

Time: 3 Hours**Max Marks: 60**

Answer ONE Question from each Unit

All Questions Carry Equal Marks

All parts of the Question must be answered at one place

		Marks	CO	Blooms Level
<u>UNIT-I</u>				
1.	a) Define IT Infrastructure. Explain IT infrastructure Management Activities.	5M	CO1	K1,K2
	b) Discuss the advantages and challenges of IT infrastructure management.	5M	CO1	K2
(OR)				
2.	a) Define the evolutions of systems since 1960's and their management.	5M	CO1	K1
	b) What are the Current business demands and IT systems Issues?	5M	CO1	K1
<u>UNIT-II</u>				
3.	a) Summarize the phases of 'Software Development Life Cycle.	5M	CO2	K2
	b) Explain Conventional Software Management Performance.	5M	CO2	K2
(OR)				
4.	a) Explain about software economics.	5M	CO2	K2
	b) Analyse the Software Economics from software cost estimation.	5M	CO2	K4
<u>UNIT-III</u>				
5.	a) Describe the common tasks in IT system Management.	5M	CO3	
	b) Explain Strategy-Tactics-Operations Approach in detail.	5M	CO3	K2
(OR)				
6.	a) Explain multiple technologies in current computing.	5M	CO3	K2
	b) Explain capacity management in detail.	5M	CO3	K2
<u>UNIT-IV</u>				
7.	a) Explain Computer Security in detail.	5M	CO4	K2
	b) Discuss the two basic components of the cryptography.	5M	CO4	K2
(OR)				
8.	a) Explain Internet Security in detail.	5M	CO4	K2
	b) Explain Identity management in detail.	5M	CO4	K2
<u>UNIT-V</u>				
9.	a) Define storage management? Explore the process activities of storage management.	5M	CO5	K1,K2
	b) Define space management, Explain the uses of space management.	5M	CO5	K1,K2
(OR)				
10.	a) Explain Backup ,archive and recovery.	5M	CO5	K2
	b) Define disaster recovery. Classify the different disasters.	5M	CO5	K1,K2
<u>UNIT-VI</u>				
11.	a) what is E-Commerce and write its advantages and disadvantages.	5M	CO6	K1
	b) Illustrate the Electronic Data Interchange in detail.	5M	CO6	K2
(OR)				
12.	a) what is GSM and explain its architecture.	5M	CO6	K1
	b) what is data interchange explain it with example diagram.	5M	CO6	K1

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<u>UNIT-I</u>		Marks	CO	Blooms Level
1.	a) Describe the structure and role of a Peer-to-Peer (P2P) network in Blockchain with suitable examples.	5M	CO1	L2
	b) Discuss the different types of Blockchain platforms (Public, Private, Consortium). Compare their features and use cases.	5M	CO1	L3
(OR)				
2.	a) Explain the key components of Blockchain architecture — Block, Transaction, Hash, and Timestamp — with a neat, labelled diagram.	5M	CO1	L2
	b) Discuss the advantages and disadvantages of Blockchain Technology (BCT) in real-world applications.	5M	CO1	L3
<u>UNIT-II</u>				
3.	a) Explain the mechanism of Verifiable Random Function (VRF) and its importance in Blockchain networks.	5M	CO2	L2
	b) What are the differences between permissioned and permissionless blockchains, and what are their pros and cons?	5M	CO2	L3
(OR)				
4.	a) Write short notes on the following: i) Cryptographic Primitives ii) Digital Signatures	5M	CO2	L2
	b) Discuss the process of Public Key Cryptography used in Blockchain systems. Explain how it ensures authentication and confidentiality.	5M	CO2	L4
<u>UNIT-III</u>				
5.	Explain the architecture and working of the Bitcoin Blockchain with a neat diagram.	10M	CO3	L3&L4
(OR)				
6.	a) Explain the concept of Proof of Burn and Proof of Elapsed Time (PoET) . Highlight their working principles and benefits.	5M	CO3	L3
	b) Discuss the major challenges faced by the Bitcoin network and describe possible solutions to overcome them.	5M	CO3	L4
<u>UNIT-IV</u>				
7.	Explain the different types of cryptocurrency wallets with suitable examples.	10M	CO4	L3&L4
(OR)				
8.	What is MetaMask ? Explain the steps involved in creating an account in MetaMask with a neat flow diagram.	10M	CO4	L4&L5
<u>UNIT-V</u>				
9.	Explain the architecture and working principles of Ethereum . How does it differ from the Bitcoin Blockchain?	10M	CO5	L3&L4
(OR)				
10.	Describe the steps involved in writing and compiling a Smart Contract in Solidity using Remix IDE .	10M	CO5	L2&L4
<u>UNIT-VI</u>				
11.	Describe the architecture of Hyperledger Fabric with a neat, labelled diagram.	10M	CO6	L3&L4
(OR)				
12.	Explain the concepts of Membership Service Provider (MSP) and Access Control Lists (ACLs) in Hyperledger Fabric.	10M	CO6	L2&L4

