



Semester III								
Paper Code	Title	Generic/Skill Component	Theory/ Practical	Internal (Theory)	External (Theory)	Internal (Practical)	External (Practical)	Credits
*GEN -301	Value Education And Human Rights	Generic Component	Theory	20	80	----	----	6
GC 302	E-Commerce	Generic Component	Theory	20	80	----	----	6
ASC -303	Introduction to Poultry Farming	Skill Component	Theory & Practical	10	40	10	40	6
ASC -304	Management of Broiler & Layer Chicken	Skill Component	Theory & Practical	10	40	10	40	6
ASC -305	Hatchery Management	Skill Component	Theory & Practical	10	40	10	40	6

Semester IV								
Paper Code	Title	Generic/Skill Component	Theory/ Practical	Internal (Theory)	External (Theory)	Internal (Practical)	External (Practical)	Credits

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**Semester V**

<b>Paper Code</b>	<b>Title</b>	<b>Generic/Skill Component</b>	<b>Theory/ Practical</b>	<b>Internal (Theory)</b>	<b>External (Theory)</b>	<b>Internal (Practical)</b>	<b>External (Practical)</b>	<b>Credits</b>
*GEN 501	Critical Thinking And Elementary Statistics	Generic Component	Theory	20	80	----	----	6
GC 502	Introduction To Research Methodology And Report Writing	Generic Component	Theory	20	80	----	----	6
ASC -503	Introduction to Shrimp Farming	Skill Component	Theory & Practical	10	40	10	40	6

## **Semester I**

**Title: ASC- 103 Dairy Farm Management**

**Theory:40**

**Practical 40**

**Internal Assessment: 20**

**Time:3 hours**

**Objective:**

Marketing aspects of Dairy Farming: Quality parameters of milk and milk products and their market prices; Pricing mechanism of various buyers of milk and milk products; Costing of various logistic arrangements towards the sale of milk and milkproducts at different markets and consumer points

#### **Unit IV**

## **Title: ASC - 104 Live Stock Management – I**

**Theory:40**  
**Practical 40**  
**Internal Assessment: 20**  
**Time:3 hours**

**Objective:** The course is designed to impart knowledge about the preparation of livestock accommodation and its maintenance. Also, the placing of livestock in the accommodation and monitoring the livestock placed.

**Job Role:** The Dairy Farmer/Entrepreneur is expected to take various decisions regarding viability and sustainability of dairy farms. He/she is expected to ensure proper care of dairy animals, their health and productivity, milking and marketing of dairy products.

### **Instructions:**

- The syllabus of this paper has been divided into four units.
- Examiner will set a total of nine questions comprising two questions from each unit,
- Question number **one** is compulsory of short answer type questions covering the whole syllabus.
- The students are required to attempt one question from each unit.
- All questions carry equal marks

### **Unit – I**

Preparation of Livestock Accommodation: Types of animal accommodation and suitability for different animals; Animals' welfare requirements; Animal welfare legislation and codes of best practice in animal welfare and animal accommodation; Materials and equipment required in animal accommodation; Containing structures for different animals (indoors and outdoors); Potential hazards in relation to the accommodation; Environmentally sound methods for managing animal waste; Effects of different cleaning methods and materials on the health and wellbeing of animals.

### **Unit –II**



- Practical file carries 5 marks and 20 marks for practical work and viva-voce.
- Practical paper will be conducted by the college in collaboration with the respective experts and marks will be submitted to Panjab University.

**Books Recommended:**

1. Richard A. Battaglia, "Handbook of livestock management" Pearson Education.
2. **N.S.R. Sastry and C.K. Thomas**, "Livestock Production and management", **Kalyani Publishers, Ludhiana, India.**
- 3.

- All questions carry equal marks

### **Unit – I**

Receiving and Storage of Animal Feed: Checking correct quantities and types of animal feed have been delivered and that they are in an acceptable condition; Report any shortfalls or faults in delivered animal feed to the appropriate person; Handle animal feed safely, and in a way that protects it from damage and contamination and mini

- Each question carries 5 marks.
- Practical file carries 5 marks and 20 marks for practical work and viva-voce.
- Practical paper will be conducted by the college in collaboration with the respective experts and marks will be submitted to Panjab University.

