

SYLLABI

of

VOCATIONAL STREAM

for

**11th Class Examination
(Senior Secondary Examination Part-I)**

2009-2010

**Punjab School Education Board
Sahibzada Ajit Singh Nagar (Mohali)-160062**

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A. SCHEME OF STUDIES

11th CLASS EXAMINATION (SENIOR SECONDARY CERTIFICATE EXAMINATION-I) (VOCATIONAL STREAM) ADMISSION YEAR 2009

Subjects for Studies

(a) **Compulsory Subjects : Every candidate shall offer the following subjects :**

| Sr. No. | Subject | Marks for | | Duration of Papers | | Distribution of Period per week | | Total |
|---------|--|-----------|-------|--------------------|-----------|---------------------------------|--------|-------|
| | | Theo. | Prct. | Theo. | Prct. | Theo. | Prct.l | |
| 1. | Geneal English | 75 | — | 3 hrs | — | 5 | — | 5 |
| 2. | General Punjabi Or Punjab History & Culture | 75 | — | 3 hrs | — | 5 | — | 5 |
| 3. | Environmental Education | 35 | 15 | 2 hrs | 1½ hrs | 1 | 1 | 2 |
| 4. | Computer Science | 50 | 50 | 3 hrs | 3 hrs | 1 | 1 | 2 |
| 5. | General Foundation Course | 50 | — | 3 hrs | — | 4 | — | 4 |

For General Foundation Course (G.F.C) :

| MARKS | GRADING |
|-------------------------------|---------|
| 75% & above | 'A' |
| 60% & above but less than 75% | 'B' |
| 50% & above but less than 60% | 'C' |
| 45% & above but less than 50% | 'D' |
| 33% & above but less than 45% | 'E' |
| 15% & above but less than 33% | 'F' |
| Less than 15% | 'G' |

Note : To be declared 'Pass' a student has to clear General Foundation Course minimum with Grade 'E'.

(b) Elective Subjects :

Every candidate shall offer any one trade relating to any one of the following Groups. (Each trade has three elective subjects of 80 marks each and on-the-job training of 60 marks).

- (i) Agriculture Group
- (ii) Business and Commerce Group
- (iii) Home Science Group
- (iv) Engineering & Technology Group
- (v) Humanities and Others Group

Broad distribution of marks and periods per week.

| | | | Marks | | | Periods | | | |
|------------------|---|------|-------|-------|-------|---------|-----|-------|-------|
| | | | Th. | Prac. | Total | O.J.T. | Th. | Prac. | Total |
| Elective Subject | - | I* | 30 | 50 | 80 | } 60 | 2 | 8 | 10 |
| Elective Subject | - | II* | 30 | 50 | 80 | | 2 | 8 | 10 |
| Elective Subject | - | III* | 30 | 50 | 80 | | 2 | 8 | 10 |

- Note :**
1. Three weeks for on-the-job training (O.J.T), every year as per instructions issued by the Board from time to time.
 2. *In any subject if there is only one paper either of theory or of practical, the total marks for that subject will be 80 and the periods allotted will be 10.
 3. Punjab School Education Board Regulations for Senior Secondary Examination are also applicable to vocational stream.
 4. Six periods are for library studies / extra curricular activities / optional/ tutorials / assignments
 5. The Board reserves the right to amend syllabus courses and / or scheme of studies as and when it considers necessary.

B. GENERAL FOUNDATION COURSE

Time : 3 hrs.

Structure of question paper

M. Marks : 50

THEORY

In all eight question will be set from the prescribed syllabus. Student will attempt any five questions from these. Each question will carry 10 marks. A question may have two or more parts. The questions will be evenly distributed from the syllabus.

SYLLABUS

PART-A

Semester-I

1. ENTREPRENEURSHIP DEVELOPMENT

a. Entrepreneurship Career Orientation

Alternative career options under vocational stream, wage employment, self employment etc. : Dynamics of entrepreneurship; Importance and Relevance of entrepreneurship career; characteristics, role & reward of an entrepreneur.

b. Entrepreneurial Values

Entrepreneurial value orientation through activities; Innovativeness; Independence; improved performance; Respect for work.

c. Entrepreneurial Attitude

Concept & significance of different entrepreneurial Attitudes; use imagination/intuition; take moderate risk; enjoy freedom of expression and action; look for economic opportunities; find satisfaction from successful completion of tasks; Believe that they can change the environment; Take initiative; Analyze situation; & plan action; Involve in work, activity.

d. Behavioural Competencies

Innovative & risk taking; tolerance to ambiguities; problem solving; persistence; standard/quality of work performance; information seeking; systematic planning; activities.

e. Entrepreneurial Motivation

Data collection about self; introduction to need system & motivational pattern of entrepreneur; conceptualizing entrepreneurial skill & behaviour; Risk taking behaviour; Hope for success & fear of failure; learning from feed back; Understanding motive strength; achievement imageries; intensity of motives; achievement language etc; Personal efficiency-individual life goal, its linkages to entrepreneurship; Locus of control; Conceptualizing entrepreneurial values; Achievement planning; Influence competence; Entrepreneurial goal setting; Sharing entrepreneurial goal, devising clarity in terms of enterprise building. Coping with difficulties. Reinforcing help seeking ability; Creativity; Understanding & internalizing coping abilities.

Semester-II

Part-B

2. ENTERPRISE LAUNCHING COMPETENCIES

a. Project Identification

Definitions of Large Scale Industry (LSI), Medium Scale Industry (MSI), Small Scale Industry (SSI), tiny Sector, cottage and Rural Industries; Classification of Projects- Manufacturing, Service, Trading, Consumer Goods, Capital Goods & Ancillary Goods (Characteristics & Scope of activities of each type), Central and the State Government Policies, Programmes and Incentives with regard to SSI, Tiny sector and new entrepreneurs; Steps in setting up a business enterprise; Information about the various institutions providing help to the existing & potential entrepreneurs; District Industries Centre, Directorate of Industries, Technical Consultancy Organisation; Punjab Financial Corporation, Punjab Small Industries Development Corporation, National Small Industries Corporation, Punjab Small Industries and Export Corporation, Small Industries. Service Institute, Commercial Banks, Co-operative Banks, Punjab State Khadi & Village Industries Board etc., Reservation of Products for exclusive manufacture in SSI Sector.

(The product list should be circulated to the students).

b. Project Selection

Project /Projects Identification, generating ideas for selection of a project,; procedure for short listing the ideas generated; factors to be considered for final selection of the product-Demand, competitors, availability of factors of product-Govt. policy, profit margin etc.

c. Project Formulation & Report

Need for Project Report; Elements (steps) of a Project Report; Determining the Project size keeping in view the manageability, investment possibilities, Production and market aspects; Selection of plant and machinery; Determining Labour and raw material requirements in the form of the information required in the project report (simple project report); Estimating the Project cost, production cost concepts, working capital requirements, profit ratios and the concept of inventory control; Break Even Analysis & profitability rates, capacity utilization indicator, sales revenue indicator; Time scheduling, Project Monitoring and review Technique (Network analysis), Study of typical project report, namely of consumer goods, capital goods, ancillary goods and services, the requirements of the banks and financial institutions, project appraisal-technical, economic, financial,

commercial and managerial aspects; Practice Session (Students should practice on the preparation of the project report on the similar projects).

(B) COMPULSORY SUBJECTS

1. GENERAL ENGLISH

Time : 3 hours

One Paper

Max. Marks : 75

Syllabus

A. I AM THE PEOPLE *(for detailed study)* **25**

- I. (i) Comprehension passage
- (ii) Summary of a poem
- (iii) One essay type question
- (iii) Translation from English into Vernacular.

Note : A special question in lieu of translation for foreign students:

Explain the contents of a given prose passage in simple English from *I Am The People*.

B. STORIES, PLAYS & TALES OF ADVENTURE *(Text for non-detailed study)* **20**

- II. (a) Short-answer type questions on contents of lessons 12
- (b) Character-sketch, episode, incident, theme of, any one lesson 8

C. USAGE & COMPOSITION **30**

1. USAGE **12**

- (a) Tenses
- (b) Use of Verbs
- (c) Voice (Simple)
- (d) Reported Speech (Simple)
- (e) Simple idioms
- (f) Common errors

II. COMPOSITION **18**

- (i) Simple/descriptive/narrative essay
- Or
- Paragraph-writing
- (ii) Letter-writing (Personal)

STRUCTURE OF QUESTION PAPER

Time : 3 hours

One Paper

Max. Marks : 75

PART-A

Marks : 45

Note : All the questions of Part-A and B shall be based on the exercises of the text books prescribed by the Board.

(A) I AM THE PEOPLE (for detailed study) **25**

- a) A passage from the above mentioned textbook to test comprehension through the following techniques : 10
- (i) Who spoke/write these words to whom/about whom name of the chapter and author (from the passage).
 - (ii) Short-answer type questions.
 - (iii) Matching exercise
 - (iv) Formation of words using prefix
 - (v) Fill in the blanks
 - (vi) Meaning of difficult words/phrases in simple English.
- (b) One essay type question with internal choice (about 100 words). 5
- (c) Summary or central idea of a poem (*I Am The People*) 5
- (d) Translation from English into Vernacular (Only one running passage consisting of not more than seven sentences (from *I Am The People*).

Note : A special question for foreign students in lieu of translation : 5
 Explain the contents of a given prose passage in simple English from *I Am The People*'.

B. Stories, Plays and Tales of Adventure (Text for non-detailed study) 20

- (a) Short-answer type questions from different exercises given at the end of the lessons. 12
 (Any six out of eight questions)
- (b) One essay type question on character sketch/episode/incident/theme of any one lesson in about 100 words. 8

PART-B

MARKS : 30

C. Usage and Composition 12

- (i) Usage
- (a) Tenses
- (b) Use of Verbs
- (c) Voice (Simple)
- (d) Narration (simple)
- (Isolated sentences of different types)
- (e) Simple idioms

Or

- (f) Common errors

Note : Question on the above mentioned items will be based on the language material contained in the prescribed textbooks.

COMPOSITION**18**

One out of three simple/descriptive/narrative essays in about 250 words. 10

Or

Develop a paragraph (out of two) with the help of given outline/situation in about 150 words.

Letter (simple and personal only) with internal choice. 8

Books Prescribed :

1. I Am The People - Published by the Punjab School Education Board.
2. Stories, Plays and Tales of Adventure - Published by the Punjab School Education Board.

2. ਲਾਜ਼ਮੀ ਪੰਜਾਬੀ**(ੳ) ਮਨੋਰਥ****ਆਮ :**

1. ਵਿਦਿਆਰਥੀ ਦੀ ਭਾਸ਼ਾ-ਸਮਰੱਥਾ ਵਿੱਚ ਵਾਧਾ ਕਰਨਾ।
2. ਉਸ ਵਿੱਚ ਸੱਭਿਆਚਾਰਿਕ ਚੇਤਨਤਾ ਜਗਾਉਣਾ।

ਵਿਸ਼ੇਸ਼ :

1. ਵਿਦਿਆਰਥੀ ਨੂੰ ਪੰਜਾਬ ਦੇ ਲੋਕ-ਸਾਹਿਤ, ਲੋਕ-ਗੀਤਾਂ ਤੇ ਲੋਕ-ਕਥਾਵਾਂ ਤੋਂ ਜਾਣੂ ਕਰਵਾਉਣਾ।
2. ਉਸ ਦੇ ਨਿਤਾ-ਪ੍ਰਤੀ ਜੀਵਨ ਵਿੱਚ ਕੰਮ ਆਉਣ ਵਾਲੀ ਪੰਜਾਬੀ ਦੀ ਸਮਰੱਥਾ ਵਧਾਉਣਾ।
3. ਉਸ ਦੀ ਸੰਚਾਰ-ਯੋਗਤਾ ਵਿੱਚ ਵਾਧਾ ਕਰਨਾ।

(ਅ) ਪਾਠ-ਕ੍ਰਮ

1. ਪੰਜਾਬੀ ਲੋਕ-ਸਾਹਿਤ
2. ਅੰਗਰੇਜ਼ੀ ਤੋਂ ਪੰਜਾਬੀ ਵਿੱਚ ਅਨੁਵਾਦ
3. ਅਖ਼ਬਾਰ ਦੇ ਸੰਪਾਦਕ ਨੂੰ ਪੱਤਰ
4. ਇਸ਼ਤਿਹਾਰ/ਸੱਦਾ ਪੱਤਰ
5. ਪੈਰਾ ਰਚਨਾ
6. ਮੁਹਾਵਰੇ

(ੳ) ਪਾਠ-ਕ੍ਰਮ ਦਾ ਵੇਰਵਾ**ਕੁੱਲ ਅੰਕ : 75****1. ਪੰਜਾਬੀ ਲੋਕ-ਸਾਹਿਤ****20(10 + 10)****(i) ਲੋਕ-ਗੀਤ**

ਸੁਹਾਗਾ, ਘੋੜੀਆਂ, ਸਿੱਠਣੀਆਂ, ਟੱਪਾ, ਬੋਲੀਆਂ, ਢੋਲਾ, ਮਾਹੀਆ।

(ii) ਲੋਕ ਕਥਾਵਾਂ

1. ਮਿੱਥ ਕਥਾਵਾਂ

ਪ੍ਰਹਿਲਾਦ ਭਗਤ, ਨਲ ਅਤੇ ਦਮਿਅੰਤੀ

2. ਪਰੀ ਕਥਾਵਾਂ ਤੇ ਨੀਤੀ ਕਥਾਵਾਂ :
ਨੀਲ ਕਮਲ, ਸਬਜ਼ ਪਰੀ, ਲਾਲਸਾ ਦੀ ਚੱਕੀ
 3. ਦੰਦ ਕਥਾਵਾਂ :
ਪੂਰਨ ਭਗਤ, ਰਾਜਾ ਰਸਾਲੂ, ਦੁੱਲ ਭੱਟੀ
 4. ਪ੍ਰੀਤ ਕਥਾਵਾਂ :
ਹੀਰ ਰਾਂਝਾ, ਮਿਰਜ਼ਾ ਸਾਹਿਬਾਂ
2. ਅੰਗਰੇਜ਼ੀ ਤੋਂ ਪੰਜਾਬੀ ਵਿੱਚ ਅਨੁਵਾਦ :
- (i) ਤਕਨੀਕੀ ਸ਼ਬਦਾਵਲੀ : ਦਫ਼ਤਰੀ ਸ਼ਬਦਾਵਲੀ, ਵੱਖ-ਵੱਖ ਵਿਸ਼ਿਆਂ ਨਾਲ ਸੰਬੰਧਿਤ ਸ਼ਬਦਾਵਲੀ।
 - (ii) ਬੈਂਕ, ਰੇਲਵੇ, ਡਾਕ ਤੇ ਬੀਮਾ ਸੇਵਾਵਾਂ ਨਾਲ ਸੰਬੰਧਿਤ ਵਾਕ। 10(4-6)
3. ਅਖ਼ਬਾਰ ਦੇ ਸੰਪਾਦਕ ਨੂੰ ਪੱਤਰ (ਕਿਸੇ ਮਸਲੇ/ਘਟਨਾ ਬਾਰੇ) 10
 4. ਸੱਦਾ ਪੱਤਰ/ਇਸ਼ਤਿਹਾਰ 10
ਖੁਸ਼ੀ, ਗ਼ਮੀ ਜਾਂ ਕਿਸੇ ਹੋਰ ਸਮਾਗਮ ਦਾ ਸੱਦਾ-ਪੱਤਰ, ਅਖ਼ਬਾਰਾਂ ਨੂੰ ਦੇਣ ਲਈ ਨਿਜੀ ਇਸ਼ਤਿਹਾਰ (ਪ੍ਰਾਈਵੇਟ ਅਤੇ ਸਰਕਾਰੀ ਸੰਸਥਾਵਾਂ ਦੇ ਇਸ਼ਤਿਹਾਰ ਨਹੀਂ ਹੋਣਗੇ।)
 5. ਪੈਰਾ ਰਚਨਾ : (ਲਗ-ਪਗ 150 ਸ਼ਬਦਾਂ ਦੀ) 15
 6. ਮੁਹਾਵਰੇ (ਲਗ-ਪਗ 100 ਮੁਹਾਵਰੇ) 10
- ਪਾਠ-ਪੁਸਤਕ :

ਲਾਜ਼ਮੀ ਪੰਜਾਬੀ-11 (ਗਿਆਰ੍ਹਵੀਂ ਸ਼੍ਰੇਣੀ ਲਈ) ਪੰਜਾਬ ਸਕੂਲ ਸਿੱਖਿਆ ਬੋਰਡ

ਪੇਪਰ ਸੈਂਟਰ ਲਈ ਆਮ ਹਿਦਾਇਤਾਂ

1. ਪ੍ਰਸ਼ਨ-ਪੱਤਰ ਤਿਆਰ ਕਰਨ ਤੋਂ ਪਹਿਲਾਂ ਪਾਠ-ਕ੍ਰਮ ਅਤੇ ਪਾਠ-ਪੁਸਤਕਾਂ ਦੇ ਨਵੀਨਤਮ ਐਡੀਸ਼ਨਾਂ ਨੂੰ ਧਿਆਨ ਨਾਲ ਵਾਚਣਾ ਜ਼ਰੂਰੀ ਹੈ। ਕਿਸੇ ਵੀ ਤਰ੍ਹਾਂ ਪਾਠ-ਕ੍ਰਮ ਦੀ ਉਲੰਘਣਾ ਨਾ ਕੀਤੀ ਜਾਵੇ। ਵਿਸ਼ੇਸ਼ ਹਿਦਾਇਤਾਂ ਅਤੇ ਨਮੂਨੇ ਦਾ ਪ੍ਰਸ਼ਨ-ਪੱਤਰ ਵੀ ਜ਼ਰੂਰ ਵੇਖ ਲਿਆ ਜਾਵੇ।
2. ਪ੍ਰਸ਼ਨ-ਪੱਤਰ ਵਿੱਚ ਤਕਨੀਕੀ ਸ਼ਬਦਾਵਲੀ ਪਾਠ-ਕ੍ਰਮ ਵਾਲੀ ਹੀ ਹੋਵੇ।
3. ਪ੍ਰਸ਼ਨ-ਪੱਤਰ ਵਿੱਚ ਸ਼ਬਦ-ਜੋੜ ਪਾਠ ਪੁਸਤਕਾਂ ਵਾਲੇ ਹੀ ਰੱਖੇ ਜਾਣ।
4. ਹਰ ਪ੍ਰਸ਼ਨ ਦਾ ਕੇਵਲ ਇੱਕ ਨਿਸਚਿਤ ਉੱਤਰ ਬਣਦਾ ਹੋਵੇ।
5. ਪ੍ਰਸ਼ਨਾਂ ਦੀ ਭਾਸ਼ਾ ਸਰਲ ਤੇ ਸਪਸ਼ਟ ਹੋਵੇ।
6. ਜਿਹੜੇ ਪ੍ਰਸ਼ਨ ਚੋਣ ਲਈ ਪਾਏ ਜਾਣ ਉਹ ਉੱਤਰ ਦੇ ਪੱਧਰ, ਕਰਨਾਈ ਅਤੇ ਆਕਾਰ ਦੇ ਪੱਖੋਂ ਇੱਕ ਦੂਜੇ ਦੇ ਬਰਾਬਰ ਹੋਣ।
7. ਪ੍ਰਸ਼ਨ-ਪੱਤਰ ਵਿੱਚ ਦਿੱਤੀਆਂ ਹਿਦਾਇਤਾਂ ਪ੍ਰਸ਼ਨਾਂ ਨੂੰ ਸਪਸ਼ਟ ਕਰਨ, ਉੱਤਰਾਂ ਨੂੰ ਸੇਧ ਦੇਣ ਅਤੇ ਸੀਮਾ-ਬਧ ਕਰਨ ਲਈ ਹੀ ਦਿੱਤੀਆਂ ਜਾਣ। ਇਹਨਾਂ ਰਾਹੀਂ ਪਾਠ-ਕ੍ਰਮ ਤੋਂ ਬਾਹਰਲੀਆਂ ਗੱਲਾਂ ਜਿਨ੍ਹਾਂ ਲਈ ਅੰਕ ਨਹੀਂ ਰੱਖੇ ਗਏ, ਨਾ ਛੋਹੀਆਂ ਜਾਣ।

8. ਕਿਸੇ ਪ੍ਰਸ਼ਨ ਦੇ ਨਾਲ ਕੇਵਲ ਉਹ ਹਿਦਾਇਤ ਦਿੱਤੀ ਜਾਵੇ ਜੋ ਕੇਵਲ ਉਸ ਵਿਸ਼ੇਸ਼ ਪ੍ਰਸ਼ਨ ਬਾਰੇ ਹੈ। ਜੇ ਉਹ ਹੋਰ ਪ੍ਰਸ਼ਨਾਂ ਤੇ ਵੀ ਲਾਗੂ ਹੁੰਦੀ ਹੈ ਜਾਂ ਹੋ ਸਕਦੀ ਹੈ ਤਾਂ ਉਸ ਨੂੰ ਆਮ ਹਿਦਾਇਤਾਂ ਵਿੱਚ ਸ਼ਾਮਲ ਕੀਤਾ ਜਾਵੇ।
9. ਜਿਨ੍ਹਾਂ ਪ੍ਰਸ਼ਨਾਂ ਵਿੱਚ ਅੰਕ-ਵੰਡ ਕਰਨੀ ਸੰਭਵ ਹੈ ਤੇ ਲੋੜੀਂਦੀ ਵੀ ਹੈ ਉੱਥੇ ਇਹ ਵਿਸ਼ੇਸ਼ ਹਿਦਾਇਤਾਂ ਦੀ ਲੋਅ ਵਿੱਚ ਪ੍ਰਸ਼ਨ-ਪੱਤਰ ਵਿੱਚ ਹੀ ਕਰ ਦਿੱਤੀ ਜਾਵੇ।
10. ਵਿਸ਼ੇਸ਼ ਹਿਦਾਇਤਾਂ ਵਿੱਚ ਜਿਹੜੇ ਪ੍ਰਸ਼ਨ ਦਾ ਉੱਤਰ ਸੀਮਾ-ਬੱਧ ਕੀਤਾ ਗਿਆ ਹੈ, ਉਸ ਬਾਰੇ ਪ੍ਰਸ਼ਨ-ਪੱਤਰ ਵਿੱਚ ਹਿਦਾਇਤ ਕਰ ਦਿੱਤੀ ਜਾਵੇ।

ਅਧਿਆਪਕਾਂ, ਵਿਦਿਆਰਥੀਆਂ, ਪੇਪਰ ਸੈਂਟਰਾਂ ਅਤੇ ਪਰੀਖਿਅਕਾਂ ਲਈ ਵਿਸ਼ੇਸ਼ ਹਿਦਾਇਤਾਂ :

ਸਮਾਂ : 3 ਘੰਟੇ

ਕੁੱਲ ਅੰਕ : 75

- ਪ੍ਰਸ਼ਨ ਨੰ: 1 **ਲਾਜ਼ਮੀ ਪੰਜਾਬੀ**- 11 ਪਾਠ-ਪੁਸਤਕ ਵਿੱਚ ਲੋਕ-ਗੀਤਾਂ ਬਾਰੇ ਦਿੱਤੇ ਪਾਠ-ਅਭਿਆਸਾਂ ਦੇ ਪ੍ਰਸ਼ਨਾਂ ਵਿੱਚੋਂ ਕੋਈ ਚਾਰ ਪ੍ਰਸ਼ਨ ਦੇ ਕੇ ਦੋ ਦਾ ਉੱਤਰ ਲਿਖਣ ਲਈ ਕਿਹਾ ਜਾਵੇਗਾ। (5 +5=10)ਅੰਕ
- ਪ੍ਰਸ਼ਨ ਨੰ: 2 **ਲਾਜ਼ਮੀ ਪੰਜਾਬੀ**-11 ਵਿੱਚ ਦਿੱਤੀਆਂ ਵੱਖ-ਵੱਖ ਵੰਨਗੀਆਂ ਦੀਆਂ ਕਥਾਵਾਂ ਵਿੱਚੋਂ ਕੋਈ ਦੋ ਕਥਾਵਾਂ ਦੇ ਨਾ ਦੇ ਕੇ ਕਿਸੇ ਇੱਕ ਕਥਾ ਨੂੰ ਆਪਣੇ ਸ਼ਬਦਾਂ ਵਿੱਚ ਲਿਖਣ ਲਈ ਕਿਹਾ ਜਾਵੇਗਾ। 10 ਅੰਕ
- ਪ੍ਰਸ਼ਨ ਨੰ: 3 **ਲਾਜ਼ਮੀ ਪੰਜਾਬੀ**- 11 ਵਿੱਚ ਦਿੱਤੀ ਤਕਨੀਕੀ ਸ਼ਬਦਾਵਲੀ ਵਿੱਚੋਂ ਅੰਗਰੇਜ਼ੀ ਦੇ ਅੱਠ ਸ਼ਬਦ ਦੇ ਕੇ ਕੋਈ ਚਾਰ ਸ਼ਬਦਾਂ ਦਾ ਪੰਜਾਬੀ ਰੂਪ ਲਿਖਣ ਲਈ ਕਿਹਾ ਜਾਵੇਗਾ। ਅੱਧੇ ਸ਼ਬਦ ਦਫ਼ਤਰੀ ਸ਼ਬਦਾਵਲੀ ਵਿੱਚੋਂ ਅਤੇ ਅੱਧੇ ਵੱਖ-ਵੱਖ ਵਿਸ਼ਿਆਂ ਨਾਲ ਸੰਬੰਧਿਤ ਸ਼ਬਦਾਵਲੀ ਵਿੱਚੋਂ ਹੋਣਗੇ। 4 ਅੰਕ
- ਪ੍ਰਸ਼ਨ ਨੰ: 4 **ਲਾਜ਼ਮੀ ਪੰਜਾਬੀ**- 11 ਵਿੱਚੋਂ ਬੈਂਕ, ਰੇਲਵੇ, ਡਾਕ ਤੇ ਬੀਮਾ ਸੇਵਾਵਾਂ ਨਾਲ ਸੰਬੰਧਿਤ ਅੰਗਰੇਜ਼ੀ ਦੇ ਛੇ ਵਾਕ ਦੇ ਕੇ ਕੋਈ ਤਿੰਨ ਵਾਕਾਂ ਦਾ ਪੰਜਾਬੀ ਰੂਪ ਲਿਖਣ ਲਈ ਕਿਹਾ ਜਾਵੇਗਾ। 6 ਅੰਕ
- ਪ੍ਰਸ਼ਨ ਨੰ: 5 ਕਿਸੇ ਮਸਲੇ/ਘਟਨਾ ਬਾਰੇ ਕਿਸੇ ਅਖ਼ਬਾਰ ਦੇ ਸੰਪਾਦਕ ਨੂੰ ਪੱਤਰ ਲਿਖਣ ਲਈ ਦੋ ਵਿਸ਼ੇ ਦੇ ਕੇ ਕਿਸੇ ਇੱਕ ਬਾਰੇ ਲਿਖਣ ਲਈ ਕਿਹਾ ਜਾਵੇਗਾ। (2+6+2=10) ਅੰਕ
- ਪ੍ਰਸ਼ਨ ਨੰ: 6 **ਲਾਜ਼ਮੀ ਪੰਜਾਬੀ**- 11 ਵਿੱਚ ਦਿੱਤੀਆਂ ਵੰਨਗੀਆਂ ਅਨੁਸਾਰ ਇੱਕ ਇਸ਼ਤਿਹਾਰ ਜਾਂ ਸਦਾ-ਪੱਤਰ ਲਿਖਣ ਲਈ ਕਿਹਾ ਜਾਵੇਗਾ। ਦੋ ਵਿਸ਼ੇ ਦਿੱਤੇ ਜਾਣਗੇ, ਇਹਨਾਂ ਵਿੱਚੋਂ ਕਿਸੇ ਇੱਕ ਬਾਰੇ ਲਿਖਣਾ ਹੋਵੇਗਾ। 10 ਅੰਕ
- ਪ੍ਰਸ਼ਨ ਨੰ: 7 ਕੋਈ ਤਿੰਨ ਵਿਸ਼ੇ ਦੇ ਕੇ ਕਿਸੇ ਇੱਕ ਬਾਰੇ ਲਗ-ਪਗ 150 ਸ਼ਬਦਾਂ ਦੀ ਪੈਰਾ ਰਚਨਾ ਕਰਨ ਲਈ ਕਿਹਾ ਜਾਵੇਗਾ। 15 ਅੰਕ
- ਪ੍ਰਸ਼ਨ ਨੰ: 8 **ਲਾਜ਼ਮੀ ਪੰਜਾਬੀ**- 11 ਵਿੱਚੋਂ ਕੋਈ ਅੱਠ ਮੁਹਾਵਰੇ ਦੇ ਕੇ ਉਹਨਾਂ ਵਿੱਚੋਂ ਪੰਜ ਨੂੰ ਵਾਕਾਂ ਵਿੱਚ ਵਰਤਣ ਲਈ ਕਿਹਾ ਜਾਵੇਗਾ। 10 ਅੰਕ

Paper-I

3. PUNJAB HISTORY & CULTURE

Time : 3 hours

One Paper

Max. Marks : 75

Structure of Question Paper

1. There will be eighteen questions in all. All the question will be compulsory.
2. Questions from 1 to 10 will carry 2 marks each. Answer of each question should be in about 20-25 words.
3. Questions from 11 to 15 will carry 5 marks each. Answer of each question should be in about 75-80 words.

