

SRI VENKATESWARA UNIVERSITY: TIRUPATI
B.VOC. HONOURS PROGRAMME IN HORTICULTURE
Under CBCS W.E.F. 2023-2024

COURSE STRUCTURE

SEMESTER - II

	Skills Gen. Edu	Courses	Title of Paper/Course and code	Credits per course	Hours/ week	Total Hours/ Course	Marks		
							Internal	External	Total
	General Education component Gen.Edu	Language	General English	3	4	60	25	75	100
2			Telugu	3	4	60	25	75	100
		Skill Course	Marketing Skills	2	2	30		50	50
4			Investment Planning	2	2	30		50	50
5	Domain Skill component	Major-I	Fundamentals of Horticulture	3	3	45	25	75	100
6		Practical	Fundamentals of Horticulture	1	2	30		50	50
7		Major -II	Silvi Horticulture	3	3	45	25	75	100
8		Practical	Silvi Horticulture	1	2	30		50	50
9		Minor-I	Milk Production and Management, Dairy Plant Design and Dairy Development	3	3	45	25	75	100
10		Practical	Milk Production and Management, Dairy Plant Design and Dairy Development	1	2	30		50	50
		TOTAL		22	27	405	125	625	750

SRI VENKATESWARA UNIVERSITY - TIRUPATI
Program: B.A. /B.Sc. /B.Com/BBA/BCA/B.A.(OL) Honours in
(GENERAL ENGLISH)
FIRST YEAR - II SEMESTER
(W.e.f. Academic Year 2023 - 24)

SKILL GENIE – II A COURSE IN READING AND WRITING SKILLS

Learning Outcomes:

By the end of the course the learner will be able to:

- Use reading skills effectively
- Comprehend different texts
- Interpret different types of texts
- Analyze what is being read
- Build up a repository of active vocabulary
- Use good writing strategies
- Write well for any purpose
- Improve writing skills independently for future needs

I. UNIT:

Poetry:

1. Ulysses – Alfred Lord Tennyson

Skills:

2. Vocabulary: Conversion of Words
3. One Word Substitutes
4. Collocations

II. UNIT:

Prose:

1. The Best Investment I Ever Made – A.J. Cronin

Poetry:

Non-Detailed Text:

2. Florence Nightingale - Abrar Mohsin

Skills:

3. Skimming and Scanning

III. UNIT

Prose:

1. The Night Train at Deoli - Ruskin Bond

Poetry:

2. Stopping By Woods on Snowy Evening –
Robert Frost

Skills:

3. Reading Comprehension
4. Note Making/Taking

IV. UNIT

Poetry:

1. Night of the Scorpion – Nissim Ezekiel

Skills:

2. Expansion of Ideas
3. Notices, Agendas and Minutes

V. UNIT

Non-Detailed Text:

1. An Astrologer's Day R K Narayan

Skills:

2. Curriculum Vitae and Resume
3. Letters
4. E-Correspondence

SRI VENKATESWARA UNIVERSITY - TIRUPATI
Program: B.A. /B.Sc. /B.Com/BBA/BCA/B.A.(OL) Honours in (**GENERAL ENGLISH**)

FIRST YEAR - II SEMESTER
(W.e.f. Academic Year 2023 - 24)
THREE YEAR DEGREE EXAMINATIONS

MODEL QUESTION PAPER 2023-2024

CHOICE BASED CREDIT SYSTEM: SEMESTER – II

SKILL GENIE – II: A COURSE IN READING AND WRITING SKILLS

Time: 3 Hours

Marks: 75

I) Answer any THREE of the following questions. (3X5=15)

a. What is Ulysses searching for in "Ulysses"?

b. Write Noun forms for the following words by adding a Suffix:

i) Child ii) Absorb iii) Noble iv) Lazy v) Smuggle

c. Write One Word Substitutes for the following.

i) A person who eats human flesh

ii) Something that cannot be changed

iii) One who speaks many languages

iv) One who never takes alcoholic drinks

v) One who looks at the dark side of things.

