



MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY (Autonomous Institution – UGC, Govt. of India)

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Contact Number: 040-23792146/64634237, E-Mail ID: mrcet2004@gmail.com, website: www.mrcet.ac.in

DEPARTMENT OF INFORMATION TECHNOLOGY III B.TECH I SEMESTER R18 REGULAR AND SUPPLEMENTARY PREVIOUS QUESTION PAPERS



LIST OF SUBJECTS

CODE	NAME OF THE SUBJECT
R18A0507	Design and Analysis of Algorithms
R18A0464	Embedded Systems
R18A0353	Enterprise Resource Planning
R18A0513	Python Programming
R18A1205	Artificial Intelligence
R18A0555	Data Visualization
R18A0517	Web Technologies

Code No: R18A0507

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY
(Autonomous Institution – UGC, Govt. of India)

III B.Tech I Semester Regular/Supplementary Examinations, Dec-21/Jan-22
Design and Analysis of Algorithms

(IT)

Roll No									
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Time: 3 hours

Max. Marks: 70

Note: This question paper Consists of 5 Sections. Answer **FIVE** Questions, Choosing ONE Question from each SECTION and each Question carries 14 marks.

SECTION-I

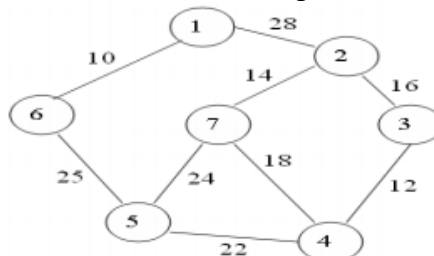
- 1 a) Explain different asymptotic notations used for algorithm analysis [7M]
 b) What is an algorithm? Explain the Properties of an Algorithm. [7M]
- OR
- 2 Write Divide – And – Conquer recursive Merge sort algorithm and compute the time complexity of this algorithm. [14M]

SECTION-II

- 3 Write an algorithm for m-coloring problem. Explain with an example [14M]
- OR
- 4 Illustrate the state space tree to find the positions of 8 queens on a 8X8 chessboard [14M]

SECTION-III

- 5 Solve the Job Sequencing Algorithm for $n=5$, $d(1:5) = (2,1,3,2,1)$ [14M]
 $P(1:5)=(60,100,20,40,20)$.
- OR
- 6 Discuss Prim’s algorithm to find out shortest path for the following graph [14M]



SECTION-IV

- 7 Explain 0/1 Knapsack algorithm? Solve the following 0/1 Knapsack Problem by using Dynamic Programming approach. $N=3$, $(w_1, w_2, w_3) = (2, 3, 4)$ [14M]
 $(p_1, p_2, p_3) = (1, 2, 5)$ and $m= 6$
- OR
- 8 Consider $A_1=5X4$, $A_2=4X6$, $A_3=6X2$, $A_4=2X7$. $P_1=5$, $P_2=4$, $P_3=6$, $P_4=2$, $P_5=7$ [14M]
 and Apply matrix chain multiplication to obtain optimal sequence.

SECTION-V

- 9** Solve the following instance of 0/1 knapsack problem using LIFO Branch and Bound technique. $N=4, (p_1, p_2, p_3, p_4) = (10, 6, 8, 11), (w_1, w_2, w_3, w_4) = (8, 9, 5, 6), m=12.$ **[14M]**

OR

- 10 a)** State and explain Cooks Theorem **[7M]**
b) What is the relationship among P, NP and NP complete problems?
Show with the help of a diagram. **[7M]**

Code No: **R18A0464****MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY**

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III B.Tech I Semester Regular/Supplementary Examinations, Dec-21/Jan-22**Embedded Systems****(CSE & IT)**

Roll No									
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Time: 3 hours**Max. Marks: 70**

Note: This question paper Consists of 5 Sections. Answer **FIVE** Questions, Choosing ONE Question from each SECTION and each Question carries 14 marks

SECTION-I

- 1 Explain the architecture of 8086 processor. What is the need for memory segmentation? [14M]

OR

- 2 What are the different blocks of Architecture of 8051 microcontroller explain each one? Explain internal memory of 8051 Microcontroller? [14M]

SECTION-II

- 3 Differentiate embedded system over the general computing system. Mention the purpose of designing Embedded systems. [14M]

OR

- 4 Evaluate in detail the characteristics of embedded systems. Mention the design merits used to compare them. List out the applications of embedded systems. [14M]

SECTION-III

- 5 Which are the components used as the core of an embedded system? Explain the merits, drawbacks, if any, and the applications where they are commonly used. [14M]

