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ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
III B.Tech II Semester Regular/Suppl Examinations, July-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)	What is Human Resource Development? Describe its salient features.	6M
	b)	Explain the types of training methods and its merits and demerits.	6M

(OR)

2.	a)	Discuss the evolution and growth of a HRD.	6M
	b)	Differentiate between Human Resource Management and Human Resource Development.	6M

UNIT-II

3.	a)	What is meant by employee assistance programme? State its contents and approaches.	6M
	b)	Discuss organizational strategies to improve the effectiveness of human resources.	6M

(OR)

4.	a)	"Like any other HR activities the organizations are also making a major investment in providing employee counselling services as a way to promote employees' well-being" Discuss.	6M
	b)	Explain the effectiveness of employee counselling in detail.	6M

UNIT-III

5.	a)	Explain the approaches of downsizing	6M
	b)	Explain HRD programs for managing diversity.	6M

(OR)

6.	a)	Discuss the determinants of employee retention.	6M
	b)	Define bench marking. How do you evaluate the cost of HR? Explain.	6M

UNIT-IV

7.	a)	Explain the nature and characteristics of organization behaviour.	6M
	b)	Define personality. Illustrate the factors affecting the personality of an individual.	6M

(OR)

8.	a)	Explain the need hierarchy theory of motivation with suitable examples.	6M
	b)	Define group dynamics. Explain five stages of group formation in detail.	6M

UNIT-V

9.	a)	What is meaning of organizational change? Elucidate the nature of change with suitable examples.	6M
	b)	How could we implement the change process? Explain the concept of resistance to change.	6M

(OR)

10.	a)	Explain the Kurt Lewin's Change Model on unfreezing, changing and refreezing with suitable examples.	6M
	b)	Discuss the various intervention strategies implementing in organizational change.	6M

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ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
III B.Tech II Semester Regular/Supplementary Examinations, July-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) Determine the main guiding principles of Environmental Impact Assessment. **6M**
   b) Compare and contrast Comprehensive EIA and Rapid EIA with suitable examples. **6M**

(OR)

2. a) Define IEE, examine the factors effecting EIA during impact evaluation and analysis. **6M**
   b) Show how the Environmental Base map is prepared. **6M**

UNIT-II

3. a) Compare and contrast the advantages and disadvantages of Ad-hoc and Matrix method. **6M**
   b) Determine the criteria for the selection of EIA methodology. **6M**

(OR)

4. a) Examine the WQI method of impact assessment using weighted average with suitable examples. **6M**
   b) Define economic externalities; show the different parameters to be considered for a road project using CBA as a tool. **6M**

UNIT-III

5. a) Determine the mitigation measures to protect Endangered and Endemic species of wildlife while considering any proposed project in those areas. **6M**
   b) Summarize the Impacts on flora and fauna by LCA's. **6M**

(OR)

6. a) Categorize how impact assessment will be done on wildlife and forests with regard to a mine development project. **6M**
   b) Summarize a detailed note on a range of Impact by devegitation. **6M**

UNIT-IV

7. a) Infer why post audit is required? Explain how it is beneficial to improve the environment. **6M**
   b) Determine the stages of Environmental audit (pre-audit/activities at site/post audit activities). **6M**

(OR)

8. a) Define environmental audit; show the different types of environmental audits will be used in different sectors. **6M**
   b) Summarize the protocols used for the preparation of environmental auditing. **6M**

UNIT-V

9. a) Show the format and procedure for EIS documentation? **6M**
   b) Compare the differences between functions of CPCB & SPCB in relation to air act. **6M**

(OR)

10. a) Evaluate what are the major steps/elements covered in EIS? **6M**
    b) Show the objectives and main provisions provided under wildlife protection act-1972. **6M**

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CODE: 18IET335   **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
III B.Tech II Semester Supplementary Examinations, July-2022
ELEMENTS OF WORKSHOP TECHNOLOGY
(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 any two manufacturing processes which effects change in properties.	6M
	b)	Give brief classification of materials used in manufacturing and explain their advantages.	6M

