UNITED INSTITUTE OF TECHNOLOGY

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Periyanaickenpalayam, Coimbatore – 641020

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING (CYBER SECURITY)

QUESTION BANK

IV YEAR

ODD SEMESTER

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INDEX

Prepared by **Verified by** **Recommended by** **Approved by** **Principal**

GE3791

HUMAN VALUES AND ETHICS

UNIT – I
DEMOCRATIC VALUES

Understanding Democratic values: Equality, Liberty, Fraternity, Freedom, Justice, Pluralism, Tolerance, Respect for All, Freedom of Expression, Citizen Participation in Governance World Democracies: French Revolution, American Independence, Indian Freedom Movement.

Q. NO	QUESTION	CO	BTL	Marks
	PART–A			
1.	Define Human Values.	1	RE	2
2.	What are Intrinsic Values?	1	RE	2
3.	Define Extrinsic Values.	1	RE	2
4.	What is meant by Fraternity?	1	RE	2
5.	Define Democratic values.	1	RE	2
6.	Define Equality.	1	RE	2
7.	Define Tolerance.	1	RE	2
8.	Define Pluralism.	1	RE	2
9.	Outline the word Freedom.	1	UN	2
10.	Define the term world democracy.	1	RE	2
11.	Summarize the rule of law.	1	UN	2
12.	Why separation of powers is important in world democracy?	1	RE	2
13.	Explain the term Justice.	1	UN	2
14.	Outline the term Tolerance.	1	UN	2
15.	What is meant by Economic freedom?	1	RE	2
	PART-B			
1.	Explain the importance and needs of democracy. What are the problems and challenges of democracy?	1	UN	16
2.	Explain the principle and concept of fraternity in the Indian context. Outline the significance and importance of Tolerance.	1	UN	16
3.	Explain the Roles of Freedom. What are the Principles and importance of Respect for all?	1	UN	16
4.	Explain in detail the features, objectives and purpose of Pluralism.	1	UN	16
5.	How can we ensure equality and justice for all citizens in a democracy? Explain the limits of individual liberty in a democratic society?	1	UN	16
6.	Interpret the World Democracies in Indian Freedom Movement in detail.	1	UN	16
7.	Summarize the French Revolution and American Independence in detail.	1	UN	16
8.	What roles does freedom of expression play in a healthy democracy? Explain how citizens effectively participate in shaping their government?	1	UN	16

UNIT – II

SECULAR VALUES

Understanding Secular values Interpretation of secularism in Indian context Disassociation of state from religion Acceptance of all faiths - Encouraging non- discriminatory practices.

Q. NO	QUESTION	CO	BTL	Marks
	PART–A			
1.	What is Secularism?	2	RE	2
2.	Define Secular Values.	2	RE	2
3.	What is Secular Society?	2	RE	2
4.	Explain relationship between religion and state.	2	UN	2
5.	Define the acceptance of all faith.	2	RE	2
6.	What is State religion system?	2	RE	2
7.	Outline the threats of Secularism.	2	UN	2
8.	What is the scope of the Non-Discrimination?	2	RE	2
9.	Summarize the benefits of secular values?	2	UN	2
10.	Define Religious neutrality.	2	RE	2
11.	List the degrees of disassociation.	2	RE	2
12.	List the Zero-Tolerance policies.	2	RE	2
13.	What are the Challenges of secular values?	2	RE	2
14.	Summarize the benefits of disassociation.	2	UN	2
15.	Define Freedom of Religion.	2	RE	2
	PART-B			
1.	What are the features, objectives and purpose of Indian Secularism? Explain briefly secular values.	2	UN	16
2.	Explain five models for State and Religion. What are the problems of Religion of the State?	2	UN	16
3.	Explain the concept of Non-Discriminatory. What is the scope of the Non-Discrimination?	2	UN	16
4	Explain the Concepts of acceptance of all faith. Discuss the problems of Religion of the State.	2	UN	16
5.	Summarize the key Principles of secular values detail.	2	UN	16
6.	Explain in detail about disassociation of state from religion.	2	UN	16
7.	Explain how Secularsm Understood and APlied in india.	2	UN	16
8.	Illustrate, What can be done to promote fair treatment of all people?	2	UN	16

UNIT –III

SCIENTIFIC VALUES

Scientific thinking and method: Inductive and Deductive thinking, Proposing and testing Hypothesis, Validating facts using evidence based Approach - Skepticism and Empiricism Rationalism and Scientific Temper.

Q. NO	QUESTION	CO	BTL	Marks
	PART–A			
1.	Define scientific thinking.	3	RE	2
2	Compare the difference between inductive and deductive thinking?	3	UN	2
3.	Outline the importance of proposing and testing a hypothesis in scientific research.	3	UN	2
4.	What does the term empiricism mean in the context of scientific values?	3	RE	2
5.	How does skepticism contribute to the scientific method?	3	RE	2
6.	Define rationalism and its role in scientific inquiry.	3	RE	2
7.	What is meant by scientific temper?	3	RE	2
8.	Why is an evidence-based Approach crucial in scientific investigations?	3	RE	2
9.	List the methods of scientific thinking?	3	RE	2
10.	Define inductive reasoning : Building up from the specific	3	RE	2
11.	Compare Deductive reasoning vs. Top-down reasoning.	3	UN	2
12.	What are the pillars of evidence-based validation?	3	RE	2
13.	Summarize the benefits of empiricism.	3	UN	2
14.	Define rationalism.	3	RE	2
15.	What is meant Empiricism?	3	RE	2
	PART-B			
1.	Summarize in detail how, Scientific values are essential for the advancement of knowledge.	3	UN	16
2.	Compare the significance of Skepticism, Empiricism, and Rationalism in fostering scientific thinking.	3	AN	16
3.	Explain the importance of validating facts using an evidence-based Approach in scientific research.	3	UN	16
4.	Compare and contrast inductive and deductive reasoning with examples of their Application in scientific research.	3	UN	16
5.	Outline the steps involved in proposing and testing a hypothesis in scientific studies.	3	UN	16
6.	Summarize how do rationalism and a scientific temper influence scientific thinking and the pursuit of knowledge?	3	UN	16
7	Explain Skepticism and Empiricism, and how do they contribute to the reliability and progress of scientific knowledge?	3	UN	

	Explain Scientific Thinking and its methods		
8		3	AN

UNIT –IV

SOCIAL ETHICS

Application of ethical reasoning to social problems Gender bias and issues Gender violence Social discrimination Constitutional protection and policies Inclusive practices.