OR

- 6 Explain the necessities to enable Intra communication among peripherals using I2C. How is the parallel interface different from wifi. [14M]

SECTION-IV

- 7 How to design and implement firmware development languages. list of the importance of the high-level and assembly level languages [14M]

OR

- 8 Why is IDE important in the development of design process of embedded system firmware? Explain operating system-based firmware designing approach is more advantageous [14M]

SECTION-V

- 9 How C++ template are differ from the Macro functions in Embedded programming. Are C++ Templates just Macros in disguise? [14M]

OR

- 10 Explain in detail with examples about [4M]
 (i)Data types [5M]
 (ii)Structures [5M]
 (iii) Loops

Code No: **R18A0353****MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY**
(Autonomous Institution – UGC, Govt. of India)**III B.Tech I Semester Regular/Supplementary Examinations, Dec-21/Jan-22**
Enterprise Resource Planning
(CSE & IT)

Roll No									
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Time: 3 hours**Max. Marks: 70****Note:** This question paper Consists of 5 Sections. Answer **FIVE** Questions, Choosing ONE Question from each SECTION and each Question carries 14 marks.

SECTION-I

- 1 Explain the Overview and Benefits of Enterprise Resource Planning. [14M]

OR

- 2 Analyze the different steps in implementing the Business Process Reengineering. [14M]

SECTION-II

- 3 State the phases of ERP implementation of product life cycle. Explain any three of them in detail [14M]

OR

- 4 Examine and explain the various methodology implementation of ERP. [14M]

SECTION-III

- 5 Briefly discuss about the major functions of the HR Management System. [14M]

OR

- 6 Explain the core functions of the sales and distribution module of ERP system. [14M]

SECTION-IV

- 7 What are the factors that are critical for the success and failure of the ERP implementation? [14M]

OR

- 8 Analyse the various issues in maintenance of ERP in business and industry. [14M]

SECTION-V

- 9 What is CRM? Why is it required for any business? Explain CRM module in detail. [14M]

OR

- 10 Explain the future trends in enterprise resource planning system. [14M]

Code No: R18A0513

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

III B.Tech I Semester Regular/Supplementary Examinations, Dec-21/Jan-22**Python Programming****(CSE & IT)**

Roll No									
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Time: 3 hours**Max. Marks: 70**

Note: This question paper Consists of 5 Sections. Answer **FIVE** Questions, Choosing ONE Question from each SECTION and each Question carries 14 marks.

SECTION-I

- 1 A) Justify the statement “Python is a general purpose, object oriented, functional and scripting Language” with an example program. [7M]
 B) Differentiate between list and tuples in python with suitable examples [7M]
 OR
- 2 Explain about basic data types with their operations and methods in python with appropriate examples [14M]

SECTION-II

- 3 A) Explain usage of function with default, variable and keyword arguments in python with examples. [7M]
 B) Implement usage of any two iterative statements of python with example code [7M]
 OR
- 4 A) Explain break and continue statement with the help of for loop with an example [7M]
 B) Implement functions to perform all arithmetic operations [7M]

SECTION-III

- 5 Implement map, filter, reduce using lambda functions with example python code [14M]
 OR
- 6 A) Explain recursive function. How do recursive function works? Explain with a help of a program [10M]
 B) Discuss the built in methods of arrays in python [4M]

SECTION-IV

- 7 Explain python exception handling mechanism and write an example python code which handles Zero Division Error, Name Error, Indentation Error, IOError and EOF Error [14M]
 OR
- 8 Explain in detail about Python Files, its types, functions and operations that can be performed on files with examples. [14M]

SECTION-V

- 9 A) Write a class with following criteria [9M]
 Class name: Flower
 Objects: lilly, rose, hibiscus
 Properties: price, color, smell
 Methods: get(), display() [5M]
 B) Narrate about polymorphism
 OR
- 10 What is inheritance? Illustrate types of inheritance with python code [14M]

Code No: **R18A1205****MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY**
(Autonomous Institution – UGC, Govt. of India)**III B.Tech I Semester Regular/Supplementary Examinations, Dec-21/Jan-22****Artificial Intelligence****(EEE, CSE & IT)**

Roll No									
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Time: 3 hours**Max. Marks: 70****Note:** This question paper Consists of 5 Sections. Answer **FIVE** Questions, Choosing **ONE** Question from each **SECTION** and each Question carries 14 marks.