d. Match the following into appropriate collocations:

A		B
1. Cut	()	A. thrift
2. Name	()	B. throat
3. Spend	()	C. room
4. Bed	()	D. day
5. Birth	()	E. board

e. Explain: "To strive, to seek, to find, and not to yield"

II) Answer any THREE of the following questions. (3X5=15)

a. Summarize "The Best Investment I Ever Made" in your own words.

b. Write a note on the terrible conditions in the Crimean Hospitals.

c. Why was Florence Nightingale called "The Lady with the Lamp"?

d. What are the techniques of Skimming?

e. Discuss Scanning as the reading skill.

III) Answer any THREE of the following questions. (3X5=15)

a. Describe the author's second meeting with the basket selling girl.

b. Summarize the poem "Stopping by the Woods on a Snowy Evening" in your own words.

- c. Explain the climax of the short story "The Night Train at Deoli" in your own words.

d. Read the following passage and answer the questions that follow.

Children should be educated without pressure. They should enter into adulthood free from the damaging effects of tradition and fear. Free expression of thought should be given to the children. A child once asked Krishnamurthy: "Is it your hobby to give lectures? Don't you get tired of talking? Why are you doing it?" Krishnamurthy replied: "I am glad you asked that question. You know, if you love something, you never get tired of it. I mean love in which there is no desire of wanting something out of it. If you are talking because you are getting something out of it-money, reward, sense of your importance-then there is weariness. Then it has no meaning because it is only self fulfillment, but if there is love in your heart, it is like a fountain, always giving fresh water".

Questions

- How should children be educated?
- What according to Krishnamurthy is that one quality which makes one never to get tired?
- When does one get tired of doing something? Give two examples.
- How should the children enter into adulthood?
- Which word in the passage means 'harmful'?

e. Make Notes on the following passage.

The human brain is spherical like a ball. It is divided into two halves called the two hemispheres. The right hemisphere controls the working of the left side of the body, while the left hemisphere controls the right side. Furthermore, each hemisphere controls certain kinds of mental activity. In most people reasoning or logical thinking and the learning of mathematics and languages are controlled by the left hemisphere while the abilities in the arts and crafts and in music, dance and sports are controlled by the right hemisphere.

IV) Answer any THREE of the following questions. (3X5=15)

- Describe the character of the 'mother' in the poem the "Night of the Scorpion".
- Too many cooks spoil the broth. Expand the idea.
- How does Nissim Ezekiel present motherhood in the poem "Night of the Scorpion"?
- Imagine that you have been made in-charge to conduct Kabaddi competitions in your college. Prepare a notice inviting students to participate in the competitions.
- What are minutes and why are they important?

V) Answer any THREE of the following questions. (3X5=15)

- Justify the Title "An Astrologer's Day".

- b.** Prepare a CV for the post of a Lecturer in English in a Degree College.
- c.** Write a letter to the editor of the newspaper about irregular tap water supply.
- d.** Explain the format/ structure/layout/components of a Resume.
- e.** What is E-Mail? Discuss its advantages. Why is it becoming popular media of communication?

SRI VENKATESWARA UNIVERSITY, TIRUPATI

B.A., / B.Sc., / B.Com., Honours - General Telugu

First Year, Semester - II

Course - 2 : సృజనాత్మక రచన

Theory

Credits : 3

4hrs/ week

పాఠ్య ప్రణాళిక

I వ్యక్తీకరణ నైపుణ్యాలు

భాష - నిర్వచనాలు, లక్షణాలు

భాష - ఆవశ్యకత, ప్రయోజనాలు

వర్ణం - పదం - వాక్యం - సామాన్య, సంక్లిష్ట, సంయుక్త వాక్యాలు (రూపాన్ని బట్టి వాక్యభేదాలు)