4. Questions from 16 to 18 will carry 10 marks each. Answer of each question should be in about 250-300 words. There will be internal choice in these questions. The paper-setter should not set more than one such question from one chapter.
5. The language of paper will be straight.
6. No question will be based on quotation.

SYLLABUS

- 1) The land and the people.
- 2) The age of the Harappa Culture.
- 3) The age of the vedic Aryans.
- 4) From the Budha to Ashoka.
- 5) Invasions and impact.
- 6) The Gupta-Vardhana Age.
- 7) The Turks in the Punjab.
- 8) Education and Literature.
- 9) Art and Architecture.
- 10) Religion and Philosophy.
- 11) The Siddhas and the Sufis.

4. ENVIRONMENTAL EDUCATION

Theory Paper
Project Work

Time : 2 hours
Time : 1½ hours

Marks : 35
Marks : 15
Total Marks : 50

THEORY

Structure of Question Paper

- 1) There will be one theory paper comprising of 16 questions. All questions will be compulsory.
- 2) Question Nos. 1-5 are very short answer type questions carrying 1 mark each. Answer to each question will be in one line or few words only.
- 3) Question Nos. 6-10 are short answer type questions carrying 2 marks each. Answer to each question will be in 20-30 words only.
- 4) Question Nos. 11-15 are short answer type questions carrying 3 marks each. Answer to each question will be in 40-50 words only.
- 5) Question Nos. 16 is long answer type question carrying 5 marks. Answer to this question will be in 80-100 words.
- 6) In question No. 16 there will be 100% internal choice.
- 7) There will be no objective type questions such as yes/no, tick/cross, fill in the blanks multiple choice, true/false etc.

- 8) The question paper should be strictly from the prescribed syllabus based on above mentioned guidelines.

Unitwise distribution of marks will be as follows :

| | | |
|----------|--|---------|
| Unit I | Man and Environmental | 7 marks |
| Unit II | Environmental and Development | 7 marks |
| Unit III | Environmental Pollution and Global Issues | 7 marks |
| Unit IV | Energy | 7 marks |
| Unit V | Safe Work Environmental and Occupational Hazards | 7 marks |

SYLLABUS

Unit I Man and Environmental

- Dimensions of environment-physical, biological and social.
- Human being as rational and social partner in environmental action.
- Society and environment in India : Indian traditions, customs and culture past and present.
- Population and environment.
- Impact of human activities on environment.
 - environmental problems of urban and rural areas.
 - natural resources and their depletion.
 - stress on civic amenities; supply of water and electricity, waste disposal, transport, health services.
 - Vehicular emissions.
 - Urbanisations-land use, housing, migrating and floating population.

Unit II Environmental and Development

- Economic and social needs-as basic considerations for development.
- Agriculture and industry as major sections of development.
- Social factors affecting development-poverty, affluence, education, employment, child marriage and child labour; human health-HIV/AIDS, social, cultural and ethical values.
- Impact of liberalization and globalisation on-agriculture and industries, dislocation of manpower and unemployment implications for social harmony.
- Role of society in development and environment-public awareness through education, eco-clubs, population education programme, campaigns, public participation in decision-making.

Unit III Environmental Pollution and Global Issues

- Air, water (fresh and marine), soil pollution-sources and consequences.
- Noise and radiation pollution-sources and consequences.

- Solid, liquid and gaseous pollutants.
- Handling of hazardous materials and process, handling and management of hazardous wastes.
- Ozone Layer depletion and its effect.
- Greenhouse effect; global warming and climatic changes and their effects on human society, agriculture, plants and animals.
- Pollution related diseases.
- Disaster-natural (earthquakes, droughts, floods, cyclones, landslides) and man-made (technological and industrial); their impact on the environment; prevention, control and mitigation.
- Strategies for reducing pollution and improving the environment.

Unit IV Energy

- Changing global patterns of energy consumption-from ancient to modern times.
- Energy consumption as a measure of quality of life.
- Rising demand for energy, gap between demand and supply (Indian context).
- Conventional energy sources-fossil fuels and firewood, potential (Indian context) and limitations of each source, methods of harnessing and environmental consequences of their use.
- Non-conventional energy sources-types of non-conventional sources (bio-mass, solar, wind, ocean, hydel, geothermal, nuclear), potential (Indian context) and limitations of each source, methods of harnessing and their environmental consequences, need to promote non-conventional energy sources.
- Conservation of energy sources-efficiency in production, transportation and utilization of energy.
- Future source of energy-hydrogen, alcohol, fuel cells.

Unit V Safe Work Environment and Occupational Hazards

- Safe work environment-adequate light, ventilation, cleanliness, good house keeping.
- Safety awareness and management-safety precautions-home and work (laboratory, workshop, work site), safe handling of equipment and materials.
- Occupational/hazards physical chemical, mechanical, electrical, bio-logical radiational and psychological.
- Accidents and major hazards in industries and occupations-fire, explosion, toxic release.

- First aid measures.
- Laws and regulations related to occupational health and safety.

PROJECT WORK

Time : 1½ hours

Two Project 5 marks each

Viva

Marks : 15

Marks : 10

5 Marks

THEORY

Exemplar projects and activities

It is expected that students will undertake two projects or activities, one of which should be undertaken individually' and they will prepare a report in each case. Teachers may plan and design projects and activities depending upon the local situations, available resources and environmental issues of concern. The projects and activities given below are only suggestive and not prescriptive.

- To study the changes that have taken place in the given land area of a city/village/locality/market during the last five years in respect of atleast five parameters like number of houses, residents and families, food habits, number of household goods in a family, consumption of water, electricity and fuels including that for personal vehicles by a family, sources of noise (public address systems being used, television, radio and vehicles on the road), common facilities like number of schools, hospitals, shops, theatres, public convenience, public utilities, public transport, number of factories, industries and/or the facilities for production and processing of goods, loss of water bodies, types and quantity of wastes, their disposal and treatment facilities with a view to discussing the patterns of changes and impact on the environment and quality of life. One specific project on these aspects may be to study the changes that have taken place in a given land area during the last five years in respect of the number of houses, residents and families and to prepare a report on their effects on civic amenities like availability of water, electricity and fuels, the drainage system, disposal of wastes including night soil.
- To study the environment profile of a town/locality/village in respect of population density, green cover, educational level of residents, social problems and sources of pollution and their effect on air, water and soil.
- To improvise two models of greenhouses of similar dimensions made from low cost/on cost materials, to place them in open under identical conditions; and put some potted plants in one of them to note the temperature inside and outside of both the greenhouses every two hours from dawn to dusk for two weeks. To explain the reasons for the differences in temperature, if any, between the two green houses.
- To collect data on monthly consumption of electricity and fuels from atleast five families, any two commercial establishments and four public utilities in a given locality to plan strategies for educating consumers to economise on

the consumption of electricity and fuel by reducing their over-use, misuse and improper use.

- To study, for a period of one month, the status of sanitary conditions and methods of waste disposal of a given locality vis-à-vis the role of Panchayat. Municipality of Corporation and to prepare an action plan for making the conditions more environments friendly.
- To investigate the impact of an industry or a large manufacturing unit on the local environment. The parameters could be land use, the ratio of the covered area and the open space, the raw materials used for production, inputs like electricity and water the types of waste generated and the modes of waste disposal, use of environmental friendly and efficient technology, types of pollutants emitted or discharged, the average health status of the employees and residents in the area.
- To collect samples of water from different sources and study their physical characteristics like turbidity, colour, odour the measure of pH, the nature of suspended and dissolved impurities and pollutants, the presence of toxic materials like mercury lead, arsenic, fluorine and the presence of living organisms. For testing the presence of toxic materials and living organisms the help of a local laboratory or institution may be taken, if available. To identify the most polluted sample of water and locate the sources of its pollution. To devise an action plan for mobilising public opinion for checking the pollution.
- To prepare a status report on the prevalence of child labour in a given area through simple surveys on children engaged as domestic help and as workers in farms, commercial establishments and manufacturing units. The survey may be in respect of age group education, wages, working hours, working conditions, safety in work place, health handling hazardous materials and the like. Units dealing with hazardous materials and processes may be identified and an action plan for mobilising public opinion against the practice of child labour may be prepared.
- To prepare a flow chart to show different steps involved in the supply of water from the source (river, bore well) to houses in the locality. To collect information from the concerned authorities about the quantity of water processed and the amount of energy required for the purpose of each stage. To compute the energy spent for supply in 1 Kilolitre of water to the consumer. To plan and execute a campaign to educate the community members about the implications of wastage of water in terms of energy.
- To conduct a survey through observations and interviews about the prevailing work environment of an establishment such as workshop, factory, manufacturing unit hospital or any other related to a specific vocation and to prepare a report highlighting the presence or absence of the desirable environmental conditions.
- To study through observation and interviews practices followed by the workers in handling hazardous chemicals or hazardous processes and to prepare an action plan suggesting to remedial measures.

- To prepare a model action plan for generation of biogas and other useful products from biodegradable and non-biodegradable wastes on the basis of data collected for a village or locality indicating environmental and economic benefits.
- To study through observation and interviews the extent of adherence to the prescribed norms of safety in the manufacturing, units and automobile workshops in the locality and to prepare a report thereon.

ਕੰਪਿਊਟਰ ਸਾਇੰਸ ਪਾਠ-ਕ੍ਰਮ ਅੱਠਵੀਂ ਤੋਂ ਬਾਰ੍ਹਵੀਂ ਸ਼੍ਰੇਣੀਆਂ ਲਈ

ਪਿੱਠ-ਭੂਮੀ ਜਮਾਤ ਸੱਤਵੀਂ

1. ਕੰਪਿਊਟਰ ਦੇ ਮੂਲ ਸਿਧਾਂਤ :

ਕੰਪਿਊਟਰ ਬਾਰੇ ਜਾਣ-ਪਛਾਣ ਇਸਦੀ ਮਨੁੱਖਾਂ ਨਾਲ ਤੁਲਨਾ
ਕੰਪਿਊਟਰ ਇੱਕ ਸਿਸਟਮ ਹੈ
ਕੰਪਿਊਟਰ ਸਿਸਟਮ ਕਿਵੇਂ ਕੰਮ ਕਰਦਾ ਹੈ

2. ਸਧਾਰਨ ਮੰਤਵ ਕੰਪਿਊਟਰ ਸਿਸਟਮ :

ਸਧਾਰਨ ਮੰਤਵ ਕੰਪਿਊਟਰ ਸਿਸਟਮ
ਹਾਰਡਵੇਅਰ ਅਤੇ ਸਾਫਟਵੇਅਰ : ਸਾਫਟਵੇਅਰ ਦਾ ਵਰਗੀਕਰਨ
ਇਨਪੁੱਟ/ਆਊਟਪੁੱਟ
ਮੈਮਰੀ
ਪ੍ਰੋਸੈਸਰ, ਪ੍ਰੋਸੈਸਰ ਬਣਤਰ
ਸਾਫਟਵੇਅਰ ਸਿਸਟਮ : ਭਾਸ਼ਾ ਅਨੁਵਾਦਕ, ਲਿੰਕਰਜ਼, ਲੋਡਰਜ਼, ਓਪਰੇਟਿੰਗ ਸਿਸਟਮ

3. ਤੁਹਾਡਾ ਕੰਪਿਊਟਰ ਨੂੰ ਚਲਾਉਣਾ

ਕੰਪਿਊਟਰ ਸਬ ਸਿਸਟਮਾਂ ਨੂੰ ਆਪਸ ਵਿਚ ਜੋੜਨਾ
ਕੰਪਿਊਟਰ ਨੂੰ ਚਾਲੂ ਕਰਨਾ
ਕੰਪਿਊਟਰ ਨੂੰ ਬੰਦ ਕਰਨਾ

4. ਸੂਚਨਾ ਅਤੇ ਸੰਚਾਰ ਤਕਨਾਲੋਜੀ :

ਨੈਟਵਰਕ ਵਿੱਚ ਪ੍ਰਿੰਟਰ ਦਾ ਕਈ ਕੰਪਿਊਟਰਾਂ ਨਾਲ ਹਿੱਸਾ ਵੰਡਾਉਣਾ
ਇੰਟਰਨੈਟ ਐਕਸਪਲੋਰਰ

ਵਰਡ ਪ੍ਰੋਸੈਸਰ : ਕਲਿਪ ਗੈਲਰੀ, ਹਾਈਪਰਲਿੰਕ, ਵਰਡ ਦਸਤਾਵੇਜ਼ ਵਿਚ ਮੌਜੂਦਾ ਧੁਨੀ ਭਰਨਾ, ਚਿੰਨ੍ਹ, ਸਮੀਕਰਨ, ਸਾਰਨੀ, ਡਾਕ ਮਿਲਾਉਣਾ, ਵਰਡ ਡੇਟਾ ਸਾਧਨ ਵਿਚੋਂ ਸੂਚਨਾਂ ਤੇ ਝਾਤ ਪਾਉਣੀ

5. **ਡੇਟਾ ਗ੍ਰਾਫਿਕ ਨਾਲ ਖੇਡਣਾ :**

ਡੇਟਾ ਅਤੇ ਗ੍ਰਾਫਿਕ

ਗ੍ਰਾਫਿਕਸ ਦੇ ਐਪਲੀਕੇਸ਼ਨਜ਼ ਅਤੇ ਉਨ੍ਹਾਂ ਦੀ ਵਰਤੋਂ

6. **ਡੇਟਾਬੇਸ ਮੈਨੇਜਮੈਂਟ**

ਡੇਟਾਬੇਸ ਮੈਨੇਜਮੈਂਟ ਸਿਸਟਮ ਨਾਲ ਜਾਣ-ਪਛਾਣ

ਡੇਟਾ ਮਾਡਲ

7. **ਸਮੱਸਿਆ ਦਾ ਸੁਲਝਾਉਣਾ**

ਐਲਗਾਰਿਥਮ

ਫਲੋਚਾਰਟ ਅਤੇ ਇਸ ਦੇ ਚਿਨ੍ਹ

ਫਲੋਚਾਰਟ ਦੇ ਢਾਂਚੇ

8. **ਲੋਗੋ**

ਭੂਮਿਕਾ, ਲੋਗੋ ਦੀ ਸ਼ੁਰੂਆਤ, ਲੋਗੋ ਦੀ ਪ੍ਰਿਮਿਟਿਵਜ਼

ਜਮਾਤ ਅੱਠਵੀਂ

1. **ਕੰਪਿਊਟਰ ਮਸ਼ੀਨਾਂ ਦਾ ਵਿਕਾਸ**

ਗਿਣਨ, ਹਿਸਾਬ ਲਾਉਣ ਅਤੇ ਕੰਪਿਊਟਿੰਗ ਕਰਨ ਵਾਲੀਆਂ ਮਸ਼ੀਨਾਂ ਦੀ ਸ਼ੁਰੂਆਤ

ਕੰਪਿਊਟਰਾਂ ਦਾ ਵਿਕਾਸ

ਕੰਪਿਊਟਰਾਂ ਦੀਆਂ ਜੈਨਰੇਸ਼ਨਜ਼

ਹੋਰ ਕਿਸਮਾਂ ਦੇ ਕੰਪਿਊਟਰ

2. **ਹਾਰਡਵੇਅਰ ਅਤੇ ਸਾਫਟਵੇਅਰ**

ਕੰਪਿਊਟਰ ਵਿਚ ਸੂਚਨਾ ਦਾ ਫਲੋ

ਸੀ.ਪੀ.ਯੂ. ਕੈਬਨੇਟ ਦੇ ਅੰਦਰ

ਕੰਪਿਊਟਰ ਭਾਸ਼ਾਵਾਂ

ਭਾਸ਼ਾ ਪਰਿਵਰਤਕ

ਮਸ਼ੀਨ ਵਿਚਲਾ ਕ੍ਰਮ

ਦੋ ਸਟੇਟ ਲੌਜਿਕ ਨਾਲ ਜਾਣ ਪਛਾਣ

3. **ਓਪਰੇਟਿੰਗ ਸਿਸਟਮ (ਓ/ਐਸ)**

ਜਾਣ ਪਛਾਣ

ਓ/ਐਸ ਦੀ ਭੂਮਿਕਾ

ਸ਼੍ਰੇਣੀ ਮੈਨੇਜਰ

ਬੱਢਰਸ

ਸਪੂਲਿੰਗ

ਸੂਚਨਾ ਵਿਹਾਰਕਤਾ ਲਈ ਓਪਰੇਟਿੰਗ ਸਿਸਟਮ

4. ਸੂਚਨਾ ਅਤੇ ਸੰਚਾਰ ਤਕਨੀਕੀ

ਜਾਣ-ਪਛਾਣ

ਡਾਟਾ ਸੰਚਾਰ

ਸੰਚਾਰ ਚੈਨਲ

ਨੈਟਵਰਕਿੰਗ ਕੰਪਿਊਟਰਾਂ ਲਈ ਲੋੜੀਂਦੇ ਸਾਧਨ

ਨੈਟਵਰਕ ਟੋਪੋਲੋਜੀ

ਸੰਚਾਰ ਅਤੇ ਸੰਪਰਕਤਾ ਦੀਆਂ ਵਿਧੀਆਂ

ਸੰਪਰਕਤਾ

ਸੰਚਾਰ ਉਪਕਰਣ

ਈ-ਮੇਲ

ਨੈਟੀਕੁਐਟਸ

ਨਿਊਜ਼ਗਰੁਪ

ਕਾਨਫਰੈਂਸਿੰਗ

ਇੰਟਰਲੈਨ ਚੈਟਿੰਗ

ਸਾਫਟਵੇਅਰ ਉਤਾਰਨਾ

5. ਪ੍ਰਸਤੁਤੀ ਪੈਕੇਜਿੰਗ

ਜਾਣ-ਪਛਾਣ

ਪਾਵਰਪੋਆਇੰਟ ਸਕਰੀਨ ਤੱਤ

ਨਵੀਂ ਪ੍ਰਸਤੁਤੀ

ਹੋਰ ਸਲਾਇਡਾਂ ਵਧਾਉਣਾ

ਡਿਜ਼ਾਇਨ ਟੈਂਪਲੇਟਸ

ਪਾਵਰ ਪੋਆਇੰਟ ਫਾਇਲ ਦਾ ਨਾਂ ਰਖਣਾ

ਮੌਜੂਦ ਪ੍ਰਸਤੁਤੀ ਖੋਲ੍ਹਣਾ

ਪ੍ਰਸਤੁਤੀ ਸੇਵ ਕਰਨਾ

ਪਾਵਰ ਪੋਆਇੰਟ ਵਿਚ ਵਿਡੀਓ ਦ੍ਰਿਸ਼
 ਪ੍ਰਸਤੁਤੀ ਪ੍ਰਿੰਟ ਕਰਨਾ
 ਐਨੀਮੇਸ਼ਨ
 ਸਲਾਇਡ ਟਰਾਂਜਿਸ਼ਨਜ਼
 ਟੇਬਲਜ਼
 ਆਪਣੀਆਂ ਸਲਾਇਡਾਂ ਵਿਚ ਚਾਰਟ ਵਰਤਣਾ
 ਸਲਾਇਡਾਂ ਵਿਚ ਦਸਤਾਵੇਜ਼ ਦਾਖਲ ਕਰਨੇ
 ਬਣੀਆਂ ਬਣਾਈਆਂ ਪ੍ਰਸਤੁਤੀਆਂ
 ਮਲਟੀਮੀਡੀਆ
 ਸੰਗੀਤ ਅਤੇ ਆਵਾਜ਼ ਦੇ ਪ੍ਰਭਾਵ ਵਧਾਉਣੇ
 ਵੈਬ ਪੇਜ ਦੇ ਤੌਰ ਤੇ ਪ੍ਰਸਤੁਤੀ ਸੇਵ ਕਰਨਾ

6. ਡਾਟਾ ਬੇਸ ਪ੍ਰਬੰਧ

ਡਾਟਾਬੇਸ ਦਾ ਪ੍ਰਬੰਧ-ਡਾਟਾਬੇਸ ਪ੍ਰਬੰਧ ਸਿਸਟਮ
 ਡਾਟਾਬੇਸ ਦੀ ਸਾਂਭ ਸੰਭਾਲ ਅਤੇ ਪ੍ਰਬੰਧ
 ਫਾਕਸਪ੍ਰੋਅ ਡਾਟਾਬੇਸ ਰਾਹੀਂ ਕੰਮ ਕਰਨਾ
 ਡਾਟਾਬੇਸ ਬਣਾਉਣਾ
 ਡਾਟਾਬੇਸ ਫਾਇਲਾਂ ਖੋਲ੍ਹਣਾ ਅਤੇ ਬੰਦ ਕਰਨਾ
 ਡਾਟਾਬੇਸ ਟੇਬਲ ਦੀ ਬਣਤਰ ਬਦਲਣਾ
 ਡਾਟਾਬੇਸ ਟੇਬਲ ਵਿਚ ਰਿਕਾਰਡ ਜਮਾਂ ਕਰਨਾ
 ਫਾਕਸਪ੍ਰੋਅ ਵਿਚੋਂ ਨਿਕਲਣਾ
 ਡਾਟਾਬੇਸ ਟੇਬਲ ਵਿਚੋਂ ਰਿਕਾਰਡ ਦੇਖਣਾ
 ਡਾਟਾਬੇਸ ਟੇਬਲ ਵਿਚੋਂ ਰਿਕਾਰਡ ਲਭਣਾ
 ਕਿਸੇ ਵੱਖਰੀ ਫਾਇਲ ਵਿਚੋਂ ਹੁਣੇ ਖੋਲ੍ਹੀ ਡਾਟਾਬੇਸ ਫਾਇਲ ਵਿਚ ਰਿਕਾਰਡ ਪਾਉਣਾ
 ਡਾਟਾਬੇਸ ਟੇਬਲ ਦੇ ਰਿਕਾਰਡ ਬਦਲਣੇ
 ਡਾਟਾਬੇਸ ਟੇਬਲ ਛਾਟਣਾ
 ਡਾਟਾਬੇਸ ਟੇਬਲ ਵਿਚੋਂ ਰਿਕਾਰਡ ਹਟਾਉਣਾ
 ਹਟਾਏ ਰਿਕਾਰਡਾਂ ਨੂੰ ਬਹਾਲ ਕਰਨਾ/ਅਣਾਸੰਕੇਤਿਤ ਕਰਨਾ

7. ਸਪਰੈਡਸ਼ੀਟ

ਜਾਣ-ਪਛਾਣ

ਇਲੈਕਟਰੋਨਿਕ ਸਪਰੈਡਸ਼ੀਟ

MS-Excel

8. ਪ੍ਰੋਗਰਾਮਿੰਗ ਸੰਕਲਪ

ਪ੍ਰਬੰਧ ਸੰਕਲਪ

ਪ੍ਰਬੰਧ ਵਿਕਾਸ

ਪ੍ਰਬੰਧ ਵਿਕਾਸ ਜੀਵਨ ਚੱਕਰ

ਟੂਲ ਅਤੇ ਦਸਤਾਵੇਜ਼ ਦੀ ਯੋਜਨਾ

ਐਰੇਜ ਅਤੇ ਐਰੇਜ ਉਤੇ ਅਮਲ

ਨੋਟ : ਸਰਕਾਰ ਦੀਆਂ ਹਦਾਇਤਾਂ ਅਨੁਸਾਰ, ਦਾਖਲਾ ਸਾਲ 2009 ਤੋਂ ਕੰਪਿਊਟਰ ਸਾਇੰਸ ਦਾ ਵਿਸ਼ਾ ਛੇਵੀਂ ਤੋਂ ਬਾਰ੍ਹਵੀਂ ਸ਼੍ਰੇਣੀ ਲਈ ਪੜ੍ਹਨਾ ਲਾਜ਼ਮੀ ਕੀਤਾ ਗਿਆ ਹੈ ਜਿਨ੍ਹਾਂ ਸਕੂਲਾਂ ਵਿਚ ਪਿਕਟਸ ਵੱਲੋਂ ਪਹਿਲਾਂ ਹੀ ਇਹ ਲਾਜ਼ਮੀ ਵਿਸ਼ੇ ਵਜੋਂ ਪੜ੍ਹਾਇਆ ਜਾ ਰਿਹਾ ਹੈ ਉਥੇ ਉਹ ਹੀ ਪਾਠ-ਕ੍ਰਮ ਚਾਲੂ ਰਹੇਗਾ। ਜਿਹਨਾਂ ਸਕੂਲਾਂ ਵਿੱਚ ਪਹਿਲੀ ਵਾਰ ਇਹ ਵਿਸ਼ਾ ਲਾਗੂ ਕੀਤਾ ਗਿਆ ਹੈ, ਉਨ੍ਹਾਂ ਸਕੂਲਾਂ ਦੇ ਵਿਦਿਆਰਥੀਆਂ ਲਈ ਉਪਰ ਦੱਸਿਆ ਪਾਠ-ਕ੍ਰਮ ਲਾਗੂ ਹੋਵੇਗਾ।

ਨੋਟ : ਪ੍ਰੀ-ਵੋਕੇਸ਼ਨਲ ਦੇ ਪਾਠ-ਕ੍ਰਮ ਸਮੈਸਟਰਵਾਇਜ਼ ਵੰਡ ਵੱਖਰੇ ਤੌਰ ਤੇ ਭੇਜੀ ਜਾਵੇਗੀ।

D. STRUCTURE OF QUESTION PAPERS OF ELECTIVE SUBJECTS

**FOR QUESTION PAPERS CARRYING 30 MARKS (THEORY) EACH
(EXCEPT THOSE SPECIFIED AT*)**

Time : 2 hours**THEORY****M. Marks : 30**

In all eight questions will be set from the prescribed syllabus. Candidates will attempt any five questions out of these. Every question will carry six marks. A question may have two or more parts. The questions will be evenly distributed from the syllabus.

