELINES FOR PROJECT/ASSIGNMENTS STD: XII

Course: Horticulture

Subject: Chemistry (Vocational)

- To study the soil profile
- To study the different types of Rocks (e.g. Igneous Rock, Sedimentary Rocks, metamorphic rock)
- To study different types of soil samples
- Give brief account on manure and fertilizers
- Give brief account on essential and non essential elements (Their functions and deficiencies symptoms).
- Structures of different functional groups
- Study some of the JUPAC and common name. (e.g. Alkanes, Alkenes, Alkynes, Alcohols, Phenol, Ether, Amide, Amines, carboxylic acid, Aldehydes and ketone)
-

Projects

- 1) Study of presence of insecticides and pesticides in fruits and vegetables
 - (a) To study the presence of insecticides/pesticides (nitrogen containing) in various fruits and vegetables
- 2) To study the methods of purification of water
- 3) To study the presence of ions in drinking water (Chloride, fluoride, Iron)
- 4) To analyse the acid content of different brands of tea
- 5) To detect the presence of carbohydrates, fats and proteins in the following food stuffs:-
(Grapes, potatoes, rice, butter, biscuits, milk, groundnut, boiled egg)
- 6) 1) Qualitative Tests of Carbohydrates

- (a) To study some simple tests of carbohydrates
- 2) Qualitative tests for oils and fats
- 3) Qualitative tests of proteins
- 7) To compare the rates of fermentation of the following fruit or vegetable juices
 - i) Apple juice ii) Orange juice iii) carrot juice
- 8) Analysis of vegetables and fruit juices

Biology (Vocational) List of Project

- 1) Collection of different diversity of orchids and their plantation in school garden
- 2) Preparation of cactus garden
- 3) Collection of preservation of Aquatic plants
- 4) Collection and preservation of fresh water fishes
- 5) Vermicomposting
- 6) Hydroponics
- 7) Aqua culturing (Fish, mussels, snails etc)
- 8) Pond water analysis to study the presence of life.(Aquatic alga, ascitotoria, amoeba, Euglena & paramecium)
- 9) Mushroom cultivation
- 10) Study of different types Algae
- 11) Study of different types of parasitic plants
- 12) Study of different types of climbers
- 13) Anthurium cultivation
- 14) Extraction of Bio-fuel from Ratnanjyoti (Jatropha curcas)
- 15) Study of Diversity of Nocturnal Insects
- 16) Study of diversity of spiders

Criteria for the evaluation

- a) Content/Relevance to the syllabus
- b) Matter should be accurate
- c) Matter should be hand written
- d) Neatness and presentation

List of Assignments

- 1) Collection, drying & preparation of herbarium sheets
- 2) Collection of insect representing orders: Lepidoptera, coleaptera, Hemiptera & Ephimenroptera
- 3) Collection of different varieties of cactus & succulents
- 4) Collection of different varieties of Medicinal plant
- 5) Preparation of flow charts to explain all the Biological cycles
- 6) Preparation of flow charts to explain the different pathways' in photosynthesis (4, (3, cyclic-Monocyclic pathways)
- 7) Preparation of Model of chloroplast
- 8) Collection of different types of sea shells

**List of Project/Assignment
(Existing/Revised Syllabus)
STD: XII Horticulture
Subject: Floriculture and Landscaping**

- 1) Floriculture in Goa
- 2) Success stories in Floriculture in Goa
- 3) Success stories in Landscaping in Goa
- 4) Gardens in Goa
- 5) Different landscape Designs
- 6) Bonsai
- 7) Interior scaping
- 8) Identification of different avenue trees
- 9) Identification & collection of different shrub
- 10) Identification & collection of different Climber & Creepers
- 11) Identification & Collection of different Commercial flowers of Goa
- 12) Components of Garden
- 13) Lawns
- 14) Flower arrangement
- 15) Commercial cultivation of flower in Poly house unit
- 16) Post harvest treatment unit for commercial flower
- 17) Bank proposal for commercial flowers (any one flower)
- 18) Market survey for commercial flower
- 19) Hitch cultivation of commercial flowers (any one flower)
- 20) Field trials of commercial flowers (any one flower)

NOTE: Any one project may be allotted to each student or to group of maximum 5 students

GUIDELINES FOR PROJECT/ASSIGNMENTS STD: XII

Subject: Commercial Crops

- 1) Raising of seedlings of Areca nut (Nursing practices)
- 2) Raising of seedlings of coconut (Nursery practices)
- 3) Raising of cashew root stocks and grafting
- 4) Raising of Mango root stocks and grafting
- 5) Rapid multiplication in black pepper
- 6) Propagation in black pepper
- 7) Small scale cultivation of ginger
- 8) Small scale cultivation of turmeric
- 9) Drying of local fruits & vegetables and their preservation
- 10) Processing of different fruits and vegetables
- 11) Study of some local minor fruit & their importance
- 12) Visit to local fruit processing units to study the preservation and processing.