SECTION-I

1 Explain the Heuristic Search Techniques. List and explain the applications of Artificial Intelligence [14M]

OR

2 What is a Breadth first search of the search tree? Write an algorithm to conduct Breadth first search explain with example and also mention advantages and disadvantages. [14M]

SECTION-II

3 Give a brief note on Alpha-Beta Pruning. How Mini max Search is useful and implemented. [14M]

OR

4 How Probabilistic Reasoning is useful in Basic Knowledge Representation. Compare Propositional Logic & First-Order Logic with their features [14M]

SECTION-III

5 Explain in detail about Other Knowledge Representation Schemes along with its advantages and disadvantages. [14M]

OR

6 Discuss about Acting Under Uncertainty? Analyze the Bayesian Belief networks with clear examples. [14M]

SECTION-IV

7 Illustrate Learning by Taking Advice & Learning in Problem Solving by considering two real time examples [14M]

OR

8 Describe the role of information gain in decision tree learning [14M]

SECTION-V

9 With the help of a neat diagram, explain the Expert System Architecture. List its Applications [14M]

OR

10 Explain Various Phases in building Expert Systems. Write the procedure for Knowledge Acquisition by using Expert Systems. [14M]

Code No: R18A0555

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

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III B.Tech I Semester Supplementary Examinations, Dec-21/Jan-22

Data Visualization

(IT)

Roll No										
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Time: 3 hours

Max. Marks: 70

Note: This question paper Consists of 5 Sections. Answer **FIVE** Questions, Choosing ONE Question from each SECTION and each Question carries 14 marks.

SECTION-I

- | | | |
|---|--|-------|
| 1 | a. Distinguish Descriptive Statistics and Inferential Statistics | [6 M] |
| | b. Describe the features of R language. | [8 M] |

OR

- | | | |
|---|--|-------|
| 2 | What is Sampling? What is its Need? Discuss in detail the various Sampling Methods | [14M] |
|---|--|-------|

SECTION-II

- | | | |
|---|---|-------|
| 3 | Discuss in detail Data Analysis in R with suitable Examples | [14M] |
|---|---|-------|

OR

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|---|---|-------|
| 4 | Data Visualization helps in knowing the Characteristics of Data. Elaborate. | [14M] |
|---|---|-------|

SECTION-III

- | | | |
|---|--|-------|
| 5 | a. Explain the various operations on Tuple Data Structure in Python. | [7 M] |
| | b. Compare and contrast List and Tuple data structures with their specific usages. | [7 M] |

OR

- | | | |
|---|--|-------|
| 6 | Write a function myfunc() in Python that takes integer list mylist object as a parameter and returns all even numbers in a mylist. | [14M] |
|---|--|-------|

SECTION-IV

- | | | |
|---|--|------|
| 7 | Describe briefly the following data Visualizations | [5M] |
| | i. Density plot | [5M] |
| | ii. Violin Plot | [4M] |
| | iii. Box Plot | |

OR

- | | | |
|---|--|-------|
| 8 | Write a program in python to plot Histogram and Pie Plots. | [14M] |
|---|--|-------|

SECTION-V

- | | | |
|---|---|-------|
| 9 | a. What is Spatial Data Analysis? Discuss the applications of Spatial Data. | [14M] |
| | b. Explain with suitable case study the insights we derive from spatial data. | |

OR

- | | | |
|----|---|-------|
| 10 | Elaborately discuss with examples the Markers, Layers and Tiles in Folium Library | [14M] |
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Code No: **R18A0517****MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY**

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III B.Tech I Semester Regular/Supplementary Examinations, Dec-21/Jan-22**Web Technologies****(IT)**

Roll No										
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Time: 3 hours**Max. Marks: 70****Note:** This question paper Consists of 5 Sections. Answer **FIVE** Questions, Choosing ONE Question from each SECTION and each Question carries 14 marks.

SECTION-I

1 List and explain various HTML tags with examples and usage? [14M]

OR

2 Discuss Mouse event handlers in JavaScript with suitable example. [14M]

SECTION-II

3 Develop a DOM parser using java to parse any given XML file? [14M]

OR

4 Discuss about concept of functions used in PHP with suitable examples. [14M]

SECTION-III

5 How to handle Handling Http Request & Responses in Servlets? Explain with suitable example? [14M]

OR

6 Demonstrate the use of cookies in servlets with an example. [14M]

SECTION-IV

7 Develop a PHP script that establish database connectivity to MySQL with example? [14M]

OR

8 Discuss the concept of struts frameworks and its usage? [14M]

SECTION-V

9 Explain anatomy of a JSP page with suitable example? [14M]

OR

10 Explain briefly working of Beans in JSP Pages? [14M]