FOR QUESTION PAPERS CARRYING 80 MARKS (THEORY) EACH

The structure of question paper having 80 marks precedes the syllabus of that particular subject.

* **SUBJECTS HAVING 80 MARKS THEORY ARE :**

| GROUP | TRADE | SUBJECT |
|---------------------|----------------------------------|---|
| Business & Commerce | Accountancy and Auditing -do- | a. Principles of Business and Economics b. Book Keeping and |

| | | |
|--------------------------|----------------------------------|------------------------------------|
| Engineering & Technology | Engineering Drawing and Drafting | Accountancy – Work Calculation |
| | Computer Techniques | – Mathematics & Statistics |
| Humanities & Others | Commercial Art | Technical Theory of Commercial Art |

E. STRUCTURE OF QUESTION PAPERS OF ELECTIVE SUBJECTS (PRACTICAL)

FOR ALL QUESTION PAPERS CARRYING 50 MARKS EACH (EXCEPT THOSE SPECIFIED AT*)

Time : 3 hours

(PRACTICAL)

M. Marks : 50

Distribution of marks will be as follows :

- | | |
|--|----------|
| (i) Practical note book/sessional work/visits/project work | 10 marks |
| (ii) Viva-Voce | 5 marks |
| (iii) Actual performance | 35 marks |

No.1 MAJOR PRACTICAL

(20 Marks)

In all three practicals will be asked from the prescribed syllabus. Student will be asked to choose any two out of these. The Practical examiner will ask the student to perform any one practical out of the two chosen by him.

No.2 MINOR PRACTICAL

(15 Marks)

In all three practicals will be asked from the prescribed syllabus. Student will be asked to choose any two out of these. The examiner will ask the candidate to perform any one practical out of the two chosen by him.

FOR QUESTION PAPERS CARRYING 80 MARKS (PRACTICAL) EACH :

The Structure of question paper having 80 marks precedes the syllabus of that particular subject.

***SUBJECTS HAVING 80 MARKS PRACTICAL ARE :**

| GROUP | TRADE | SUBJECT |
|----------------------------|------------------------------|--|
| Engineering and Technology | Mechanical servicing (Genl.) | Engineering Drawing |
| Humanities & Others | Commercial Art | a. Commercial Art & Drawing b. Design and Lay-out |

F. GENERAL INSTRUCTIONS TO THE PAPER SETTERS

1. The paper should be strictly from the prescribed syllabus and according to guidelines given under the 'structure of question paper'.
2. The language should be simple and to the mental level of the students.
3. The standardized form of the Technical Terminology should be used.
4. The questions in the paper should be evenly distributed throughout the syllabus.
5. There will not be any objective type question like Yes or No/ Tick or cross/ Fill in the Blanks/Multiple choice etc.
6. Due weightage should be given to numerical problems wherever required.

PRACTICAL

1. The question paper will be set on the spot by the practical examiner himself.
2. A group of students should be examined in a three hour session.
3. Separate question paper should be set for each group.

G. ON-THE-JOB TRAINING

Time : 3 weeks

M. Marks : 60

INTRODUCTION : On-the-job training is an essential component of effective Vocational Education and Training. The Heads of Vocational Schools have to play a vital role in this regard.

IDENTIFICATION OF TRAINING CENTRE : The Head of the institution will identify the Training Centres in consultation with liaison agencies and local community. Any reputed Industrial Organisation/Workshop/Office/Shop situated in the neighbourhood of the school can be the training centre.

GROUPING OF STUDENTS : After the identification of Training Centres the Head of school will group the students under the guidance of a group incharge, the concerned vocational master. There should not be more than 10 students in a group.

DURATION : On-the-job training will be for three weeks in all. It can be conducted at more than one centre depending upon the facilities available at the training centers. The schedule may be framed by the Head of the school in consultation with the competent authority of the training centre/s.

EVALUATION : The competent authority at the training centre will evaluate the conduct, work, aptitude, gained experience, efficiency etc. of the student and will issue the training certificate on the Performance Sheet.

PREPARATION OF AWARD LIST : On the basis of the training, certificate marks will be allotted to the student by the group incharge.

Training certificates of the students should not be sent to the Board. These may be issued to the students after the declaration of their result by the Head of School.

I. AGRICULTURE GROUP

(i) Horticulture

PAPER-I

FUNDAMENTALS OF HORTICULTURE

Time : 2 hrs.

THEORY

M. Marks : 30

Semester-I

1. Definition, importance and scope of horticulture.
2. Branches of horticulture, classification, distribution of horticulture crops and horticulture zones of India.
3. Climatic factors, plant growth and development including effects of adverse climatic conditions and their management.
4. Soil as a media of plant growth including effects of soil conditions.
5. Propagation-types and methods of propagation, propagation structures, tools and equipment, media and containers.
6. Propagation through seed and factors affecting viability of seeds.
7. Principles of seed production.

Semester-II

8. Nursery raising, preparation of bed, seed sowing, protection, hardening, lifting and packing of seedlings.
9. Asexual propagation and its importance, propagation by cutting, layering, grafting, budding and their types.
10. Propagation of plants by specialized structures- bulbs, corms, tubers, rhizomes, runners, slips stolans, suckers and their types.
11. Handling of nursery plants, display, marketing and economics of nursery business.
12. Selection of site, land development including fencing and windbreaks and planting.
13. Nutrition of horticultural crops.
14. Irrigation in horticultural crops.
15. Training and pruning of horticultural crops.

Semester-II

5. Commercial cultivation of major fruit crops with special reference to their origin, climate, soil varieties, propagation, planting, training, pruning nutrition, interculture, irrigation, weed control, plant protection, harvesting, grading, storage and marketing of; Mango, papaya, sapota, citrus fruits, guava, grape, litchi, ber, pomegranate, amla, pear, peach phalsa, Mamun

PAPER-II**FRUIT PRODUCTION****Time : 3 hrs.****PRACTICAL****M. Marks : 50****Semester-I**

1. Visit to an orchard, study of features and identification of fruits crops.
2. Lay out of orchards by different systems of planting.
3. Digging of pits, refilling the pits for planting of important fruit crops.
4. Raising of seedings of fruit crops.
5. Planting of fruit trees.

Semester-II

6. Methods of training and pruning of fruit crops.
7. Application of manures and fertilizers for fruit crops.
8. Identification and control of insect pest-mango/guava/citrus/pear/peach and ber.
9. Identification and control of diseases in important fruit crops.
10. Study of special problems like malformation in mango/citrus decline.
11. Grading and packaging of fruits.
12. Organoleptic evaluation of cultivars of fruit crops.

PAPER-III**VEGETABLE PRODUCTION****Time : 2 hrs.****THEORY****M. Marks : 30****Semester-I**

1. Importance of vegetables and their role in human diet.
2. Present status and future scope of vegetable production in Punjab.
3. Classification of vegetables based upon climate zone parts used in food, cultural practices.
4. Types and system of vegetable growing including protected cultivation and cropping sequence. Type of vegetable garden, kitchen garden and market gardens.
5. Nursery raising for vegetables crops.

Semester-II

6. Commercial cultivation of the following in respect to climate, soil, varieties, planting method, irrigation, weed control, plant protection, harvesting and grading: Tomato, brinjal, chilli, okra, watermelon, muskmelon, cucumber, gourds, potato, onion, garlic, pea, cauliflower, cabbage, radish, carrot, spinach, lettuce vegetables of local importance.
7. Seed production in important vegetable crops like tomato, cauliflower, chilli, peas, onion, radish, watermelon and potato.

PAPER-III**VEGETABLE PRODUCTION****Time : 3 hrs.****PRACTICAL****M. Marks : 50**

1. Visit to vegetable farms and identification of vegetable crops.
2. Identification of various vegetable seeds.
3. Lay out and soil sterilization for vegetable nurseries.
4. Use of manure and fertilizers for important vegetable crops.
5. Hardening of nursery seedlings.
6. Study of nutrient deficiency symptoms in important vegetable crops.
7. Interculture operations like hoeing, earthing and staking in vegetables.
8. Weed control in vegetable crops.
9. Identification of important diseases of vegetable and their control.
10. Visit to a vegetable seed production farm and seed processing unit.
11. Grading and packaging of vegetable crops.

Note : Semester – I Practical No. 1,2,3,4, and7

Semester - II Practical No. 5,6,8,9,10 and 11.

(ii) AGRI BUSINESS**PAPER-I****ELEMENTS OF AGRICULTURE****Semester-I****Time : 2 hrs.****THEORY****M. Marks : 30**

1. Definition of agriculture, its scope and importance, common agricultural, horticultural crops, factors affecting crop production.
2. Soil and water in relation to plant growth.
3. Types of soils, soil fertility, saline and alkaline soils.
4. Critical stages of crops for irrigation, methods of irrigation, water conveyance.
5. Characteristic features of rained and dryland agriculture.
6. Definition of manures and fertilizer, role in crop production.

- Principles and practices of integrated nutrient management (INM), use of bio-fertilizers.

Semester-II

- Crop production practices including soil and water requirement of crops selection of crops according to seasons, field and seed bed preparation, seed treatment, sowing, planting and intercultivation practices, weeds and weed management/control.
- Seed its development and multiplication.
- Importance of pest and diseases management. Common diseases and pests of important crops. Common insecticides, fungicides, acaricides, rodenticide, nematicides and antibiotics and their uses.
- Integrated pest and disease management.
- Familiarization, handling, calibration and use of common farm machinery and implements and safety precautions.
- Methods of drying-open drying, solar drying, natural drying and mechanical drying.
- Traditional and modern storage structures. Storage conditions for different agricultural produce and control of stored grain pest.
- Processing of produce-shelling cleaning, grading, mixing and packaging methods.
- Role of livestock's and poultry in economy.

PAPER-I

ELEMENTS OF AGRICULTURE

Time : 3 hrs.

PRACTICAL

M. Marks : 50

Semester-I

- Visit to an observatory to familiarize with weather recording instruments.
- Study of growth characters of important crops.
- Study of deficiency symptoms of essential plant nutrients.
- Seed treatment with fungicides and bacterial inoculant.
- Preparation of compost.
- Preparation of farm yard manure.
- Identification of inorganic fertilizers.
- Top dressing of chemical fertilizers.
- Foliar application of fertilizers.

Semester-II

- Preparation of ideal seed bed for sowing.
- Study of soil types.
- Site visit to know about the use of sprinkler and drip irrigation systems.

- 6 Determination of irrigation requirement of crops and efficiency of irrigation.
- 7 Site visit to watershed development areas.
- 14 termination of seed germination.
- 15 Sowing of seeds.
- 16 Raising of seeding/plant materials.
- 18 Identification of insects for common crops.
- 19 Collection and preservation of insects.
- 21 Identification, collection and preservation of plant specimens infested by common insect-pests and diseases.
- 20 Preparation of pesticide and fungicide solution of required concentrations and their application.
- 24 Identification of stored grain pests and their prevention.
- 22 Study of different types of farms implements and their uses.
- 23 Calibration of various farm implements/tools.
- 25 Storage of seeds.
- 26 Study of different packaging equipment.

**PAPER-II INTRODUCTION TO BUSINESS MANAGEMENT
AND COMPUTER APPLICATIONS**

Time : 2 hrs.

THEORY

M. Marks : 30

Semester-I

(A) BUSINESS MANAGEMENT

1. Business - Definition, characteristics, objectives, essentials of a successful business, various forms of business organization (meaning only), classification of business activities-Industry, Commerce, Trade - Aids to Trade, social responsibility of a business.
2. Management - Definition, scope, nature, levels of management and managerial skills.
3. Principles of Management.
- 4. Functions of Management**
 - Planning - Meaning, types of plans, steps in planning, decision making – meaning, types of decisions, process/steps in decision - making.
 - Organisation - Line and staff of organization - meaning.

- Staffing - Manpower planning - meaning, objectives & importance, Recruitment and selection - meaning, Training and development - meaning and difference, need and importance.
- Leading - Meaning, Leadership styles.
- Motivation - Meaning, need and importance.
- Communication – Meaning, types, process and barriers to effective communication.
- Controlling – Meaning, controlling techniques and advantages.

Semester-II

(B) COMPUTER APPLICATIONS

1. Computer Fundamentals

- What is a computer ? Block diagram of a Computer, Characteristics. Types of computers.
- Data representation within computer - Bits, Bytes, EBCDIC, BCD, ASCII, number system.
- Basic structure of computer - Input, Process, Output.
- Memory - RAM, ROM, EPROM, DRAM, CACHE, CDROM.
- Input Devices, Output Devices, Data Storage Devices.
- Computer Languages.
- Operating System- What is an operating system and Types of Operating System.

2. MS-DOS- Internal and External Commands

- **MS-WINDOWS**-Introduction to Windows, Advantages of Windows, Control panel, Assessories, Overview.

3. MS-Office

- **MS-WORD**- Starting MS-Word, Creating a Document, Operating a Document, Saving a Document, Editing Text, Formatting Text, Viewing Documents, Formatting Documents, Line spacing Paragraph spacing, Setting Tabs, Indenting Text, Aligning Text, Adding Headers and Footers. Numbering Pages. Inserting a Table, Proofing a Document. Spell-check utility, Printing a Document, Mail Merge, Use of Internet & sending of E-mails.

**PAPER-II INTRODUCTION TO BUSINESS MANAGEMENT
AND COMPUTER APPLICATIONS**

Time : 3 hrs.

PRACTICAL

M. Marks : 50

Semester-I

BUSINESS MANAGEMENT

- Discussion with Agri-busines Managers about their management - one visit
- Discussion with public administrator regarding the functioning of agri-business managers - one visit
- Interviews of agri-business entrepreneurs relating to their social responsibilities. - one visit
- Visit to two agri-business firms to learn about the planning process.
- Interviews of agri-business managers to obtain information on decision-making process. - one visit
- Selection of agri-business organization(s) for acquainting with selection process, training, development system and appraisat policies of personnel in the organization. - three visit
- Interviews of two agri-business entrepreneurs to find out how they motivate their employees. - one visit
- Visit to two agril. farms and interview the farmers about the communication problems they face in procuring agriculture inputs and selling agricultural products/commodities. - two visit
- Visit to two agri-business organizations to study management techniques followed by them. - two visit
- Selection of agri-business organizations to study how computers are used in the business and submit a report about how it differs from using computers in general business. - two visit

Semester-II

COMPUTER APPLICATIONS

- Computer Fundamental - Checking the connectivity, peripherals of computer, booting (startup) the computer system.
- MS-DOS - Execution of internal DOS commands, execution of external DOS commands, making directory, subdirectory using DOS commands, creating, copying, deleting, renaming files and directories using DOS commands, formatting floppy disks, backup commands, making tree structure.
- Windows operation - Using mouse, study of different menus available in windows, creating, copying, deleting and renaming operations through windows.

- MS-Word - Loading a Software, creating and opening a document moving, copying, deleting, making block, undeleting a text and fonts managemnt, printing, spell check, mail merge, export and import utilities.

Paper-III BOOK KEEPING & FARM PLANNING

Time : 2 hrs.

THEORY

M. Marks : 30

Semester-I

1. Introduction:

Meaning, nature and scope of accounting. Basic concepts and conventions of accounting principle. Double entry system. Advantages of book keeping and accounting, limitations of accounting.

2. Accounting Records :

Preparation of journal, Ledger, Cash book, types of cash books, Single column cash book; Double column cash book, Triple column cash book, Bank cash book, petty cash book; Practical problems.

3. Subsidiary Books :

Needs and use of subsidiary journal and sub-journals. Purchase book, Trade discount, Sales book, Purchase Returns book, Debit Note, Sales return book, Credit Note, Practical Problems.

Semester-II

4. Final Accounts :

Procedure for preparing Trial balance, final accounts, trading account, Profit & loss account Balance sheet; Practical Problems.

5. Methods of Valuation : Depreciation, methods of computing depreciation.

6. Farm Planning : Budgeting, techniques of farm planning, farm budgeting, steps in farm planning and budgeting, farm plans.

BOOK KEEPING & FARM PLANNING

Time : 3 hrs.

PRACTICAL

M. Marks : 50

Semester-I

- 1 Survey of Book-keeping practices followed in Agri-business.
- 2 Preparation of Journal book.
- 3 Posting in Ledger.
- 4 Record of entries in Cash book.

- 5 Preparation of Petty cash book.
- 6 Preparation of Purchase book.
- 7 Preparation of Sales book.
- 8 Preparation of Purchase return book.
- 9 Preparation of Sales return book.

Semester-II

- 10 Preparation of Trial Balance.
- 11 Computation of Gross profit/Loss.
- 12 Computation of Net Profit/Loss.
- 13 Preparation of Balance Sheet.
- 14 Computation of Depreciation.
- 15 Preparation of Farm planning.
- 16 Preparation of budget.

(iii) REPAIR AND MAINTENANCE OF POWER DRIVEN FARM MACHINERY

PAPER-I

BASIC WORKSHOP PRACTICES

Time : 2 hrs.

THEORY

M. Marks : 30

Semester-I

General

- Importance of safety precautions in a workshop.
- Introduction to SI units fundamental and derived units.
- Common workshop hand tools, measuring tools and their application. Spanners, socket set, Allen head key wrenches, pliers, pipe and chain wrenches, punches and screw drivers. Linear measurement tools, angular measurement tools and gauges.
- Properties and uses of common engineering materials such as cast iron, mild steel, high carbon steel, alloy steel, stainless steel, copper, brass, tin, gunmetal, bronze, white metal, aluminium wood, plastic and rubber.
- Measurements of Electrical parameters e.g. current, voltage, resistance, Power and Power factor.
- Plumbing : Functions and specifications of common plumbing tools and accessories (pipe dies, pipe wrenches etc.).
- Corrosion and its remedies.

Fitting and Drilling

- Functions and specifications of common handtools such as vices, hammers, files, chisel, reamers, taps and die sets and hand hacksaw.

- Drilling machines - parts and functions. Types of drill bits and applications.

Smithy and Sheet Metal

- Functions and specifications of smithy tools and accessories - blowers, furnace, anvils, swages plates, chisels, swage hammers, tongs, fuller's set, flattener, punches, takes, pokers, shovels and press scales.
- Functions and specifications of common sheet metal tools and accessories - staker, hammers (wooden), snips, punches, grooves and chisels.

Semester-II

Welding

- Arc and Oxy-acetylene welding
- Functions and specifications of Arc welding equipment and accessories - welding transformer, electrodes, electrode holder, cables, cable connectors, cable lug, chipping hammer, earthing clamps, wire brush, helmet, screen safety goggles, hand gloves and apron.
- Methods of arc welding, preparation for welding, proper selection of electrodes adjustment/setting of current; welding defects; precautions in welding.

Turning

- Lathe: parts and functions of head-stock, bed, chuck, tail-stock, lead screw, tool post, apron, dead centre, etc.
- Applications of pointed edge, straight edge, sharpened edge, facing, rough, left hand, right hand round nose and knurling tools.
- Different operations performed on a lathe - facing, plain turning, step turning, taper turning, knurling, threading, boring, etc.

Grinding

- Double ended power grinder : parts and functions.
- Composition of grinding wheel material and grinding wheels specifications.

Engineering Drawing

- Recognition of objects from given pictorial view. (Blue Print Reading of Simple assemblies)

PAPER-I

BASIC WORKSHOP PRACTICES

Time : 3 hrs.

PRACTICAL

M. Marks : 50

Semester-I

Materials

- Identification of common engineering materials with regard to type, size and specifications- cost iron, mild steel, high carbon steel, alloy steel, stainless steel, copper, brass, tin, gunmetal, bronze, white metal, aluminium, etc.

- Simple demonstration of physical properties of materials malleability, ductility, brittleness, hardness, etc.

Fitting

- Hack sawing of solid and hollow material (pipes), straight and cross filling.
- Preparing jobs involving filling, chipping, drilling and tapping/threading.
- Preparation of a job by fitting a square piece.

Smithy and Sheet Metal

- Preparing jobs involving heating, drawing, upsetting and bending.
- Preparing useful articles involving making, cutting, bending, riveting and soldering. (Ex. Preparing funnel).

Semester-II

Plumbing

- Preparing jobs involving cutting, threading, bending and joining with simple pipe fittings.
- Attending actual jobs of plumbing in institutional areas.

Welding, Arc and OXY acetetyne

- Preparing jobs having butt joint, arc and gas.
- Preparing jobs having lap joint, arc and gas.
- Preparing jobs having T-joining, arc.
- Preparing jobs having corner joint, arc.
- Preparing useful jobs such as tables, stools and racks.

Turning

- Holding a job, its centring and facing; preparing a job involving simple turning, step turning, taper turning threading and knurling.
- Grinding of lathes tools.

Engineering Drawing

- Reading of simple blue print.
- To read given drawing of simple object.

Part-II IRRIGATION, HARVESTING & TUBEWELL TECHNOLOGY

Time : 2 hrs.

THEORY

M. Marks : 30

Semester-I

Irrigation and Tubewells :

- Methods of irrigation and laying of irrigation channels and pipes in relation to types of soil and topography of the field.

- Type of Pumps, principles of operation, constructional details and application of centrifugal pumps & submersible pumps.
- Estimation of heads, discharge and power requirement of a pump-set.
- Fundamentals of electricity, units of measurement and different meters.

Semester-II

- Types of diesel engines and electric motors for pumping sets.
Sefety precautions while handling electrical appliances including motors.
Trouble shooting & maintenance of diesel engines.
Types of tubewells, selection of sites, drilling methods, installation of pumping sets.
Rain water irrigation

Harvesting :

- Functions and Materials of construction of harvesing devices-sickle, reaper, combine, potato & groundnut digger.

Threshing :

- Functions & materials of construction of wheat thresher, different types of threshing cylinders and their adjustments.
- Safe use of threshers & storage.

IRRIGATION, HARVESTING & TUBEWELL TECHNOLOGY

Time : 3 hrs.

PRACTICAL

M. Marks : 50

Semester-I

- Demonstration of different methods of irrigation.
- Identification of different types of pumps and their parts.
- Dismantling & assembling of centrifugal pump.
- Installation of pump, prime mover, fitting of pipes, valves, pulleys and checking for correct alignment; priming, gland packing, operation and trouble shooting of centrifugal pump sets, periodical servicing.
- Dismantling of submersible pump, materials of construction of different components and maintenance.

Semester-II

- Practice in the use of voltmeter, ammeter and megger.
- Introduction to different types of tubewells.
- Diesel engine, operations, adjustment and overhauling.
- Harvesting
 - (1) Demonstration and warking of combine Harvester
 - (2) Use at Reaper
 - (3) Working of potato digger (material of construction)

- (4) Working of groundnut digger (material of construction)
- . Threshing (1) Demonstration of working of wheat thresher.