Q. NO	QUESTION	CO	BTL	Marks
	PART–A			
1.	What is Ethical reasoning?	4	RE	2
2.	Define Gender violence.	4	RE	2
3.	Why are constitutional protections important for social equality?	4	RE	2
4.	What is social discrimination, and how does it affect marginalized groups?	4	RE	2
5.	Name any two constitutional protections in India against discrimination.	4	RE	2
6.	What are inclusive practices, and why are they important?	4	RE	2
7.	Relate the link between ethical reasoning and social justice.	4	RE	2
8.	Show one example of a policy aimed at addressing gender inequality in India?	4	RE	2
9.	Outline the key concepts in social ethics?	4	UN	2
10.	What are the root causes of gender violence?	4	RE	2
11.	List the consequences of gender bias.	4	RE	2
12.	Recall the challenges of ethical reasoning.	4	RE	2
13.	How ethical reasoning encourages in promoting ethical leadership and collaboration?	4	RE	2
14.	What are the key areas of gender bias and issues commonly manifest?	4	RE	2
15.	List the impact of social discrimination?	4	RE	2

PART-B

1.	Discuss the importance of ethical reasoning in promoting constitutional protections for gender equality and preventing gender-based violence. How do legal and ethical Approaches complement each other?	4	UN	16
2.	Discuss the concept of ethical reasoning in relation to social justice. How ca ethical reasoning be Applied to develop policies that address gender bias, violence, and social discrimination?	4	UN	16
3.	Describe the role of inclusive practices in reducing social discrimination and promoting gender equality. How does ethical reasoning support these practices?	4	UN	16
4.	Discuss how ethical reasoning can be Applied to address gender bias in society. What actions and policies can promote fairness and equality across genders?	4	UN	16
5.	What are the ethical considerations in combating gender violence and what strategies can be implemented to prevent it.	4	UN	16
6.	Summarize how can ethical reasoning help in identifying and eliminating different forms of social discrimination?	4	UN	16
7.	Discuss what constitutional protections and policies exist to address social issues and how effective are they in promoting justice and equality?	4	UN	16
8.	Interpret some examples of inclusive practices and how do they contribute to creating a more equitable society?	4	UN	16

UNIT – V

SCIENTIFIC ETHICS

Transparency and Fairness in scientific pursuits - Scientific inventions for the betterment of society - Unfair Application of scientific inventions - Role and Responsibility of Scientist in the modern society.

Q. NO	QUESTION	CO	BTL	Marks
	PART–A			
1.	What is transparency in scientific pursuits, and why is it important?	5	RE	2
2	Define Scientific Ethics.	5	RE	2
3.	List the consequences of unfair Application.	5	RE	2
4.	What are the scientific inventions for the betterment of society?	5	RE	2
5.	What is transparency in scientific pursuits, and why is it important?	5	RE	2
6.	Explain the link between ethical reasoning and social justice.	5	UN	2
7.	What are the benefits of transparency and fairness?	5	RE	2
8.	Why is addressing gender violence crucial for societal ethics?	5	RE	2
9.	Outline the importance of scientific ethics.	5	UN	2
10.	How to promote fair Application in the society?	5	RE	2
11.	List the benefits of transparency and fairness.	5	RE	2
12.	What is meant by digital divide?	5	RE	2
13.	What are the challenges faced by scientists in the modern society?	5	RE	2
14.	Outline the critical components of scientific ethics.	5	UN	2
15.	List the responsibility of scientists to society and the environment.	5	RE	2
	PART-B			
1.	Explain the Ethical reasoning is essential for solving social problems. Discuss with reference to gender bias, violence, and discrimination.	5	UN	16
2.	Explain the role of constitutional protections and policies in addressing social discrimination in India.	5	UN	16
3.	Show how Inclusive practices are key to achieving a fair and just society.	5	RE	16
4.	Explain the significance of addressing gender bias and inequality for achieving social justice.	5	UN	16
5.	Justify why are transparency and fairness are crucial in scientific research and how they be ensured.	5	UN	16
6.	Explain how scientific inventions be directed towards the betterment of society and give some successful examples?	5	UN	16
7.	Summarize some examples of the unfair Application of scientific inventions and what ethical issues do they rise?	5	UN	16
8.	Elaborate the roles and responsibility do scientists have in modern society, particularly in ensuring their work benefits humanity?	5	UN	16

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TOTAL QUALITY MANGEMENT

UNIT I

INTRODUCTION

Introduction - Need for quality - Evolution of quality - Definition of quality - Dimensions of product and service quality –Definition of TQM-- Basic concepts of TQM - Gurus of TQM (Brief introduction) -- TQM Framework- Barriers to TQM –Benefits of TQM.

Q. NO	QUESTION	CO	BTL	Marks
	PART–A			
1.	Define quality.	1	RE	2
2	What is meant by Total Quality Management (TQM)?	1	RE	2
3.	State any two basic concepts of TQM..	1	RE	2
4.	List any two dimensions of product quality.	1	RE	2
5.	Mention any two service quality dimensions.	1	RE	2
6.	What are the primary needs for quality in organizations?	1	UN	2
7.	Differentiate between quality control and quality assurance.	1	AN	2
8.	What are the benefits of implementing TQM?	1	UN	2
9.	Name any two TQM Gurus.	1	RE	2
10.	Define customer focus in the context of TQM.	1	UN	2
11.	What is meant by continuous improvement?	1	UN	2
12.	Mention two common barriers to TQM implementation.	1	RE	2
13.	What is meant by "employee involvement" in TQM?	1	AP	2
14.	How has quality evolved over time?	1	AP	2
15.	What do you Understand by the term "TQM Framework"?	1	UN	2
	PART-B			
1.	Explain the need for quality and discuss the evolution of quality with relevant examples.	1	AP	16
2.	Define TQM. Explain the basic concepts of TQM and how they contribute to organizational success.	1	UN	16
3.	Discuss in detail the various dimensions of product and service quality with suitable illustrations.	1	AN	16
4.	Compare and contrast the contributions of any four TQM Gurus towards the development of quality management.	1	AN	16
5.	Explain the TQM framework in detail. Illustrate how each component supports quality improvement**.**	1	EV	16
6.	List and explain the barriers to TQM implementation. Suggest ways to overcome them.	1	EV	16
7.	Discuss the benefits of TQM implementation in both manufacturing and service organizations. Support your answer with examples.	1	EV	16
8.	Describe the historical evolution of quality and highlight how it shaped modern TQM practices.	1	AN	16

UNIT II
TQM PRINCIPLES

Leadership - Deming Philosophy, Quality Council, Quality statements and Strategic planning Customer Satisfaction –Customer Perception of Quality, Feedback, Customer complaints, Service Quality, Kano Model and Customer retention – Employee involvement – Motivation, Empowerment, Team and Teamwork, Recognition & Reward and Performance Appraisal Continuous process improvement – Juran Trilogy, PDSA cycle, 5S and Kaizen - Supplier partnership – Partnering, Supplier selection, Supplier Rating and Relationship development.