**Books Recommended:**

1. Keith Wheatley , “Agricultural water Management: Insights and Challenges”
- 2.



## **Title: ASC - 203 Fodder and Forage Management**

**Theory:40**

**Practical 40**

**Internal Assessment: 20**

**Time:3 hours**

**Objective:** the course aims to equip the trainee with the knowledge about the fodder and forage harvesting, the equipment to be used and its maintenance, its storage and preservation and maintenance of safety standards.

**Job Role:** The Dairy Farmer/Entrepreneur is expected to take various decisions regarding viability and sustainability of dairy farms. He/she is expected to ensure proper care of dairy animals, their health and productivity, milking and marketing of dairy products.

### **Instructions:**

- The syllabus of this paper has been divided into four units.
- Examiner will set a total of nine questions comprising two questions from each unit,
- Question number **one** is compulsory of short answer type questions covering the whole syllabus.
- The students are required to attempt one question from each unit.
- All questions carry equal marks

### **Unit - I**

Fodder Management: Various forage conservation options based on the year round requirement of feed and fodder; Risk factors for spoilage in forage conservation such as fire, vermin and air in silage; Favourable and unfavourable conditions for forage conservation; Forage conservation machinery and equipment,

### **Unit - II**

Occupational Health and Safety (OHS) requirements; Access to paddocks for harvesting and transport machinery; Storage facility for selected forage conservation method. Safety hazards and OHS procedures for forage conservation.

### **Unit- III**

Forage Management: Weather conditions to determine optimum time for harvest; Dry matter target and assessing dry matter content of forage material for the forage operation; Mow, condition, tender and/or rake swaths depending on weather conditions and forage drying targets; Conduct of harvesting activities in a safe, controlled and efficient manner;

#### **Unit - IV**

Equipment required during harvesting operations; Bale, wrap, compact, seal or store forage in accordance with storage plan; Load, transport, and store/compact (if required) forage in accordance with OHS and quality requirements; Store forage so as to minimise risk of spoilage and combustion; Disposal of waste and debris; Test or sample stored forage for quality; Mitigate environmental impacts of forage conservation activities.

**Practical:** A detailed project is to be undertaken on the fodder and forage management. The equipment used in harvesting and techniques used for storage and preservation needs are to be highlighted. Measures for quality control are to be assessed.

#### **Instructions for Practical Paper: (for 40 marks)**

- Examiner will set total of four questions covering the whole syllabus.
- Student will attempt any three questions.
- Each question carries 5 marks.
- Practical file carries 5 marks and 20 marks for practical work and viva-voce.
- Practical paper will be conducted by the college in collaboration with the respective experts and marks will be submitted to Panjab University.

#### **Books Recommended:**

1. Forages and fodder by Anil Kumar Singh, M A Khan, NatrajaSubash and Krishna Murari Singh.
2. Forages: An introduction to Grassland Agriculture by Robert F. Barnes, C. Jerry Nelson, Michael Collins and Kenneth J. Moore.
3. Report of the Sub Group III on Fodder and Pasture Management Constituted under the Working Group on Forestry and Sustainable Natural Resource Management by Planning commission of India.

## **Title: ASC - 204 Live Stock Management – II**

**Theory:40**

**Practical 40**

**Internal Assessment: 20**

**Time:3 hours**

**Objective:** The course is designed to impart knowledge about the preparation of livestock accommodation and its maintenance. Also, the placing of livestock in the accommodation and monitoring the livestock placed.

**Job Role:** The Dairy Farmer/Entrepreneur is expected to take various decisions regarding viability and sustainability of dairy farms. He/she is expected to ensure proper care of dairy animals, their health and productivity, milking and marketing of dairy products.

### **Instructions:**

- The syllabus of this paper has been divided into four units.
- Examiner will set a total of nine questions comprising two questions from each unit,
- Question number **one** is compulsory of short answer type questions covering the whole syllabus.
- The students are required to attempt one question from each unit.
- All questions carry equal marks

### **Unit – I**

Monitoring health and wellbeing of livestock: Promoting health and well being of animals and minimize stress and injury; Organizational policy in relation to the treatment of animals under welfare legislation; Need for animal movement and how this varies at different times; The appearance, posture and movement, behaviour and bodily functioning of healthy animals characteristics of the species, age, health status and social needs; Signs which indicate potential problems with animals' health and well being, and the actions to be taken;

### **Unit – II**

Types of preventative care for maintaining the health and well being of animals; Adjustment of environment for the health and well being of the animals; Animal temperaments and behaviour related to the associated hazards and risks to animals and staff during animal feeding and cleaning of animal house; Reasons for keeping records and the importance of accuracy; Recognizing a health emergency in an animal and the correct actions to take; Processes that support environment and resource efficiencies; Correct methods for disposing of organic and inorganic waste.