II అనువాద రచన

అనువాదం - నిర్వచనాలు, ఆవశ్యకత

అనువాద పద్ధతులు

అనువాద సమస్యలు - భౌగోళ, భాష, సాంస్కృతిక సమస్యలు

- అభ్యాసం ఆంగ్లం నుంచి తెలుగుకు, తెలుగు నుంచి ఆంగ్లానికి ఒక “పేరా” అనువాదం చేయడం

III మాధ్యమాలకు రచన

పత్రికా రచన - వార్తారచన

శ్రవ్య మాధ్యమం - రేడియో రచన (కథ), Podcast (డాక్యుమెంటరీ)

దృశ్య మాధ్యమం - రూపకం (Skit), వ్యాఖ్యానం (Anchoring)

- ముద్రణా మాధ్యమ / శ్రవ్య మాధ్యమ / దృశ్య మాధ్యమ రచన విద్యార్థుల చేత చేయించడం

IV తెలుగు వ్యాస రచన

తెలుగు వ్యాసం - నిర్వచనాలు, లక్షణాలు

వివిధ రకాల వ్యాసాలు

సాక్షి వ్యాసం - స్వభాష

- విద్యార్థి చేత వ్యాసరచన చేయించడం

V తెలుగు సాంకేతికత

తెలుగు లిపి పరిచయం - యూనికోడ్

సామాజిక మాధ్యమాల్లో తెలుగు (‘ఇ’ పత్రికలు, వెబ్‌సైట్లు, బ్లాగులు)

- సామాజిక మాధ్యమాల్లో తెలుగు రచనలు చేయించడం.

SRI VENKATESWARA UNIVERSITY : TIRUPATI
Courses Offered for All Groups
LIFE SKILLS COURSES
w.e.f. AY 2023-24 (SEMESTER-II)
SKILLCOURSE
MARKETINGSKILLS

Credits:2

2hrs/w

week

Course Objective:

This course will help the students to develop a better appreciation and understanding of the role of marketing in a business organization specifically, and able to have operational skills of various marketing activities.

Learning Outcomes:

The learner is able to:

1. Formulate a *marketing* plan that will meet the needs or goals of a business
or organization and Conduct *market research* to provide information needed to make *marketing* decisions.
2. Understand different strategies for effective design of Marketing Mix;
3. Know the Sales Skills including effective personal selling skills;

UNIT I: INTRODUCTION TO MARKETING:

Marketing Management Tasks
Marketing Environment
Marketing Research and Information
Market Segmentation
Determinants of Consumer Behaviour

UNIT II: MARKETING MIX:

Elements of Marketing Mix
7P's of Service Marketing Mix
Product Life Cycle
Sales Promotion
Social Media Marketing

UNIT III: NATURE AND ROLE OF SELLING:

Nature and Importance of Selling
Attributes of a Good Salesperson
Personality and Physical Characteristics
Communication Skills

CURRICULAR ACTIVITIES:

1. Analyze different needs and wants of consumers in your locality or region
2. Prepare the prevalent marketing environment in your locality or region.
3. Identify Product Life Cycle stages of few Products like consumer durables(ex., Electronic goods ,Computers, etc.).
4. Analyze Marketing strategies/planning used by automobile cosmetic and FMCG companies.
5. Conduct Market Research for the need of new products in your region.

REFERENCES

1. Philip Kotler, Kevin Lane Keller, Abraham Koshy & Mithileswar Jha, *Marketing Management-A South Asian Perspective*, Pearson Education.
2. Agarwal, P.K., *Marketing Management-An Indian perspective*, Pragati Prakasham
3. Kazmi SHH, *Marketing Management Text and Cases*, Excel.
4. Philip Kotler and Armstrong G., *MARKETING*, Prentice Hall of India, 12th Edition.
5. Core Selling Skills: Because Selling Is All About People
Paperback – 1 January 2015 by Les Giblin (Author)
6. Ramaswamy V.S. & Nama Kumari, S., *Marketing Management-Planning and Control*, Macmillan.