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UNIT-I

- | | | | | |
|---|--|-------|----|-------|
| | | Marks | CO | BTL |
| 1 | Solve the following linear programming problem using Big-M method
Minimize $Z=40x_1+24x_2$
Subjective to constraints
$20x_1+50x_2\geq 4800$,
$80x_1+50x_2\geq 7200$,
$x_1, x_2\geq 0$ | 10M | 1 | Apply |

(OR)

- | | | | | |
|---|---|-----|---|-------|
| 2 | Solve the following linear programming problem using two phase Simplex method
Maximize $Z = 5x_1+3x_2$
Subject to:
$2x_1 + x_2 \leq 1$
$x_1 + 4x_2 \geq 6$
$x_1, x_2 \geq 0$ | 10M | 1 | Apply |
|---|---|-----|---|-------|

UNIT-II

- | | | | | |
|---|---|-----|---|-------|
| 3 | Solve the following linear programming problem using Simplex method
Maximize $Z = 3x_1 + 5x_2+4x_3$
Subject to the constraints
$2x_1 + 3x_2 \leq 18$
$2x_1 + 5x_2 \leq 10$
$3x_1 + 2x_2+4x_3 \leq 15$
$x_1, x_2, x_3\geq 0$ | 10M | 2 | Apply |
|---|---|-----|---|-------|

(OR)

- | | | | | |
|---|---|-----|---|-------|
| 4 | A manufacturing produces four products A, B, C, D by using two types of machines (Lathes, Milling). The time required on the two machines to manufacturing 1 unit of each of the four products, the profit per unit of the product and the total time available on the two types of machines per day given below. | 10M | 2 | Apply |
|---|---|-----|---|-------|

Machine	Time required per unit for product				Total time available per day in min
	A	B	C	D	
Lathe	7	10	4	9	1200
Milling	3	40	1	1	800
Profit per unit	4	100	30	50	

- (a) Find the number of units to be manufacture of each product per day for minimizing the profit.
- (b) Find the effect of changing the total time available per day on the two machines from 1200-800 minutes to 1500-1000 minutes

UNIT-III

- 5 a) Explain the characteristics of queuing theory? 4M 3
- b) Railway station marshalling yard, goods trains arrive at a rate of 30 trains per day. Assuming that the inter arrival time follows an exponential distribution and the service time (The time taken to hump train) distribution is also exponential with an average 36 minutes. Determine (a) Utilization parameter (or) Traffic intensity (b) Average number of trains in the queue (c) Expected waiting time (d) Average number of trains in the yard 6M 3 Apply

(OR)