Paper-III**CROP PRODUCTION MACHINERY****Time : 2 hrs.****THEORY****M. Marks : 30****Semester-I****Tillage**

- Functions, types and implements for Primary and Secondary tillage.

Primary Tillage

- Mouldboard plough : Types-one way, two way; parts-share, mould board, land side, frog etc. material of construction, accessories and their functions, jointer coulter, furrow wheel; adjustments of plough-horizontal suction and vertical suction; setting of coulter and jointer.
- Disc plough : Types, parts and function-disc, frame, bearing, scraper, adjustment of disc and tilt angles.

Secondary Tillage and Interculture

- Harrows : types; parts, materials of construction and functions, adjustment of gang angle and leveling of harrow.
- Cultivators; types; parts, materials of construction and functions.
- Clod crushers, levellers and bund former: types, parts materials of construction and functions.
- Rotavators, parts, materials of construction and functions and safety measures.
- Zero Tillage.

Seeding Machinery

- Methods of sowing – broadcasting, dibbling, seed dropping behind the plough, drilling hill, dropping, check sowing and transplanting.
- Seed drills; plain drills and seed-cum-fertiliser drills, various parts, materials of construction and their functions; types of seed metering devices, types of furrow openers; ground wheel drive, calibration of a seed drill.
- Planters; types, parts, materials of construction and functions.
- Types of metering devices; setting up of planter for row and plant spacing.
- Working principle of transplants.

Semester-II**Harvesting Machinery**

- Reaper windrower.
- Types of tractors and power tiller operated reaper windrowers.
- Constructional details of reaper windrower, functions of parts and material of constructions and adjustments.
- Safety precautions.
- Common faults and corrective measures.

Combine Harvestors

- Constructional details and functions of different sub-assemblies of tractor power take off shaft (P.T.O.) driven and self-propelled combine harvestors.
- Adjustments in reel, cutter bar, conveyor, threshing unit, separating and cleaning unit, grain augers and beheading units; power transmission mechanism, hydraulic and electrical systems.
- Care, maintenance offseason storage and safety precautions.
- Common faults and corrective measures.
- Familiarisation and identification of different sub-assemblies and components, material of construction and functions of combine harvestors.
- Adjustment, care, maintenance and safety precautions.
- Common faults and remedies.
- Straw Reaper

Threshing Machinery

- Types of power threshers, working principles and constructional details.
- Different types of threshing cylinders and their adjustments.
- Types of cleaning & grain handling systems & their adjustments.
- Care, maintenance and safety precautions.
- Common faults and corrective measures.
- Dismantling of power thresher, identification of different components, material of construction, checking of damaged/worn out parts, their reconditioning repair and/or replacement & assembly.
- Installation, adjustment & commissioning of a power thresher.
- Safety precautions.
- Common faults and trouble shooting.
- Plant Protection Equipment (Type of sprayers and dusters), uses and safety precautions.

Paper : III**CROP PRODUCTION MACHINERY****Time : 3 hrs.****PRACTICAL****M. Marks : 50****Semester-I****Tillage and Interculture**

- Familiarisation with different agricultural machinery.
- Identification of different part of mould board plough and materials of construction; dismantling of mouldboard plough, reconditioning/replacement of damaged/worm-out parts; assembling of different parts of mould board plough; adjustments of horizontal and vertical sucions; adjustments of depth, width, coulter, jointer and furrow wheel, servicing of mouldboard plough after use.
- Identification of different part of disc plough, materials of construction of various parts; dismantling of disc plough; recontitioning/replacement of damaged/worm-out parts; assembling of different parts of disc plough; adjustments of disc & tilt angles; adjustments of depth, width & furrow wheel.
- Identification of different part of disc-harrows and cultivators, materials of construction of various parts; dismantling reconditioning/replacement of damaged/worm-out parts; assembling and various adjustment.
- Identification of different part of rotavators & rotary tilters, materials of construction of various parts, dismantling of disc plough; reconditioning/replacement of damaged/worm-out parts; assembling and lubrication, checking of damage to safety guards and their repair.

Seeding and Planting

- Identification of different part of a seed cum ferfiliser drill; materials of construction of various parts; adjustment of furrow opener and reconditioning/replacement of damaged/worm-out parts of the seed-cum-fertiliser drills; dismantling of seed and fertilizer metering mechanisms and study of parts.
- Calibration of a seed-cum-fertiliser drill in a shop; servicing and maintenance after its use.
- Identification of different parts of planters-materials of construction, adjustments of furrow-opener and reconditioning/replacement of damaged /worm-out parts; familiarization with different types of furrow openers, selection of proper seed plates, distance gear and their fitting, adjustment of land markers; servicing and maintenance of after use.
- Familiarsation with transplants.

Semester-II**Reeper Windrower**

- Identification of different parts and components and materials of construction of a reaper windrower. Carrying out adjustments of cutter bar, registration and alignment, overload protection safety clutch, operation care and maintenance.
- Dismantling, checking, reconditioning, replacement of different reaper components and assembly.
- Trouble shooting.
- Types of Sprayers and Dusters and precautions to be observed while operating.

Semester II**Combine Harvester****(Practical)****Paper-II**

- 1 Dismantling and identification of different parts of combine Harvester

Threshing Machinery

- 1) Dismantling and identification of different parts of power thresher
- 2) Dismantling and identification of different parts of Reaper.

II BUSINESS AND COMMERCE GROUP**(i) OFFICE SECRETARYSHIP****Modern Office Practices - II****Paper-I****Time : 2 hrs.****Theory****M. Marks : 30****Semester-I****Part I****Unit-I Introduction**

Meaning and Evolution of Modern Office. Functions of an Office, Place of an Office in a Modern Business Organization. Concept of Office Management, Departments of a Large Office, Role and Qualities of a Modern Office Manager.

Unit-II Office Machines

Meaning & Relevance of Office Automation

Types of Machines : Typewriter, electronic typewriter, duplicating machines, calculating machines, fax machines, punching card machines, franking machines, cheques writing machines, telephones, telex and teleprinters, envelope addressing machines, xerox machines and other machines of routine character e.g. stapler, envelope opener, punching machines etc. Computer-Hardware (Basics) and Software (MS Office-MS Word, MS Excel, MS Power Point), Types and use of printers, scanners, copiers and other appliances.

Semester-II**Part II****Unit-III Office Record Management**

Meaning and features of record management, Filing; Characteristics of a good filing system: Classification of records for filing (Alphabetic, Numeric etc.)

Modern methods: vertical, horizontal, lateral and suspension; equipment; types of files; filing routine, disposal of obsolete documents; indexing; importance; types.

Page index; card index; strip index; rotary index; Micro filing; merit and demerits; types roll film, fiche, jackets etc. Meaning of electronic filing, Data Storage Management.

Procedure for Inward and Outward mailing: Diary register, Dispatch register, peon book.

Unit-IV Office Accounting and services

Introduction to elements of book-keeping and accounts, journal, ledger, trial balance. Cash book, petty cash book and their maintenance, Banking operation e.g. types of accounts, opening of account, overdraft, cheques, writing of cheques, crossing of cheques, endorsement of cheques, bank drafts, travelers cheques and withdrawals and deposits in bank accounts.

PRACTICAL**Time : 3 hrs.****M. Marks : 50****Semester-I**

1. Student will be imported practical knowledge regarding basics of computers, operation of office machines.

Semester-II

2. Creating presentation with Power Point, working with slides in Power Point, creating, editing, formatting, Microsoft Word document, Creating Tables in Microsoft word; Creating editing and formatting worksheets in Microsoft Excel, working with data in Microsoft Excel.

SHORTHAND-ENGLISH**Paper-II****Theory****Time : 2 hrs.****M. Marks : 30****Semester-I****Part I**

1. Evolution, development, scope and importance of Shorthand.
2. Consonant-definition, strokes, difference between stroke Chay and Ray, Joining of strokes.
3. Vowels-definition, vowel sounds, places and value of vowel signs.

4. Alternative signs of the consonant R & H. Value of H tick and H dot.
5. Use of Diphthongs, Triphones and their signs.

Semester-II

Part-II

6. Abbreviated W (semi circle).
7. Gramalogues, phraseography
8. Circle S and Z, sw,ss,sz, loop st & str.
9. Use of initial and final hooks, alternative signs of hooked strokes, circle and loop with initial and final hooks- 'shun' and 'sh' upward.
10. Halving Principle and doubling principle.

SHORTHAND-ENGLISH

Practical

Time : 3 hrs.

M. Marks : 50

Semester-I

1. Students are to pick up a speed of 60W.P.M. They will be dictated a Para of 150 words, they are to transcribe it within 15 minutes on type writer.

Semester-II

2. Students will be dictated another Para of 150 words which they are to transcribe within 15 minutes on type writer.
3. Sessional work-A file of at least 100 pages will be prepared by the students during the session.

ਪੇਪਰ-II

ਸ਼ਾਰਟਹੈਂਡ-ਪੰਜਾਬੀ

ਸਮਾਂ : 2 ਘੰਟੇ

ਪਾਠ-ਕ੍ਰਮ
ਲਿਖਤੀ ਪ੍ਰੀਖਿਆ
ਭਾਗ-I
Semester-I

ਕੁੱਲ ਅੰਕ : 30

1. ਸ਼ਾਰਟਹੈਂਡ ਦੀ ਉੱਤਪਤੀ, ਵਿਕਾਸ, ਖੇਤਰ ਅਤੇ ਮਹੱਤਤਾ।
2. ਵਿਅੰਜਨ-ਪਰਿਭਾਸ਼ਾ, ਵਿਅੰਜਨ ਰੇਖਾਵਾਂ, ਚ/ਰ ਵਿੱਚ ਅੰਤਰ, ਸਟਰੋਕਾਂ ਦਾ ਆਪਸ ਵਿੱਚ ਜੋੜਨਾ।

3. ਸਵਰ-ਪਰਿਭਾਸ਼ਾ, ਭਾਰੀਆਂ ਤੇ ਹਲਕੀਆਂ ਸੁਰਾਂ, ਪਹਿਲੇ, ਦੂਜੇ ਅਤੇ ਤੀਜੇ ਸਥਾਨ ਦੇ ਸਵਰ ਚਿੰਨ੍ਹਾਂ ਦੀ ਵਰਤੋਂ, ਲਾਈਨ ਅਨੁਸਾਰ ਸ਼ਬਦਾਂ/ਸਟਰੋਕਾਂ ਦਾ ਲਿਖਣ ਸਥਾਨ।
4. ਬਦਲ ਰੇਖਾਵਾਂ-ਰ/ੜ, ਲ, ਹ, ਵਿਅੰਜਨ ਰੇਖਾਵਾਂ ਦੇ ਬਦਲਵੇਂ ਰੂਪ, 'ਹ' ਟਿੱਕ ਅਤੇ 'ਹ' ਡਾਟ (ਬਿੰਦੀ)।
5. ਸੰਯੁਕਤ ਸਵਰ, ਵਿਸ਼ਰਾਮ ਚਿੰਨ, ਬਿੰਦੀ, ਟਿੱਪੀ ਦਾ ਪ੍ਰਯੋਗ।

ਭਾਗ- II

Semester-II

6. 'ਵ' ਲਈ ਅੱਧਾ ਚੱਕਰ 9 (ਸੈਮੀ-ਸਰਕਲ)।
7. ਸ਼ਬਦ ਚਿੰਨ੍ਹ, ਵਿਸ਼ਰਾਮ ਚਿੰਨ, ਬਿੰਦੀ, ਟਿੱਪੀ ਦਾ ਪ੍ਰਯੋਗ।
8. ਛੋਟਾ/ਵੱਡਾ ਚੱਕਰ/ਲਘੂ ਦੀ ਵਰਤੋਂ ਅਤੇ ਜਾਣਕਾਰੀ।
9. ਆਰੰਭਕ ਅਤੇ ਅੰਤਮ ਹੁੱਕਾਂ ਦਾ ਪ੍ਰਯੋਗ, ਹੁੱਕ ਲੱਗੀਆਂ ਸਟਰੋਕਾਂ ਦੇ ਬਦਲਵੇਂ ਰੂਪ, ਆਰੰਭਕ ਤੇ ਅੰਤਮ ਹੁੱਕਾਂ ਨਾਲ ਚੱਕਰ ਦੇ ਲੂਪ ਦੀ ਵਰਤੋਂ। ਸ਼ਨ ਹੁੱਕ
10. ਵਿਅੰਜਨ ਰੇਖਾਵਾਂ ਦਾ ਅੱਧ ਕਰਨ ਅਤੇ ਦੁੱਗਣਾ-ਕਰਨ ਦਾ ਸਿਧਾਂਤ।

ਪ੍ਰਯੋਗੀ ਪ੍ਰੀਖਿਆ

ਸਮਾਂ : 3 ਘੰਟੇ

ਕੁੱਲ ਅੰਕ : 50

Semester-I

1. 15● ਸ਼ਬਦਾਂ ਦਾ ਇੱਕ ਪੈਰਾ, 6● ਸ਼ਬਦ ਪ੍ਰਤੀ ਮਿੰਟ ਦੀ ਰਫ਼ਤਾਰ ਨਾਲ (ਢਾਈ ਮਿੰਟਾਂ ਵਿੱਚ) ਲਿਖਵਾਇਆ ਜਾਵੇਗਾ। ਇਸ ਦਾ ਲਿੱਪੀ ਅੰਤਰਣ ਟਾਈਪ ਮਸ਼ੀਨ ਰਾਹੀਂ 15 ਮਿੰਟ ਵਿੱਚ ਕਰਨਾ ਹੋਵੇਗਾ।

Semester-II

2. 15● ਸ਼ਬਦਾਂ ਦਾ ਇੱਕ ਹੋਰ ਪੈਰਾ, 6● ਸ਼ਬਦ ਪ੍ਰਤੀ ਮਿੰਟ ਦੀ ਰਫ਼ਤਾਰ ਨਾਲ ਲਿਖਵਾਇਆ ਜਾਵੇਗਾ। ਪ੍ਰੀਖਿਆਰਥੀ ਇਸ ਦਾ ਵੀ ਲਿੱਪੀ ਅੰਤਰਣ ਟਾਈਪ ਮਸ਼ੀਨ ਰਾਹੀਂ 15 ਮਿੰਟਾਂ ਵਿੱਚ ਮੁਕੰਮਲ ਕਰਣਗੇ।
3. ਸਿਖਲਾਈ ਦੌਰਾਨ ਵਿਦਿਆਰਥੀ ਵਲੋਂ ਸ਼ਾਰਟਹੈਂਡ ਲਿਖੀ ਨੋਟ-ਬੁੱਕ ਅਤੇ ਟਾਈਪ ਮਸ਼ੀਨ ਦੁਆਰਾ ਲਿੱਪੀ ਅੰਤਰਣ ਕੀਤੇ ਕੰਮ ਦੀ ਘੱਟੋ-ਘੱਟ 10● ਪੰਨਿਆਂ ਦੀ ਫਾਈਲ ਤਿਆਰ ਕੀਤੀ ਜਾਵੇ।

ਪੇਪਰ - II

ਸ਼ਾਰਟਹੈਂਡ (ਹਿੰਦੀ)

ਲਿਖਿਤ ਪਰੀਖਾ

Semester-I

ਸਮਯ : 2 ਘੰਟੇ

ਭਾਗ - I

ਅਧਿਕਤਮ ਅੰਕ : 30

1. ਸ਼ਾਰਟਹੈਂਡ ਦੀ ਉਤਪਤਿ, ਵਿਕਾਸ, ਖੇਤਰ ਔਰ ਮਹਤਵ।
2. ਘੰਜਨ-ਪਰਿਆਠਾ, ਘੰਜਨ ਰੇਖਾ, ਚ/ਰ ਮੇਂ ਅੰਤਰ, ਸਟਰੋਕੋਂ ਕੋ ਆਪਸ ਮੇਂ ਜੋਡਨਾ।

3. स्वर-परिभाषा, भारी और हल्की सुरों, सुरों के स्ट्रोक के बीच तीसरे स्थान के स्वर चिन्ह का प्रयोग, पवित्तियों के अनुसार शब्दों। स्ट्रोकों को लिखने की जगह।
4. बदलने वाली रेखाएं- र/ड/ल/ह व्यंजन रेखाओं के बदले रूप 'ह' टिक और 'ह' डाँट।
5. संयुक्त स्वर-परिभाषा और प्रयोग।

Semester-II

भाग - II

6. 'व' के लिए आधा चक्र (सैमी सर्कल)।
7. शब्द चिह्न, विशरू चिन्ह, बिन्दी का प्रयोग।
8. छोटा/बड़ा चक्कर/लूप का प्रयोग व जानकारी।
9. आरम्भ और अंतिम हुकों का प्रयोग, हुक लगी हुई स्ट्रोक के बदले रूप, आरंभिक और अंतिम हुकों के साथ चक्कर और लूप 'शन' एवं 'श' ऊपर वाले।
10. आधाकरण और दोगुणा करने का सिद्धांत।

प्रयोगी परीक्षा

समय : 3 घंटे

अधिकतम अंक : 50

Semester-I

1. ढाई (2½) मिनट का एक पैरा जो 150 शब्दों का होगा, जो 60 शब्द प्रति मिनट की गति से लिखाया जाएगा। इसका लिपि-अंतरन 15 मिनटों में करना होगा।

Semester-II

2. ढाई (2½) मिनट का एक और पैरा जो कि 150 शब्दों का होगा, इसे भी 60 शब्द प्रति मिनट की गति से लिखाया जाएगा। इसका भी लिपि-अंतरन 15 मिनटों में पूरा करना होगा।
3. सिखलाई के रूप में सेशन के दौरान परीक्षार्थी की और से पूरे वर्ष में किये गए कार्य की कम से कम 100 पृष्ठों की फाईल तैयार की जाएगी।

Paper-III

TYPEWRITING-ENGLISH

Syllabus

Time : 2 hours

M. Marks : 30

Semester-I

Part-I

1. Type-writer-Introduction, importance; types-standard ad portable.
2. Care and upkeep of the typewriter, instruments for removing minor faults of typewriter, typewriter accessories.
3. Essential parts of typewriter and their functions.

4. Ribbon-Introduction. Need of changing ribbon , method of changing ribbon, care of ribbon.
5. Typing-Introduction, sitting posture, insertion of paper, fixing margins.
6. Methods of typing-touch and sight system.

Part-II

7. Key-board practice, keyboard structure, different keys.

Semester-II

8. Speed development and importance of accuracy in typing.
9. Punctuations and their use.
10. Errors and omissions in typing and their rectification.
11. How to type general letters/applications for different posts. Different forms of letters-private and government.

Practical

Time : 3 hrs

M. Marks : 50

Semester-I

1. Students are to pick up speed of 25 W.P.M. A para of 250 words will be given to students which they are to typed in 10 minutes.

Semester-II

2. Typing a letter or application of at least 200 words for a post in 30 minutes.
3. Sessional work. A file of at least 100 pages will be prepared by students during the session.

ਪੇਪਰ-III

ਟਾਈਪ ਰਾਇਟਿੰਗ-ਪੰਜਾਬੀ

ਸਮਾਂ : 2 ਘੰਟੇ

ਕੁੱਲ ਅੰਕ : 30

Semester-I

ਭਾਗ-I

1. ਪੰਜਾਬੀ ਟਾਈਪ ਮਸ਼ੀਨ ਨਾਲ ਜਾਣ-ਪਛਾਣ, ਮਹੱਤਤਾ, ਮਸ਼ੀਨਾਂ ਦੀਆਂ ਕਿਸਮਾਂ-ਸਟੈਂਡਰਡ, ਪੋਰਟੇਬਲ।
2. ਟਾਈਪ ਮਸ਼ੀਨ ਦੀ ਸੰਭਾਲ, ਸਫਾਈ ਛੋਟੇ-ਮੋਟੇ ਨੁਕਸ ਦੂਰ ਕਰਨ ਲਈ ਸਾਜ਼ੋ-ਸਮਾਨ (ਔਜ਼ਾਰ)।
3. ਟਾਈਪ ਮਸ਼ੀਨ ਦੇ ਮੁੱਖ ਭਾਗ ਤੇ ਉਹਨਾਂ ਦੀ ਵਰਤੋਂ।
4. ਰਿਬਨ-ਜਾਣ-ਪਛਾਣ, ਬਦਲਣ ਦੀ ਲੋੜ, ਵਿਧੀ ਤੇ ਸਾਂਭ-ਸੰਭਾਲ।
5. ਟਾਈਪ ਕਰਨ ਸੰਬੰਧੀ ਆਮ ਵਾਕਫੀ, ਬੈਠਣ ਦਾ ਢੰਗ, ਕਾਗਜ਼ ਚੜਾਉਣਾ, ਹਾਸ਼ੀਆ ਸੈਟ ਕਰਨਾ।
6. ਟਾਈਪ ਕਰਨ ਦੀਆਂ ਵਿਧੀਆਂ, ਪ੍ਰਤੱਖ ਅਤੇ ਛੋਹ ਪ੍ਰਣਾਲੀ।

ਭਾਗ-II

7. ਕੀ-ਬੋਰਡ ਅਭਿਆਸ- ਕੀ ਬੋਰਡ ਢਾਂਚਾ, ਵੱਖ-ਵੱਖ ਕੀਜ਼ (Keys)।

Semester-II

8. ਸਾਫ, ਸੁੱਧ ਅਤੇ ਤੇਜ਼ੀ ਨਾਲ ਟਾਈਪ ਕਰਨਾ।
9. ਵਿਸ਼ਰਾਮ ਚਿੰਨ੍ਹ ਅਤੇ ਉਹਨਾਂ ਦਾ ਟਾਈਪਿੰਗ ਵਿੱਚ ਪ੍ਰਯੋਗ।
10. ਅਸੁੱਧੀਆਂ, ਭੁੱਲਾਂ ਅਤੇ ਉਹਨਾਂ ਦਾ ਸੁਧਾਰ।
11. ਆਮ ਜੀਵਨ ਵਿੱਚ ਕੰਮ ਆਉਣ ਵਾਲੇ ਬਿਨੈ-ਪੱਤਰ, ਵੱਖ-ਵੱਖ ਅਸਾਮੀਆਂ ਲਈ ਭੇਜੇ ਜਾਣ ਵਾਲੇ ਬਿਨੈ-ਪੱਤਰ, ਨਿੱਜੀ ਅਤੇ ਸਰਕਾਰੀ ਪੱਤਰਾਂ ਦੇ ਵੱਖ-ਵੱਖ ਨਮੂਨੇ।

ਪ੍ਰੈਕਟੀਕਲ

ਸਮਾਂ : 3 ਘੰਟੇ

ਵੱਧ ਤੋਂ ਵੱਧ ਅੰਕ : 50

Semester-I

1. ਪੰਜਾਬੀ ਟਾਈਪ- ਪ੍ਰੀਖਿਆ ਲਈ 250 ਸ਼ਬਦਾਂ ਦਾ ਇੱਕ ਪੈਰਾਂ ਦਿੱਤਾ ਜਾਵੇਗਾ, ਜਿਸ ਨੂੰ 10 ਮਿੰਟਾਂ ਵਿੱਚ 25 ਸ਼ਬਦ ਪ੍ਰਤੀ ਮਿੰਟ ਦੀ ਰਫਤਾਰ ਨਾਲ ਟਾਈਪ ਕਰਨਾ ਹੋਵੇਗਾ।

Semester-II

2. ਵੱਖ-ਵੱਖ ਅਸਾਮੀਆਂ ਲਈ ਭੇਜਿਆ ਜਾਣ ਵਾਲਾ ਬਿਨੈ-ਪੱਤਰ ਜਾਂ ਆਮ ਜੀਵਨ ਵਿੱਚੋਂ ਲਿਖਿਆ ਜਾਣ ਵਾਲਾ ਘੱਟੋ-ਘੱਟ 20 ਸ਼ਬਦਾਂ ਦਾ ਸਧਾਰਣ ਪੱਤਰ ਦਿੱਤਾ ਜਾਵੇਗਾ। ਜਿਹੜਾ ਪ੍ਰੀਖਿਆਰਥੀ 30 ਮਿੰਟਾਂ ਵਿੱਚੋਂ ਟਾਈਪ ਕਰੇਗਾ।
3. ਸਾਲ ਦੌਰਾਨ ਵਿਦਿਆਰਥੀ ਵੱਲੋਂ ਟਾਈਪ ਕੰਮਾਂ ਦੀ ਘੱਟੋ-ਘੱਟ 100 ਪੰਨਿਆਂ ਦੀ ਫਾਈਲ ਤਿਆਰ ਕੀਤੀ ਜਾਵੇ।

ਪੇਪਰ - III**ਟਾਈਪ - ਰਾਈਟਿੰਗ (ਹਿੰਦੀ)****ਲਿਖਿਤ ਪਰੀਖਾ****Semester-I**

ਸਮਾਂ : 2 ਘੰਟੇ

ਭਾਗ - I

ਅਧਿਕਤਮ ਅੰਕ : 30

1. ਹਿੰਦੀ ਟਾਈਪ ਮਸ਼ੀਨ ਦੇ ਸਾਥ ਜਾਨ-ਪਹਚਾਨ, ਸਹਤਕ, ਮਸ਼ੀਨਾਂ ਦੀ ਕਿਸਮਾਂ :- ਸਟੈਂਡਰਡ ਏਂਕ ਪੋਰਟੇਬਲ।
2. ਟਾਈਪ ਮਸ਼ੀਨ ਦੀ ਸੰਭਾਲ, ਸਫਾਈ, ਛੋਟੇ-ਛੋਟੇ ਨੁਕਸਾਂ ਨੂੰ ਠੀਕ ਕਰਨੇ ਦੇ ਲਿਏ ਪ੍ਰਯੋਗ ਹੋਣੇ ਵਾਲਾ ਸਾਮਾਨ ਐਂਡ ਐਂਡਰ।
3. ਟਾਈਪ ਮਸ਼ੀਨ ਦੇ ਪ੍ਰਮੁੱਖ ਭਾਗ ਐਂਡ ਉਨਕਾ ਪ੍ਰਯੋਗ।
4. ਖਿਨ-ਜਾਨ-ਪਹਚਾਨ, ਬਦਲਨੇ ਦੀ ਜ਼ਰੂਰਤ ਵਿਧਿ ਐਂਡ ਸੰਭਾਲ।
5. ਟਾਈਪ ਮਸ਼ੀਨ ਸੰਬੰਧੀ ਜਾਨਕਾਰੀ-ਬੈਠਨੇ ਕਾ ਫੰਗ, ਕਾਗਜ ਚੜਨਾ ਐਂਡ ਹਾਸ਼ਿਯਾ ਸਹੀ ਕਰਨਾ।
6. ਟਾਈਪ ਕਰਨੇ ਦੀ ਵਿਧਿਯਾਂ- ਪ੍ਰਤਿਕਸ਼ (Sight) ਐਂਡ ਅਪ੍ਰਤਿਕਸ਼ (touch) ਪ੍ਰਣਾਲੀ।

ਭਾਗ - II

7. ਕੀ-ਬੋਰਡ ਅਭਿਆਸ- ਕੀ-ਬੋਰਡ ਵਿਭਾਜਨ, ਗਾਈਡ ਕੀਜ਼ (Keys)।

Semester-II

8. साफ, शुद्ध और तीव्रता (Speed) के साथ टाईप करना।
9. विराम चिह्न और उनका प्रयोग।
10. अशुद्धियां, गल्तीयां और सुधार।
11. आम जीवन के प्रयोग वाले पत्र, अलग-अलग नौकरियों के लिए भेजे जाने वाले प्रार्थना पत्र।

प्रयोगी परीक्षा

समय : 3 घंटे

अधिकतम अंक : 50

Semester-I

1. हिन्दी टाईप परीक्षा के लिए 250 शब्दों का एक पैरा दिया जाएगा जिसे परीक्षार्थी 10 मिनट में टाईप करेगा।

Semester-II

2. अलग-अलग नौकरियों के लिए भेजे जाने वाले प्रार्थना पत्र तथा आम जीवन में लिखाया जाने वाला पत्र दिया जाएगा जो विद्यार्थी को 30 मिनट में टाईप करना होगा।
3. पूरे वर्ष में विद्यार्थी द्वारा किए गए टाईप काम की कम से कम 100 पन्नों की फाईल तैयार की जाएगी।

(ii) ACCOUNTANCY & AUDITING**Paper-I****Modern Office Practices**

Time : 2 hrs.