### **Unit – III**

Deliver basic recommended treatment to livestock: Significance of expiry dates on drugs and medication; Possible sources of contamination to medication and how to identify damage; Equipment to select for each treatment; Administering prescribed basic healthcare treatments; Importance of keeping to instructions for basic healthcare treatments; Potential consequences of not keeping to instructions and procedures for carrying out treatments;

### **Unit – IV**

Use of restraint techniques; Reasons and legislative requirements for ‘withdrawal periods’ for animals; Reasons for personal hygiene and safety; Reasons for maintaining records; Correct methods for disposing of waste; Changes in the condition of the animal which may occur after the treatment; Monitoring the behaviour of animals after treatment and report unusual signs; Organizational policy in relation to animal treatment and one’s responsibility under welfare Legislation

**Practical:** the trainee is expected to undertake an investigation into the healthcare provision both preventive and curative for the

## **Title: AGR - 205 Workforce Health & Safety Management**

**Theory:40**  
**Practical 40**  
**Internal Assessment: 20**  
**Time:3 hours**

**Objective:** to acquaint the trainee about the health and hygiene standards to be maintained by the workforce in the farm. Also it aims to provide the knowledge about various safety measures to be adopted and practiced.

**Job Role:** The Dairy Farmer/Entrepreneur is expected to take various decisions regarding viability and sustainability of dairy farms. He/she is expected to ensure proper care of dairy animals, their health and productivity, milking and marketing of dairy products.

### **Instructions:**

- The syllabus of this paper has been divided into four units.
- Examiner will set a total of nine questions comprising two questions from each unit,
- Question number **one** is compulsory of short answer type questions covering the whole syllabus.
- The students are required to attempt one question from each unit.
- All questions carry equal marks

### **Unit – I**

Maintenance of Clean & Efficient Workplace: Personal hygiene and fitness requirements in dairy farm; General duties of dairy farm worker under relevant health and safety legislation; Personal protective equipment and clothing required in a dairy farm and how it is cared for;

### **Unit – II**

Safe usage of materials and equipment required in dairy farm; Importance of good housekeeping in dairy farm; Safe disposal methods for livestock waste. Methods for minimizing environmental damage during work

### **Unit – III**

Safety Procedures at dairy farm: Risks to health and safety and the measures to be taken to control those risks in dairy farm; Procedures and requirements for the treatment of injuries/illnesses in dairy farm;

## **Unit – IV**

Basic emergency first aid procedure; Local emergency services; Reporting of accidents, incidents and problems and appropriate action to be taken

### **Practical:**

# Semester III

**Paper Title : GC 302 – E-COMMERCE**

**Theory:80**  
**Internal Assessment: 20**  
**Time:3 hours**

**Objective :** The objective of this paper is to provide fundamental knowledge to the students about E-Commerce so that they can better perform in any area of operation and can excel in the field of commerce with IT specialization.

**Instructions:**

- The syllabus of this paper has been divided into FOUR units.
- Examiner will set a total of **NINE** questions comprising Two questions from each unit, including Question No. 1 (compulsory) of short answer type covering the whole syllabus.
- The students are required to attempt one question from each unit and the entire Compulsory Question No. 1.
- All questions carry equal marks.

## UNIT I

Electronic Commerce Framework, Basics and Tools of E-Commerce, Comparison of Web-based with Traditional Business; Growth of E-Commerce – Present and potential. E-Business: Meaning, Importance, Models Based on the Relationships of Transacting Parties (B2B, B2C, C2C and C2B), Present Status of E-Commerce in India.

## UNIT II

Changing Structure of Organization – The Impact of E-Commerce on supply chain management and customer relation, Socio-Economic Impacts of E-Commerce. Electronic Payment System: Types of Payment System — E-Cash and Currency Servers, E-Cheques, Credit Cards, Smart Cards, Electronic Purses and Debit Cards , Risk and Electronic payment Systems.