Q. NO	QUESTION	CO	BTL	Marks
	PART–A			
1.	Define leadership in the context of TQM.	2	RE	2
2.	What is Deming's philosophy of quality?.	2	UN	2
3.	List any two functions of a Quality Council.	2	RE	2
4.	What is a Vision Statement?	2	RE	2
5.	Define strategic planning.	2	RE	2
6.	Mention two dimensions of customer perception of quality.	2	RE	2
7.	What is the importance of customer feedback?	2	UN	2
8.	List any two types of customer complaints.	2	RE	2
9.	Define Service Quality.	2	RE	2
10.	What is Kano Model?	2	UN	2
11.	Define employee empowerment.	2	RE	2
12.	List two characteristics of an effective team.	2	RE	2
13.	What is Kaizen?	2	UN	2
14.	State any two benefits of 5S.	2	RE	2
15.	What is Supplier Rating?	2	UN	2

PART-B

1.	Explain Deming's 14 Points for Management in detail. How do these principles enhance leadership in a quality-focused organization?.	2	EV	16
2.	Describe the roles and responsibilities of the Quality Council. Also, differentiate between Vision, Mission, and Quality Policy with suitable examples.	2	AN	16
3.	Discuss the strategic planning process in Total Quality Management. How does it contribute to the long-term success of an organization?	2	EV	16
4.	What are the elements that influence customer perception of quality? Explain how customer feedback and complaint handling lead to customer satisfaction and retention.	2	EV	16
5.	Explain the Kano Model of customer satisfaction. How can organizations use this model to improve product/service quality?	2	EV	16
6.	Discuss the importance of employee involvement in TQM. Explain the concepts of motivation, empowerment, and performance Appraisal..	2	AP	16
7.	Write detailed notes on continuous process improvement using Juran's Trilogy, PDSA cycle, 5S and Kaizen techniques.	2	AP	16
8.	Explain the concept of supplier partnership in TQM. How are suppliers selected, rated, and developed for long-term relationships?	2	AN	16

UNIT III
TQM TOOLS & TECHNIQUES I

The seven traditional tools of quality - New management tools - Six-sigma Process Capability Bench marking - Reasons to benchmark, Benchmarking process, What to Bench Mark, Understanding Current Performance, Planning, Studying Others, Learning from the data, Using the findings, Pitfalls and Criticisms of Benchmarking - FMEA - Intent ,Documentation, Stages: Design FMEA and Process FMEA.

Q. NO	QUESTION	CO	BTL	Marks
	PART–A			
1.	List any two of the seven traditional tools of quality.	3	RE	2
2.	What is a cause-and-effect diagram?	3	UN	2
3.	Define histogram in the context of quality control.	3	RE	2
4.	What is a control chart used for?	3	UN	2
5.	Mention two new management tools in TQM.	3	RE	2
6.	What is Six Sigma?	3	UN	2
7.	Define process capability.	3	RE	2
8.	What does a sigma level indicate in Six Sigma?	3	UN	2
9.	What is benchmarking?	3	UN	2
10.	List two reasons why organizations benchmark.	3	RE	2
11.	What should be considered when selecting what to benchmark?	3	AP	2
12.	Define FMEA..	3	RE	2
13.	What is the primary purpose of Design FMEA (DFMEA)?	3	UN	2
14.	Mention any two stages of FMEA.	3	RE	2
15.	What is the role of documentation in FMEA?	3	UN	2
	PART-B			
1.	Explain in detail the seven traditional tools of quality with neat diagrams and examples. How do these tools help in problem-solving?.	3	AP	16
2.	Discuss the New Seven Management Tools used in TQM. Illustrate your answer with APropriate examples.	3	AP	16
3.	Define Six Sigma and explain the DMAIC methodology. Discuss how process capability is Evaluated in a Six Sigma project.	3	AP	16
4.	Describe process capability indices (Cp, Cpk) with suitable formulas and examples. How are these indices interpreted in quality control?	3	AN	16
5.	What is benchmarking? Explain in detail the benchmarking process. Highlight the steps involved from planning to implementation.	3	AP	16
6.	Discuss the benefits, pitfalls, and criticisms of benchmarking. How can organizations avoid common pitfalls while benchmarking?	3	EV	16
7.	Explain the concept of Failure Mode and Effect Analysis (FMEA). Differentiate between Design FMEA and Process FMEA.	3	AN	16
8.	Describe the stages of conducting FMEA. Explain how FMEA helps in risk reduction with a suitable example.	3	EV	16

UNIT IV

TQM TOOLS & TECHNIQUES II

Quality circles – Quality Function Deployment (QFD) - Taguchi quality loss function – TPM – Concepts, improvement needs – Performance measures- Cost of Quality - BPR.

Q. NO	QUESTION	CO	BTL	Marks
	PART–A			
1.	What is a quality circle?	4	RE	2
2	List any two benefits of quality circles.	4	RE	2
3.	Define Quality Function Deployment (QFD)..	4	RE	2
4.	What is the purpose of the House of Quality?	4	UN	2
5.	Define Taguchi's Quality Loss Function.	4	RE	2
6.	What is meant by "loss to society" in Taguchi's model?	4	UN	2
7.	What is TPM?.	4	RE	2
8.	List any two pillars of TPM.	4	RE	2
9.	Mention two improvement needs UNer TPM.	4	RE	2
10.	Define OEE (Overall Equipment Effectiveness).	4	RE	2
11.	What are the three major components of OEE?	4	RE	2
12.	What is meant by Cost of Quality (COQ)?.	4	UN	2
13.	List the four categories of quality costs.	4	RE	2
14.	Define Business Process Reengineering (BPR).	4	RE	2
15.	Mention two key features of BPR.	4	RE	2
	PART-B			
1.	Explain the concept of quality circles. Discuss the structure, operation, and benefits of implementing quality circles in an organization.	4	AP	16
2.	What is QFD? Explain the construction and Application of the House of Quality with an example.	4	AN	16
3.	Describe the Taguchi quality loss function. Derive the loss function equation and explain its significance in quality management.	4	AN	16
4.	Define Total Productive Maintenance (TPM). Explain its concepts, pillars, and improvement needs with real-world examples.	4	AP	16
5.	Discuss how Overall Equipment Effectiveness (OEE) is calculated. Explain the factors affecting performance, availability, and quality rates.	4	AN	16
6.	What is Cost of Quality (COQ)? Explain its four components and the ways to reduce cost through TQM initiatives.	4	EV	16
7.	Define Business Process Reengineering (BPR). Explain the principles, steps involved, and how BPR differs from continuous improvement.	4	AN	16
8.	Compare and contrast Quality Function Deployment (QFD), Taguchi method, and BPR in terms of goals, tools used, and implementation strategy.	4	EV	16

UNIT V
QUALITY MANGEMENT SYSTEM

Introduction-Benefits of ISO Registration-ISO 9000 Series of Standards-Sector-Specific Standards - AS 9100, TS16949 and TL 9000-- ISO 9001 Enquirers-Implementation-Documentation Internal Audits-Registration-ENVIRONMENTAL MANGEMENT SYSTEM: Introduction—ISO 14000 Series Standards—Concepts of ISO 14001—Requirements of ISO 14001-Benefits of EMS.

