AR18

CODE: 18IET331 **SET-2**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

III B.Tech II Semester Supplementary Examinations, September-2022

HRD & ORGANIZATIONAL BEHAVIOR

(Interdisciplinary Elective – III)

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

UNIT-I

1.	a)	Define HRD. Discuss the outcomes of HRD.	6M
	b)	Explain the roles and competencies of HRD professionals.	6M
		(OR)	
2.	a)	Explain the process designing of an effective HRD program.	6M
	b)	Discuss the factors to be considered during the selection of training methods.	6M

UNIT-II

3.	a)	Discuss on employee wellness programme (EWP) to reduce stress level among the employees.	6M
	b)	What is employee counselling? Discuss the various process adopted for employee counselling.	6M
		(OR)	
4.	a)	Explain the different intervention strategies to improve the wellness among the employees.	6M
	b)	Explain the various issues dealing with employee counselling.	6M

UNIT-III

5.	a)	Discuss the effects of Mergers and Acquisitions on employee turnover.	6M
	b)	Explain the cross cultural education and training programs.	6M
		(OR)	
6.	a)	Discuss the impact globalization on HRD.	6M
	b)	Explain classification of International employee.	6M

UNIT-IV

7.	a)	Define organization behaviour. Discuss the various elements of organization behaviour in detail.	6M
	b)	Discuss the perpetual dimensions influencing the personality.	6M
		(OR)	
8.	a)	What is learning? Discuss the various theories of learning.	6M
	b)	What is conflict? Illustrate the concept of conflict management practice in realty.	6M

UNIT-V

9.	a)	What is OD Intervention? Discuss any two types of Intervention and their significance to the organization.	6M
	b)	Explain the various causes of change that affect the organization.	6M
		(OR)	
10.	a)	Discuss the different forces affecting the organization change.	6M
	b)	Explain the role of change agent to develop a learning organization.	6M

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CODE: 18IET332 **SET-2**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

III B.Tech II Semester Supplementary Examinations, September-2022

ENVIRONMENTAL IMPACT ASSESSMENT

(Interdisciplinary Elective – III)

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

UNIT-I

1.	a)	Evaluate the systematic approach for using EIA as a planning tool for major project activities in brief.	6M
	b)	Compare and contrast screening and scoping with suitable examples.	6M
		(OR)	
2.	a)	Determine the requirements of an ideal EIA system.	6M
	b)	Define EIA; examine the purpose and requirements to execute EIA?	6M

UNIT-II

3.	a)	Analyze the overlay method of impact assessment for a coal mining project with suitable examples.	6M
	b)	Predict the criteria for the selection of EIA methodology.	6M
		(OR)	
4.	a)	Outline the network method of impact assessment for a road project with suitable examples.	6M
	b)	Evaluate the CBA; explain the different parameters to be considered for a TPP using CBA as a tool.	6M

UNIT-III

5.	a)	Summarize the varied environmental effects by Land Clearing Activities (LCA's).	6M
	b)	Examine the loss of environmental services to humanity by large scale devegitation.	6M
		(OR)	
6.	a)	Analyze the biological and regulatory mitigation measures for the mitigation of biological impacts.	6M
	b)	Categorize the environmental impacts on flora and fauna and suggest mitigation measures.	6M

UNIT-IV

7.	a)	Determine the important points taken into consider examining in the environmental audit during operational phase of a project.	6M
	b)	Develop an audit report for a chemical plant in brief.	6M
		(OR)	
8.	a)	Define what is Environmental Audit? Show the steps involved in the preparation of audit report?	6M
	b)	Determine the protocols used for the preparation of environmental audits.	6M

UNIT-V

9.	a)	Summarize the salient features/provisions of Water (Prevention & Control of Pollution) Act –1974.	6M
	b)	Develop an EIS report to a thermal power plant in brief.	6M
		(OR)	
10.	a)	Examine why the Acts are necessary and write its objectives?	6M
	b)	Compare the functions of CPCB with SPCB's.	6M

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CODE: 18IET338 **SET-2**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

III B.Tech II Semester Supplementary Examinations, September-2022

SIMULATION AND MODELING

(Interdisciplinary Elective – III)

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

UNIT-I

1.	a)	Explain statistic mathematical model and dynamic mathematical model with example.	6 M
	b)	Explain the principles used in modeling?	6 M
		(OR)	
2.	a)	Explain the basic components of a system with suitable example.	7 M
	b)	Write short notes on system dynamics.	5 M

UNIT-II

3.	a)	Explain numerical computation techniques for Continuous and Discrete models.	8 M
	b)	Write about the system simulation language.	4 M
		(OR)	
4.	a)	Explain different montecarlo techniques in brief.	8 M
	b)	List out the types of simulation queues.	4 M

UNIT-III

5.	a)	Explain different random number generation algorithms in brief.	7 M
	b)	Explain in detail how to analyze the simulation output.	5 M
		(OR)	
6.	a)	Explain numerical solution of differential equations in brief.	8 M
	b)	Explain in detail about decay model in simulation?	4 M