- 6 a) A department store has only one cashier. During the rush hours customer arrives at a rate of 20 customers per hour. The average number of customers that can be handled by the cashier is 24 customers per hour. Assume that the condition for use of the single channel queuing model determine 5M 3 Apply
- (a) Utilization parameter (or) Traffic intensity
(b) Average number of customers in the queue.
(c) Average number of customers in the system
(d) Average time a customer spends in the queue
(e) Average number of customers spend in the system
(f) Probability that cashier is idle
- b) The arrivals at a telephone booth are considered to be following Poisson law of distribution with an average time of 10 minutes between one arrival and the next. Length of the phone call is assumed to be distributed exponentially with a mean of 3 minutes. (a) What is the probability that a person arriving at the booth will have to wait? (b) What is the average length of queue that forms from time to time? 5M 3 Apply

UNIT-IV

- 7 a) Differentiate linear programming problem and non-linear programming problem 4M 4 Understand
- b) Solve the following problem using method of Lagrangian multipliers 6M 4 Apply

$$Z=4X_1^2+2X_2^2$$

Subjective to the constraints

$$X_1+X_2=15,$$

$$X_1, X_2 \geq 0$$

(OR)

- 8 a) Find the maximum or minimum of the function 5M 4 Apply
- $$Z=X_1^2+X_2^2+X_3^2-4X_1-8X_2-12X_3+100$$
- b) Maximize 5M 4 Apply
- $$Z=2x_1^2-7x_2^2+12x_1x_2$$
- Subjected to $2x_1+5x_2 \leq 98$
 $x_1, x_2 \geq 0$
using Kuhn-Tucker conditions

UNIT-V

- 9 a) What are the applications of the dynamic programming? 5M 5 Understand
- b) State Bellman's "principle of optimality" and explain with the help of an example? 5M 5 Understand

(OR)

- 10 Use Bellman's principle of optimality to find the optimum solution for the following problem
- Minimize $Z = y_1^2 + y_2^2 + y_3^2$
 Subjected to $y_1 + y_2 + y_3 \geq 15$
 $y_1, y_2, y_3 \geq 0$
- 10M 5 Apply

UNIT-VI

- 11 a) Differentiate decision making under certainty, decision making under risk, decision making under uncertainty 5M 6 Understand
- b) ABC Corporation to launch one of its mega campaigns to promote a special product. The promotion budgets not yet finalized, but they know that some Rs. 55,00,000 is available for advertising and promotion. Management wants to know how much they should spend for television spots, which is the most appropriate medium for their product. They have created five 'T.V. campaign strategies' with their projected outcome in terms of increase in sales. Find which one they have to select to yield maximum utility. The data required is given below.

Strategy	Cost in lakhs of Rs.	Increased in sales in lakhs of Rs.
A	1.80	1.78
B	2.00	2.02
C	2.25	2.42
D	2.75	2.68
E	3.20	3.24

- 12 a) A company is planning for its sales targets and the strategies to achieve these targets. The data in terms of three sales targets, their respective utilities, various strategies and appropriate probability distribution are given in the table given below. What is the optimal strategy? 5M 6 Apply

Sales targets (\times lakhs)	50	75	100			
Utility	4	7	9			
	Prob.	Prob.	Prob.			
Strategies						
S_1	0.6	0.3	0.1			
S_2	0.2	0.5	0.3			
S_3	0.5	0.3	0.2			

- b) A marketing manager of an insurance company has kept complete records of the sales effort of the sales personnel. These records contain data regarding the number of insurance policies sold and net revenues received by the company as a function of four different sales strategies. The manager has constructed the conditional payoff matrix given below, based on his records. (The state of nature refers to the number of policies sold). The number within the table represents utilities. Suppose you are a new salesperson and that you have access to the original records as well as the payoff matrix. Which strategy would you follow? 5M 6 Apply

State of nature	N_1	N_2	N_3
Probability	0.2	0.5	0.3
Strategy ↓	Utility	Utility	Utility
S_1 (1 call, 0 follow up)	4	6	10
S_2 (1 call, one follow up)	6	5	9
S_3 (1 call, two follow-ups)	2	10	8
S_4 (1 call, three follow-ups)	10	3	7