Q. NO	QUESTION	CO	BTL	Marks
	PART–A			
1.	What is ISO?	5	RE	2
2.	List any two benefits of ISO registration.	5	RE	2
3.	What is ISO 9000?	5	RE	2
4.	Name any two standards in the ISO 9000 family..	5	RE	2
5.	What is the focus of ISO 9001:2015?	5	UN	2
6.	Mention one key feature of ISO 9001.	5	RE	2
7.	What is the purpose of internal audits in ISO implementation?	5	UN	2
8.	Define quality documentation.	5	RE	2
9.	What is the role of management review in ISO 9001 implementation?.	5	UN	2
10.	What does TL 9000 specifically address?	5	UN	2
11.	Mention the industry to which AS 9100 Applies.	5	RE	2
12.	Define Environmental MANgement System (EMS).	5	RE	2
13.	What is ISO 14000?	5	RE	2
14.	Mention any two requirements of ISO 14001	5	RE	2
15.	List two benefits of implementing EMS.	5	RE	2
	PART-B			
1.	Explain the ISO 9000 series of standards. How do these standards help in establishing a quality management system in an organization?	5	AP	16
2.	Discuss the sector-specific standards: AS 9100, TS 16949, and TL 9000. Compare their features and industry relevance.	5	AN	16
3.	What are the key requirements of ISO 9001:2015? Explain each clause in detail with examples.	5	AP	16
4.	Describe the steps involved in the implementation of ISO 9001. What challenges may arise, and how can they be overcome?	5	EV	16
5.	Explain the different types of quality documentation in ISO 9001. How does proper documentation support internal audits and registration?	5	AP	16
6.	What is an internal quality audit? Explain its process, objectives, and role in ISO certification..	5	AP	16
7.	Define Environmental Management System. Discuss the ISO 14000 family of standards and the key concepts behind ISO 14001..	5	UN	16
8.	Explain the requirements of ISO 14001 in detail. What are the benefits of implementing an EMS in manufacturing industries?	5	EV	16

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IT IN AGRECULTURE SYSTEM

UNIT I
PRECISION FARMING

Precision agriculture and agricultural management – Ground based sensors, Remote sensing, GPS, GIS and mapping software, Yield mapping systems, Crop production modeling.

Q. NO	QUESTION	CO	BTL	Marks
	PART–A			
1.	Define Precision Agriculture.	1	RE	2
2.	What is the main objective of precision farming?	1	RE	2
3.	List two Applications of GPS in agriculture.	1	RE	2
4.	What are groUN-based sensors?	1	RE	2
5.	Mention any two types of Remote sensing used in precision farming.	1	UN	2
6.	Write a short note on GIS in agriculture.	1	UN	2
7.	What is yield mapping?	1	RE	2
8.	How is mapping software useful in farming?	1	UN	2
9.	List two benefits of using GPS in crop management.	1	RE	2
10.	What is the role of IT in precision agriculture?	1	RE	2
11.	State any two advantages of precision farming.	1	UN	2
12.	What is crop production modeling?	1	RE	2
13.	Differentiate between groUN-based and REote sensing.	1	AP	2
14.	How do sensors help in agricultural mANgement?	1	UN	2
15.	Mention two challenges in implementing precision agriculture	1	UN	2
	PART-B			
1.	Explain the concept of precision agriculture. Discuss its advantages and limitations.	1	UN	16
2.	Describe the role of ground-based sensors and Remote sensing in precision farming.	1	UN	16
3.	Explain how GPS and GIS technologies are integrated into modern farming.	1	UN	16
4.	Discuss the process and importance of yield mapping systems in agriculture.	1	UN	16
5.	Elaborate on the different types of mapping software used in agricultural management.	1	UN	16
6.	Write an essay on crop production modelling. How is it beneficial to farmers?	1	RE	16
7.	Explain the IT tools involved in precision farming with real-life Applications.	1	UN	16
8.	Discuss the future scope and challenges of implementing precision agriculture in India.	1	UN	16

UNIT II
ENVIRONMENTAL CONTROL SYSTEMS

Artificial light systems, management of crop growth in greenhouses, simulation of CO2 consumption in greenhouses, on-line measurement of plant growth in the greenhouse, models of plant production and expert systems in horticulture.

Q. NO	QUESTION	CO	BTL	Marks
	PART–A			
1.	Define environmental control systems in agriculture.	2	RE	2
2.	What is the role of artificial light systems in crop growth?	2	RE	2
3.	List any two parameters measured for plant growth in greenhouses.	2	RE	2
4.	What is the significance of CO_2 simulation in greenhouses?	2	RE	2
5.	Differentiate between natural and artificial lighting in greenhouses.	2	UN	2
6.	Name any two expert systems used in horticulture.	2	RE	2
7.	State the importance of online measurement of plant growth.	2	AP	2
8.	What are the benefits of using models in plant production?	2	RE	2
9.	Mention any two challenges in greenhouse crop management.	2	UN	2
10.	What is the use of simulation models in greenhouse systems?	2	RE	2
11.	Give two examples of sensors used in environmental monitoring.	2	UN	2
12.	What is the purpose of environmental modelling in controlled agriculture?	2	RE	2
13.	List any two advantages of using IT in greenhouse systems.	2	UN	2
14.	How does IT help in managing crop growth in greenhouses?	2	RE	2
15.	Write short notes on the role of expert systems in modern agriculture.	2	AP	2
	PART-B			
1.	Explain in detail the components and working of artificial light systems used in greenhouses.	2	UN	16
2.	Discuss the various IT-enabled techniques for managing crop growth in greenhouses.	2	UN	16
3.	Elaborate on the simulation techniques used for CO_2 consumption modeling in greenhouse systems.	2	AP	16
4.	How is plant growth monitored online in greenhouses? Describe with tools and technologies used.	2	RE	16
5.	Describe various models of plant production and their implementation in horticultural practices.	2	UN	16
6.	Explain the role and architecture of expert systems in horticulture with examples.	2	UN	16
7.	Analyze the challenges and future scope of IT-based environmental control systems.	2	AP	16
8.	Design an environmental control system for a smart greenhouse using IT tools. Justify your design.	2	EV	16

UNIT III
AGRICULTURAL SYSTEM MANGEMENT

Agricultural systems - managerial overview, Reliability of agricultural systems, Simulation of crop growth and field operations, Optimizing the use of resources, Linear programming, Project scheduling, Artificial intelligence and decision support systems.