(OR)

2.	a)	What are the various primary shaping processes and machining processes used in manufacturing? Explain any two from each.	12M

UNIT-II

3.	a)	Classify the Carpentry tools according to their use.	8M
	b)	Differentiate Ripsaw and Cross cut saw.	4M

(OR)

4.	a)	Describe (i) wooden jack plane and (ii) Metal Jack Plane with sketches.	6M
	b)	Sketch and explain (i) Mortise and Tenon Joint.	6M

UNIT-III

5.	a)	Name and explain various types of files used in fitting section.	6M
	b)	Sketch and explain the working of hacksaw.	6M

(OR)

6.	a)	Sketch and explain (i) Inside Caliper (ii) Outside Caliper	6M
	b)	Explain the following fitting operations: (i) Tapping (ii) Dieing	6M

UNIT-IV

7.	a)	Explain any three tools used in sheet metal work with neat sketch.	6M
	b)	What is the importance of sheet metal work?	6M

(OR)

8.	a)	List the sheet metal operations and explain any three.	12M

UNIT-V

9.	a)	Explain Anvil with neat sketch.	6M
	b)	Write short Notes on Fullers and Flatters.	6M

(OR)

10.	a)	Differentiate between hand hammer and sledge hammer.	6M
	b)	Explain the following operations with sketches: (i) Bending (ii) punching.	6M

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ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
III B. Tech II Semester Regular/Supply Examinations, July-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) Define simulation? What are advantages and disadvantages of simulation system and explain.   6 M
   b) What are different principles used in modeling explain?   6 M
   (OR)
2. a) Draw flowchart and explain the steps involved in simulation study.   6 M
   b) Explain elaborately different types of models of simulation.   6 M

UNIT-II

3. a) Explain different types of simulation.   5 M
   b) Compare the simulation and analytical method of system simulation.   7 M
   (OR)
4. a) Compare and contrast analog computers and hybrid computers.   7 M
   b) Explain in detail cob web models.   5 M

UNIT-III

5. a) Discuss elaborately about logistic curves.   5 M
   b) Explain briefly the uniform distribution technique.   7 M
   (OR)
6. a) Explain different probability functions.   8 M
   b) Explain in details about Exponential growth?   4 M

UNIT-IV

7. a) Describe arrival pattern distribution of queuing theory.   6 M
   b) Explain different simulation programming tasks.   6 M
   (OR)
8. a) Explain the queueing theory and types of queues?   6 M
   b) Write short notes on numerical experimentation.   6 M

UNIT-V

9. What is SIMSCRIPT? What is its importance? Discuss its various functions.   12 M
   (OR)
10. a) Define event? Explain asynchronous events with example.   7 M
    b) Name any five blocks of GPSS and explain.   5 M

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CODE: 18IET339   **SET-2**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
III B.Tech II Semester Regular/Supplementary Examinations, July-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 2D sampling and quantization? Explain difference between sampling & quantization.   6M
   b) What is Digital Image? And explain how it is represented.   6M

(OR)

2. a) What are the basic relationships between pixels? Explain in detail.   6M
   b) Explain the various components of general purpose image processing system.   6M

UNIT-II

3. a) What is image enhancement? Explain the importance of image enhancement.   6M
   b) Explain about Contrast Stretching and Bit-Plane slicing.   6M

(OR)

4. a) Differentiate between spatial domain enhancement and frequency domain enhancement?   6M
   b) What are various Spatial operations in a digital image? And explain.   6M

UNIT-III

5. a) What is the difference between Lossless and Lossy image compression? And explain.   6M
   b) What is redundancy? Explain the causes of redundancy in an image.   6M

(OR)

6. a) With an example, explain the concept of Run Length coding.   6M
   b) Explain Huffman coding algorithm with example   6M

UNIT-IV

7. a) What are the Applications of morphology? and explain it.   6M
   b) Explain the concept of Dilation and Erosion operation with example   6M

(OR)