E-LEARNING REFERENCE:

1. https://www.udemy.com/course/the-new-manager-managing-people-teams-processes/?utm_source=adwords&utm_medium=udemyads&utm_campaign=Leadership_v.NONP_la.EN_cc.INDIA&utm_term=._ag_136108019508._ad_606494316205_.d_e_c_.dm._pl._ti_kwd-295074359507_.li_9302139_.pd._&utm_term=._pd._kw_business+management+and+leadership_.&matchtype=b&gclid=CjwKCAjww7KmBhAyEiwA5-PUSp4Q_OUYVm29rgKdiM_Oc2hfjgLJIb6F2pxFukILjqtD-JDI8-kEYxoC6W4QAvD_BwE

SRI VENKATESWARA UNIVERSITY : TIRUPATI

Courses Offered for All Groups

LIFE SKILLS COURSES

w.e.f. AY 2023-24 SEMESTER-II

FORMAT OF MODEL QUESTION PAPER

SKILLCOURSE

MARKETINGSKILLS

Time: 1½hrs

Max. Marks 50

Section A

Answer any Five of the following

5 X 10 = 50 M

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.

SRI VENKATESWARA UNIVERSITY : TIRUPATI

Courses Offered for All Groups

LIFE SKILLS COURSES

w.e.f. AY 2023-24 (SEMESTER-II)

SKILLCOURSE

INVESTMENT PLANNING

Credits:2

2hrs/week

COURSE OBJECTIVES:

The objective of the course is to make the students familiarise with the concepts of investment, associated risks along with the regulatory authorities that monitor the capital market.

UNIT-I-INVESTMENT:

Attributes of Investment
Investment and speculation
Features of a good Investment
Investment Process

UNIT-II-RETURN AND RISK:

Meaning and Measurement of Security Returns.
Meaning and Types of Security Risks
Systematic Vs Non-systematic Risk
Measurement of Total Risk

UNIT-III-PORTFOLIO:

Choosing the right Investment options
Construction of Investment portfolio
Portfolio management
Investor Protection Guidelines of SEBI

HANDS ON ACTIVITIES:

1. Group/Individual presentations on Investment Alternatives (Advantages, Suitability and Limitations).
2. Calculation of Stock Return and Risk from historical data of NSE and BSE.
3. To make comparative analysis between various stocks using excel.

REFERENCES:

1. Prasanna Chandra, Investment Analysis and Portfolio Management, Tata Mc Graw Hill.
2. Bhalla VK, Investment Management, S. Chand.
3. Donald E.Fischer, Ronald J.Jordan, Security Analysis and Portfolio Management; Prentice Hall of India.
4. Preeti Singh, Investment Management, Himalaya Publishers.
5. Pitabas Mohanty Spreadsheet Skills for Finance Professionals Tax mann Publications.

SRI VENKATESWARA UNIVERSITY : TIRUPATI

Courses Offered for All Groups

LIFE SKILLS COURSES

w.e.f. AY 2023-24 (SEMESTER-II)

SKILLCOURSE

FORMAT OF MODEL QUESTION PAPER

INVESTMENT PLANNING

Time: 1½hrs

Max. Marks 50

Section A

Answer any Five of the following **5 X 10 = 50 M**

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.

SRI VENKATESWARA UNIVERSITY TIRUPATI
B.VOC. HONOURS PROGRAMME IN HORTICULTURE
MAJOR: HORTICULTURE
FIRST YEAR – SECOND SEMESTER
Under CBCS W.E.F.2023-24 AY Onwards
MAJOR PAPER-I: FUNDAMENTALS OF HORTICULTURE
Credits -3

I Learning Objectives:

By the end of this course the learner has:

1. To realize the divisions and zones of Horticulture in India
2. To be capable of planning new fruit orchard and able to produce new plantlets through various propagation methods.
3. To learn basic knowledge related to horticulture.

II. Learning Outcomes: On completion of this course students will be able to:

1. Understand the scope and potential of Horticulture products in India and Andhra Pradesh.
2. Illustrate different systems of planting in orchard and predict the number of plants in a given land.
3. Demonstrate the methods and types of training and pruning.
4. Explain sexual and asexual propagation methods of plants.
5. Demonstrate skills on vegetative propagation of plants.