Q. NO	QUESTION	CO	BTL	Marks
	PART–A			
1.	What is agricultural system management?	3	RE	2
2.	Define reliability in agricultural systems.	3	RE	2
3.	What is the role of simulation in crop growth?	3	RE	2
4.	List two benefits of linear programming in agriculture.	3	UN	2
5.	What do you mean by field operations in agriculture?	3	RE	2
6.	Name any two decision support systems used in agriculture.	3	UN	2
7.	Mention two uses of artificial intelligence in agriculture	3	UN	2
8.	What is meant by project scheduling in agricultural context?	3	RE	2
9.	Differentiate between crop modeling and simulation.	3	AP	2
10.	Why is resource optimization important in agriculture?	3	RE	2
11.	What is the significance of simulation in field operations?	3	RE	2
12.	Define decision support system.	3	RE	2
13.	Write any two Applications of AI in agricultural system management.	3	UN	2
14.	How can linear programming improve resource use in farming?	3	RE	2
15.	What is the managerial overview in agricultural systems?	3	RE	2
	PART-B			
1.	Explain in detail the managerial overview of agricultural systems with suitable examples.	3	UN	16
2.	Discuss the concept of reliability in agricultural systems and the methods to improve it.	3	AP	16
3.	Describe the simulation of crop growth and field operations. How are they helpful in precision farming?	3	RE	16
4.	Elaborate on the role of linear programming in optimizing the use of resources in agriculture. Provide relEVnt case studies.	3	UN	16
5.	Write down the importance of project scheduling in agricultural management. What tools can be used for efficient scheduling?	3	RE	16
6.	How artificial intelligence and decision support systems can revolutionize agricultural system management.	3	RE	16
7.	Write down the various techniques used in agricultural system management with emphasis on simulation and modeling.	3	UN	16
8.	Describe a decision support model for resource management in agriculture integrating AI and linear programming.	3	UN	16

UNIT IV
WEATHER PREDICITION MODELS

Importance of climate variability and seasonal forecasting, Understanding and predicting world's climate system, Global climatic models and their potential for seasonal climate forecasting, General systems Approach to Applying seasonal climate forecasts.

Q. NO	QUESTION	CO	BTL	Marks
	PART–A			
1.	What is meant by climate variability?	4	RE	2
2.	Define seasonal forecasting.	4	RE	2
3.	What is the role of IT in weather prediction?	4	RE	2
4.	Mention any two global climatic models.	4	UN	2
5.	What are the components of a weather prediction system?	4	RE	2
6.	List the advantages of seasonal climate forecasting.	4	UN	2
7.	What is the significance of long-term weather data?	4	RE	2
8.	Define general systems AProach in climate forecasting.	4	RE	2
9.	How does climate affect agricultural planning?	4	RE	2
10.	What is the difference between weather and climate?	4	RE	2
11.	Mention any two input parameters for weather prediction models.	4	UN	2
12.	State the use of Remote sensing in weather forecasting.	4	UN	2
13.	What are the limitations of global climatic models?	4	RE	2
14.	What is meant by model calibration in weather prediction?	4	RE	2
15.	List two real-time weather forecasting tools.	4	UN	2
	PART-B			
1.	Explain the importance of climate variability and seasonal forecasting in agriculture.	4	UN	16
2.	Describe the structure and functioning of global climatic models used in seasonal climate forecasting.	4	UN	16
3.	Analyze how IT-enabled tools are used in Understanding and predicting the world's climate system.	4	AP	16
4.	Evaluate the advantages and limitations of different weather prediction models used in agriculture.	4	UN	16
5.	Discuss the general systems Approach to Applying seasonal climate forecasts with examples.	4	AP	16
6.	Write a model architecture for integrating seasonal climate forecasting with agricultural decision-making.	4	RE	16
7.	Compare and contrast different global climatic models and their predictive capabilities.	4	AP	16
8.	Apply IT-based weather prediction models to a specific crop cycle and suggest suitable actions based on forecast data.	4	AP	16

UNIT V
Applications Development

Expert systems, decision support systems, Agricultural and biological databases, e-commerce, e-business systems & Applications, Technology enhanced learning systems and solutions, e-learning, Rural development and information society.

Q. NO	QUESTION	CO	BTL	Marks
	PART–A			
1.	Define e-Governance in the context of agriculture.	5	RE	2
2.	What are expert systems in agricultural Applications?	5	UN	2
3.	Mention any two types of agricultural databases.	5	RE	2
4.	What is the role of decision support systems in farming?	5	UN	2
5.	List any two advantages of using e-commerce in agriculture.	5	RE	2
6.	What do you mean by rural development in the information society?	5	UN	2
7.	Name any two technology-enhanced learning systems used in agriculture.	5	RE	2
8.	What is the difference between e-commerce and e-business?	5	UN	2
9.	How does IT help in rural development?	5	AP	2
10.	Give examples of how DSS helps farmers in decision making.	5	AP	2
11.	Write two features of agricultural expert systems.	5	RE	2
12.	Explain the importance of databases in precision farming.	5	UN	2
13.	What is the role of e-learning in agricultural education?	5	UN	2
14.	List two challenges in implementing e-Governance in rural areas.	5	AP	2
15.	State any two IT tools used in agricultural governance.	5	RE	2
	PART-B			
1.	Explain the architecture, components, and benefits of expert systems in agriculture.	5	UN	16
2.	Discuss the role and structure of agricultural and biological databases with suitable examples.	5	AP	16
3.	Elaborate on how e-commerce and e-business models are transforming agricultural markets.	5	EV	16
4.	Describe the development and impact of Technology Enhanced Learning (TEL) systems in rural farming.	5	AP	16
5.	Discuss the integration of Decision Support Systems (DSS) with real-time data for smart farming.	5	AP	16
6.	Analyze the challenges and opportunities in implementing e-Governance in Indian agricultural sector.	5	EV	16
7.	Explain about an ICT framework for improving agricultural extension services in rural areas.	5	RE	16
8.	Compare traditional agricultural practices with IT-enabled governance systems with case studies.	5	AP	16

OEN351

DRINKING WATER SUPPLY AND TREATMENT

UNIT I
SOURCES OF WATER

Public water supply system – Planning, Objectives, Design period, Population forecasting; Waterdemand – Sources of water and their characteristics, Surface and Groundwater – Impounding Reservoir – Development and selection of source – Source Water quality – Characterization –Significance – Drinking Water quality standards.