Theory

M. Marks : 30

Part-A**Unit-I Introduction**

- Meaning and Evaluation of Modern Office. Functions of an Office, Place of an office in a modern Business organization. Concept of Office Management, Department of a Large Office, Role and Qualities of a Modern Office Manager.

Unit-II Office Machines

Meaning & Relevance of Office Automation

Types of Machines: Typewriter, electronic, typewriter duplicating machines, calculating machines, punching card machines, franking machines, cheque writing machines, telephones, telex and teleprinters, envelope addressing machines, xerox machines and other machines of routine character e.g. stapler, envelope opener, punching machines etc. Computer-Hardware (Basics) and Software (MS Office-MS Word, MS Excel, MS Power Point), Types and Use of Printers, Scanners, Copiers and other appliances.

Part-B

Unit-III Office Communication

Meaning and Importance of Effective Communication.

Ways of Communication: Verbal (Written, spoken) and non-verbal communication, Internal and External Communication - Their importance in different setting and their disadvantages.

Tools of Communication : Letter, Telephone, Extension PBX, Intercom, facsimile, e-mail, video conferencing, etc.

Postal Services: Different modes of sending letters, parcels, telegrams and packets, Courier, Speed post.

Unit-IV Office Record Management

Meaning and features of record management, Filing : Characteristics of a good filing system: classification of records for filing (Alphabetic, Numeric, etc.) Modern methods; vertical, horizontal, lateral and Suspension; equipment; types of Files, filing routine; disposal of obsolete documents; indexing, importance, types-page index; card index; strip index; rotary index, Micro filing merit and demerits; types roll film, fiche, jackets, etc. Meaning of electronics filing, data storage management.

Note : Semester –I (Unit-I, Unit-III)

Semester-II (Unit-II, Unit-IV)

PRACTICAL

Time : 3 hrs

M. Marks : 50

Student will be imparted a practical knowledge regarding basics of computers, Operation of Scanner, Printer, Photocopiers, fax Machines and other office application Communication skills (Resume writing and applications of jobs). Creating presentation with Power Point, working with slides in Power Point; Creating, editing, formatting Microsoft Word document, Creating Tables in Microsoft word, Creating editing and formatting worksheets in Microsoft Excel, working with data in Microsoft Excel.

Note Semester –I Communication skill, Resume writing and application for jobs.

Semester-II Remaining practical exercise of semester-I

Paper II PRINCIPLES OF BUSINESS AND ECONOMICS**Time : 3 hrs.****Theory
Part A****Max. Marks : 80****Principle of Business****Marks : 40**

- (i) Business-Definition, its nature, functions and importance. Component of Business-Commerce Industry and Trade.
- (ii) Forms of Organizations : Sole Trader, Partnership and Joint Stock Company, their features, advantages and disadvantages.
- (iii) Methods of Buying and Selling, Conditions of Purchase and Sale.
- (iv) Functions and Services of Whole sellers and Retailers, Direct Marketing, Tele Marketing, Internet Marketing.
- (v) Meaning of Bank, Functions of a bank, types of bank accounts, cheques, drafts, bills of exchange and promissory notes.
- (vi) Importance of transport; merits and demerits of different modes of transport.
- (vii) Communication : postal, telegraph and recent trends in communication, fax, internet, e-mail, video-conferencing.

Part B**Economics****Marks : 40**

- (i) Definition and scope of Economics, the economic activities of man, subject matter of economics, fundamental concepts - wealth, goods, utility, value and price, consumption, human wants and their satisfaction, laws of diminishing and equi-marginal utility, demand, law of demand and elasticity of demand. Supply, law of supply and elasticity of supply.
- (ii) Production: Meaning and factors of production; Land and its productivity, Labour; Meaning, features of labour, division of labour, efficiency of labour, mobility of labour, Capital : Meaning and functions; Entrepreneurship: Meaning, features and significance.

Note : Semester- I (Part A (i, ii and iii), Part-B (i))

Semester-II (Part A (iv, v, vi and vii), Part-B (i))

PAPER-III BOOK KEEPING AND ACCOUNTANCY**Time : 3 hrs.****Max. Marks : 80****PART-A****Unit I Introduction to Accounting**

- ❖ Accounting Meaning, Accounting as source of information, internal and external users of accounting information and their needs, Advantages and limitations of Accounting. Difference between book-keeping and Accountancy.
- ❖ Basic Accountancy terms - Asset, Liability, Capital, Expense, Income, Expenditure, Revenue, Debtor, Creditor, Goods, Cost, Gain, Stock, Purchase, Sale, Loss, Profit, Voucher, Discount : Cash and Trade discount, Transactions.

Unit II Recording Business transactions

- ❖ Voucher and Transactions : Origin of Transactions-Source Documents and Vouchers, Preparation of Vouchers, Accounting Equation Approach-Meaning and Analysis of transactions using Accounting equations, Rules of Debit and Credit.
- ❖ Recording of Transactions : Books of original entry : Journal, Special Purpose Books (a) Cash Books-Simple, Cash book with Bank column and Petty Cash book, (b) Purchase Book (c) Sales Book (d) Purchase Returns Book (e) Sale Returns book (f) Bills Receivable Book (g) Bills Payable Book.

Unit III Trial Balance and Rectification of Errors

- ❖ Trial Balance : Meaning, Objective, Advantages and Methods of preparation.
- ❖ Errors : Types of Errors, Errors affecting Trial Balance, Errors not affecting Trial Balance.
- ❖ Detection and Rectification of Errors (One sided and two sides); Use of suspense Account.

Unit IV Bank Reconciliation Statement

- ❖ Bank Reconciliation Statement: Meaning, Need and Preparation Correct Cash Balance.

PART-B**Unit V Accounting for Bills of Exchange**

- ❖ Bills of Exchange and Promissory Note : Definition, Features, Parties, Specimen and Distinction.
- ❖ Important Terms : Term of Bill, Concept of Accommodation Bill, Days of Grace, Date of Maturity, Bill at Sight, Bill After Date, negotiation, Endorsement, Discounting of Bill, Dishonour, Retirement and Renewal of a Bill, Insolvency of a Acceptor.

- ❖ Accounting treatment of Bill Transactions.

Unit VI Depreciation of Assets.

- ❖ Depreciation : Meaning and need for charging depreciation, Factor affecting Depreciation, Methods of Depreciation-Straight Line Method, Written Down Value Method (Excluding change in method), Method of Recording Depreciation charging to Assets Account, Treatment of Disposal of Assets.

Unit VII Financial statements

- ❖ Financial Statements : Meaning and Objectives.
- ❖ Distribution between Capital and Revenue Expenditure.
- ❖ Balance Sheet : Need, Grouping, Marshalling of Assets and Liabilities, Vertical Presentations of Financial Statements.
- ❖ Adjustments of Preparation of Financial Statements with Respect to Closing Stock, Outstanding Expenses, Prepaid Expenses, Accrued Income, Income Received in Advance, Depreciation, Bad Debts, Provision of Doubtful Debts, Provision of Discount on Debtors, Manager's Commission.
- ❖ Preparation of Trading and Profit & Loss Account and Balance Sheet of Sole Proprietorship.

Unit VIII Auditing

- ❖ Origin of Auditing : Meaning and definition of Auditing : Function and objectives of Auditing.
- ❖ Qualities of an Auditor: Scope of Auditing; Advantages and Limitations of Auditing; Auditing in India.

Note : Semester- I Part-A (Unit-I, Unit-II) , Part-B (Unit-III, Unit-IV)

Semester-II Part-A (Unit-V, Unit-VI) , Part B (Unit-VII, Unit VIII)

III HOME SCIENCE GROUP

(i) FOOD PRESERVATION

Paper-I FUNDAMENTAL OF FOOD PRESERVATION

Time : 2 hrs.

THEORY

Max. Marks : 30

Semester-I

1. Our Food-Functions of food, basic food groups, sources & functions of various nutrients.
2. Food Preservation Industry-Its need, future scope and role in the economy of country with special reference to Punjab.
3. Effects of processing and storage on the nutritive value, colour, appearance, texture, flavour and overall acceptability of foods.

Semester-II

4. Post harvest technology for fruits and vegetables - surface coating, low temperature, maturity & ripening and deep freezing.
5. Food Additives-spices, preservatives flavours & colours - their properties and uses.
6. Study of (a) Simple equipments and their use-thermometer, gelmeter, hygrometer, salinometer and refractometer (b) Simple laboratory processes used in food industries- Pasteurization, homogenization, filtration, distillation, evaporation, condensation.
7. Study of pH, mode of detection and its role in food preservation.

FUNDAMENTALS OF FOOD PRESERVATION**PRACTICAL****Time : 3 hrs****M. Marks : 50****Semester-I**

1. Weights, measures and conversions.
2. a. Use of simple equipments used in the food industry such as thermometer, gel-meters, hygrometer, refractometer and salinometer.
b. Simple processes like distillation, evaporation, condensation, pasteurization and homigenization.
3. Methods of increasing shelf life of perishable foods by surface coating and low temperature.

Semester-II

4. Market surveys -
 - a. Type of food available.
 - b. Prices.
 - c. Handling techniques (container, bags etc.)
5. Preparation and standardization of Normal Solutions.
6. Determination of acidity and alkalinity & pH.
7. Visit to orchard/market to observe stages of maturity of locally grown vegetables and fruits.
8. All practicals to be recorded in file along with procedures, analysis and samples.

Paper-II FOOD MICROBIOLOGY AND QUALITY CONTROL**THEORY****Time : 2 hrs.****Max. Marks : 30****Semester-I**

1. Elementary knowledge of Mould, Yeast & Bacteria, their advantage and disadvantages with reference to food.

2. Causes of food spoilage - Physical, Microbial and Enzymatic.
3. Control of Communication in preserved foods.]

Semester-II

4. Food Poisoning - Causes & Control.
5. Effect of Heat & pH on Micro organisms.
6. Quality Control-Evaluation, methods, system and scope.
 - a) Food standards & specifications - Food laws governing FPO, MFPO, PEA, ISI, Agmark, FSSA (Food safety & Standard Act).
7. Organo-oleptic (Sensory) evaluation of foods.
8. Food Adulteration-common adulterants and simple detection techniques.

FOOD MICROBIOLOGY AND QUALITY CONTROL

PRACTICAL

Time : 3 hrs

M. Marks : 50

Semester-I

1. Use of microscope, its parts, accessories and their use.
2. A visit to microbiological laboratory in the area and report writing for the same.
3. Method of preparing slides and use of simple stains.
4. Practical observation and identification of common organisms causing food spoilage.

Semester-II

5. Simple techniques of detecting food adulteration.
 6. Methods of detection of spoiled cans and care while consuming high pH foods.
 7. Fermentation techniques for juices and beverages.
 8. Determination of total soluble solids by refractometer - hygrometer salinometer and gel meter etc.
 9. Determination of salt in food products by chemical analysis.
 10. Market survey for consumer awareness regarding Quality Control and labels.
- All practicals to be recorded in file along with procedures, analysis and samples.

Paper-III

FOOD PRESERVATION TECHNIQUES

THEORY

Time : 2 hrs.

Max. Marks : 30

Semester-I

1. Food Preservation - Definition, importance, principles and methods of food preservation.
2. Preservation by salting, Brining, Curing and Pickling.
3. Preservation by sugar-principles involved in jams, jellies, marmalades, preserve, glazed, Crystallized.
4. Preservation by Chemical-class I and class II preservatives.

Semester-II

5. Refrigeration and freezing-advantages and disadvantages, storage and spoilage.
6. Sun drying and dehydration-principles involved, factors affecting drying, types of dehydrators, dehydration & rehydration ratios.
7. Preservation by alcoholic, acetic and lactic acid fermentation in foods and their importance in the diet.
8. Advanced methods of preservation:
 - (i) Irradiation.
 - (ii) Antibiotics.
 - (iii) Controlled atmospheric storage.
9. Pectin-Properties, uses and grades.

FOOD PRESERVATION TECHNIQUES**Paper-III****PRACTICAL****Time : 3 hrs.****Max. Marks : 50****Semester-I**

1. Preparation, Organoleptic Evaluation and costing of the following as per seasonal availability.
 - a) Pickles
 - b) Jams & Marmalade
 - c) Sauces, Ketchup, Chutneys.

Semester-II

- d) Fruit Juices, Squash, Crush, Cordial, RTC beverages, Sweetened Juices, fruit & Synthetic Syrups & Fruit Toffees.
 - e) Pappad & Varian.
 2. Sundrying of seasonal Vegetables & Calculating their dehydration and rehydration ratio.
 3. Visit to Cold Store & Food processing industry & report writing for the same.
- All practicals to be recorded in file along with procedures, analysis and samples.

(ii) Commercial Garment Designing & Making**Paper-I****TEXTILE SCIENCE****(COMMON FOR ALL THE TEXTILE BASED COURSES)****THEORY****Time : 2 hrs.****Max. Marks : 30**

1. Fibres - Introduction to Textiles Fibres, classification and description of various textile fibres (Natural, manmade and synthetic), Physical and Chemical properties for identification, use and care.

2. Yarn - Types of Yarns - simple, novelty and textured yarns.
3. Weaves - Introduction to different types of weaves. (not for the students of knitting technology).
Introduction to different types of knittings (For Knitting technology students only).
4. Dyes - Introduction to dyeing, classification of dyes as per their application - Natural, Direct, Acidic, Basic, sulphur Indigosol/soluble vat, Reactive, Disperse Naphthol or Azoic, chrome, Oxidation dyes and Pigment colours.
5. Finishes - Purpose, types & understanding the effect of some common finishes used in textile industry like Mercerisation, Sanforisation, Sizing, Crease resistance, Calendaring, Tenting and Embossing.
6. Study of various kinds of stains on textile and their removal.

Note : Semester-I (1,2,3)

Semester-II (4,5 and 6)

TEXTILE SCIENCE

Paper-I

PRACTICAL

Time : 3 hrs.

Max. Marks : 50

Semester-I

- 1) Identification of various textiles fibres by Physical (Burning and Microscopic) and Chemical (Solubility) methods.
- 2) Methods of Washing, Bleaching, starching, drying and ironing of various fabrics.

Semester-II

- 3) Colour fastness test to heat, Sunlight, gas fumes, perspiration, humidity, washing, crocking and Ironing on coloured natural fabrics.
- 4) Identification of various types of vegetable, animal, chemical and mineral stains and their removal.

All practicals to be recorded in file along with procedures, analysis and samples.

Paper-II

DESIGNING AND PATTERN MAKING

THEORY

Time : 2 hrs.

Max. Marks : 30

Semester-I

1. Design -
 - a) Concept and types - Structural and applied.
 - b) Elements of design - Line, Colour, Texture, Form and Shape.

- (i) Line - Straight, Vertical, Diagonal, Horizontal and Curved lines.
 - (ii) Colour - Theory of colour, qualities of colour, colour wheel, colour schemes. Psychological impact of colours and factors affecting choice of colours.
 - (c) Principles of design-Balance, Harmony, Rhythm, Proportion and Emphasis in relation to apparel.
2. Sketching -
- a) Tools for drawing and sketching.
 - b) Figure sketching - Normal figure, Fashion figure, Block figure and Flesh Figure
 - c) Optical illusions of
 - (i) Inner lines - Vertical, Horizontal, Diagonal & Curved lines and also of big and small Checks.
 - (ii) Outer lines - Rectangular, Circular, Square, Triangular, Inverted Triangular.
 - (iii) Wide and Narrow panels of various garments.
 - (iv) Sleeves, Collars, Neck lines. Yokes and Pockets.
3. Introduction to measuring, marking, drafting and cutting tools.
4. Paper pattern - Purpose, principles, techniques and use in lay out any cutting.
5. Importance of taking accurate body measurements, locating proper measuring points for children, women and men.

Semester-II

- 6. Standard measurements for children (measurement charts).
- 7. Introduction to pattern manipulation and principles of pattern manipulations.
- 8. Adaptation of basic paper pattern to size, shape, darts and fullness.
- 9. Method of adaptation of basic bodice block for developing garment pattern.
- 10. Collar, sleeve and yoke manipulations.

DESIGNING AND PATTERN MAKING

PRACTICAL

Time : 3 hrs.

Max. Marks : 50

Semester-I

- 1. Design -
 - a) Basic lines
 - b) Colour-Wheel, tints and tones, combinations and schemes.
 - c) Texture-Textural combinations with fabric samples.
- 2. Sketching -
 - a) Floral and Geometrical motifs.
 - b) Block Figure, Flesh figure, Normal and Fashion figure.
 - c) Composition of figures with pencil shading and colour media.

- d) Flesh figures with garments for ladies and children keeping in view the modern trends of fashion.
3. Taking body measurements, their sequence and application in drafting and cutting.
 4. Drafting child's bodice block.

Semester-II

5. Drafting child's sleeve block.
6. Adjustment in block pattern of children.
7. Drafting lady's bodice block.
8. Drafting lady's sleeve block.
9. Adjustment in block pattern of ladies.
10. Making paper pattern of basic bodice block, sleeves and collars.

All practicals to be recorded in file along with procedures, analysis and samples.

CLOTHING CONSTRUCTION

Paper-III

THEORY

Time : 2 hrs.

Max. Marks : 30

Semester-I

1. Tools and equipments for sewing Ironing and finishing.
- 2. Sewing machine :**
 - a) Types - Hand, Trade and Motorized ; main parts, their operations and safety measures.
 - b) Different types of stitching adjustments attachments and their uses.
 - c) Minor defects and their remedies.
 - d) Sewing threads - their number, sizes and uses with relation to needle and cloth.
- 3. Basic processes for garment making -**
 - a) Basic stitches - Basting, Running stitch, Back stitch, Blanket stitch, Button-hole. Hemming, Slip stitch, Whipping, Lock stitch.
 - b) Decorative stitches - Lazy-daisy, Chain, Stain stitch, Herring bone, Feather-long and short, French knot, Patch work. Mirror work Cross stitch and Beading.
 - c) Seams and seam finishes - Plain seam, Counter hem seam, Lapped seam, Run and fell seam.

Semester-II

- 4. Principles of Garments Making -**
 - a) Preparation of fabric-shrinking, straightening, ironing.
 - b) Placing, marking, cutting and handling of various type of materials.
 - c) Selection of trimmings, supporting fabric (lining, interlining) and fastner.

5. Disposal of fullness - Pleats-Knife, Box, Laverted; Darts, Tucks, Pin shells, Gathers, Smocking, Shirring, Frills and Ruffle.
6. Plackets - One piece and two piece placket opening.
7. Fastners- Press buttons, 'Hooks and eyes, Eyelets buckles, Button, Button holes, Zippers and Velero tape.
8. Edge Finishes - Facing and Binding both biased and shaped.

CLOTHING CONSTRUCTION

Paper-III

PRACTICAL

Time : 3 hrs.

Max. Marks : 50

Semester-I

1. Identification and maintenance of tools and equipment of dress making.
- 2. Sewing machine -**
 - a) Types, main parts, operation and care.
 - b) Main adjustments while operating sewing machine.
 - c) Special attachments and their use.
 - d) Minor defects and rectification.
3. Selection and use of different threads and needles for various fabrics.
- 4. Making samples of -**
 - a) Basic stitches.
 - b) Decorative stitches.
 - c) Seams.
 - d) Disposal of fullness.
 - e) Fastners.
 - f) Edge Finishes

Semester-II

- 5. Drafting of basic bodice blocks for children and women.**
- 6 Adapting the basic blocks for making the following garments;**
 - a) Children - Frock & Shorts.
 - b) Women - Petticoat, Saree Blouse, Salwar Kameez.
7. Estimation of the fabric and accessories on the basis of body measurements.
8. Fitting, finishing, Ironing and folding of the above garments.
9. Files (a) Sample file, (b) Drafting and adaptation file.

All practicals to be recorded in file along with procedures, analysis and samples.

(iii) TEXTILE CRAFT**Paper-I****TEXTILE SCIENCE
(SAME AS GIVEN UNDER
COMMERCIAL GARMENT DESIGNING & MAKING)****Paper-II****YARN PREPARATION AND FABRIC STRUCTURE
THEORY****Time : 2 hrs.****M. Marks : 30****Semester-I**

1. Spinning & its types -
 - a) Mechanical - spinning of cotton, wool and worsted.
 - b) Chemical - Melt, Dry & wet spinning.
2. Terminology related to fabrication - fabric, Warp, Weft, Weave, repeat pattern, design, draft plan, peg plan, selvedge (Plain, Tape, Split, Fused, Ieno, Tucked), texture motif and picks.
3. Introduction to yarn preparation, winding, wrapping - Definition & different methods of warping, warping calculations (no. of ends/inch, no. of picks/inch/no. of bobbins, no. of sections, width of sections, length of warp on bobbins, total length of yarn, weight of yarn, width of cloth including selvedge), sizing, beaming, looming, yarn count, reed count and count of folded yarn.
4. Aims, objective and scope of weaving.

Semester-II

5. Use of graph paper.
6. Detailed classification of weaves - Elementary, Compound and Complex.
7. Introduction to the following weaves alongwith their draft plan and peg plan :
Plain weave - Rib and Basket, Twill weave- Regular, Pointed Honey Comb, Satin, Sateen, Pile weave-Cut and Uncut.
8. Introduction to Computer Aided Weaving.

YARN PREPARATION AND FABRIC STRUCTURE**PRACTICAL****Time : 3 hrs.****Max. Marks : 50**

1. Warp and Weft winding, Pin winding, Bobbin winding and cone winding.
2. Plain Weave-Preparation of wrap, drafting, denting and drawing.

3. Basket Weave-Preparation of warp, drafting, denting and drawing.
4. Regular twill Weave - Preparation of warp, drafting, denting and drawing.
5. Pile Weave - Preparation of warp, drafting, denting and drawing.
6. Simple exercise on different types of knotting.
7. Introduction in Computer Aided Weaving.

All practicals to be recorded in file along with procedures, analysis and samples.

Atleast three visits to reputed textile industry, quality control centre or textile related institute, maintaining record of the visits and report writing for the same.

Note : Semester I (1,2,3,6) Semester -II (4,5,7)

HANDLOOM MECHANICS AND OPERATIONS

Paper-III

THEORY

Time : 2 hrs.

M. Marks : 30

- 1) History of weaving & its importance in textile craft.
- 2) Types and parts of warping machine-creel stand, hackreed, warpreed, guide roller, warping drum, warping beam and drawing hooks and their functioning.
- 3) a) Types and parts of handlooms and their functioning.
b) Harnessing of Handloom.
- 4) Process of handloom fitting.
- 5) Motions of the handloom -
a) Primary motions - shedding, picking & beating up.
b) Secondary motions - Taking up & letting off.
- 6) Checking of handloom before operation and general precautions.
- 7) Different methods of drafting & denting.
- 8) Different types & parts of shuttle.
- 9) Working of Dobby on handloom.
10. Working of Jacquard on handloom.

Note : Semester I (1,2,3,8)

Semester II (4,5,6,7,9,10)

HANDLOOM MECHANICS AND OPERATIONS

Paper-III

PRACTICAL

Time : 3 hrs.

M. Marks : 50

Semester-I

- 1) Winding of bobbins.

- 2) Arrangement of bobbins in creel.
- 3) Passing of threads through the heckreed.