III. Syllabus of Theory:

Unit-1: Introduction to Horticulture

9 Hrs.

1. Horticulture: Definition, importance and scope of horticulture.
2. Divisions of Horticulture with suitable examples and their importance.
3. Area and production of Horticultural crops in A.P. and India.
4. Horticulture zones of India and Andhra Pradesh.

Unit 2: Characteristics of Orchards

9Hrs.

1. Orchard: Definition, different systems of planting orchards – square, rectangular, Quincunx, hexagonal and contour.
2. Calculation of planting densities in different systems of planting.
3. Training: Definition, principles and objectives; merits and demerits of different methods of Training.
4. Pruning: Definition, principles and objectives: Different methods of pruning.

Unit-3: Plant propagation

9 Hrs.

1. Sexual propagation – advantages and disadvantages.
2. Polyembryony – Horticultural significance of polyembryony
3. Asexual propagation – advantages and disadvantages.
4. Vegetative propagation by Bulbs, Corms, Tubers, Rhizomes.

Unit- 4: Vegetative propagation techniques**9 Hrs.**

1. Cuttings: Definition, methods of Cuttings.
2. Layering: Definition, methods of Layering.
3. Grafting: Definition; methods of Grafting.
4. Budding: Definition; methods of Budding.

Unit- 5: Important Horticultural operations**9 Hrs.**

1. Definition of Irrigation-Different methods of irrigation followed in horticultural crops.
2. Definition of manures and fertilizers-different methods of application of manures and fertilizers to horticultural crops.
3. Definition of mulch-objectives of mulching-different types of mulches-organic and inorganic mulches with suitable examples.
4. Cropping systems-inter cropping and multi-tier cropping, their merits and demerits with suitable examples.

Text Books/ Reference Books:

- Prasad and Kumar ,2014.: Principles of Horticulture 2nd Edition Agribios India.
- Kumar, N., 1990 Introduction to Horticulture. Rajyalakshmi Publications, Nagarkoil, Tamilnadu.
- Jithendra Singh, 2002. Basic Horticulture. Kalyani Publishers, Hyderabad.
- Kau salkumar Misra and Rajesh Kumar, 2014 Fundamentals of Horticulture Biotech books.
- Sadhu. M.K 1996. Plant propagation, New Age International Publishers, New Delhi
- Sarma. R. R 2002 Propagation of Horticultural crops: Principles and practices Kalyani Publishers, New Delhi
- Hartman. HT and Kester. D.E 1976 Plant propagation. Principles and Practices, Prentice Hall of India Pvt. Limited, Mumbai.

MAJOR PAPER-I: FUNDAMENTALS OF HORTICULTURE

Credits -1

I. Laboratory/field exercises:

1. Identification of various Horticulture crops.
2. Identification of various tools and implements in Horticulture.
3. Preparation of nursery beds for sowing of vegetable seeds.
4. Methods of breaking dormancy in seeds.
5. Growing Media for propagation of plants.
6. Brief account of plant propagation structures.

V. Suggested activities and evaluation methods:

A. Measurable:

a. Student seminars:

1. Importance, scope and statistics of horticulture in India and Andhra Pradesh
2. Branches or divisions of horticulture with suitable examples
3. Climatic zones of horticulture in India and Andhra Pradesh.
4. Systems of planting in an orchard
5. Types and methods of pruning in horticultural crops
6. Training methods in horticultural crops
7. Types of propagation methods (Asexual and sexual)
8. Cuttings – Types of cuttings
9. Layering – Types of Layering
10. Grafting – Types of grafting
11. Budding – Types of Budding

b. Student Study Projects:

1. Demonstrate different methods of planting systems

2. Collection of different soil samples of local area
3. Method of demonstration on mixing of fertilizer
4. Study of different tools and implements in horticulture
5. Demonstrate on different methods of Cuttings
6. Demonstrate on different methods of Layering
7. Demonstrate on different methods of Grafting
8. Demonstrate on different methods of Budding

c. Assignments:

Written assignment at home / during '0' hour at college; preparation of charts with drawings, making models etc., on topics included in syllabus.