Q.No	Question	CO	BTL	Marks
	PART-A			
1.	List the significance of impounding reservoirs in water storage.	1	RE	2
2.	Enumerate the components of water supply system?	1	UN	2
3.	What is an intake? Mentions its types.	1	RE	2
4.	What is per capita water demand?	1	UN	2
5.	What is meant by shallow well?	1	UN	2
6.	Define the term design period.	1	RE	2
7.	What are the factors affecting per capita demand?	1	RE	2
8.	What are the impurities present in water?	1	RE	2
9.	What is meant by deep well?	1	RE	2
10.	What are the objectives of water supply system?	1	RE	2
11.	Write the maximum acceptable limit of the following for the public drinking water. i. Color ii. pH iii. Chlorides iv. Sulphates	1	RE	2
12.	Define BOD	1	RE	2
13.	Write in brief about the recharge of ground water.	1	UN	2
14.	What is water demand? State its types	1	RE	2
15.	Compare and contrast between carbonate and non-carbonate hardness.	1	UN	2

PART-B

1.	What do you mean by design period? Explain its importance in design of different components of water supply scheme.	1	UN	16
2.	Summarize the various sources of water.	1	UN	16
3.	Enumerate and explain the characteristics of surface and ground water and state their environmental significance.	1	UN	16
4.	Compare the surface and underground sources of public water supply.	1	UN	16
5.	The population of five decades from 1980 to 2020 are given below in the table. Find the population after one, two, three decades beyond the last known decades by using Arithmetic increase method Geometric increase method IncREental increase method	1	AN	16

Year	1980	1990	2000	2010	2020
Population	15000	18000	24000	26000	29000

6.	The population of five decades from 1980 to 2020 are given below in the table. Calculate the population after one, two, three decades beyond the last known decades by using a.Arithmetic increase method b.Geometric increase method c.IncREental increase method Estimate the water demand at 135 LPCD for the year 2040.	1	AN	16

Year	1970	1980	1990	2000	2010
Population	38000	40000	44000	46000	49000

7.	List out the water quality standards	1	UN	16
8.	Explain the various types of water demand in detail.	1	UN	16

UNIT II

CONVEYANCE FROM THE SOURCE

Water supply – intake structures – Functions; Pipes and conduits for water – Pipe materials –Hydraulics of flow in pipes – Transmission main design – Laying, jointing and testing of pipes –Appurtenances – Types and capacity of pumps – Selection of pumps and pipe materials.

Q.No	Question	CO	BTL	Marks
	PART-A			
1.	List out the standards for water quality?	2	RE	2
2.	What is an infiltration well? Mentions its types.	2	UN	2
3.	Mention the factors governing location of intake structures	2	UN	2
4.	What is head loss in pipes?	2	UN	2
5.	What are the types of gravity conduits?	2	RE	2
6.	List the types of conduits.	2	RE	2
7.	Define intake.	2	UN	2
8.	List functions of intake structures.	2	RE	2
9.	List out the various joint's in cast iron pipes.	2	RE	2
10.	Name the types of intake according to their position.	2	RE	2
11.	How the corrosion of metal pipes is reduced?	2	RE	2
12.	Predict the factors controlling the choice of materials for water conduits.	2	RE	2
13.	Illustrate the properties of Ductile Iron pipes.	2	UN	2
14.	Compare gravity conduits with pressure conduits.	2	RE	2
15.	What are the advantages and limitations of RCC pipes?	2	RE	2
	PART-B			
1.	With neat sketch, explain river intake and canal intake towers.	2	UN	16
2.	Illustrate the different types of pumps used in water supplies with a neat sketch.	2	UN	16
3.	What are the pipe materials used in water transmission?	2	RE	16
4.	Apply the principles for selecting suitable pumps and pipe materials for a conveyance system	2	UN	16
5.	Illustrate the different types of pipe Appurtenances used in water supply project.	2	UN	16
6.	What are the basic requirements of a pipe joint? Describe the various pipe joints with neat sketches.	2	UN	16
7.	Summarize few lines about the functioning of a jet pump with a neat sketch.	2	UN	16
8.	Discuss about the wet and dry intake tower to draw water from the reservoir.	2	UN	16

UNIT III
WATER TREATMENT

Objectives – Unit operations and processes – Principles, functions, and design of water treatment plant units, aerators of flash mixers, Coagulation and flocculation –- sand filters - Disinfection – Construction, Operation and Maintenance aspects.

Q.No	Question	CO	BTL	Marks
	PART-A			
1.	Define: Detention time and surface over flow rate.	3	RE	2
2.	Explain the term coagulation.	3	RE	2
3.	List out advantages of rapid sand filter.	3	RE	2
4.	Mention the advantages of chlorine as disinfectant.	3	UN	2
5.	State the function of sedimentation tanks.	3	RE	2
6.	Write the nature of any four coagulants.	3	UN	2
7.	Differentiate between unit operation and unit process.	3	RE	2
8.	Discuss the significances of velocity gradient in flocculator design.	3	RE	2
9.	Differentiate between sterilization and disinfection.	3	RE	2
10.	Describe the tests to be done to find the residual chlorine in water.	3	RE	2
11.	Illustrate the mechanism of disinfection process.	3	RE	2
12.	Discover the factors which depends the dose of coagulants.	3	RE	2
13.	Show the layout plan of water treatment plant.	3	RE	2
14.	Compare the objectives of Screen chamber and Grit chamber.	3	RE	2
15.	What are Flocculates?	3	RE	2
	PART-B			
1.	List the types of chlorination and explain break point chlorination in detail	3	UN	16
2.	A new township is to have a population of 6,00,000 and 90 Lpcd of water supply. Find the rapid sand filter unit with details of Under drainage and water washing including gutter arrangement. Limit the maximum spent backwash water as 3.5%.	3	AN	16
3.	Compute the dimensions of continuous flow rectangular sedimentation tank for a population of 20000 persons with a daily per capita water allowance of 120 liters. Assume detention period to be 6 hours.	3	AN	16
4.	Explain the working principle of slow sand filter with the help of neat sketch.	3	UN	16
5.	Explain the working principle of rapid sand filter with the help of neat sketch.	3	UN	16
6.	Discuss the design aspects of sedimentation tanks in detail.	3	UN	16
7.	Compare slow sand filter with rapid sand filter.	3	UN	16
8.	Write short notes on methods of coagulant feeding.	3	UN	16

UNIT IV
ADVANCED WATER TREATMENT

Water softening – Desalination- R.O. Plant – demineralization – Adsorption - Ion exchange – Membrane Systems - Iron and Manganese Removal - Defluoridation - Construction and Operation and Maintenance aspects.