## UNIT-III

**Electronic Data Interchange (EDI):** EDI and its applications in business; Legal, Security and Privacy issues in EDI, EDI

**Job Role:** Poultry Farm Assistant is responsible for handling various activities involved in broiler/layer chicken rearing at poultry farm. The individual at work prepares the poultry farm for placement of chicks, carry out their feed; water; litter; brooding and health management to raise the chicks according to market's standards

**Instructions:**

- The syllabus of this paper has been divided into four units.
- Examiner will set a total of nine questions comprising two questions from each unit,
- Question number

Selection of farm site & farm building; Poultry equipment. Biology of Poultry: Breeds, Varieties and Strains.

**Practical:** To carry out a survey to find the regional density of poultry population in immediate neighbourhood also the farming system practiced at large by the poultry farmers. Enumerate the species kept in the in the poultry farms and their cost to a poultry farmer.

**Instructions for Practical Paper: (for 40 marks)**

- Examiner will set total of four questions covering the whole syllabus.
- Student will attempt any three questions.
- Each question carries 5 marks.
- Practical file carries 5 marks and 20 marks for practical work and viva-voce.
- Practical paper will be conducted by the college in collaboration with the respective experts and marks will be submitted to Panjab University.

**Books Recommended:**

1. Hand book of Applied Broiler Production, Poultry Punch Publication (I), Ltd, New Dehi: Narahari & Kumararaj.
2. Scientific Poultry Production, International Book Distributing Co., Lucknow: P.V. Sreenivasaiah

## **Title: ASC 304: Management of Broiler & Layer chicken**

**Theory:40**

**Practical 40**

**Internal Assessment: 20**

**Time:3 hours**

**Objective:** To understand the process of meat & egg production and maximize the returns in rearing of Broiler & Layer chicken.

**Job Role:** Poultry Farm Assistant is responsible for handling various activities involved in broiler/layer chicken rearing at poultry farm. The individual at work prepares the poultry farm for placement of chicks, carry out their feed; water; litter; brooding and health management to raise the chicks according to market's standards

### **Instructions:**

- The syllabus of this paper has been divided into four units.
- Examiner will set a total of nine questions comprising two questions from each unit,
- Question number **one** is compulsory of short answer type questions covering the whole syllabus.
- The students are required to attempt one question from each unit.
- All questions carry equal marks

### **Unit 1**

Preparing the brooder house to receive broiler chicks; Brooding & rearing of chicks; Feeding & watering of broilers; Lighting, Ventilation, Litter & Health management

### **Unit II**

Catching & Transportation to processing; Integration in broiler production; Broiler management during different seasons; Broiler production & performance problems

### **Unit III**

Getting started in egg business – Farm location, land requirement, layer buildings for deep litter, cage system & equipment

### **Unit IV**

Management prior to lay (Chick & Grower management) and management during lay (Layer Management) Management practices – Toe, comb & beak trimming. Lighting, Ventilation & Health management, Judging pullets & Factors affecting egg production

**Practical:** A detailed report to be submitted after assessment of the management of both broiler and layer chicks.

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2. Scientific Poultry Production, International Book Distributing Co., Lucknow: P.V. Sreenivasaiah
3. Commercial chicken meat and egg production, 5<sup>th</sup> edition, Spinger : Donald D. Bell, William D. Weaver

**Title: ASC 305 Hatchery Management**

**Theory:40**  
**Practical 40**  
**Internal Assessment: 20**  
**Time:3 hours**

**Objective:** To understand the process of hatchery operations and to produce the good quality chick of broiler & layer.

**Job Role:** Poultry Farm Assistant is responsible for handling various activities involved in broiler/layer chicken rearing at poultry farm. The individual at work prepares the poultry farm for placement of chicks, carry out their feed; water; litter; brooding and health management to raise the chicks according to market's standards

**Instructions:**

- The syllabus of this paper has been divided into four units.
- Examiner will set a total of nine questions comprising two questions from each unit,
- Question number **one** is compulsory of short answer type questions cov()()()()()r102624e wl syllabus

## **Unit II**

Handling and care of hatching eggs-selection, cleaning, disinfection, storage and transport; Equipment for hatcheries

## **Unit III**

Incubation & Hatching: Hatchery planning, Design & construction; Principles of incubation Operations in Hatchery – securing, storage, traying/setting of hatching eggs, pre-warming eggs prior to setting, testing of fertility (Candling), pulling the hatch, Grading chicks, holding of chicks & chicks delivery.