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	<u>UNIT-I</u>	Marks	CO	Blooms Level
1.	a) Discuss any five types of Energy audits and Reviews.	5M	CO1	understand
	b) Demonstrate the Sankey diagram, Pie charts and Load Profiles used in energy flow representation.	5M	CO1	Application
	(OR)			
2.	a) Illustrate different types of Energy Conservation Schemes.	5M	CO1	understand
	b) Demonstrate the concept of Load profiles.	5M	CO1	Application
	<u>UNIT-II</u>			
3.	a) Outline the principles of Energy management.	5M	CO 2	understand
	b) Generalist the key elements of Energy Management organization chart.	5M	CO 2	Application
	(OR)			
4.	Examine the Organization of Energy Management Program in detail with the help of designation chart.	10M	CO 2	Apply
	<u>UNIT-III</u>			
5.	a) Outline the Characteristics of energy efficient motors.	5M	CO3	understand
	b) Outline the Constructional features of energy efficient motors.	5M	CO3	understand
	(OR)			
6.	Demonstrate the concept of RMS-Horse Power Loading in Energy Efficient Motors with an example.	10M	CO3	Application
	<u>UNIT-IV</u>			
7.	a) Discuss about power factor in detail	5M	CO4	understand
	b) Classify the methods of improving power factor.	5M	CO4	understand
	(OR)			
8.	a) Outline the need of power factor.	5M	CO4	understand
	b) Discuss about the location of capacitor.	5M	CO4	understand
	<u>UNIT-V</u>			
9.	a) Interpret the Good lighting system design and practice	5M	CO5	Application
	b) Examine any three types of energy instruments in detail.	5M	CO5	Apply
	(OR)			
10.	Outline the concept of Light Control and Light energy audit.	10M	CO5	understand
	<u>UNIT-VI</u>			
11.	Examine the different Depreciation Methods in detail.	10M	CO6	Apply
	(OR)			
12.	a) Outline the concept of present worth method.	5M	CO6	understand
	b) Demonstrate the concept of life cycle costing analysis	5M	CO6	Application

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		Marks	CO	Blooms Level
<u>UNIT-I</u>				
1.	a) List out various guiding principles of EIA and explain them briefly.	5	CO1	Understand
	b) Illustrate the importance of environmental base maps in EIA.	5	CO1	Understand
(OR)				
2.	a) Explain the different steps involved in EIA process along with a flow chart.	5	CO1	Understand
	b) Categorize the history of EIA from the world to India.	5	CO1	Analyse
<u>UNIT-II</u>				
3.	a) Explain briefly about Environmental Media Quality Index method along with various indices.	5	CO2	Evaluate
	b) Discuss the important characteristics of overlay method of EIA.	5	CO2	Create
(OR)				
4.	Compare matrix methods and network methods of EIA along with suitable examples.	10	CO2	Evaluate
<u>UNIT-III</u>				
5.	Elaborate the causes, effects and mitigation measures of deforestation.	10	CO3	Create
(OR)				
6.	Develop the assessment of impact of development activities on vegetation.	10	CO3	Apply
<u>UNIT-IV</u>				
7.	a) Illustrate the different objectives of Environmental audit.	5	CO4	Understand
	b) Discuss briefly the steps considered in On-site audit stage using a flow chart.	5	CO4	Create
(OR)				
8.	a) Classify various types environmental audit and explain them briefly.	5	CO4	Understand
	b) Summarize the important aspects of an audit protocol in environmental auditing process.	5	CO4	Evaluate
<u>UNIT-V</u>				
9.	Explain in detail about the following Acts: (i) The Water Act, 1974 (ii) The Air Act, 1981	10	CO5	Evaluate
(OR)				
10.	a) Discuss briefly about the objectives and provisions of The Motor Vehicles Act, 1988.	5	CO5	Create
	b) Explain the important aspects of The Wild life Act, 1972.	5	CO5	Evaluate
<u>UNIT-VI</u>				
11.	Summarize the various guidelines required for developing an EIA Report.	10	CO6	Create
(OR)				
12.	Develop an Environmental Impact Assessment (EIA) statement report for coal mining activities along with the detailed guidelines.	10	CO6	Create