Q.No	Question	CO	BTL	Marks
	PART-A			
1.	Define reverse osmosis.	4	RE	2
2.	Show the methods of Removing temporary and permanent hardness.	4	RE	2
3.	Define Zeolite process.	4	RE	2
4.	What is meant by adsorption isotherm?	4	UN	2
5.	List any four effects of hardness in water	4	RE	2
6.	How do you regenerate softener?	4	RE	2
7.	Distinguish between physical adsorption and chemical adsorption	4	RE	2
8.	Differentiate between demineralization and desalination.	4	RE	2
9.	Describe about the term water softening.	4	UN	2
10.	What are the recent advances in water treatment process?	4	RE	2
11.	What is the principle of demineralization by Ion-exchange?	4	RE	2
12.	Define Defluoridation.	4	RE	2
13.	Examine how to Remove iron and manganese from water.	4	RE	2
14.	What are Membrane Bioreactors?	4	RE	2
15.	Define RO reject management.	4	UN	2
	PART-B			
1.	Explain the Zeolite process for the Removal of permanent hardness from water.	4	UN	16
2.	Explain in detail with neat sketches about the Membrane Bioreactor (MBR) process.	4	UN	16
3.	Describe in detail about the principle and mechanism of desalination process.	4	UN	16
4.	Elaborate, how demineralization carried out in the advanced water treatment process.	4	UN	16
5.	Explain the methods of Removing temporary and permanent hardness from water.	4	UN	16
6.	Why and what pre-treatment is required in the feed water to RO plant?	4	UN	16
7.	Write short notes on defluoridation in detail.	4	UN	16
8.	Write short notes on Iron and Manganese Removal in detail.	4	UN	16

UNIT V
WATER DISTRIBUTION AND SUPPLY

Requirements of water distribution – Components – Selection of pipe material – Service reservoirs - Functions – Network design – Economics - Computer Applications – Appurtenances – Leak detection - Principles of design of water supply in buildings – House service connection – Fixtures and fittings, systems of plumbing and types of plumbing.

Q.No	Question	CO	BTL	Marks
	PART-A			
1.	What is an equivalent pipe?	5	RE	2
2.	How will you calculate the service capacity of the reservoir?	5	RE	2
3.	Mention the important components needed for the water distribution to buildings.	5	RE	2
4.	Where the ring system of water distribution system is adopted?	5	RE	2
5.	What are the requirements of water distribution system?	5	RE	2
6.	Name the Appurtenances used in water distribution system.	5	RE	2
7.	Describe about air valves. Mention the different types of air valves.	5	RE	2
8.	Extend a few lines on ferrule in water service connection.	5	RE	2
9.	Predict the factors which control water supply to buildings.	5	UN	2
10.	Discuss the methods available to find the leakages in pipelines.	5	RE	2
11.	Explain Hardy Cross method of pipe network Analysis.	5	RE	2
12.	Examine the prime functions of service reservoirs.	5	RE	2
13.	What is a surface reservoir?	5	RE	2
14.	Analyze how to identify leakage in pipe lines.	5	RE	2
15.	List out the components of service connection pipe.	5	RE	2

PART-B

1.	Explain in detail about the Appurtenances in water distribution system.	5	UN	16
2.	Explain in detail about the surface water resources	5	UN	16
3.	Explain about the distribution networks in water distribution and supply to buildings with neat sketch.	5	UN	16
4.	Discuss with neat sketches the various types of layout of distribution system and state their advantages and disadvantages.	5	UN	16
5.	Summarize few lines about leak detection and explain its methods. How to maintain the drinking water pipe line system.	5	UN	16
6.	Draw a sketch and label the parts of a water supply service connection from the street main to a residential building and state the functions of each fitting.	5	UN	16
7.	What are the functions of service reservoir? Briefly outline the design aspects of service reservoir.	5	UN	16
8.	Explain about the Analysis of distribution networks in water distribution and supply to buildings.	5	UN	16

OHS352

PROJECT REPORT WRITING

UNIT – I

Writing Skills – Essential Grammar and Vocabulary – Passive Voice, Reported Speech, Concord, Signpost words, Cohesive Devices – Paragraph writing - Technical Writing vs. General Writing.

Q.No	Question	CO	BTL	Marks
	PART-A			
1.	Define passive voice.	1	RE	2
2.	What is reported speech? Give an example.	1	RE	2
3.	Define concord with an example.	1	RE	2
4.	Give examples of cohesive devices.	1	RE	2
5.	What are signpost words?	1	RE	2
6.	Compare technical and general writing.	1	UN	2
7.	What is the purpose of using passive voice in technical writing.	1	RE	2
8.	What is cohesive device?	1	RE	2
9.	List the features of technical writing.	1	RE	2
10.	Compare direct and reported speech.	1	UN	2
11.	Define paragraph unity.	1	RE	2
12.	List the types of conjunctions used as cohesive devices.	1	RE	2
13.	Give an example of subject-verb agreement error.	1	RE	2
14.	What do you mean by formal vocabulary in technical writing?	1	RE	2
15.	Write two linking words and their function	1	RE	2

PART-B

1.	i) Explain the rules of using passive voice in formal writing.	1	UN	8
2.	ii) Illustrate how reported speech is used in documentation.	1	UN	8
3.	i) Analyze the importance of concord in writing a project report with suitable examples.	1	AN	8
4.	ii) Analyze the use of signpost words in improving the readability and flow of a project report with examples.	1	AN	8
5.	Explain the role of cohesive devices and write a short paragraph using five of them.	1	UN	16
6.	Explain how signpost words help to improve the readability of a report?	1	UN	16
7.	Illustrate the types of paragraphs by writing suitable examples that can be used in a project report.	1	AP	16
8.	Demonstrate the differences between technical and general writing by drafting suitable examples for each.	1	AP	16

UNIT – II

Project Report – Definition, Structure, Types of Reports, Purpose – Intended Audience – Plagiarism – Report Writing in STEM fields – Experiment – Statistical Analysis

Q.No	Question	CO	BTL	Marks
	PART-A			
1.	Define a project report.	2	RE	2
2.	List the types of technical reports.	2	RE	2
3.	What is the purpose of a project report?	2	RE	2
4.	Who are the intended audiences?	2	RE	2
5.	What is plagiarism?	2	RE	2
6.	Mention the consequences of plagiarism.	2	RE	2
7.	Define statistical Analysis.	2	RE	2
8.	What is the role of an experiment in a report?	2	RE	2
9.	Give examples of STEM fields.	2	UN	2
10.	List the features of a good report.	2	RE	2
11.	Why is originality important in writing?	2	RE	2
12.	Compare Analytical and descriptive reports.	2	UN	2
13.	What is report writing in STEM?	2	UN	2
14.	Give an example of statistical data.	2	RE	2
15.	What is a summary?	2	RE	2

PART-B

1.	Explain the structure and components of a project report.	2	UN	16
2.	Explain the types of reports with examples.	2	UN	16
3.	Use the standard structure and components to create an outline for a project report.	2	AP	16
4.	Identify how the purpose and role of the intended audience can be Applied while drafting a project report.	2	AP	16
5.	Analyze the ethical issues and consequences of plagiarism in academic and professional writing.	2	AN	16
6.	Examine the use of statistical Analysis in reports to show its impact on accuracy and clarity.	2	AN	16
7.	Compare STEM report writing with other fields.	2	AN	16
8.	Examine the need for originality in technical writing.	2	AN	16

UNIT – III

Structure of the Project Report: (Part 1) Framing a Title – Content – Acknowledgement – Funding Details - Abstract – Introduction – Aim of the Study – Background - Writing the research question - Need of the Study/Project Significance, Relevance – Determining the feasibility – Theoretical Framework.