## **Unit IV**

Hatchery record management, calculation of fertility & Hatchability of eggs. Factors affecting Fertility & Hatchability. Hatchery sanitation & disposal of hatchery waste.

**Practical:** Prepare a detailed report on Hatchery Management by visiting a hatchery unit in neighbourhood.

### **Instructions for Practical Paper: (for 40 marks)**

- Examiner will set total of four questions covering the whole syllabus.
- Student will attempt any three questions.
- Each question carries 5 marks.
- Practical file carries 5 marks and 20 marks for practical work and viva-voce.
- Practical paper will be conducted by the college in collaboration with the respective experts and marks will be submitted to Panjab University.

**Reference:**

1. Hand book of Applied Broiler Production, Poultry Punch Publication (I), Ltd, New Dehi: Narahari & Kumararaj.
2. Scientific Poultry Production, International Book Distributing Co., Lucknow: P.V. Sreenivasaiah
3. Commercial chicken meat and egg production, 5<sup>th</sup> edition, Spinger : Donald D. Bell, William D. Weaver

## **Semester IV**

**Paper Title: GC 402 - PROJECT MANAGEMENT**

**Theory:80**

**Internal Assessment: 20**

**Time:3 hours**

**Objectives:**

Project Organization and Control – Project Network Analysis (Basic concepts of PERT, CPM, Cost and Time Over Run). Project Reporting: Meaning, Purpose, Process, Requirements of a Good Report, Methods, Principles of Good Reporting System.

**Books Recommended:**

- Project Management - Choudhary – Tata McGraw Hill Pub.
- Project Management: The Managerial Process (Special Indian Edit.) -Clifford F Gray, Oregon State University.
- Projects : Planning, Analysis, Selection, Financing, implementation and Review -Chandra, Prasanna.

**Title: ASC 403 Poultry Nutrition**

**Theory:40**

**Practical 40**

**Internal Assessment: 20**

**Time:3 hours**

**Objective:** The objective of the course is to impart knowledge about improvement of productivity of meat & egg by scientific feeding of broiler & layer.

**Job Role:** Poultry Farm Assistant is responsible for handling various activities involved in broiler/layer chicken rearing at poultry farm. The individual at work prepares the poultry farm for placement of chicks, carry out their feed; wat-s3(e)-6(e)4(d;)-2.00 pouli poult00684(a)4(t)

- All questions carry equal marks

### **Unit I**

Poultry feeds & feeding: Principles of poultry feeding; Feed ingredients for poultry feeding (Energy & protein feedstuffs); Poultry feed additives & supplements – Vitamins, Minerals, prebiotics & probiotics, enzymes etc.

### **Unit II**

Feeding standards: Feeding standards/specification for broiler & layer; Feed allowance & Dietary requirements; Feed formulation; feeding methods; feed processing & quality control

### **Unit III**

Quality standards: storage of feed, water and maintaining their quality; poultry farm's waste disposal methods; legislation; codes or guidelines of best practice in broilers/layer welfare and accommodation

### **Unit IV**

Balanced feed-feeds for chicks at different stages: age wise scientific feeding programs, types of feed and water requirements for broiler chicks;

Different environmental, feed, water, light requirements to produce quality broilers; documentation of the feed record of the broiler chicks.

**Practical:** Preparation of report on the feed formulation, management and feeding process. Observations to be made on the quality

- Examiner will set total of four questions covering the whole syllabus.
- Student will attempt any three questions.
- Each question carries 5 marks.
- Practical file carries 5 marks and 20 marks for practical work and viva-voce.
- Practical paper will be conducted by the college in collaboration with the respective experts and marks will be submitted to Panjab University.