Semester-II

- 4) Pirl winding and inserting.
 - 5) Fitting of handloom and maintenance.
 - 6) Harnessing of Handloom.
 - 7) Weaving of cloth - Plain weave, Basket weave, Twill weave and Terry pile weave.
- All practicals to be recorded in file along with procedures, analysis and samples.

(iv) TEXTILE DESIGNING

Paper-I

**TEXTILE SCIENCE
(SAME AS GIVEN UNDER
COMMERCIAL GARMENT DESIGNING & MAKING)**

Paper-II

**TEXTILE DESIGNING AND PRINTING
THEORY**

Time : 2 hrs.

M. Marks : 30

Semester-I

- 1) Origin, historical background and characteristics of traditional Indian designs with special references to Punjab.
- 2) Design-Definition, Classification (structural & applied), principles and elements.
- 3) Colours-light and pigment theory of colours, colour wheel, primary, secondary and tertiary colours, colour schemes and Qualities of colour.

Semester-II

- 4) Introduction to textile printing materials used for printing, its importance and various methods of printing: block printing, roller printing, screen printing, spray printing/stencil printing and transfer printing.
- 5) Elementary study of thickening agents and auxiliaries.
- 6) Preparation of textile fabric for printing-Scouring, Bleaching, Sinzing & Batching.
- 7) Block printing of cotton fabric with aniline black.

TEXTILE DESIGNING AND PRINTING**Paper-II****PRACTICAL****Time : 3 hrs.****M. Marks : 50****Semester-I**

- 1.(a) Practice of mixing colours showing colour on colour wheel with varied values and hues showing various colour combinations.
- (b) Preparing file of at least 25 pages with different designs suitable for textiles using soft pencil, crayon, pencil colours, sketch pens, coloured ink or water colour.
2. Preparing paper stencils for printing.

Semester-II

3. Making of design for saree border, handkerchief and pillow cover.
4. Practice of painting with fabric colours on textiles.
5. Practice of printing aniline black on cotton cloth with hand block.
6. Making preparation of grey scale.

All practicals to be recorded in file along with procedures, analysis & samples.

Visit to museums, Art Galleries, Craft Meals and Report writing of the Craft appraised.

Paper-III**TEXTILE DYEING****THEORY****Time : 2 hrs.****M. Marks : 30**

- 1) Brief study of pH value.
- 2) Precautions to be observed while scouring, bleaching and dyeing.
- 3) Scouring and bleaching of cotton and woolen fibres and fabric.
- 4) Properties, names and applications of direct dyes on cotton and after treatment with synthetic fixing agents.
- 5) Properties, names and applications of reactive dyes, azoic dyes (Naphthol), Vat and indigo-sol dyes.
- 6) Determination of weight of dyes and chemicals from percentage in recipes.

- 7) Dyeing of woolen yarn with acid dyes and metal complex dyes (Nulon and Chrome dyes).
- 8) A brief study of long bath, short bath, neutral bath, standing bath, stripping, leveling.
- 9) Study of factors affecting the fading of dyed textiles - Heat, light, sunlight, gas fumes, humidity, perspiration, rubbing chemicals, washing, crocking and Ironing.

Note : Semester –I (1,2,3 and 4)

Semester-II (5,6,7,8 and 9)

Paper-III

TEXTILE DYEING

PRACTICAL

Time : 3 hrs.

M. Marks : 50

Semester-I

- 1) Practice of scouring and bleaching of cotton and wool.
- 2) Practice of dyeing of cotton and jute with direct dye.
- 3) Effect of time, temperature, water ratio and chemicals in dyeing.

Semester-II

- 4) Practice of dyeing of cotton with reactive, azoic, vat and indigo-sol dyes.
- 5) Practice of dyeing of woolen yarn/fabric with acid dyes, metal complex (Nulon) dyes.
- 6) Practice of dyeing of cotton with Ramazole dyes.
- 7) Colour fastness test to heat, light, sunlight, gas fumes, humidity, perspiration, rubbing, chemicals, washing, crocking and ironing on coloured natural fabric.

All practicals to be recorded in file along with procedures, analysis & samples.

(v) KNITTING TECHNOLOGY

Paper-I

TEXTILE SCIENCE

**(SAME AS GIVEN UNDER
COMMERCIAL GARMENT DESIGNING & MAKING)**

Paper-II

HANDFLAT KNITTING MECHANISM

THEORY

Time : 2 hrs.

M. Marks : 30

Semester-I

- 1) Past, present & future perspective of Knitting Industry.

- 2) Basic terminology used in knitting such as Gauge, Wales, Course, Knitted stitch, Neele loop, Sinker loop etc.
- 3) Diagrammatic presentation of Latch Needle, understanding its different parts and their functions.
- 4) Diagrammatic presentation of loop formation o flatch needle on V bed Hand Knitting Machine.
- 5) Diagrammatic presentation of weft knitted stitches such as plain, rib and tuck.
- 6) Diagrammatic presentation of cam system of V bed Hand Flat Knitting Machine.

Semester-II

- 7) Operations and function of different cams of cam system of V bed Hand Flat Knitting Machine.
- 8) Setting of stitch length on a Hand Flat Knitting Machine.
- 9) Knitting process of welts and function of welts.
- 10) Knitting process of 1 x 1 rib and plain fabric.
- 11) Knitting defects, their causes & remedies on Hand Flat Knitting Machine.
- 12) Maintenance of Hand Flat Knitting Machine.

HAND FLAT KNITTING MECHANISM

PRACTICAL

Time : 3 hrs.

M. Marks : 50

- 1) Identification and functioning of different parts of Hand Flat Knitting Machine.
- 2) Description & diagrams of Cam set, different parts of Cam set & their functions.
- 3) Method of putting and replacing of Needles.
- 4) Adjustment of brushes, method of feeding yarn and setting of feeders on Flat Knitting Machine.
- 5) Starting sequence of the machine for knitting.
- 6) Jobbing on and Running on operation on Flat Knitting Machine.
- 7) Setting of Stitch Quality or Stitch Length on Flat Knitting Machine.
- 8) Knitting of plain fabric on Flat Knitting Machine.
- 9) Knitting of 1 x 1 & 2 x 2 rib on Flat Knitting Machine.
- 10) Transferring of loops from one needle bed to another needle bed with the help of Decca and knitting of single bed fabric.
- 11) Knitting of Decca design and Tuck design.
- 12) Knitting of Half cardigan and Full cardigan fabric.
- 13) Knitting of Half milano and Full milano fabric.

14) Knitting of panels of front, back and sleeves for making :

- i) Pull Over.
- ii) Slip Over.
- iii) Ladies Cardigan.

All practicals to be recorded in file along with procedures, analysis & samples.

Visit to reputed knitting industry/knitting technology institutes-craft melas and report writing for the same.

Note : Semester – I (1,2,3,4,5 and 8)

Semester –II (6,7,9,10,11,12,13,14)

HAND DRIVEN CIRCULAR KNITTING

Paper-III

THEORY

Time : 2 hrs.

M. Marks : 30

1. Classification of Knitting Industry
 - i) Socks Knitting Industry
 - ii) Under Garments Knitting Industry
 - iii) Outerwear Garments Knitting Industry.
2. Socks Knitting Machine its different parts and their uses.
3. Cylinder Cam Set of hand driven socks machine, explanation of its different parts and their functions with diagram.
4. Dial Cam Set of hand driven socks machine, explanation of its different parts and their functions with diagram.
5. Looping elements-Needle, Sinkers and Verges.
6. Diagrammatic presentation of loop formation of latch needle on circular knitting machine.
7. Jobbing on, running on operation of circular knitting.
8. Showing diagrammatically different parts of socks (welt, rib top, leg part, heel part, foot part and toe part).
9. Method of formation of welt on hand socks knitting machine.
10. Method of knitting rib with the use of dial.
11. Method of knitting heel and toe.
12. Method of making complete socks with elastic rib top and 1x1 rib top.
13. Toe closing (i) Linking (ii) Over locking.
14. Defects that occur during circular knitting and their causes and remedies.
15. Different types of articles can be produced on hand driven knitting machine such as Mittens, Socks, Stockings, Gloves etc.

Note : Semester-I (1,2,3,4,5,6,9 and 11)

Semester-II (7,8,10,12,13,14 and 15)

HAND DRIVEN CIRCULAR KNITTING

PRACTICAL

Time : 3 hrs.

M. Marks : 50

- 1) Identification of various parts of socks machine.
- 2) Tools and accessories used in circular knitting and their uses.
- 3) Identification and function of cylinder cams.
- 4) Identification and functions of dial-cams.
- 5) Disassembling and assembling of the cam system of socks machine.
- 6) Raising and Lowering of dial and time setting.
- 7) How to adjust the stitch length and yarn guide of the machine.
- 8) Method of starting machine with jobbing on method and running on method.
- 9) Knitting of welt and 1 x 1 rib.
- 10) Method of knitting heel and toe.
- 11) Knitting of full socks.
- 12) Knitting of stockings.
- 13) Method of linking of toe portion.
- 14) Method of Pressing, Labeling, Folding and packing of finished product.
- 15) Size chart of socks.

All practicals to be recorded in file along with procedures, analysis & samples.

Note : Semester -I (1,2,3,4,5,6,8,9 and 10)

Semester -II (7,11,12,13,14 and 15)

IV ENGINEERING & TECHNOLOGY GROUP

(i) MAINTENANCE AND REPAIR OF ELECTRICAL DOMESTIC APPLIANCES

Paper I.

BASIC ELECTRICITY

Time : 2 hrs.

THEORY

M. Marks : 30

Semester-I

1. Introduction

What is electricity and its sources. Definition of Resistance, Voltage, Current, Power, Energy and their units, Factors affecting resistance of a conductor. Temperature coefficient of resistance. Difference between ac and dc voltage.

2. D.C. Circuits :

Ohm's Law Relation between voltage and current in a dc circuit. Series and parallel resistance circuits, and their equivalent resistance. Series-Parallel

resistance circuits, calculation of equivalent resistance. Kirchhoff's laws and their applications.

3. Batteries

Primary cell, dry cell, battery, series and parallel connection of cells, Secondary cells, Lead Acid Cell, discharging and recharging of battery common charging methods, care and maintenance of secondary Battery Specifications of a cell Battery.

4. Heating and Lighting Effects of Current :

Joule's Laws of electric heating and its domestic applications, heating efficiency Lighting effect of electric current, Filaments used in lamps, lamps and gas discharge lamps, their specifications, working and applications.

5. Capacitors :

Capacitor units and capacity. Concept of charging and discharging of capacitors. Types of capacitors and their use in circuits. Series and parallel connection of capacitors Energy stored in a capacitance.

Semester-II

6. Electromagnetic Effects :

Permanent magnets and Electromagnets their construction and use. Properties of an electromagnet and rules for finding them. Faraday's Laws of Electromagnetic Induction and applications. Dynamically induced e.m.f., its magnitude and direction. Static e.m.f., its magnitude and direction. Static induction, self induced e.m.f. its magnitude and direction. Inductance and its unit. Mutually induced e.m.f. its magnitude and direction.

7. A.C. Circuits :

Principles of Generation of A.C. voltage and wave shape Cycle, frequency, peak value (maximum value) average value, instantaneous value, r.m.s. value Introduction to resistance, capacitance and inductance. What is inductive reactive and capacitive reactance phase, phase difference, power factor (leading and lagging). Impedance, impedance of R.L. & C, A.C Circuits with (i) resistance and inductance, (ii) resistance and capacitance (iii) Resistance, inductance and capacitance in series.

8. Measuring instruments :

Working principles of moving iron and moving coil voltmeters and ammeters, Dynamometer type wattmeter, Ohm meter, Megger and Induction type Energy meter, their circuit connection and application for measurement of electrical quality.

9. Electrical Wiring

Types of wiring - Introduction to casing and capping conduit wiring their procedure systems. Factor for selection of a particular wiring system. Importance of switch, fuse, change over switch and earthing of wiring system. Types of faults, their causes and remedies. Methods of finding numbers of circuits and circuit

distribution by distribution board system. Indian Electricity Rules (IER) related to wiring. Introduction to submeters and their installation in Inverter wiring.

Types of earthing - Plate Earthing, and pipe Earthing, their procedure and application.

Solar Electricity

Need of Solar Energy, Solar Photovoltaic (SPV) Technology, advantage of SPV system, Solar Constant, formation of Solar Cells, SPV Module, Array and Applications of Solar Photovoltaic System.

BASIC ELECTRICITY

Time : 3 hrs.

PRACTICAL

M. Marks : 50

Semester-I

1. Measurement of current, voltage and resistance of the help of multimeter.
2. Verification of Ohm's Law.
3. Measurement of equivalent resistance of series combination of resistors.
4. Measurement of equivalent resistance of parallel combination of resistors.
5. Measurement of equivalent resistance of series-parallel components of resistors.
6. To verify Kirchhoff's current laws.
7. Charging a lead acid battery and to test its state of charge.
8. Study of series and parallel capacitor circuits.
9. Study of series and parallel resistor circuits/lamps.
10. Study of R.L. series circuit and measurement of impedance, power and power factor.
11. Study of R.C. series circuit and measurement of impedance, power and power factor.
12. Study of R.L.C. series circuit and measurement of impedance, power and power factor.
13. Connections of Ammeter, Voltmeter and Wattmeter in an A.C. circuit of resistive load.
14. To test a single phase energy meter with the help of standard wattmeter and stop watch with resistive load.

Semester-II

15. Controlling low voltage lamps in series.
16. Controlling lamps from two or three places.
17. Drawing schematic diagram of single phase supply to consumers.
18. Drawing schematic diagram of three phase supply to consumers.
19. Practice on CTS/TRS (Batten) wiring with 2 fans, 4 lamps, 2 tubes and 4 plug points.
20. Practice on conduit wiring.
21. Polarity (means phase and neutral testing) test of wiring installation.
22. Measurement of insulation resistance of wiring installation by megger.

23. Testing of wiring in stallations with the help of megger.
24. Installation of pipe earthing for wiring installation.
25. Study of plate earthing for wiring installation.
26. Testing faults of wiring installationa nd rectification.
27. Installation of a sub-meter between a given electrical wiring.
28. Measurement of open Circuit Voltage and short circuit current of a PV Module.
29. To study/Install a Solar Street light System.

Paper II ELECTRICAL DOMESTIC APPLIANCES

Time : 2 hrs.

THEORY

M. Marks : 30

Semester-I

1. Introduction to Single phase supply :

Introduction to phase neutral earth, voltage between phase and neutral, phase and earth common faults as like open circuit, shot circuit and earth fault. Series testing board and its uses.

2. Electric Room Heater :

Construction and working principle of Reflector type room heater, common defects, testing and repairs.

3. Electric Iron :

Types of electric iron-ordinary type and Automatic/Thermostat control type, steam iron. Constructions and working principles of electric irons. Common defects, testing and repairs.

4. Electric Stove :

Types of electric stoves-coiled types, hot plate/oven. Construction and working principles of electric stoves. Common defects, testing and repairs.

Semester-II

5. Electric Toaster :

Types of toaster- Ordinary and Automatic. Construction and working principles of electric toasters. Common defects, testing and repairs.

6. Immersion Heater and Gyser :

Construction, working principle and use of immersion heater. Common faults, their causes, testing and repairs.

Construction, working principles and use of Gyser, Common defects, their causes, testing and repairs. Testing and installation of Gyser. Precautions in using immersion heater and gyser.

7. Electric Kettle :

Construction, working principle and use of Electric Kettle. Common faults, their causes.

8. Table Lamp, Low Voltage Night Lamp and Tube Light :

Constructions, working principles and uses of Table Lamp, Night Lamp and Fluorescent Tube (Tube Light) Common faults and their causes, testing and repair. Study of CFL (Compact Fluorescent Light) and LED (Light Emitting Diode).

9. Electric Bell, Buzzer and Door Chimes :

Constructions, working principles and uses of Electric Bell, Buzzer and Door chimes. Common faults and their causes testing and repair.

ELECTRICAL DOMESTIC APPLIANCES

Time : 3 hrs.

PRACTICAL

M. Marks : 50

Semester-I

- 1) Fabrication of a control panel board with meters and series test lamp for testing of electrical appliances.
- 2) Fabrication of a mains lead with three pin plug and iron connector.
- 3) Dismantling and reassembling of reflector type room heater.
- 4) Testing and repair of reflector type room heater.
- 5) Dismantling and reassembling of Electric iron (i) ordinary types and (ii) Automatic/Thermostat control type.
- 6) Testing and repair of Electric iron (i) Ordinary type and (ii) Automatic/Thermostat control type.
- 7) Dismantling and reassembling of Electric stove (i) Coiled type (ii) Hot plate (iii) Oven.
- 8) Testing and repair of Electric Stove (i) Coiled type (ii) Hot plate (iii) Oven.

Semester-II

- 9) Dismantling and reassembling of Electric Toaster (i) Ordinary and (ii) Automatic.
- 10) Testing and repair of Electric Toaster (i) Ordinary and (ii) Automatic.
- 11) Dismantling and reassembling of Gysler.
- 12) Testing and repair of Gysler.
- 13) Dismantling and reassembling of Electric Kettle.
- 14) Testing and repair of Electric Kettle.
- 15) Connections of a fluorescent tube.
- 16) Testing and repair of (i) Table Lamp (ii) Night Lamp and (iii) Tube Light.

- 17) Testing and repair of (i) Electric Bell (ii) Buzzer and (iii) Door chimes.
- 18) Fabrication of an extension cord for three plug points with independent controls.

Paper III MATERIALS AND WORKSHOP PRACTICE

Time : 2 hrs.

THEORY

M. Marks : 30

Semester-I

1. Safety Precautions and Shock Treatment :

Familiarise the students with shop discipline, Layout of shops, Safety precautions. Use of fire fighting equipment. First Aid practice. Causes of electric fire and electric shock. Precautions to avoid electric fire and electric shock. Procedure for removal of person from contact of live wire. Treatment for electric shock and burns as per IEI rules.

2. Common Tools

Familiarise the students with common tools, safe use of tools, their specification and applications.

3. Conducting Materials

Copper and aluminium as low resistivity materials, their electrical characteristics and applications. Electric resistance materials. Materials for lamp filaments and brushes. Tungsten, Nichrome, Euroka, Selenium and Carbon as high resistivity materials, their electrical characteristics and applications.

4. Insulating Materials :

Distinction between conductor, insulator and semi conductor, insulation resistance, dielectric strength, breakdown voltage, mechanical and physical properties and classification of insulating materials. Paper, plastic coated paper. Empire cloth Leatheroid Cotton and silk, Rubber, PVC Porcelain, Bitumen, Micro, Bakelite, Ebonite, Marble, Glass Asbestos, Fibre glass-their uses and applications insulating tapes, Sleeves, insulating and empragnating varnishes and points-their uses and applications.

5. Magnetic Materials :

Classification of materials as Ferromagnetic materials, soft and hard magnetic material, Mild steel, silicon steel, Mu-metal, Permalloy, Alnico as magnetic materials their properties and uses.

6. Structure Materials :

Iron Steel, Brass, Gun Metal and Aluminium as structural materials, their properties and applications.

Semester-II

7. Fuse and soldering Materials

Silver, copper, lead, Tin and alloys as fuse material, their properties and applications. Soldering and Brazing materials and tools. Procedure of soldering and brazing and precautionary measures.

8. Wiring Materials :

ICTP and ICDP main switches, Distribution Boards, Busbar, Conduit fittings and pipes, Battens, Round Block, Board, Switches Lamp holders, Ceiling roses, Plugs, Sockets, Wires, etc. used for different wiring.

9. Lubricants :

Solid, semi-solid and liquid lubricants-uses and applications.

10. Corrosion Protective Points :

Application of paint for corrosion protection and precautions in painting.

11. Transmission of Power :

Belt drive, Shaft drive, Gear drive, Chain drive, Friction drive and their application in domestic appliances.

12. Electrical symbols and blue print reading. Simple Domestic electric circuit drawing.
13. Construction and application of bimetallic relays and thermo-couple for control of temperature and current.
14. Introduction to Miniature Circuit Breaker (MCB) and Earth leakage Circuit Breaker (ELCB), Specifications and their use in electrical circuits.

MATERIALS AND WORKSHOP PRACTICE

Time : 3 hrs.

PRACTICAL

M. Marks : 50

Semester-I

- 1) First aid box practice.
- 2) Identification of common tools.
- 3) To form two identical coils using insulated copper wire and aluminium wire of same gauge and same number of turns and compare their resistance.
- 4) To make coils of Nichrome and Eureka wires of equal lengths and gauge and measure resistance, current and power at a given voltage.
- 5) Identification of different insulating materials.
- 6) Practice on insulating (i) Slots and (ii) Cores of motors.
- 7) Insulating the coil winding with varnish.
- 8) Identification of structural materials parts.

Semester-II

- 9) Replacing a blown fuse of standard current rating.
- 10) Study the relationship between wire diameter and fusing current for instantaneous fusing.
- 11) Soldering practice.
- 12) Lubricating Technique practice.
- 13) Study of thermocoupled oven to control temperature.
- 14) Application of bimetallic relay to control temperature.
- 15) Use of an MCB in an electrical circuit.
- 16) Use of an ELCB in an electrical circuit.

(ii) REPAIR & MAINTENANCE OF RADIO & TELEVISION

Paper-I

BASIC ELECTRONICS

Time : 2 hrs.

THEORY

M. Marks : 30

Semester-I

1. Basic Electricity :

Electricity & its sources ac and dc concept of phase, frequency, graphical representation of ac and dc. Batteries, need of power supply, cells and batteries. Resistors, capacitors and types of resistors and capacitor. Component ratings and color order of resistors and capacitor, relationship between voltage and current. Ohm's law, Kirchhoff's Laws and their applications. Magnetism, Definitions of Electromagnetization electromagnetic induction, flux, permeability. Transformers; concept working principle and application.

Semester-II

2. Circuits :

Series, parallel and combination circuits of resistors, capacitors and inductors, LC, RLC, LC circuits and their applications.

3. Material Services :

- Conductors, Semiconductors and insulators P and N types materials their principles and properties.
- Thermistors - PNP, NPN, symbols, their functioning, Zener Diodes, FET and their applications.
- SCRs - Symbols, characteristics and uses, Diacs, Triacs and their uses. LDR, VDR and Thermistors and their uses.

- Integrated circuits - Introduction to IC's, Types (Audio, Video, Digital, Analogs) their advantages, limitations and applications.

Paper-I**BASIC ELECTRONICS****Time : 3 hrs.****PRACTICAL****M. Marks : 50****Semester-I**

- 1) Drawing of Electronic/Electrical Symbols.
- 2) Freehand sketching of Electronic Components.
- 3) Tracing of given Electronic circuits.
- 4) Identification of components and devices.
- 5) Colour coding of resistors and capacitors.
- 6) Verification of Ohm's Law (Relationship between Voltage and Current).
- 7) Verification of Kirchhoff's Laws.

Semester-II

- 8) Study and use of series and parallel Circuit of (a) resistance (b) capacitors.
- 9) Study of series and parallel Resonant circuits.
- 10) To check a transformer for primary and secondary voltages.
- 11) Fabrication of an extension board for Power supply and use of Line Tester.

Paper-II**ELECTRONIC CIRCUITS****Time : 2 hrs.****THEORY****M. Marks : 30****Semester-I****1. Electronic Circuits**

- Rectifiers-half wave, full wave and bridge type, their working. Capacitors as a Filter. Concept of 'T' and 'π' filters.
- Power supply regulators - Zener regulation, series and shunt regulators and IC regulators, voltage doubler and tripler circuits.
- Amplifiers : Class A, B, AB and C their input and output characteristics and efficiency (without derivations).
- Audio Amplifiers - Voltage and Power amplifiers used in Radio and TV Receivers.
- RF Amplifiers - General Principles, single and double tuned RF and IF amplifiers used in Radio and TV Receivers.

Semester-II

- Oscillators-Concepts of Oscillators, types of oscillators such as Hartley, Colpitts, phase shift, Wien bridge and crystal oscillators, circuits and their working. Feedback and its types, effect of negative feedback on gain, bandwidth, noise and distortion.

2. Measuring Instruments

- Principle of voltmeter, ammeter, multimeter and digital multimeter their uses and applications.
- Cathode Ray Oscilloscope-Basic principle, use of CRO for measurement of voltage and frequency.
- Introduction to frequency meter, wattmeters, energy meter, capacitance meter. Use of signal generator for tuning.

3. Tools

- Soldering Iron - Various types proper use and maintenance
- Desoldering tools
- Common tools used in servicing and assembly in electronic shop.

Paper-II

ELECTRONIC CIRCUITS

Time : 3 hrs.

PRACTICAL

M. Marks : 50

Semester-I

- 1) Measurement of alternating and direct voltages and currents with the help of voltmeter and ammeter.
- 2) Measurement of V, I & R parameters with the help of analog multimeter.
- 3) Measurement of V, I & R parameters with the help of digital multimeter.
- 4) Measurement of voltage & Frequency with the help of an oscilloscope.
- 5) Measurement of frequency with the help of frequency meter.
- 6) Testing of Diode, Transistor, SCR, Zener Diode, L & D and F & T with the help of a multimeter.

Semester-II

- 7) Graded exercises on soldering practice viz. tinned wire, PCB, lugs, connectors etc.
- 8) Fabrication of 3/6/9 volt simple DC power supply using half wave and full wave rectifiers. [Battery Eliminator]
- 9) Fabrication of a Zener regulated DC Power supply.
- 10) Fabrication of DC stabilized supply using series and shunt pass transistors.
- 11) Demonstration and study of Audio Frequency Amplifiers.

- 12) Demonstration and study of Radio Frequency Amplifiers.
- 13) Study and use of AF and RF signal generators for tuning of Transistor/radio receiver.
- 14) Using Signal Injection method of fault finding for servicing of electronic gadgets.
- 15) Demonstration of colpitts and weinbridge oscillators.

Paper-III AM/FM RADIO RECEIVERS & FAULT ANALYSIS

Time : 2 hrs.