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	<u>UNIT-I</u>	Marks	CO	Blooms Level
1.	Explain the nature and characteristics of Digital Marketing and Appraise Traditional Marketing concepts.	10M	CO1	K4
	(OR)			
2.	Explain the scope of Digital Marketing and Appraise Digital Marketing concepts.	10M	CO1	K3
	<u>UNIT-II</u>			
3.	Analyse the Scope of SEO and Explain the steps in Search Engine Optimization Process.	10M	CO2 CO2	K6 K6
	(OR)			
4.	Analyse the nature and characteristics of SEO and Explain the applications of Search Engine Optimization Process.	10M	CO2	K6
	<u>UNIT-III</u>			
5.	Describe the Meaning and Scope of SMO and Discuss the Characteristics of a Successful Social Media Marketer.	10M	CO3	K3
	(OR)			
6.	Describe the nature and characteristics of SMO and Discuss the role of Social Media Marketer.	10M	CO3	K2
	<u>UNIT-IV</u>			
7.	Explain the Search Engine Marketing Concepts and Discuss the steps to set up Google words Account.	10M	CO4	K4
	(OR)			
8.	Explain the steps in Search Engine Marketing and Discuss the role of Google words Account in Search Engine Marketing.	10M	CO4	K4
	<u>UNIT-V</u>			
9.	Analyze the steps in designing packed Newsletter and Elaborate the benefits of Promotion in Your LeadMagnet.	10M	CO5	K6
	(OR)			
10.	Analyze Value packed Newsletter and Elaborate the steps Optimize Your Website to Promote Your LeadMagnet.	10M	CO5	K6
	<u>UNIT-VI</u>			
11.	Discuss the concepts of Metaverse and Discuss the concepts of NFT.	10M	CO6	K3
	(OR)			
12.	Elaborate the major drivers of the contemporary digital revolution in business and society. Illustrate how digital technologies are reshaping customer experience and value creation.	10M	CO6	K6

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<u>UNIT-I</u>		Marks	CO	Blooms Level
1.	Define entrepreneurship and explain in detail the stages of the entrepreneurial process.	10M	CO1	Understand
(OR)				
2.	Describe the ethics and social responsibilities that entrepreneurs should adhere to and evaluate their importance in business sustainability.	10M	CO1	Evaluate
<u>UNIT-II</u>				
3.	Analyze the concept of women entrepreneurship and rural entrepreneurship, highlighting their significance India's economy	10M	CO2	Analyze
(OR)				
4.	Explain the local mobility of entrepreneurs and its impact on the development of entrepreneurship in regional areas of India	10M	CO2	Understand
<u>UNIT-III</u>				
5.	a) Describe the key steps involved in starting an MSME	5M	CO3	Understand
	b) Explain the significance of each step.	5M	CO3	Understand
(OR)				
6.	Analyze various sources of new ideas and methods for generating ideas.	10M	CO3	Analyze
<u>UNIT-IV</u>				
7.	Explain the provisions and significance of the MSME Development Act, 2006	10M	CO4	Understand
(OR)				
8.	Evaluate the impact of Andhra Pradesh Industrial Policy (2020-23) on MSMEs, focusing on incentives and subsidies.	10M	CO4	Evaluate
<u>UNIT-V</u>				
9.	Discuss the purpose and essence of creating e-entrepreneurs in the current digital economy.	10M	CO5	Analyze
(OR)				
10.	Analyze the main problems faced by e-entrepreneurs in India and propose possible remedies.	10M	CO5	Analyze
<u>UNIT-VI</u>				
11.	Evaluate the role of Human Resource Management in MSMEs and suggest ways to overcome the HR challenges faced by small enterprises.	10M	CO6	Evaluate
(OR)				
12.	Explain the concept of Total Quality Management (TQM) and assess its relevance for improving MSME productivity and competitiveness.	10M	CO6	Understand