**Books Recommended:**

1. Hand book of Applied Broiler Production, Poultry Punch Publication (I), Ltd, New Dehi: Narahari & Kumararaj.
2. Scientific Poultry Production, International Book Distributing Co., Lucknow: P.V.Sreenivasaiah
3. Commercial chicken meat and egg production, 5<sup>th</sup> edition, Spinger : Donald D.Bell, William D. Weaver



Maintenance of vaccination record of the broiler chicks; Policy with respect to purchase of day old chicks from suppliers. Reporting of accidents, incidents and problems and appropriate action to be taken.

### **Unit III**

Role of a broiler farm worker in maintain health standards on the farm. Maintenance of hygiene at poultry farm. Personal protective equipment and clothing required in a poultry farm and how it is cared for; safe usage of materials and equipment required in dairy farm.

### **Unit IV**

Bio-security: Components of Bio security – isolation, traffic control & sanitation; Routine Daily Sanitation Practices; Cleaning & Disinfection of poultry facilities.

**Practical:** Prepare a detailed report on Health Management i.e. the poultry immunity system & disease control mechanisms and the norms practiced.

#### **Instructions for Practical Paper: (for 40 marks)**

- Examiner will set total of four questions covering the whole syllabus.
- Student will attempt any three questions.
- Each question carries 5 marks.
- Practical file carries 5 marks and 20 marks for practical work and viva-voce.
- Practical paper will be conducted by the college in collaboration with the respective experts and marks will be submitted to Panjab University.

**Books Recommended:**

1. Hand book of Applied Broiler Production, Poultry Punch Publication (I), Ltd, New Dehi: Narahari & Kumararaj.
2. Scientific Poultry Production, International Book Distributing Co., Lucknow: P.V. Sreenivasaiah
3. Commercial chicken meat and egg production, 5<sup>th</sup> edition, Spinger : Donald D. Bell, William D. Weaver

## **Title: ASC- 405 Poultry Production Economics & Marketing**

**Theory:40**  
**Practical 40**  
**Internal Assessment: 20**  
**Time:3 hours**

**Objective:** The objective of the course is to understand economics & marketing of broiler & layer farms.

**Job Role:** Poultry Farm Assistant is responsible for handling various activities involved in broiler/layer chicken rearing at poultry farm. The individual at work prepares the poultry farm for placement of chicks, carry out their feed; water; litter; brooding and health management to raise the chicks according to market's standards

### **Instructions:**

- The syllabus of this paper has been divided into four units.
- Examiner will set a total of nine questions comprising two questions from each unit,
- Question number **one** is compulsory of short answer type questions covering the whole syllabus.
- The students are required to attempt one question from each unit.
- All questions carry equal marks

### **Unit I**

Poultry Production Economics: Preparation of Project report for broiler farm & Layer farm; Measures of performance efficiency of poultry; Economics of poultry operation;

### **Unit II**

Marketing: Current marketing system; Market structure; Marketing channel; Constrains of marketing. Maintenance of farm records.

### **Unit III**

Poultry farm expenses: infrastructure, labour, chicks etc. Receipts from poultry enterprises. Profits from poultry enterprises: labour income variation. Feed-Egg/meat ratio: effect on number of eggs and chicken produced.

#### **Unit IV**

Factors affecting labour income: size of flock; Egg/meat production. Factors affecting price of egg/chicken: yearly variation; seasonal variation; storage; grade price curve.

**Practical:** A project report should be prepared on starting a poultry business, infrastructure required, its expected costs and receipts should be estimated by carrying out a field survey.

#### **Instructions for Practical Paper: (for 40 marks)**

- Examiner will set total of four questions covering the whole syllabus.
- Student will attempt any three questions.
- Each question carries 5 marks.
- Practical file carries 5 marks and 20 marks for practical work and viva-voce.
- Practical paper will be conducted by the college in collaboration with the respective experts and marks will be submitted to Panjab University.

# Semester V

**Title : GC 502 - INTRODUCTION TO RESEARCH METHODOLOGY AND REPORT WRITING**

**Theory:80**

**Internal Assessment: 20**

**Time:3 hours**

**Objective:** The objective of the module is to familiarize the students with basics of research methodology like types of research, data collection, sampling techniques and report writing.

## **Instructions:**

- The syllabus of this paper has been divided into FOUR units.
- Examiner will set a total of **NINE** questions comprising Two questions from each unit, including Question No. 1 (compulsory) of short answer type covering the whole syllabus.
- The students are required to attempt one question from each unit and the entire Compulsory Question No. 1.
- All questions carry equal marks.