B. General:

1. Group Discussion (GD)/ Quiz/ Just A Minute (JAM) on different modules in syllabus of the course.
2. Visit to Horticulture University/Research station

MAJOR PAPER-I: FUNDAMENTALS OF HORTICULTURE
MODEL QUESTION PAPER

Time: 1½ Hours

Max. Marks: 75

PART -A

Answer any FIVE questions, each question carries 5 marks. (5x5=25)

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.

PART – B

Answer **ALL** of the following Question. (5x10=50)

11. a)

Or

b)

12. a)

Or

b)

13. a)

Or

b)

14. a)

Or

b)

15. a)

Or

b)

SRI VENKATESWARA UNIVERSITY TIRUPATI
B.VOC. HONOURS PROGRAMME IN HORTICLUTURE

MAJOR: HORTICLUTURE

FIRST YEAR – SECOND SEMESTER

Under CBCS W.E.F.2023-24 AY Onwords

MAJOR PAPER-II: SILVI HORTICULTURE

Credits -3

Learning outcome:

After complete of these courses, students should be able to be

- Understand about objectives of forest
- Understand about agroforestry
- Benefits of forest
- Understand about forest nursery
- Learn about cultivation techniques of forest tree species
- Understand about forest conservation

Unit- I Introduction

09 h

1. Definition, Branches of forestry, Divisions of forest and interrelations
2. Classification of forest, Advantages of forest.
3. Importance of forest - Direct and Indirect benefits

Unit- II Agroforestry

09 h

1. Definition, Objectives, Types of agroforestry system.
2. Benefits of agroforestry system, differences between agroforestry and social forestry.
3. Advantages and dis advantages of agroforestry.

Unit- III Management of Tree Species

09 h

Silviculture of important agroforestry species viz.,

1. Casuarina
2. Eucalyptus
3. Palmyrah
4. Neem
5. Tamarind

Unit-IV Forest cultivation

09 h

1. Forest farming, examples of forest farming products.

2. Forest regeneration- External factors of cultivation
3. Cultivation technologies of timber trees: Teak, Red sander.
4. Cultivation technologies of Industrial Forest species: Bamboo, Sandal wood.

Unit- V Forest conservation

09 h

1. Introduction, steps of conservation of forest.
2. Deforestation, Effects of deforestation.
3. National forest policy-1988, Aim and Objectives
4. Conservation of natural resources- soil, water, biodiversity, forests.

REFERENCES

- Ashton, M. S, and M. J. Kelty. 2018. [The practice of silviculture: applied forest ecology, 10th edition](#). John Wiley and Sons, New York. 784 pp.
- Jain, T. B., 2019. [The 21st century silviculturist](#). *Journal of Forestry* 117(4): 417–424, <https://doi.org/10.1093/jofore/fvz027>
- Jenkins, T., R. Matthews, E. Mackie and L. Halsall. 2012. [Technical glossary](#). PF2011. Forestry Commission, Edinburgh. 7 pp.

MAJOR PRACTICAL PEPAR-II- SILVI HORTICULTURE

Hours: 30

Marks: 50

Credits: 01

1. Explain the forest benefits.
2. Describe different types of forest.
3. Explain the variations of agroforestry and social forestry.
4. Explain the infra structure of nursery.
5. Explain the cultivation techniques of timber, teak, red sandal.
6. Tissue culture techniques in forest.
7. Identification of forest species.
8. Field visit to forest nursery.

**MAJOR-II SILVI HORTICULTURE
MODEL QUESTION PEPAR**

Time: 1½ Hours

Max. Marks: 75

PART -A

Answer any FIVE questions, each question carries 5 marks. (5x5=25)

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.