8. a) What is thinning and thickening in image processing? and explain   6M
   b) Explain the opening and closing operations in morphology with examples?   6M

UNIT-V

9. a) What are the Different Types of Image Segmentation Techniques? And explain Thresholding Segmentation.   6M
   b) Explain about Region Splitting and Merging with an example   6M

(OR)

10. What is region splitting? Explain the region-based segmentation techniques?   12M

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
III B.Tech II Semester Regular/Supplementary Examinations, July,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) How backtracking is related to recursion and what is the importance of base case Explain with suitable Examples?   6M

   b) You are given a maze in the form of a matrix of size n * m. Each cell is either clear or blocked denoted by 1 and 0 respectively. A rat sits at the top-left cell and there exists a block of cheese at the bottom-right cell. Both these cells are guaranteed to be clear. You need to find if the rat can get the cheese if it can move only in one of the two directions - down and right. It can't move to blocked cells.   6M

   Input: Is a grid given bellow

   $[\{1, 0, 0, 0\},$

   $\{1, 1, 0, 1\},$

   $\{0, 1, 0, 0\},$

   $\{1, 1, 1, 1\}$

   $]$

   Output: true

(OR)

2. a) Explain Binary Search Algorithm with suitable Example?   6M

   b) Given a sorted array and a target value, return the index if the target is found. If not, return the index where it would be if it were inserted in order. You may assume no duplicates in the array.   6M
   Input: [1,3,5,6], 5
   Output: 2

3. a) Explain Quick sort and deriver it's time Complexity for Worst case?　　6M

   b) Given a list of non-negative integers nums, arrange them such that they form the largest number and return it. Since the result may be very large, so you need to return a string instead of an integer.　　6M

   Input: nums = [10,2]　　Output: "210"

   (OR)

4. a) Explain about hashing in detail with examples.　　6M

   b) Given an array of integers arr, print true if the number of occurrences of each value in the array is unique, or false otherwise.　　6M

   Input: arr = [1,2,2,1,1,3]
   Output: true

UNIT-III

5. a) i)Explain Inorder Traversal of a tree.　　6M
   ii)Construct the pre order tree for the given in order and post order traversal.

   Inorder Traversal　: { 4, 2, 1, 7, 5, 8, 3, 6 }
   Postorder Traversal : { 4, 2, 7, 8, 5, 6, 3, 1 }

   b) Explain Union Find Algorithm?　　6M

   (OR)

6. Write down the BFS algorithm. Illustrate the BFS algorithm for the Given graph　　12M
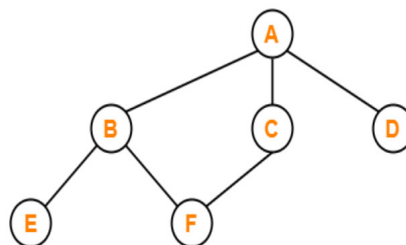
UNIT-IV

7. a) Explain Greedy Approach With Example?　　6M

b) Given arrival and departure times of all trains that reach a railway station. Find the minimum number of platforms required for the railway station so that no train is kept waiting. **6M**

Consider that all the trains arrive on the same day and leave on the same day. Arrival and departure time can never be the same for a train but we can have arrival time of one train equal to departure time of the other. At any given instance of time, same platform cannot be used for both departure of a train and arrival of another train. In such cases, we need different platforms.

Input: n = 6

arr[] = {0900, 0940, 0950, 1100, 1500, 1800}

dep[] = {0910, 1200, 1120, 1130, 1900, 2000}

Output: 3

Explanation:

Minimum 3 platforms are required to

safely arrive and depart all trains.

(OR)

8. a) Write down KMP algorithm and explain it's time Complexity? **6M**

b) Given an array of size n that has the following specifications: **6M**

Each element in the array contains either a policeman or a thief.

Each policeman can catch only one thief.

A policeman cannot catch a thief who is more than K units away from the policeman.

We need to find the maximum number of thieves that can be caught.