## **UNIT I**

Research - Meaning, Characteristics, Types, Process and Utility,. Research Design - Meaning, Types and Features of good research design. Qualitative and Quantitative research. Importance of review of literature. The research proposal.

## **UNIT II**

Primary and Secondary data. Methods of data collection. Measurement and scaling, Designing of Questionnaire and schedule.

## **UNIT III**

Sampling Design and Sampling procedure. Sampling and non sampling errors. Data analysis and interpretation. Role of computers in research.

## **UNIT IV**

Business Reports and Proposals: Introduction, Meaning a Report? Steps in Writing a Routine Business Report, Format of Proposals, Four Key Elements in Winning Business Proposals; Case Studies.

**Books Recommended :**

- 'Research Methods and Techniques' by C.R. Kothari, Eastern Wiley Publications.
- 'Business Research Methods' by A. Bryman, and E. Bell, Oxford University Press, New York.
- 'Research Methodology A Step by Step Guide for Beginners' by R. Kumar, Pearson Education.

**Title: ASC 503 Introduction to Shrimp Farming**

**Theory:40**

**Practical 40**

**Internal Assessment: 20**

**Time:3 hours**

**Objective:** the paper aims to provide the trainee with the knowledge of shrimp far



Construction of pond: various shapes and sizes, depth and width, length and breadth of a pond suitable for specific culture. Steps for construction of ponds. Sedimentation pond. Pond Management: Soil sampling Leaching Pond drying Tilling Control of undesirable species Liming Fertilization Managerial and Construction costs.

**Practical:** To prepare a detailed report on the species of sh1(i)-4.M176ve Tf 5270tdq40(s)-beigtre 395.02 Tf d [:)-(i)-2(l)-1(h1((d )-40(r)3(nd )-50(r)





- Practical paper will be conducted by the college in collaboration with the respective experts and marks will be submitted to Panjab University.

### References

1. Advances in Shrimp Aquaculture Management by S Felix
3. Marine Shrimp Culture: Principles and Practices edited by A.W. Fast, L.J. Lester

### Paper Title:ASC-505 Feed and Water Management in Shrimp Farming

**Theory:40**

**Practical 40**

**Internal Assessment: 20**

**Time:3 hours**

**Objective:** the paper aims to provide the trainee with know-how of the feed and water requirement of shrimp farming and its maintenance as per industry norms.

**Job Role:** The Shrimp farmer is expected to perform the following tasks when at work purchases seeds from hatcheries on deciding the type of species to harvest, constructs a pond and harvest the shrimp by giving it a healthy feed and maintaining quality to sell in the market.

#### Instructions:

- The syllabus of this paper has been divided into four units.
- Examiner will set a total of nine questions comprising two questions from each unit,6e-3/8(i)-446n1025i /R31425e-3/ Tf -18 -14.64 Td (·)Tj /F



# Semester VI

**Paper Title: GC 602 - TOTAL QUALITY MANAGEMENT**

**Theory:80**

**Internal Assessment: 20**

**Time:3 hours**

**Objective:** The objective of the paper is to provide knowledge to students of the concepts of total quality management and to

Latest Challenges of Quality, Six Sigma Concepts: application. Quality Systems: Need for ISO 9000 and Other Quality Systems, ISO 9000:2000 Quality System– Elements, Implementation of Quality System, Documentation, Quality Auditing; ISO 14000, Requirements and Benefits.

**Books Recommended:**

- ‘Total Quality Management’ by A.V. Feigenbaum, McGraw-Hill Publication.
- ‘Total Quality Management’ by J.S. Oakland, Butterworth – Heinemann Ltd., Oxford Press.
- ‘Quality Management – Concepts and Tasks’ by V. Narayana & N.S.Sreenivasan, New Age International.
- Total Quality Management for Engineers’ by Zeiri, Wood Head Publishers.
- ‘Total Quality Management’ by James R. Evans, Cengage Learning.

**Paper Title: ASC 603 - INDUSTRIAL TRAINING**

**Practical:300**

Industrial Training of 5-6 weeks of 6 credits in each year followed by Report Writing and Viva-voce. These credits will be evaluated in Semester VI.

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