PART – B

Answer **ALL** of the following Question. (5x10=50)

11. a)

Or

b)

12. a)

Or

b)

13. a)

Or

b)

14. a)

Or

b)

15. a)

Or

b)

B.VOC. HONOURS PROGRAMME IN HORTICULTURE

MINOR: DAIRY AND ANIMAL HUSBANDRY

FIRST YEAR – SECOND SEMESTER

UNDER CBCS W.E.F.2023-24 AY Onwards

MINOR PAPER-I: MILK PRODUCTION MANAGEMENT, DAIRY PLANT DESIGN, AND DAIRY DEVELOPMENT

Credits -3

Learning outcomes:

After completion the course student is able to

- Significance of milk production, known about nutrient requirements for growth and milk production.
- Improve the practical knowledge and understand and know about design and construction of dairy milk.

SYLLBUS:

Unit-I **09 h**

Distinguishing characteristics of India and exotic breeds of dairy animals and their performance. Management of lactating and dry cows and buffaloes. Milk production in national and international level, Methods of milking, milking procedure and practices for quality and safety of milk production. Dairy farm records and their maintenance.

Unit-II **09 h**

Feed nutrients required by animal body. Feed resources for milk production and their nutritive values. Nutrients requirements for growth and milk production. Feeding standards, Structure and function of mammary system. Price determination and pricing policy of milk products in organized and unorganized sectors of dairy industry.

Unit-III **09 h**

Quality assurance and total quality management in dairy industry. Preparation and standardization of reagents required in the analysis of milk and milk products. Sampling procedures; labeling of samples for analysis; choice of analytical tests for milk and milk products for chemical analysis and instrumental methods of analysis.

Unit-IV **09 h**

Chemical quality of water in dairy industry. Calibration of dairy glassware- including butyrometer, pipettes, burettes, hydrometers, lactometers and thermometer. Testing methods for the detection of adulterants, preservatives and neutralizers in milk and milk products. Environmental contaminants such as pesticides, antibiotics, heavy metals in milk and milk products and their chemical testing methods.

Unit- V

09 h

Brief explanation of Dairy Plant design and layout: Types and Classification of dairy plants, location, Selection of site, Significance of Building planning, Dairy plant design, Arrangement of equipment, Milk piping etc., Building construction materials, Flores for different section of dairy. Foundations, walls doors and windows. Other design aspects: Drains and drain layout for small and large dairies. Ventilation, fly control, Mold prevention, illumination in dairy plants.

MINOR PEPAR

Practical Paper-I: MILK PRODUCTION MANAGEMENT, DAIRY PLANT DESIGN, AND DAIRY DEVELOPMENT

Hours: 30

Marks: 50

Credits: 01

1. Calibration of dairy glass ware - hydrometers – butyrometer
2. Calibration of dairy glass ware – volumetric flasks, burettes and pipettes
3. Preparation and standardization of dairy reagents – alkaline and acids
4. Preparation and standardization of dairy reagents – sodium thiosulphate and silver nitrate
5. Preparation and standardization of dairy reagents – Fehling and EDTA solution
6. Preparation and standardization of dairy reagents – Gerber's acid
7. Testing of amyl alcohol for fat estimation
8. Chemical analysis of permissible additive in milk
9. Chemical analysis of detergents and sanitizers
10. Analysis of market samples milk and milk products
11. Determination of temporary and permanent hardness of water

12. Estimation of available chlorine in bleaching powder

**MINOR PAPER-I: MILK PRODUCTION MANAGEMENT, DAIRY PLANT DESIGN, AND
DAIRY DEVELOPMENT**

MODEL QUESTION PEPAR

Time: 1½ Hours

Max. Marks: 75

PART -A

Answer any FIVE questions, each question carries 5 marks. (5x5=25)

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.

PART – B

Answer **ALL** of the following Question. (5x10=50)

11. a)

Or

b)

12. a)

Or

b)

13. a)

Or

b)

14. a)

Or

b)
15. a)

Or

b)