THEORY

M. Marks : 30

Semester-I

1. AM Radio Receivers :

Basic concepts of Radio transmission, Modulation, types, necessity and demodulation (no circuits & derivations). Characteristics of a transmitter. Different modes of wave propagation.

Block diagram of radio receiver and its different stages.

Semester-II

2. FM Radio Receivers :

Basic principles and block diagram of FM receivers. Difference between FM and AM receivers.

3. Fault Analysis :

Introduction to systematic fault finding techniques, sectionalization and signal injection and other such techniques. Typical case histories and exercises. Mechanical fixtures-Typical troubles and their remedy.

Paper-III AM/FM RADIO RECEIVERS & FAULT ANALYSIS

Time : 3 hrs.

PRACTICAL

M. Marks : 50

Semester-I

1. Introduction to Electronic drafting :
 - (a) Block Diagram.
 - (b) Schematic Diagram.
 - (c) Layout Diagram.
 - (d) Wiring Diagram.
2. Identification of parts and sections of a medium wave transistor/radio receiver.
3. Assembling a medium wave transistor/radio receiver.
4. Measuring voltages at different test points of a transistor/radio receiver.
5. Check waveforms at input and output parts of different stages with the help of CRO.

Semester-II

6. Alignment of IF stages.

7. Alignment of RF stages.
8. Fault finding in Mechanical fixtures viz. Dial Cord, Volume control, loud speaker etc.
9. Band switch wiring of a multiband radio-receiver.
10. Tracing the circuit of a given transistor/radio receiver.

(iii) ENGINEERING DRAWING & DRAFTING

Paper-I

**ENGINEERING DRAWING
(PLANE GEOMETRY)**

Time : 2 hrs.

THEORY

M. Marks : 30

Semester-I

BASIC CONCEPT :

1. Introduction :

Description of drawing equipment/instruments and its use, technique for handling instruments, selection of equipment/instruments. Description of drafting machine and its usage.

2. Planning and layout of Drawings :

Need for planning, standard sizes of drawing sheets, margins, title blocks and material list according to IS 696-1972. Standard practice of following the prints and planning the working spaces of the drawing sheet.

Scales-simple and diagonal.

3. Lines, lettering and dimensions :

Different types of lines and their usage. Standard practices for writing with single stroke with instruments and free hand vertical and inclined capital and lower case letters and numerals, also black lettering in the ratio 5.4, 7.4 vertical and inclined, Need of dimensioning. Principles of dimensioning, different systems of dimensioning. Arrangement of dimensions.

4. Geometrical Constructions :

Procedure of drawing plane geometrical figures like triangle, square, parallelogram, rhombus, circle and regular polygon, ellipse & parabola.

5. Projections of Solids :

Description of solids like cube, prism, pyramids, tetrahedron, cones and cylinders. Various positions of solids placed on ground or V.P. Projections of solids when axis is inclined to both the planes. (Use First and Third angle projection method).

Semester-II

6. Section of Solids :

Need for sectioning and sectional views. Horizontal Trace and Vertical Trace of cutting planes. Procedure of drawing sectional solids (cube, prism, pyramid,

cylinder, cone) when solids rest on base. Procedure of drawing sectional views of solids when axis is inclined to one plane and parallel to other.

SOLID GEOMETRY

Time : 2hrs.

THEORY

M. Marks : 30

7. Orthographic Projections :

Meaning of H.P., Quadrants, I angle and III angle projection methods, Projections (Front, Top and Side of Simple block.

8. Symbols and Conventions :

Necessity of symbols & conventions , conventions for

- (a) Bricks work, R.C.C., stone , wood, earth, rock, plaster, glass, fibre board, doors, windows, fencing, building, roads, railway lines, bridge canal, district, state and international boundary, Industry, School.
- (b) Valve, pumps, screw threads, springs, knurling, holes on linear pitch circular pitch, gears, bearings, glass, gun metal, cast iron, mild steel, copper, aluminium, lead, zinc, white metal, brass, bronze, asbestos, rubber.
- (c) Bulb, tube, fuse, earthing, plug, socket, switch, Main switch, cell, Battery, conductor, resistance, capacitance, inductance, ammeter, voltmeter, bell, buzzer, loud speaker, fans, regulator, field poles, armature.

9. Fasteners

- (a) Meaning / definitions of pitch, crest, root, depth of threads, minor diameter & major diameter of screw thread.
- (b) Freehand sketches of bolts, nuts, washers.
- (c) Freehand sketches of riveted joints, butt and lap joints.
- (d) Freehand sketches of studs, set screws and forms of threads like British Association , British standard, Whitworth, square, Butteres, Unified, Sellers.
- (e) Freehand Sketches of locking nuts.
- (f) Freehand sketches of foundation bolts like eye bolt, Lewis, Rag, Cotter.
- (g) Freehand sketches of key like square, rectangular, sunk, flat & round, saddle Gib headed key.

10. Sectional orthographic projections :

Need for sectional views, procedure for drawing section views from the given orthographics projections of block.

11. Development of surface of solids :

Importance of development, list out the applications where developed surfaces are used.

Differentiate between parallel line and radial line development, Selection of proper methods of development, procedure for drawing the development of simple and truncated solids. Development of the surface of cube, prism, pyramid, cone, cylinder, and trustrum of pyramid and cones.

ENGINEERING DRAWING

Time : 3 hrs.

PRACTICAL

M. Marks : 50

Semester-I

1 Use of Instruments :

Lines, lettering and Dimensioning

Geometrical Construction with write up of problems.

Projection of lines and plane figures (with write up of problems).

Projection of solids (with write up of problems).

Section at solids twith write up of problems.

(Minimum 25 sheets relating to above concepts.)

Semester-II

2. Orthographic (First angle and third angle)

Projection (first angle)

Projection (third angle)

3. Symbols and Conventions

4. Fasteners

5. Sectional orthographic projections.

6. Development of surfaces

Paper-II BASICS OF BUILDING CONSTRUCTION

Time : 2 hrs.

THEORY

M. Marks : 30

Semester-I

1. Building Layout

2. Foundation.

3. Brick Masonry.

4. Damp Prevention.

5. Door and Windows.

Semester-II

6. Floors.
7. Stairs.
8. Roofs & RCC (Reinforced Concrete Construction).
9. Internal water supply, Sewrage System.
10. Plastering & Pointing.
11. Painting, Distempering and white washing.

BASICS OF BUILDING CONSTRUCTION**Time : 3 hrs.****PRACTICAL****M. Marks : 50****Semester-I**

1. Drawing of Foundation
2. Drawing of Brick Masonary (Diff. Types of Brick Bond).
3. Drawing of DPC (Damp Proof Course)
4. Drawing of Doors & Windows.

Note : Preparation of at least 10 sheets related to the above concepts.**Semester-II**

5. Drawing of Floors.
6. Drawing of Stairs.
7. Drawing of RCC Slab, Beam, Lintel, Chhajja.
8. Drawing of Internal water Supply & sewerage.

Note : Preparation of at least 15 sheets related to the above concepts.**Paper-III****WORKSHOP CALCULATION****Time : 3 hrs.****THEORY****M. Marks : 80****Structure of Question Paper**

In all eight questions will be set. Student will attempt any five questions. Each question will carry 16 marks. A question may have two or more parts.

SYLLABUS**Semester-I****Basics :**

- (i) Log and its application.

- (ii) Mensuration Area and volume of plane and solid figures, i.e. Triangle, quadrant, circle, cube, cylinder, cone, pyramid, prism and their application, calculation of weight of various products of related cost.
- (iii) T-ratio and its simple application.

SCIENCE :

Unit of weight length, time and temperature, M.K.S., E.P.S and S.I Units and their conversion.

Simple Machines :

Calculation of Mechanical Advantage, Velocity ratio and efficiency of simple machines.

Semester-II**Design :**

Simple stress, strain, Hooke's law, Modulus of elasticity, stress - strain -elastic limit, yield point, ultimate stress and breaking stress. Factors of safety, load due to impact and their simple numerical problems.

Design of Riveted Joint : lap and butt joint according to ISI code.

Design of nut and bolt (square and hexagonal) according to ISI code Design of stair case.

Design of simple spread footing foundation for basing on thumb rule method.

- (i) Partition wall/boundary wall
- (ii) Load bearing wall (One brick, one and a half brick and two bricks)
- (iii) Pillars (One brick and one and a half brick)

Definitions :

Coping, Parapet, drip course Line Gola, Terrace, Cornice, slab, R.C.C. lintel, R.C.C. chhajja, string course, plinth level, D.P.C., Footing, Offset, Foundation blocks, Basement, Groundfloor, 1st floor, 2nd floor, third floor, fourth floor.

(iv) MECHANICAL SERVICING (Genl.)**SYLLABUS****Paper-I****LATHE MACHINE AND OPERATIONS****Time : 2 hrs.****THEORY****M. Marks : 30****Semester-I****1. INTRODUCTION TO BASICS :**

Simple sketches of mechanical hand tools. Brief description of machine tools and equipments. Different types of operations by different types of machine tools (only name and diagrams). Safety precautions in using machine tools.

2. INTRODUCTION TO LATHE :

Lathe, centre lathe, General purpose lathe machine, Types of lathe machine. Specification of lathe machine, safety rules of the workshop. Principle of Lathe.

3. LATHE MACHINE PARTS :

Study of various lathe parts and sub assemblies of the lathe & their functions, Accessories viz. Lathe centers, face plate, dressing plate, angle plate, three jaw chuck, four jaw chuck, collet, mandrel, steady rest, moving rest, Tail stock, taper turning attachments. Description of the above accessories giving their sketches.

Semester-II

4. CUTTING TOOLS :

Cutting tools geometry of single point cutting tool, various angles and their values for cutting different metal jobs, Classification, types of cutting tools. Special purpose tools viz. facing tool, parting off tool, threading tool. Boring tool, knurling tool, Tool material, classification, composition, properties and application of High carbon steel, High speed steel, carbide, ceramic and diamond.

5. LATHE MACHINE TERMINOLOGY

Taper, Taper turning, use of taper, Explanation of taper, Calculations for taper, conicity : Speed, Feed, Depth of cut.

6. LATHE OPERATIONS :

Centring, Simple Turning, Stepturning, Facing, Drilling, Boring, Tapering, knurling, Parting off Taper, chamfering, Finishing.

7. CALCULATIONS FOR THREAD CUTTING :

Explanation of simple gear train and compound gear train. Calculation for change wheels metrics thread on English lead screw. Cutting multiple threads. Brief description with dies feed gear box.

8. TURRET AND CAPSTAN LATHES

Difference between centre, capston and turret lathes. Specifications scope and applications of turret and capston lathe in production shop. Machine details such as head stock, work holding devices, turret head, stops and trips, tools and equipments, turret and capston lathe accessories, tool layout operations

LATHE MACHINE AND OPERATIONS

Time : 3 hrs.

PRACTICAL

M. Marks : 50

Semester-I

- I. Holding of job in four jaw chuck, contering with the help of check method, scriber and cutting tool.
- II. Setting the tool in tool port : Plain turning, facing and parting off M.M.S Dies as per given dimensions by teacher.
- III. Step turning on M.S. Bar, as per dimensions given by teacher.

Semester-II

- IV. To do grinding of single point cutting tool according to specific geometry.
- V. Taper turning and knurring and chamfering, threading.
- VI. Drilling and Boring.
- VII. To practice on dismantling and assembling of different accessories and case and maintenance of lathe machine.

Paper-II

ENGINEERING MATERIAL

Time : 2 hrs.

Theory

M. Marks : 30

Semester-I

I. INTRODUCTION :

Materials classification - Metals, Ferrous and Non ferrous, Metals and Non metals. Different non-metals - plastic-rubber and wood.

II. PROPERTIES OF MATERIALS

Physical and mechanical properties. Physical properties as colour, weight etc.

Mechanical properties as Strength, elasticity, plasticity, ductilities britlness, moleability, hardness, toughness. Technological properties, Machinability, For mability, Welderbility Measurement of hardness-brinell and Rockwell.

III. FERROUS METALS

Mineral ores, Different types of ores of metallurgical. Definitions, Description of pig iron. Process, working of Blast furnance, typed cast iron, wrought iron: composition, Properties and uses. Steel: composition, properties and uses.

IV. STEEL AND ALLOYSTEEL :

Introduction: Composition of MS in %age of properties and uses of steel manufacturing of carbon steel. Basic constituents of steel, Iron-Carbon equilibrium Diagram, Composition, properties and uses of special alloy steel such as - chromium, nickel, stainless steel High carbon steel, High speed steel, Molybdenum, tungsten and vanadium steel.

Semester-II

V. HEAT TREATMENT

Definition, Advantages of Heat treatment, Effect of heat on steel, methods of heat treatment i.e. Normalising, Annealing, Hardening, Tempering, case hardening, cyaniding, Nitriding, Flame hardening etc.

VI. MECHANICAL WORKING OF METALS

Introduction, Mechanical working (Process), Hot working, Principle methods of hot working i.e. Rolling (Hot and Cold) Drawing, extruding and Forging (only drop Forging).

VII. SHEET METALS AND PIPE FITTINGS

Introduction, Types of sheets, thickness of sheet metals, (in mm and in gauge No.) uses of Sheet metal (as required). Layout of sheet metals 4 No.s- Pipe Fittings only description.

VIII. NON FERROUS METALS AND ITS ALLOYS :

Simple introduction properties and uses viz. copper and Aluminium.

IX. ANOTHER IMPORTANT ENGG. MATERIAL

Rubber, Plastic, thermoplastic and thermo setting plastic their properties and application, Rubber, Ceramics, wood their applications.

X. QUALITY CONCEPT

Definition of term "Quality" Introduction to quality standards according to BIS viz. IS.14000 (ISO-9000)

ENGINEERING MATERIAL**Paper-II****PRACTICALS****Time : 3 hrs.****M. Marks : 50****Semester-I**

- 1) To identify and distinguish between different Engineering materials based on observed, Physical properties- Make a write up.
- 2) To distinguish between the metal steel, cast Iron and high speed steel by spark pattern test on a grinder.
- 3) To Anneal a chisel.

Semester-II

- 4) Case carburising by hardening powder.
- 5) Hardening of carburised job by waterquenching and oil quenching.
- 6) Tempering of hardened job.
- 7) To make a funnel and weld/solder its joint.
- 8) Practice on cutting of pipes and make joint of two pipes by socket.

At least two visits to selected industry to give the practical, exposure to students.

Paper-III**ENGINEERING DRAWING**

Time : 3 hrs.**PRACTICALS
SYLLABUS****M. Marks : 80****I. INTRODUCTION OF DRAWING INSTRUMENTS & THEIR USE :**

Basic concept of Drawing & Engineering Drawing, Lists of instruments used in Engineering Drawing. Brief knowledge about the instruments. Practice to use all the instruments, Materials used in Drawing. Size of sheet and layout of sheet. Standard sizes of drawing sheets, margin title block etc.

II. LINES AND LETTERING AND DIMENSIONS CONVENTIONS :

Lines, materials, solids, Breaks, Conventional representation used in engineering Standard practice for writing single stroke and double stroke in 7:4/6:5. (Note - At methal stage graph paper may be used after some practice student should bear to draw graph.)

Standard practice for numerals dimensioning.

III. GEOMETRICAL CONSTRUCTIONS

Introduction, definition of points, lines, angles, Review of geometrical constructions such as dimensions of straight line and angle. Triangle, quadrilateral, Polygen, circles, to draw parallel lines. To draw perpendiculars, different patterns, tangents- External and internal (minimum 40 cons).

IV. SCALES

Representative Factor, simple, reduced & Enlarged scale, diagonal and vernier scales.

V. FREE HAND SKETCHING :

Lines, Circles, Squares, rectangles, areas and curves. Diagram of Solids i.e. Round, cube, rectangular block, Cylindrical block, Cone, Prism, Hexagonal etc. Free hand sketch of locking devices, washer, spring washer, keys etc.

VI. ORTHOGRAPHIC PROJECTIONS

Concept of projections, First angle and third angle projections

Simple Examples of orthographic projections of Point, Line & Planes where the Lines are parallel to one of the plane Sketching orthographic views from pictorial views. Orthographic projections of simple machine elements. Orthographic projections of Nut & Bolt (Square as well as hexagonal).

Note : Semester – I (1,3)

Semester-II (2,4,5,6)

(V) FURNITURE MAKING AND DESIGNING

Furniture, Furnishing and Finishing Materials

Paper-I**THEORY****Time : 2 hrs.****M. Marks : 30**

Semester-I

1. Qualities and use of common timber, various types, characteristics, standard size, cost, selection and use of various types of timber used in furniture making.
2. Structure (Cross section) of wood, various parts and their functions.
3. Conversion of timber.
4. The defects in wood and remedial measures.
5. Decay of wood, causes and preventive measures.
6. Methods of seasoning and preservation of timber.

Semester-II

7. Standard commercial sizes of wood and their economical use.
8. Characteristics, cost, selection and use of plywood, hardboard, block board, particle board and their suitability in furniture making.
9. Oil paints, constituents and functions, characteristics, covering capacity and polishing techniques.
10. Varnish and polish : Constituents, characteristics, covering capacity and polishing techniques.
11. Chemical preservatives, their use and importance.
12. Canes: different types, characteristics, costs, patterns and methods of cane work.
13. New furniture materials, Acrylic, Fibre glass, leather, plastic and base materials.
14. Knowledge regarding latest ready to use finishing materials available in the market.

Paper-I FURNITURE, FURNISHING AND FINISHING MATERIALS**Time : 3 hrs.****PRACTICAL****M. Marks : 50****Semester-I**

1. Identification of timbers :
2. Identification of defects and diseases in timber.
3. Practice in making oil paints from given ingredients.

Semester-II

4. Practice in making spirit polish.
5. Practice of painting.
6. Practice of polishing old and new furniture.
7. Market survey of latest furniture materials availability in the market.
8. Practice with latest ready to use finishing materials available in the market.

Paper-II**TOOLS AND PROCESSES****Time : 2 hrs.****THEORY****M. Marks : 30****Semester-I**

1. Workbench : elements and uses of a workbench.
2. Different types of devices, their selection, characteristics and precautions while using.
3. Description, care, maintenance and use of common hand tools and common sheet metal tools.
4. Tools and gauges used in measuring and marking, their identification and use.
5. Different types of chisels and gauges, their characteristics, uses, precautions in using, sharpening chisels and planes spoke shaves and other sharpening tools like surforms and rasps.
6. Different types of saws, their characteristics, selection and use, precautions, maintenance and repair, Techniques of sawing.

Semester-II

7. Various types of clamping and gripping tools, their characteristics, use and selection.
8. Tools used in driving and pulling nails, their selection, precautions and techniques used in driving and removal of nails.
9. Various types of metal & wooden plants including special purpose planks, their characteristics, selection, uses, precautions, maintenance, cost and availability Techniques of planeing.
10. Techniques of finishing wood by using scraper, abrasive papers and files.
11. Various types of screw drivers, their selection, use and precautions.
12. Various types of drilling tools, their selection, use and precautions while drilling.
13. Description, use and importance of butt joints and lap joints, mortise and tenon joints.

Paper-II**TOOLS AND PROCESS****Time : 3 hrs.****PRACTICAL****M. Marks : 50****Semester-I**

1. **Shop-Floor instructory** : Identification of different types of timbers. Identification, care, maintenance of tools and their parts and safety measures to be observed.

2. EXERCISES :

- Ex.1. Marking and Sawing practice.
- Ex.2. Planeing practice.
- Ex.3. Chiselling practice

Semester-II

- Ex.4. Preparation of lap joint.

Ex.5. Preparation of mortise and tenon joint.

Ex.6. Sanding and finishing practice.

3. Preparation & Polishing of the following :

- | | |
|----------------|--|
| 1) Name Plate, | 2) Simple Notice Board, |
| 3) Book Rack, | 4) Prayer Unit/ Puja Unit with Drawer |
| 5) Table | 6) Cushioned stool |

Paper-III

FURNITURE DESIGN

Time : 2 hrs.

THEORY

M. Marks : 30

Semester-I

1. Design : Definition, attributes, composition of design, factors influencing design : climate, utility social and economic conditions.
2. Introduction to colours and colour schemes.
3. Sizes of furniture as related to human body, working levels, viewing level for different purpose as per standard designs and practices.

Semester-II

4. Planning : Principles of furniture set up for a given space, functional utility and aesthetics.

Paper-III

FURNITURE DESIGN

Time : 3 hrs.

PRACTICAL

M. Marks : 50

Semester-I

1. At least 15 sheets regarding furniture design should be prepared.
2. Preparation of furniture album with the help of sales literature, newspaper cuttings & allied materials.

Semester-II

3. Preparation of design for the following furniture items :
Name plate, simple notice board, side board, table, stool, chair without arms, table with drawers, box type settee, Black Board, Notice Board with glass panels.
4. Preparation of design, for the following furniture items with steel structures.
 - 1) Chair with & without arms.
 - 2) Study table
 - 3) Bench
 - 4) Desk

5. Visits to local carpenter workshops/showroom (at least 4 visits).

(VI) MECHANICAL SERVICING (AUTO)

Paper-I

ENGINEERING DRAWING

Time : 2 hrs.

THEORY

M. Marks : 30

Semester-I

PART-A

1. Introduction to Engineering drawing, care and use of drawing instruments and material.
2. Free hand lettering on graph paper.
3. Different types of Engineering lines as per I.S.I. specifications. Practice in free hand sketching of vertical, horizontal & inclined lines & geometrical figures such as-triangle, rectangles and circles, polygon, construction of ellipse, parabola and involute of a circle.
4. Conventional representation of different material in sections e.g. shaft, hollow pipe, rectangular, square, angle, channel, I-section etc.

Semester-II

5. Drawing sheets of 1st angle and 3rd angle projections of solids.
6. Introduction to rivets and its types. Concepts of auto CAD (Computer Added Design).

PART B

WORKSHOP PRACTICE

1. Description of hand tools used in automobile shop. Precautions observed in a workshop.
2. Description of measuring tools and instruments like outside calliper, inside calliper, vernier calliper, outside micrometer, inside micrometer, Dial gauge, marking block and gauge. Try square, Bevel protector, bench centre, depth gauge, compression gauge, pressure gauge.
3. Surface plate, use of open end spanner, ring spanner, box spanner, sockets, torque, wrenches, adjustable spanner, Alien Key wrench.
4. Introduction to paints.

Note : Semester-I 1 to4 (PartA) 1 (PartB)

Semester-II 2 to 4 (Part B) 5,6 (PartA)

ENGINEERING DRAWING

Time : 3 hrs.

PRACTICAL

M. Marks : 50

1. Use of the hand tools, measuring tools and measuring instrument used in workshop.
2. To make a V notch on a flat surface using chipping method.
3. To practice efficient use of files by producing plane surfaces, straight edges of right angle, fillets and round corners.
4. To learn efficient and accurate use of Hacksaw cutting.
5. To learn marking a job using a surface plate, V-block and marking gauge.
6. Fitting a square hole in a M.S. flat.
7. Extraction of a broken stud.
8. Use of hand tools and equipment used in painting and denting.
9. Visit to a nearby mechanical workshop.

Note : Semester -I 1,2,3,4 Semster-II 2,5,6,7,8

Paper-II

AUTOMOBILE ENGINE

Time : 2 hrs.

THEORY

M. Marks : 30

Semester-I

1. Technical terms :

Define Automobile Engine, Power, H.P., I.H.P., B.H.P., F.H.P. Diesel cycle, Auto cycle, stroke, TDC, BDC, Compression Ratio, Swept volume, Clearance volume, Total volume, Mechanical efficiency. Pressure, Heat, Temperature.

2. Engine :

Classification-principle, basic engine operations, 4-stroke, & 2-stroke cycle engine & their difference, spark & compression ignition and their difference.

3. Engine Construction & Mechanism :

Cylinder blocks, crank case, cylinder liner, cylinder head, parts and manifolds, Piston, piston pin, piston ring, connecting rod, crankshaft, cam shaft, flywheel and valves.

Semester-II

4. Ignition system :

Magneto and battery ignition & their difference study of batteries, capacitor discharge ignition system, Distributor, ignition coil, spark plugs, ignition timing, firing order.

5. Fuel system :

- (a) Petrol: Fuel line diagram, fuel feed pump, carburettor-function and working principles, air filter, fuel gauge, inlet and exhaust manifold. Introduction to MPFI system (Multi Point Fuel Injection Systems).
- (b) Diesel: Fuel line, diagram, fuel-injection pump, pressure pipe, fuel injector. Introduction to CRDI (Common Rail Direct Injection System).

6. Engine Cooling system :

Cooling requirement, cooling systems, air cooling and liquid cooling, water jacket, coolant pump, cooling fan, radiator, pressure cap, introduction to thermostat.

7. Lubrication system :

Principles, functions, properties of lubricating oil. Introduction to SAE rating, lubricating system, crank-case ventilation, oil filter, oil pump (gear type and electrical) oil pressure gauge.

Introduction to Charging and starting system :

AUTOMOBILE ENGINE

Time : 3 hrs.

PRACTICAL

M. Marks : 50

Semester-I

- 1) To study the construction and working of a two stroke single cylinder air-cooled petrol engine using a sectional model.
- 2) To study the construction and working of a four stroke single cylinder air-cooled petrol engine using a sectional model.
- 3) To study the construction and working of a two stroke single cylinder air-cooled diesel engine using a sectional model.
- 4) To study the construction and working of a four stroke single cylinder air-cooled diesel engine using a sectional model.
- 5) To study the construction and working of a four stroke four cylinder in-line water cooled petrol engine.
- 6) To study the construction and working of a four stroke four cylinder in-line water cooled diesel engine.
- 7) To study the construction and working of (a) fuel pump (b) carburettor.
- 8) To study the construction and working of lubricating oil pump.

- 9) To study the construction and working of (a) F-I-pump (b) fuel injector.