Q.No	Question	CO	BTL	Marks
	PART-A			
1.	What is the purpose of framing a clear project title?	3	RE	2
2.	List the key features of a good project title.	3	RE	2
3.	What is included in the content section of a project report?	3	RE	2
4.	List a sample sentence suitable for an Acknowledgement section.	3	RE	2
5.	Why is it important to mention funding details in a project report?	3	RE	2
6.	What is an abstract in a project report? Give its purpose.	3	RE	2
7.	What should be included in the introduction of a technical report?	3	RE	2
8.	Define the aim of a study.	3	RE	2
9.	Compare between aim and background of a study.	3	UN	2
10.	What is meant by a “research question”?	3	RE	2
11.	Define the term “project significance.”	3	RE	2
12.	Why is determining feasibility important before starting a project?	3	RE	2
13.	What does a theoretical framework consist of in a project report?	3	RE	2
14.	Give example of how the need for the study is justified in a report	3	RE	2
15.	What are some sources where background information for a study can be collected?	3	RE	2
	PART-B			
1.	Elaborate how to frame a suitable title and abstract for a technical or scientific project.	3	CR	16
2.	Discuss the structure and contents of the "Acknowledgement", "Funding Details", and "Content" sections.	3	CR	16
3.	Create a sample introduction for a STEM-based mini project, including a justified aim and background.	3	CR	16
4.	Analyse how defining a clear research question influences the direction, methodology, and outcomes of a study	3	AN	16
5.	Design a ‘Need for the study’ section and prepare a feasibility assessment for a sample project.	3	CR	16
6.	Apply the concept of theoretical framework to develop a suitable structure for a research report in the field of study.	3	AP	16
7.	Illustrate a well-written abstract and introduction for a final-year project report on a STEM topic.	3	AN	16
8.	Draft a model outline for the first part of a project report, including all the headings listed.	3	AP	16

UNIT – IV

Structure of the Project Report: (Part 2) – Literature Review, Research Design, Methods of Data Collection - Tools and Procedures - Data Analysis - Interpretation - Findings –Limitations - Recommendations – Conclusion – Bibliography.

Q.No	Question	CO	BTL	Marks
	PART-A			
1.	What is the purpose of a literature review in a project report?	4	RE	2
2.	Define research design with an example.	4	RE	2
3.	List the methods of data collection.	4	RE	2
4.	Why is it important to describe the tools and procedures used in research?	4	RE	2
5.	What is data Analysis in the context of a research report?	4	RE	2
6.	Define the term “Interpretation” in relation to research findings.	4	RE	2
7.	Compare “Findings” and “Conclusion” in a project report.	4	UN	2
8.	What should be included in the “Limitations” section of a project report?	4	RE	2
9.	List the valid recommendations you might include in a project on water quality testing.	4	RE	2
10.	What is the purpose of writing a conclusion in a technical report?	4	UN	2
11.	Give examples of tools used in quantitative research.	4	RE	2
12.	What is the function of a bibliography in a research report?	4	RE	2
13.	How is a bibliography different from references?	4	UN	2
14.	What format styles are commonly used in writing bibliographies?	4	RE	2
15.	What are some ethical considerations to keep in mind while collecting data from human participants?	4	RE	2

PART-B

1.	Explain the purpose and structure of a literature review. How should sources be selected and cited?	4	UN	16
2.	Discuss the features of different research designs with suitable examples.	4	UN	16
3.	Analyze the effectiveness of different data collection tools in ensuring reliability and validity of research finding.	4	AN	16
4.	Analyse how different data Analysis techniques affect the accuracy and clarity of research conclusions.	4	AN	16
5.	Write a short findings, limitations, and recommendations section for a STEM-based project.	4	AP	16
6.	Write a "Conclusion" and "Recommendations" section for a given mini project. **TITLE**: Impact of Smart Irrigation Systems on Water Conservation in Small-Scale Farming.	4	AP	16
7.	Analyse the impact of proper citation styles on the credibility and authentic	4	AN	16
8.	Analyse how the organization of a research report structure affects clarity and readability.	4	AN	16

UNIT – V

Proof reading a report – Avoiding Typographical Errors – Bibliography in required Format – Font – Spacing – Checking Tables and Illustrations – Presenting a Report Orally – Techniques.

Q.No	Question	CO	BTL	Marks
	PART-A			
1.	What is meant by proofreading in report writing?	5	RE	2
2.	What are some common typographical errors found in technical reports?	5	RE	2
3.	List the formatting aspects to be checked during proofreading.	5	RE	2
4.	Why is font consistency important in project reports?	5	RE	2
5.	What are the ideal font type and size for a university project report.	5	RE	2
6.	What is the recommended line spacing for a formal report document?	5	RE	2
7.	How should tables be labeled and placed in a report?	5	RE	2
8.	What is the role of illustrations in a technical report?	5	RE	2
9.	What should you check when proofreading tables or graphs?	5	RE	2
10.	What is the standard format for writing a bibliography?	5	RE	2
11.	Compare APA and IEEE bibliography styles.	5	UN	2
12.	Define oral presentation in the context of project reporting.	5	RE	2
13.	List any two techniques for effective oral presentation of a project.	5	RE	2
14.	Why is it important to practice before presenting a report orally?	5	RE	2
15.	List the tools/software that assist in proofreading and error checking.	5	RE	2
	PART-B			
1.	Explain the importance of proofreading and list the steps involved in proofreading a technical report.	5	UN	16
2.	Identify various typographical and formatting errors commonly found in student project reports.	5	UN	16
3.	Describe how to format tables, graphs, and illustrations according to report-writing guidelines.	5	AP	16
4.	Analyze the differences between APA and IEEE styles and discuss their suitability for various types of research reports.	5	AN	16
5.	Draft a checklist used for final formatting before report submission, including font, spacing, and tables.	5	AP	16
6.	Create a short report section showing how tables and graphs are presented and labeled.	5	AP	16
7.	Analyze How different presentation techniques (visuals, voice modulation, body language) affect audience engagement.	5	AN	16
8.	Describe how to prepare slides and content for oral presentation of a STEM project report.	5	AP	16

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