Project Management
(OPEN ELECTIVE)**Time: 3 Hours****Max Marks: 60**

Answer ONE Question from each Unit

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		Marks	CO	Blooms Level
<u>UNIT-I</u>				
1.	Why project classification is important in project management? (OR)	10	CO1	K2
2.	Describe the importance of creative thinking in generating new ideas.	10	CO1	K2
<u>UNIT-II</u>				
3.	Analyze how market demand & survey results influence budget allocation and resource planning in a project? (OR)	10	CO2	K4
4.	Explain demand forecasting techniques in project management.	10	CO2	K2
<u>UNIT-III</u>				
5.	How Financial institutions analyze Risk in Project Management? (OR)	10	CO3	K3
6.	Explain the role of Social Cost-Benefit Analysis (SCBA) in project management.	10	CO3	K2
<u>UNIT-IV</u>				
7.	What are the different types of Contracts? (OR)	10	CO4	K2
8.	Explain the requisitions required for preparing a contract and selecting a contractor for a construction project.	10	CO4	K3
<u>UNIT-V</u>				
9.	Explain Project Network diagram with the help of Project Evaluation and Review Technique (PERT). (OR)	10	CO5	K3
10.	What are the prerequisites for Successful Project Implementation?	10	CO5	K2
<u>UNIT-VI</u>				
11.	Explain Post Project Evaluation and Completion Audit Report. (OR)	10	CO6	K2
12.	What factors should be considered in the Recruitment and Selection of personnel in project management?	10	CO6	K3

AR20

CODE: 20OET411

SET-1

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)

IV B.Tech I Semester Regular & Supplementary Examinations, November-2025
HRD & Organizational Behavior
(OPEN ELECTIVE)

Time: 3 Hours

Max Marks: 60

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- | | <u>UNIT-I</u> | Marks | CO | BTL |
|-------|--|-------|----|------------|
| 1. a) | The Most difficult phase of HRP process is a need assessment for continue ticking the growth chart of the organization. Explore various quantitative and qualitative techniques used by modern organization and explain their utility. | 5 | 1 | Understand |
| b) | Explain the Mechanisms of HRD and analyst Willis Challanges in HRD, sighting examples. | 5 | 1 | Understand |
| (OR) | | | | |
| 2. a) | Explain the meaning importance and evaluation of HRD describes various components of HRD systems sighting relevant examples. | 5 | 1 | Understand |
| b) | Describe the stages of HRD frame work briefly discuss the interlinkage between HRD and outcomes of the organization motivation and organizational performance.What are the functions of HRD for employees? | 5 | 1 | Understand |
| (OR) | | | | |
| 3. a) | Discuss the Mechanism adapted for resolving industrial disputes. Discuss the various types of labour welfare practices in an organization | 5 | 2 | Understand |
| b) | What do you mean by grivence handling? Discuss the step ladder system in grivence redressal handling. Discuss the agencies engaged in employee activities in India. | 5 | 2 | Understand |
| (OR) | | | | |
| 4. a) | What is mean by employee compensation? What are the principles and influencing factors of compensation? | 5 | 2 | Understand |
| b) | Define salary and wage explain techniques of employee compensation | 5 | 2 | Remember |
| (OR) | | | | |
| 5. a) | What is job Analysis? State the differences between job description and specification? | 5 | 3 | Remember |
| b) | Why any performance appraisal should be done within a organization how does it help enhancing employee performance explain. | 5 | 3 | Remember |

(OR)

- | | | | | | |
|---|----|---|---|---|------------|
| 6 | a) | Performance appraisal that in recent years undergone major changes. explain the concept of performance appraisal and critically evaluate how these changes help to improve employee | 5 | 3 | Understand |
| | b) | What is mean by job evaluation? Explain various methods of job evaluation with merits and demerits | 5 | 3 | Evaluate |

UNIT-IV

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|----|----|--|---|---|------------|
| 7. | a) | Analyze the steps involved in assessing training needs in an organization. How does incorrect need identification affect training outcomes? | 5 | 4 | Analyze |
| | b) | Compare and contrast formative and summative evaluation methods used in training programme assessment. Which one is more suitable for behavioral training? | 5 | 4 | Evaluation |