Semester-II

- 10) To study the construction, working and details of maintenance of distributor assembly.
 11) Battery Testing
 12) Spark plug cleaning and adjusting its gap.
 13) Carburettor servicing.
 14) Removal, cleaning & refitting of air cleaners.
 15) Replacement of cylinder head gasket.
 16) Cleaning of fuel tank and oil sump and refilling.
 17) To study & sketch the fuel supply system of a multicylinder diesel engine.
 18) Check engine compression.
 19) Precautions to be observed before and after starting the engine.
 20)

Paper-III

TRANSMISSION SYSTEM

Time : 2 hrs.

THEORY

M. Marks : 30

1. Classification of automobile, chassis layout of conventional motor vehicle, front-wheel drive, rear engined vehicle, four wheel drive.
2. Clutch : Function of clutch and its principle of working. Types of clutch, constructional details of single plate and multi-plate clutches, Centrifugal clutch, fluid, fly wheel, clutchining. Trouble shooting of clutch and its adjustments.
3. Gearbox : Necessity of a gear box, types of gears used, types of gear boxes-sliding mesh, constant mesh, synchro mesh, constructional details of Gearbox, Gear selector mechanism, over running drive, trouble-shooting of gearbox and its adjustments.
4. Propeller shaft and universal joints, Function of propeller shaft and its constructional details, Hotch kiss drive and torque-tube drive arrangements. Function of universal joint, types of universal joints, their constructional details.
5. Differential : Function of differential and its constructional details. Working principles of differential, differential lock, trouble-shooting of differential and its adjustments.
6. Rear Axle : Function of rear axle and its types, constructional features, trouble-shooting and adjustments.

Note : Semester-I (1,2,4)

Semester-II (3,5,6)

Paper-III

TRANSMISSION SYSTEM

Time : 3 hrs.

PRACTICAL

M. Marks : 50

1. The dismount of single plate dry friction clutch from a vehicle. Dismantle, clean the components, inspect report on the condition, repair, reassemble, adjust and remount on the vehicle.
2. To dismount and dismantle the gears of a constant mesh gear box from a vehicle, clean, inspect report on the condition, repair, reasonable, remount and adjust.
3. To dismount and dismantle the synchro mesh, gear-box from a vehicle, clean the components, inspect report on the condition, repair, reassemble and adjust.
4. To dismount the propeller shaft assembly with universal joints from a vehicle, dismantle, clean, inspect report on the condition, repair, reassemble and remount on the vehicle.
5. To dismount the differential unit from a vehicle, dismantle, clean, inspect report on the condition, repair, reassemble, preloading of drive pinion and refit on the vehicle.
6. To dimount the rear axle shafts from a 4 wheel drive, dismantle wheel bearings, oil seals, clean, inspect report on a condition, repair, reassemble, carryout pre-loading adjustment and complete the assembling of oil the components removed.
7. To study the chassis layout of two wheeler, three wheeler and 4 wheeler.
8. Flushing and refilling of transmission oil.

Note : Semester-I (1,4,7,8)

Semester-II (2,3,5,6)

(vii) COMPUTER TECHNIQUES

Paper-I

COMPUTER FUNDAMENTALS

Time : 2 hrs.

THEORY

M. Marks : 30

Semester-I

Instruction to Computers : Definition, Application of Computers, Characteristics of Computer, Types and generation of Computers, Basic Structure of Computer, Specification of Computer, Data representation within Computer - Bits, Bytes, Kilobytes, Gigabytes, Number System, Memory, Primary memory - RAM, ROM, Secondary memory with respect to structure and file organization - Floppy disk, Hard disk, CD-ROM, Zip Drive, Magnetic tape.

Input/Output Devices : Input Devices-Keyboards, Mouse, Touch Screen, Scanner, Joystick, Output Devices - VDC, Printers.

PROGRAMMING CONCEPTS AND OPERATING SYSTEM

Comparative Study of Computer Languages : Machine Language, Assembly Language, High Level Language, 4GL, Translator, Compiler, Interpreter, Assembler.

Programming Concept & Flow Charting : Problem analysis and problem solving techniques, Algorithm, Flowcharts (detailed practice exercises on mathematical and commercial problems) programming and programming techniques, Pseudo codes.

Operating Systems : Definition, Functions, Different Types of OS, Comparative study of OS, Batch Processing : Multi programming, Time sharing; Real time.

Ms-DOS : Internal Commands - their syntax with options and meaning, limitations and use, External Commands - their syntax with option and meaning, limitations and use (FORMAT, BACKUP, RESTORE, CHKDSK, XCOPY, DISKCOPY, DISKCOMP, ATTRIB, UNDELETE).

MS-WINDOWS AND INTERNET

Ms-Windows 2000/XP (or latest version) : The Windows 2000/XP Environment, Desktop Elements, Active Desktops, Changing the Classic Desktop to Active Desktop, Built-in Toolbars, Starting Programs. The Start Button, Starting from Shortcuts, Starting from My Computer or the Windows Explorer, Working with Windows, Using Menus and Dialog Boxes, Classic Style and Web Style, Choosing a Navigation Style, Mouse Actions with Classic style and Web style, File Tasks, To see What Files are in the Folder Using My Computer, To see what files are in the folder using Windows Explorer, To Create a Folder, To Rename Files or Folders, To Delete Files or Folders, The Recycle Bin, To Retrieve Deleted Files or Folders, To Find a file, Disk Tasks, To Format a Floppy Disk, To Copy a Floppy Disk, Scandisk, Disk De-fragmentation, Application Tasks, To Start a Document from the Start Menu, Shortcuts, To Add an Application to the Start Menu, To Run Programs and Documents Automatically at Startup, To Print a File, Print Manager, To install a Windows Application, To Remove Applications, System Settings, To Set the Date & Time, To Change the Formats of Number, Currency, Date and Time, To install and Delete Fonts, To Customize a Mouse, To Change Display Properties.

Internet : What is Internet, Connection methods, Types of Connections, ISPs, Internet configuration, Browsers - Microsoft Internet explorer, Netscape Navigator.

E-mail : What is e-mail ? Advantages and disadvantages, Sending and receiving messages, Checking mail, Reading Mail, Replying Mail, E-mail software-Outlook Express, Eudora.

Internet Applications : Voice mail, Chatting, Discussion forums, Newsgroup, Entertainment, Information searching, Online education.

Semester-II

MS-WORD AND MULTILINGUAL LEAP OFFICE

Introduction to word processing : Starting MS-WORD, Introduction to menus, sub-menus and tools, Creating a document, Opening a document, Saving a document, Navigation of cursor, Editing text, Formatting text, Viewing documents.

Formatting Document : Line spacing, Paragraph spacing, Setting Tabs, indenting Text, Aligning text, Adding headers and footers; Numbering pages; Inserting a table, Proofing a document, Spell-check utility, Automatic spell-check, Auto text, Auto correct, Printing a Document, Mail Merge.

Leap Office : Need of multilingual software, multilingual software package in detail, Concept of transliteration, Hardware requirements of multilingual software, Installation of different language fonts, Study Key Board layout.

MS EXCEL

Introduction to Ms-Excel

Starting Ms-Excel

Opening a Worksheet

Saving a Worksheet

Spread sheet operations

Entering Numbers, Text, Dates and Time, Formulas

Editing the Worksheet

Deleting Cells, Rows, Columns

Inserting Cells, Rows, Columns

What if Analysis

Printing a Worksheet

Formulas and Functions

Entering Formulas

Absolute and Relative Reference of a Cell

Mixed Referencing

Operations in Formulas

Using Text, Date and Time in a Formula

Arrays and Named Ranges

Functions

Entering Functions

Calculations using Functions

Different types of functions in Excel

Charts, Macros and Forms

Creating a Chart

Editing a Chart

Inserting and Deleting in a Chart

Save and Print a Chart

Macros

Creating and Running Simple Macros

Creating and Running Menu Macros

COMPUTER NETWORKS

Network Bases : Models of Network computing - Centralised computing, Distributed computing and collaborative computing.

Network Models - client server, peer to peer, LAN, MAN, WAN.

Connection types and Physical topologies - Ring, Bus, Star, Mesh and Hybrid.

COMPUTER FUNDAMENTALS

Time : 3 hrs.

PRACTICAL

M. Marks : 50

Semester-I

1. COMPUTER OPERATIONS, MS-DOS, MS-WINDOWS 2000/XP

1. Study and Observation of connection of UPS/CVT to mains and computer.
2. Study and practice of various peripherals devices attached to the computer.
3. Starting and shutdown of computer.
4. Opening (or invoking) the application.
5. Closing the application.
6. Operating the various applications at primary level.
7. Methodically operating and mastering the any of the application like Notepad, Wordpad.
8. Installation of DOS.
9. Fine-Tuning MS-DOS.
10. Use of Internal and External Commands of DOS file operation.
11. Creation and usage of batch file - AUTOEXEC.BAT
12. Creation and usage of sys files - CONFIG.SYS
13. Standard file and directory command.
14. Designing and practicing the alongrithims and flowcharts of various problems.
15. Installation of Windows.
16. Managing Files and Folders.
17. Create a picture using the Windows Paint application and save in the folder.
18. Study of different menus and submenus in Windows.
19. Working on MS Access, MS Excel, Power Point, MS-Word.

Semester-II

II. MS-WORD AND MULTILINGUAL LEAP OFFICE

1. Creating a document with New.
2. Opening an existing document with Open from the specified path.
3. Saving the document using Save, Save as, Save as Web Page-option.
4. Using Page Set-up, Web Preview, Print Preview and Print option.
5. Editing a document : Using Cut, Copy, Paste, Making Block, Find and Replace etc.
6. Viewing a document : Viewing as per the requirement, Setting Toolbars.
7. Formatting a document using various option in Format.
8. Using Tools in MS-WORD.
9. Working on Table in MS-WORD : Creating a table, inserting, deleting rows or columns.
10. Create Windows, edit and print a document file, using MS-WORD.
11. Genrate two page document in the regional language using Leap Office.

III. MS EXCEL

Generate and print a graph using Ms-Excel.

IV. Internet and Networking : Demo**Paper-II MATHEMATICS AND STATISTICS****Time : 3 hrs.****THEORY****M. Marks : 80**

Mathematics : Quadratic equation, Trigonometry, Boolean Algebra, Number System, Binary Number System, Octal, Hexodecimal Number System.

Statistics : Mean, Mode, Median, Correlation, Regression, Standard Deviation.

Note : Semester-I Mathematics: Quadratic equation, Boolean Algopra, Number System, Binarey Number System, Octal, Hexadeciamal Number System.

Semeter-II Mathematics : Mathematics : Trigonometry

Statistics : Mean, Mode, Median, Correlation, Regression, Standard Deviation.

Paper-III**PROGRAMMING IN C****Time : 2 hrs.****THEORY****M. Marks : 30****Semester-I****1. PROGRAMMING TECHNIQUES**

Identification of problem

Problem solving techniques

Algorithms

Flowcharts

Pseudo code

2. FUNDAMENTAL OF C PROGRAMMING

History of C

Structure of a C Program

Data types : int, float, char, double, void

Constant and Variables

Variable Declaration

Integer, real, float, character, logical variable, string variable

Constants

3. OPERATORS AND EXPRESSIONS

Arithmetic operators

Relational operators

Logical operators

Expressions

Bit operation ? operator, & operator, *operator

Type casting, type conversion

4. DECISION MAKING AND LOOPING

if-then

if-then - else ladder

Nested if-else

for loop

while

5. ARRAYS AND FUNCTIONS

Arroys declaration

One and two dimensional arroys

Functions - Fundamentals

General Form

Function arguments

Return value

Semester-II

6. BASIC I/O

Formatted Input/Output

Unformatted Input/Output
 Program design examples.
 Summation of a set of numbers
 Generation of fibonacci sequence
 Generation of positive prime numbers
 Finding key smallest element
 Sorting by insertion

7. STRUCTURED PROGRAMMING

Control structures
 Do/While
 Switch statements
 Break and continue
 Exit () function
 Go to and label

8. ADVANCED FEATURES IN FUNCTIONS

Type modifiers and storage class specifies for a data types
 Scope Rules
 Local and Global variables
 Scope rules for functions
 Parameter passing : Call-by-Value and Call-by-Reference
 Calling functions with Arrays
 argc and argv
 Recursion
 Basic Concept
 Design examples
 *Tower of Hanoi
 **Recursive Quick sort

9. DYNAMIC DATA STRUCTURE IN C

Pointers

the & and *operators
 Pointer expression
 Pointer Assignments
 Pointer arithmetic
 Pointer comparison
 The dynamic allocation functions-malloc and calloc

Pointer vs Arrays

Arrays of Pointers

Pointers to pointers

Instialising pointers

Pointer to functions

Functions returning Pointers

Function with variable number of Arguments

Structure

Basic of Structures

Declaring a Structures

Referencing Structure elements

Array of Structures

Passing Structures of functions

Passing entire Structure to Function

Structure Pointers.

Declaring a Structure pointer

Using Structure Pointers

Arrays and Structures within Structures Uses.

Unions

Declaration

Uses

Enumerated Data Types

Linked list insertion, deletion and search

10. FILE HANDLING IN C

The file pointer

File assessing functions

fopen, fclose, putsc, getc, fprintf

C pre-processor

decline

include

undef

conditional compilation directives # if, # else, #elif, #endif, # ifdef and # ifndef C
Standard Library and Header Files

Header files, sidio h, ctype.h, string.h, stdlib.h, time.h etc.

Standard library functions
 String functions
 Mathematical functions
 Variable argument list functions
 Utility functions
 Character class test functions.

Paper-III**PROGRAMMING IN C****Time : 3 hrs.****PRACTICAL****M. Marks : 50****Semester-I**

1. Programs using problem mainly computational to illustrate expression and operator precedence.
2. Problem relating to sequence, selection and iteration.
3. Problem relating to arrays.
4. Problem which involve manipulation of two dimensional arrays such as addition, subtraction, multiplication and transpose.

Semester-II

5. Problems which made use of and manipulate arguments to main (as per M.S.S.).
6. Problem involving manipulation of arrays of structures.
7. Problems involving the manipulations.
8. Problems for dynamic, storage allocation such as link list, stack.

(VIII) MANUFACTURING OF SPORTS GOODS**Paper-I****WOOD BASED SPORTS GOODS****Time : 2 hrs.****THEORY****M. Marks : 30**

1. Introduction and importance of wood based sports goods industry. Scope of sports goods (wood) industries in India.
2. Raw material, auxiliaries, their availability and uses in sports goods. Types of woods used in sports Industry and reasons of its utilization.
3. Tools and Equipments :
 Various types tools, tool kit, working bench and its sketch, Tool Kit necessity, Uses of tools and equipments used for making different items. Maintenance of tools and equipments.

4. Safety precautions to be observed while working in the workshop.
5. Seasoning, its advantages and various methods of seasoning of wood. Various defects of wood. Seasoning method generally used in India and Reasons for its use.
6. Various wood joints used in the manufacture of various sports goods.
7. Various types of adhesives & their usages.
8. Drawing, Designing and standard specifications of the following :
 - (1) Steel Badminton racket.
 - (2) Table Tennis Bat.
 - (3) Hockey Stick.
 - (4) Chess Board.
 - (5) Golf stick.

Note : Semester – I (1,2,3,4 and 8 (1,2))

Semester-II (5,6,7 and 8 (3,4,5))

WOOD BASED SPORTS GOODS

Time : 3 hrs.

PRACTICAL

M. Marks : 50

1. Identification and usages of tools.
2. Sharpening of tools.
3. Practice in making joints and application of adhesives.
4. Making the following sports items :
 - (1) Steel Badminton racket.
 - (2) Table Tennis Bat.
 - (3) Hockey Stick.
 - (4) Chess Board.
 - (5) Gutting of badminton racket

Note : Semester –I (1,2,3 (Practice in making joints) and 4 (1,2))

Semester-II (3 (Application of adhesives) and 4 (3,4,5))

Paper-II LEATHER AND SYNTHETIC BASED SPORTS GOODS

Time : 2 hrs.

THEORY

M. Marks : 30

1. Introduction and importance of leather & synthetic based sports goods industry. Scope of sports goods (leather) industry in India. (1)
2. Raw material, auxiliaries, their availability and uses in sports goods. Major leathers of different animals used in this industry. (1)

3. Reasons of use of synthetic sheets in these days in this industry specially for all types of balls like Foot-Ball, Volley Ball, Basket Ball and other balls comes in this categories.
4. Various types of machinery and equipments used and their maintenance.
5. Proper selection of leather components from finished leather.
6. Hide and sketch of Hide, labeling its sketch, best quality hide and its growth, reason of best part of Hide.
7. Drawing, Designing and standard specifications of the following.
 - (1) Football 32 panels.
 - (2) Volleyball 32 panels.
 - (3) Cricket Ball 4/2 panels.

Note : Semester – I (1,2,3,4 and 7 (Football))
Semester-II (5,6 and 7 (2,3)

LEATHER AND SYNTHETIC BASED SPORTS GOODS

Time : 3 hrs.

PRACTICAL

M. Marks : 50

1. Identification and usages of tools and dies.
2. Use of machinery of panel cutting.
3. Practice in joining of panels.
4. Making the following sports items.
 - (1) Foot ball
 - (2) Volley ball
 - (3) Cricket ball (Semi-Finish)

Note : Semester- I (1,2,3, and 4 Football)
Semester-II (4 (2,3,)

Paper-III

TEXTILE BASED SPORTS GOODS

Time : 2 hrs.

THEORY

M. Marks : 30

1. Introduction and importance of textile based sports goods industry. Scope of textile based sports goods industry in India.
2. Raw material, auxiliaries, their availability and uses in sports goods. Kind of leather used in this industry.
3. Various types of machinery and equipments used and their maintenance.
4. Pattern, its importance, Detail Study of Raw materials used for making patterns.
5. Drawing and designing of pattern cutting pertaining to all types of sports gloves, viz. batting gloves, wicket-keeping gloves, football goalkeeper gloves, hockey goalkeeper gloves, industrial gloves, boxing gloves, goal gloves.

Note : Semester- I (1,2 and 3)
Semester-II (4 and 5)

Paper-III TEXTILE BASED SPORTS GOODS

Time : 3 hrs.

PRACTICAL

M. Marks : 50

1. Identification and usages of tools.
2. Practice in pattern cutting.
3. Cutting of components.
4. Making the following items.
 - (1) Batting gloves.
 - (2) Wicket-keeping gloves.
 - (3) Football goal-keeper gloves.
 - (4) Hockey goal-keeper gloves.
 - (5) Industrial gloves.

Note : Semester-I (1 and 3)
Semster-II (2 and 4)

(XI) MANUFACTURING OF LEATHER GOODS

Paper-I

PATTERN CUTTING AND DESIGNING

Time : 2 hrs.

THEORY

M. Marks : 30

Semester-I

1. Introduction and importance of tools required in pattern cutting and designing.
2. Safety precautions to be observed while working in workshop.
3. Basic principles of pattern cutting.

Semester-II

4. Material used in pattern cutting.
5. Drawing and designing of pattern cutting viz. Wallets/Purses, Dak Pad, File Cover, etc.
6. Various types of machinery and equipments used and their care and maintenance.
7. Pattern cutting and designing of children Soft Toys.

PATTERN CUTTING AND DESIGNING

Time : 3 hrs.

PRACTICAL

M. Marks : 50

Semester-I

1. Identification and usage of tools.
2. Sharpening and preparation of tools.

Semester-II

3. Care and maintenance of tools.
4. Practice of pattern cutting viz. Wallets/Purses, Dak Pad, File Cover etc.
5. Practice on hand sketches of different patterns viz. Wallets/Purses, Dak Pad, File Cover etc.

Paper-II

NOVELTY LEATHER ITEMS

Time : 2 hrs.

THEORY

M. Marks : 30

Semester-I

1. Introduction and scope of the leather goods industry and its status in India with special reference to Punjab.
2. Machinery and tools used in leather goods industry.
3. Raw material, auxiliaries, their availability, proper utilization and uses in leather goods industry.

Semester-II

4. Types of threads and adhesives used in leather goods.
5. Introduction of various kinds of leather and its processing and general defects, measurement. Machines and tools required for measurement of hides and skins.
6. Sequence of operations while making: Wallet/purses, Dak Pad, Waist belts, Goggles cases, Refrigerator handle cover and File Cover etc.
7. Cost Calculation of the above, finished goods.

NOVELTY LEATHER ITEMS

Time : 3 hrs.

PRACTICAL

M. Marks : 50

Semester-I

1. Identification and working of machinery and tools.
2. Identification of various types of raw materials.
3. Sample collection of various types of leather, raxine and their linings.

Semester-II

4. Various types of skiving and folding.
5. Preparation and practice of wallet.
6. Preparation and practice of waist belt.
7. Preparation and practice of File Cover.

Paper-III**TRAVELLING LEATHER GOODS****Time : 2 hrs.****THEORY****M. Marks : 30****Semester-I**

1. Introduction and importance of travelling leather goods.
2. Various types of raw material required for the manufacturing of traveling leather goods.

Semester-II

3. Sequence of operations while making the following : conductors cash bag, school bag, air bag, part folio, TV Cover, lady purse, office bag and Shopping Bag etc.
4. Cost calculation of the above finished goods.

Paper-III**TRAVELLING LEATHER GOODS****Time : 3 hrs.****PRACTICAL****M. Marks : 50****Semester-I**

1. Identification and selection of raw material used in traveling leather goods.
2. Practice of various types of sewing machines and stitching.
3. Pattern cutting of conductor cash bag, lady purse, air bag, portfolio, school bag, TV cover, Office bag, shopping bag.

Semester-II

4. Preparation and practice of Conductor cash bag, lady purse, air bag, portfolio, TV Cover, Office bag, shopping bag and their cost calculation.

(V) HUMANITIES & OTHERS GROUP**COMMERCIAL ART****Paper-I****COMMERCIAL ART AND DRAWING****Time : 5 hrs.****PRACTICAL****M. Marks : 80****Structure of Question Paper**

The question paper will consists of 3 parts.

No. 1**30 marks**

This part will be based upon Unit I of the syllabus. Two questions will be asked and the student will do any one out of these. The distribution of marks will be as follows :

| | |
|-------------|----------|
| Composition | 10 marks |
| Expression | 10 marks |

Finishing 10 marks

No. 2**30 marks**

This will be based upon Unit II of the syllabus. Any two questions will be asked and the student will attempt any one. The distribution of marks will be as follows :

Composition 10 marks

Expression 10 marks

Finishing 10 marks

No. 3**20 marks**

This part relates to sessional work. Students will show atleast 20 articles relating to Drawing and layout which have been designed by him during the whole academic year.

SYLLABUS**Semester-I****Topics :**

1. Drawing from file : Head Study :

Or

Drawing from Still file. Monochrome/Colours.

Sessional Work

At least Six articles should be prepared by the Candidates.

The Practical Examiner will award the marks.

Semester-II

2. Drawing from nature: Flowers, Trees, Land scape Painting, Birds, Animals etc.

Or

Study of Techniques of illustrations : Pen, ink/wash.

Sessional Work

At least Nine articles should be prepared by the Candidates.

The Practical Examiner will award the marks.

Paper-II**DESIGN AND LAYOUT****Time : 5 hrs.****PRACTICAL****M. Marks : 80**

Structure of Question Paper

The question paper will consists of 3 parts.

No. 1

30 marks

This part will be based upon Unit I of the syllabus. Two questions will be asked and the student will do any one out of these. The distribution of marks will be as follows :

| | |
|-------------|----------|
| Composition | 10 marks |
| Expression | 10 marks |
| Finishing | 10 marks |

No. 2

30 marks

This will be based upon Unit II of the syllabus. Any two questions will be asked and the student will attempt any one. The distribution of marks will be as follows :

| | |
|-------------|----------|
| Composition | 10 marks |
| Expression | 10 marks |
| Finishing | 10 marks |

No. 3

20 marks

This part relates to sessional work. Students will show atleast 20 articles relating to Drawing and layout which have been designed by him during the whole academic year.

SYLLABUS Semester-I

Topics :

1. Lettering and Typography

Calligraphy

Copying from old manuscripts

Study of various scripts, Gurmukhi, English, devanagri and Roman etc.

Preparation of Simple layout, Design and Lettering

Or

Book and Magzine cover

Design and their colour schemes

At least six articles should be prepared by the candidates.

The practical examiner will award the marks.

Semester-II

2. Preparation of Poster based on combination of Lettering and simple illustration.
3. Sessional Work

At least nine articles should be prepared by the candidates.

The practical examiner will award the marks.

Paper-III TECHNICAL THEORY OF COMMERCIAL ART

Time : 3 hrs.

THEORY

M. Marks : 80

Structure of Question Paper

1. In all eight questions will be set from the prescribed syllabus. Students will have to attempt any five questions from these. Each question will carry 16 marks. A question may have two or more parts. The questions should be evenly distributed from the syllabus.

SYLLABUS**Semester-I**

1. Introduction and importance of Commercial Art in Life.
2. Important Art Terminologies used in Basic Design, Point, Line, Curve, Form, Tone and Texture, Monochrome, Basic Colours, Secondary Colours, Warm, Cool, Harmonious and Contrast Colours.
3. Principles of good composition.
Distribution of Space, Balance, Rhythm, Balance, Abstraction and Stylization and Proportion.

Semester-II

4. Use of Perspective in illustration i.e.
In landscape Painting, Anatomy and still life.
5. Various types of painting Techniques
Transparent water colours Goache.
Opaque water colours Goache.
6. Batik Technique, Mural Technique.
Fresco, Gil Painting Technique.

7. Various types of material and equipment used in illustrations.

8. Stencilling and spray work.

9. Print Making : Lino cut, Relief Printing.

Block Making, Silk Screen Printing from line and half tone blocks letter and offset printing.

10. Principles of Poster design.

Layout and composition and book illustrations.

11. Sketching and its importance in Commercial art.

12. Qualities of good commercial artist (Semeter-I)

Note : Semester -I (1,2,3 and 12)

Semester-II (4,5,6,7,8,9,10 and 11)