UNIT-IV

7.	a)	Explain different discrete system simulation events in detail.	6 M
	b)	Explain about applications of queuing theory in computer system.	6 M
		(OR)	
8.	a)	Explain discrete system simulation's generalization of arrival patterns in detail.	8 M
	b)	Discuss different queuing disciplines of queuing theory.	4 M

UNIT-V

9.	a)	Explain different Data structures used in GPSS and SIMSCRIPT	6 M
	b)	Explain different Simulation algorithms in GPSS and SIMSCRIPT	6 M
		(OR)	
10.		Write short notes on (i) Data structures of simulation programming (ii) Event scanning (iii) Simulation algorithms in GPSS	12 M

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CODE: 18IET339 **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

III B.Tech II Semester Supplementary Examinations, September-2022

FUNDAMENTALS OF IMAGE PROCESSING

(Interdisciplinary Elective – III)

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

UNIT-I

1.	a)	What is digital image processing? Explain various applications in image processing.	6M
	b)	Explain the various components of image processing with neat diagram	6M
		(OR)	
2.	a)	What is pixel? Explain the basic relationships between pixels.	6M
	b)	Explain about image sampling and Quantization	6M

UNIT-II

3.	a)	What is image enhancement and why it is important?	6M
	b)	Explain the point processing techniques in image enhancement?	6M
		(OR)	
4.	a)	What is the histogram? Why histogram equalization is used in image processing?	6M
	b)	What is filtering in image processing? and explain following filter techniques BOX filter, Smoothing Linear Filters, Median filters, Sharpening Filters	6M

UNIT-III

5.	a)	What are the different types of compression techniques?	6M
	b)	What is meant by error free compression? Explain the variable length coding.	6M
		(OR)	
6.	a)	Draw the general compression system model & Explain?	6M
	b)	Explain following error free compression techniques LZW coding and Huffman coding.	6M

UNIT-IV

6.	a)	What is Morphology? And explain convex hull	6M
	b)	Explain the following Morphology operations with example 1) Opening 2) Closing.	6M
		(OR)	
8.	a)	Write about the importance of Hit-or-Miss morphological transformation operation on a digital binary image	6M
	b)	Explain the following Morphology operations with example 1) Erosion 2) Dilation	6M

UNIT-V

9.	a)	What is image segmentation? What are the applications of image segmentation?	6M
	b)	What are the derivative operators useful in image segmentation? Explain their role in segmentation	6M
		(OR)	
10.		What is segment and explain the following features of Point, Line, Edge segmentation	12M

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CODE: 18IET33A **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

III B.Tech II Semester Supplementary Examinations, September-2022

ADVANCED CODING-II

(Interdisciplinary Elective – III)

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

UNIT-I

1. a) Define Recursion and it's application 6M
   b) Given an array nums of distinct integers, return all the possible permutations. You can return the answer in any order. 6M
   Input: nums = [1,2,3]
   Output: [[1,2,3],[1,3,2],[2,1,3],[2,3,1],[3,1,2],[3,2,1]]

(OR)

2. a) When is Binary Search is better than the Linear search justify your answer with Complexity Analysis? 6M
   b) Implement int sqrt(int x). Compute and return the square root of *x*, where *x* is guaranteed to be a non-negative integer. Since the return type is an integer, the decimal digits are truncated and only the integer part of the result is returned. 6M
   Input: 4
   Output: 2
   Input: 8
   Output: 2

UNIT-II

3. a) Explain merge sort and derive it's time complexity? 6M
   b) Given an integer array nums and an integer k, return the k^{th} largest element in the array. 6M
   Note that it is the k^{th} largest element in the sorted order, not the k^{th} distinct element. using quick sort as base idea
   Input: nums = [3,2,1,5,6,4], k = 2
   Output: 5

(OR)

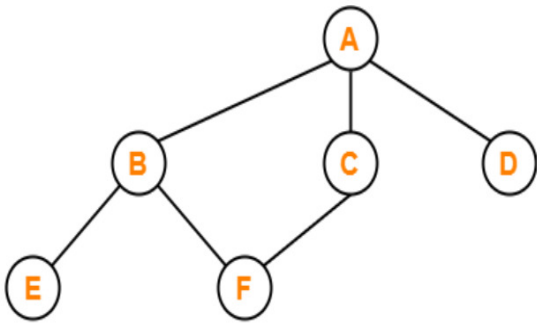
4. a) Explain about separate chaining in hashing? 6M
   b) Given an array of integers arr, a lucky integer is an integer that has a frequency in the array equal to its value. 6M
   Print the largest lucky integer in the array. If there is no lucky integer return -1.
   Input: arr = [2,2,3,4]
   Output: 2.