(OR)

- | | | | | | |
|---|----|--|---|---|----------|
| 8 | a) | Evaluate the role and responsibilities of a Training Manager in maintaining training effectiveness during organizational change. | 5 | 4 | Evaluate |
| | b) | Design a sample Training & Development (T&D) programme for newly recruited technical staff amnufacturing sector. | 5 | 4 | Evaluate |

UNIT-V

- | | | | | | |
|----|----|---|---|---|------------|
| 9. | a) | Explain how perception and impression management influence employee behavior within an organizational setting. Give practical examples. | 5 | 5 | Understand |
| | b) | Analyze Maslow's Need Hierarchy and Herzberg's Two-Factor Theory in the context of motivating public sector employees. | 5 | 5 | Analyze |

(OR)

- | | | | | | |
|----|----|---|---|---|------------|
| 10 | a) | Assess the impact of learning and reinforcement processes on long-term employee performance. | 5 | 5 | Evaluate |
| | b) | Discuss how personality development and socialization contribute to successful role adaptation in newly joined employees. | 5 | 5 | Understand |

UNIT-VI

- | | | | | | |
|-----|----|--|---|---|---------|
| 11. | a) | Differentiate between formal and informal groups with examples. How does each type influence organizational performance? | 5 | 6 | Analyze |
| | b) | Examine the stages of group development proposed by Tuckman and relate them to real-life team projects. | 5 | 6 | Analyze |

(OR)

- | | | | | | |
|----|----|---|---|---|----------|
| 12 | a) | Evaluate the major causes of conflicts within teams. Suggest conflict resolution strategies as a manager. | 5 | 6 | Evaluate |
| | b) | Propose a plan to improve group cohesion and performance in a workplace suffering from low morale. | 5 | 6 | Create |

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<u>UNIT-I</u>				
1.	a) Explain the importance of Dependency Injection in the Spring Framework?	5	1	II
	b) Explain the purpose and process of auto-scanning in Spring?	5	1	III
(OR)				
2.	a) Describe how the IoC container is configured using Java-based configuration?	5	1	III
	b) Discuss constructor and setter injection with suitable examples?	5	1	IV
<u>UNIT-II</u>				
3.	a) Explain the steps to create a Spring Boot application?	5	2	III
	b) What is Autowiring in Spring Boot and how is it implemented?	5	2	II
(OR)				
4.	a) Discuss the role of @SpringBootApplication annotation?	5	2	II
	b) Explain AOP concepts and different types of advices?	5	2	IV
<u>UNIT-III</u>				
5.	a) Discuss the limitations of Spring JDBC API?	5	3	II
	b) Explain the configuration of Spring Data JPA in Spring Boot.	5	3	III
(OR)				
6.	a) Explain pagination and sorting using Spring Data JPA?	5	3	III
	b) Describe the advantages of using Spring Data JPA?	5	3	V
<u>UNIT-IV</u>				
7.	a) Explain different query approaches supported by Spring Data JPA?	5	4	II
	b) What are named queries and when should they be used?	5	4	III
(OR)				
8.	a) Describe declarative transaction management in Spring?	5	4	II
	b) Explain how to perform update operations in Spring Data JPA?	5	4	III
<u>UNIT-V</u>				
9.	a) Define SOA and explain its importance?	5	5	II
	b) Differentiate between SOAP and RESTful Web Services?	5	5	III
(OR)				
10.	a) Discuss the process of creating a RESTful Web Service using Spring Boot?	5	5	IV
	b) Explain the advantages of using RESTful APIs?	5	5	V
<u>UNIT-VI</u>				
11.	a) Explain the use of @RequestBody and Response Entity in REST controllers?	5	6	III
	b) Describe parameter injection techniques in Spring REST?	5	6	II
(OR)				
12.	a) Discuss exception handling and data validation in Spring REST?	5	6	III
	b) Explain how to enable and secure CORS in Spring REST	5	6	IV