Input : arr[] = {'P', 'T', 'T', 'P', 'T'},

k = 1.

Output : 2.

Here maximum 2 thieves can be caught, first policeman catches first thief and second police-man can catch either second or third thief.

9. a) Given a set of positive integers and an integer k, check if there is any non-empty subset that sums to k.   6M
   Input:
   A = { 7, 3, 2, 5, 8 }
   k = 14
   Output: Subset with the given sum exists
   Subset { 7, 2, 5 } sums to 14

   b) Given an array A, maximize value of expression (A[s] - A[r] + A[q] - A[p]), where p, q, r, and s are indices of the array and s > r > q > p.   6M
   Input: A[] = [3, 9, 10, 1, 30, 40]
   Output: 46
   Explanation: The expression (40 – 1 + 10 – 3) will result in the maximum value

(OR)

10. a) Given an integer array, find a contiguous subarray within it that has the largest sum.   6M
    Input: {-2, 1, -3, 4, -1, 2, 1, -5, 4}
    Output: Subarray with the largest sum is {4, -1, 2, 1} with sum 6.

    b) Given an $M \times N$ matrix where each cell can have a value of 1, 0, or -1, where -1 denotes an unsafe cell, collect the maximum number of ones starting from the first cell and by visiting only safe cells (i.e., 0 or 1). We can only go left or down if the row is odd; otherwise, we can only go right or down from the current cell.   6M
    For example, consider the following matrix shown on the left. The maximum value collected is 9 as marked.

```
 1   1  -1   1   1            1——1  -1   1   1
                                  |
 1   0   0  -1   1            1——0   0  -1   1
                              |
 1   1   1   1  -1            1——1——1——1  -1
                                         |
-1  -1   1   1   1           -1  -1   1——1   1

 1   1  -1  -1   1            1   1  -1  -1   1
```

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ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
III B.Tech II Semester Regular/Supplementary Examinations, July-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 quick sort with example.	6M
	b)	Define searching. Explain Binary search with example.	6M
		(OR)	
2.	a)	What is Merge sort? Explain merge sort with algorithm.	6M
	b)	What is searching? Explain Linear search with example.	6M

UNIT-II

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

UNIT-III

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

UNIT-IV

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

UNIT-V

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

AR16

CODE: 16OE3046   **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
III B.Tech II Semester Supplementary Examinations, July-2022

SIMULATION AND MODELING
(Open Elective – IV)

Time: 3 Hours   Max Marks: 70

Answer ONE Question from each Unit
Each Questions Carry 14 Marks
All parts of the Question must be answered at one place

UNIT-I

1.	a)	Compare the continuous and discrete systems	7M
	b)	Explain about Static and Dynamic physical models with suitable examples	7M
		(OR)	
2.	a)	Illustrate the model of simulation study	7M
	b)	Find the Advantages, Disadvantages and Pitfalls of Simulation	7M

UNIT-II

3.	a)	Contrast between Analytical and Simulation methods	5M
	b)	Give the detailed theory about Cobweb model	9M
		(OR)	
4.	a)	Extend the Monte-Carlo Method with examples	9M
	b)	Classify the types of system simulation	5M

UNIT-III

5.	a)	Construct exponential growth model for population system	7M
	b)	Develop System Dynamic Diagrams for a system model	7M
		(OR)	
6.	a)	Explain about the Discrete and continuous probability functions	9M
	b)	Construct the Logistic curves of the system model	5M

UNIT-IV

7.	a)	Demonstrate the Poisson Arrival Patterns with a suitable examples	9M
	b)	Elaborate the Service times and Queuing disciplines	5M
		(OR)	
8.	a)	Describe the Normal and exponential distribution	7M
	b)	Define the Queuing theory	7M

UNIT-V

9.	a)	Elaborate the simulation software GPSS	7M
	b)	Demonstrate the organization of SIMSCRIPT program	7M
		(OR)	
10.	a)	Define Action times, Succession of events	7M
	b)	What are the conditional transfers of SIMSCRIPT	7M