UNIT-III

5. a) i)Explain Post order traversal 6M
   ii) Construct the post order tree for the given pre order and in order traversal
   inorder : 40,20,50,10,60,30
   pre order: 10,20,40,50,30,60
   b) i)Write down heap sort algorithm 6M
   ii) For the given input construct the max heap
   input : 1,3,5,6,13,10,9,8,15,17

(OR)

6. Write down the DFS algorithm. Illustrate the DFS algorithm for the Given graph 12M



UNIT-IV

7. a) Explain Single source shortest path algorithm in detail with example? 6M
   b) A file contains the following characters with the frequencies as shown. If Huffman Coding is used for data compression, determine- 6M

   1. Huffman Code for each character
   2. Average code length
   3. Length of Huffman encoded message (in bits)

   Character with frequencies.

   a-10
   e-15
   i-12
   o-3
   u-4
   s-13
   t-1

(OR)

8. a) Write down Rabin-karp algorithm and explain it's time Complexity? 6M

   b) Given an array a, we have to find the minimum product possible with the subset of elements present in the array. The minimum product can be a single element also. 6M

   Input : a[] = { -1, -1, -2, 4, 3 }
   Output : -24
   Explanation : Minimum product will be (-2 * -1 * -1 * 4 * 3) = -24
   Input : a[] = { -1, 0 }
   Output : -1
   Explanation : -1(single element) is minimum product possible

UNIT-V

9. a) A child is running up a staircase with n steps and can hop either 1 step, 2 steps, or 3 steps at a time. Implement a method to count how many possible ways the child can run up the stairs. 6M

   Input : 4
   Output : 7

   b) Given a set of positive integers S, partition set S into two subsets, S1 and S2, such that the difference between the sum of elements in S1 and S2 is minimized. The solution should return the minimum absolute difference between the sum of elements of two partitions. 6M

   For example, consider S = {10, 20, 15, 5, 25}.
   We can partition S into two partitions where the minimum absolute difference between the sum of elements is 5.
   S1 = {10, 20, 5}
   S2 = {15, 25

(OR)

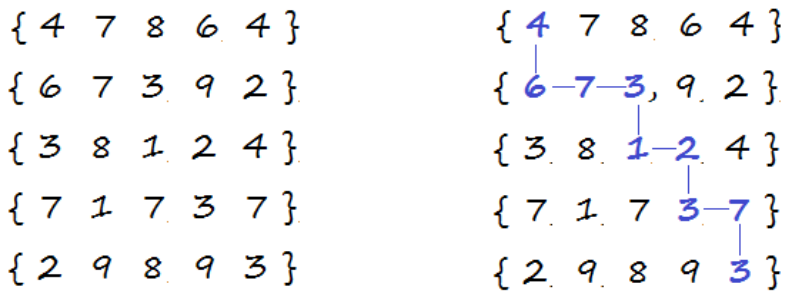
10. a) Given a fence with n posts and k colors, find out the number of ways of painting the fence such that at most 2 adjacent posts have the same color. Since answer can be large return it modulo 10^9 + 7. 6M

Input : n = 2 k = 4

Output : 16

b) Given an M × N matrix of integers where each cell has a cost associated with it, find the minimum cost to reach the last cell (M-1, N-1) of the matrix from its first cell (0, 0). We can only move one unit right or one unit down from any cell, i.e., from cell (i, j), we can move to (i, j+1) or (i+1, j). 6M

For example,



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AR18

CODE: 18IET33B **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

III B.Tech II Semester Supplementary Examinations, September-2022

COMPETITIVE PROGRAMMING - II

(Interdisciplinary Elective – III)

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

UNIT-I

1.	a)	What is sorting? Explain Merge sort with example.	6M
	b)	Define searching. Explain Linear search with example.	6M
		(OR)	
2.	a)	Define sorting? Explain quick sort with example.	6M
	b)	What is searching? Explain Binary search with example.	6M

UNIT-II

3.	a)	Define queue. Write algorithms for all operations of a queue.	6M
	b)	Explain double linked list with few operations.	6M
		(OR)	
4.	a)	What is stack? Write algorithms for all operations of a stack.	6M
	b)	What is single linked list? Explain single linked list with few operations.	6M

UNIT-III

5.	a)	Define tree. Explain Tree traversal techniques with example.	6M
	b)	What are Tree traversals techniques? Explain in detail.	6M
		(OR)	
6.	a)	Define Binary Search Tree? Explain BST all operations with example.	6M
	b)	What is BFS and DFS in a Graph. Distinguish between DFS and BFS.	6M

UNIT-IV

7.	a)	Explain all DDL statements with examples?	6M
	b)	What is groupby clause? Explain with an example.	6M
		(OR)	
8.	a)	Explain all DML statements with examples?	6M
	b)	What is orderby clause? Explain with an example.	6M

UNIT-V

9.	a)	What is subquery? Explain with an example.	6M
	b)	Define self join. Explain with an example.	6M
		(OR)	
10.	a)	Define correlated subquery? Explain with an example.	6M
	b)	What is inner join. Explain with an example.	6M

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