



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

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



## LIST OF SUBJECTS

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

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

(Autonomous Institution – UGC, Govt. of India)

**III B.Tech I Semester Supplementary Examinations, July/August 2021****Embedded Systems****(CSE & IT)**

<b>Roll No</b>									
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**Time: 3 hours****Max. Marks: 70**Answer Any **Five** Questions

All Questions carries equal marks.

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- 1 (a)** Briefly list out the relevant features of 8051 microcontroller [7M]  
**(b)** Explain different data transfer instructions of 8086 microprocessor. [7M]
- 2 (a)** Why a microcontroller is also called a microcomputer? Explain in detail the internal and external memories of 8051 microcontroller. [7M]  
**(b)** Explain different addressing modes of 8086 microprocessor. [7M]
- 3 (a)** Illustrate the applications Embedded system with suitable examples? [7M]  
**(b)** Explain the difference between general purpose and embedded system.. [7M]
- 4 (a)** Explain the role of embedded systems in automotive domain [7M]  
**(b)** What is non-operational quality attributes? Explain the important non-operational quality attributes to be considered in any embedded system design. [7M]
- 5** Which are the components used as the core of an embedded system? Explain the merits, drawbacks, if any, and the applications/domains where they are commonly used [14M]
- 6 (a)** Explain the sequence of operation for communicating with an I2C slave device [7M]  
**(b)** Explain the merits and limitations of parallel port over serial RS-232 interface [7M]
- 7 (a)** Explain the 'High level language' based 'Embedded firmware' development [7M]  
**(b)** Explain the advantages 'High level language' based 'Embedded firmware' development. [7M]
- 8** Explain about  
I. loops, [5M]  
II. data types [5M]  
III. pointers [4M]

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Code No: **R18A0353****MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY****(Autonomous Institution – UGC, Govt. of India)****III B.Tech I Semester Supplementary Examinations, July/August 2021****Enterprise Resource Planning****(CSE & IT)**

<b>Roll No</b>										
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**Time: 3 hours****Max. Marks: 70**

Answer Any **Five** Questions  
All Questions carries equal marks.

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- 1** Explain the process of online analytical processing in information system of the organization. [14M]
- 2** Analyze the various types of application involved in the Enterprise Resource Planning. [14M]
- 3** Explain the organizing of the project management and monitoring under ERP implementation. [14M]
- 4** What do you mean by ERP implementation? Discuss the factors of ERP implementation. [14M]
- 5** Mention the significance and functions of plant maintenance module. [14M]
- 6** Analyse and explain the role of quality management module of ERP system. [14M]
- 7** Briefly explain the different types of ERP software solution uses in the organisation. [14M]
- 8 a)** Examine the different technologies of wireless uses in the business. [10M]
- b)** Mention any five features of web enabled technology. [4M]

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Code No: **R18A0513****MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY**

(Autonomous Institution – UGC, Govt. of India)

**III B.Tech I Semester Supplementary Examinations, July/August 2021****Python Programming****(CSE & IT)**

<b>Roll No</b>									
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**Time: 3 hours****Max. Marks: 70**

Answer Any **Five** Questions  
All Questions carries equal marks.

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- 1
  - a) What are the common built-in data types in Python? [5M]
  - b) How is Python an interpreted language? [5M]
  - c) Explain the concept of Mutability with an example. [4M]
  
- 2
  - a) Write a Python program to clone or copy a list. [5M]
  - b) What is the use of all(), any(), cmp() and sorted in dictionary [5M]
  - c) Write a Python program to check a list is empty or not. [4M]
  
- 3
  - a) Write program to display weather the given numbers is positive, negative or zero using if-elif-else statement. [7M]
  - b) Write a program which uses a function to find factorial of a give number. [7M]
  
- 4
  - a) Explain detail passing arguments to functions. [7M]
  - b) Write a program that will ask the user to enter the amount of a purchase. The program should then compute the state and county sales tax. Assume the state sales tax is 5 percent and the county sales tax is 2.5 percent. The program should display the amount of the purchase, the state sales tax, the county sales tax, the total sales tax, and the total of the sale (which is the sum of the amount of purchase plus the total sales tax). [7M]
  
- 5
  - a) What is the difference between Python Arrays and lists? [4M]
  - b) What is a lambda function? [3M]
  - c) Write a Python program to reverse the order of the items in the array using function. [7M]
  
- 6
  - a) Explain Keyword Arguments with positional arguments with example [10M]
  - b) What is Dict and List comprehensions are? [4M]
  
- 7
  - a) What advantages do NumPy arrays offer over (nested) Python lists? [7M]
  - b) Write Python Program to find the longest word in a file. [7M]
  
- 8
  - a) Explain Inheritance in Python with an example. [7M]
  - b) What are the advantages of Django? [7M]

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Code No: **R18A1205****MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY**

(Autonomous Institution – UGC, Govt. of India)

**III B.Tech I Semester Supplementary Examinations, July/August 2021****Artificial Intelligence****(EEE, CSE & IT)**

<b>Roll No</b>									
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**Time: 3 hours****Max. Marks: 70**

Answer Any **Five** Questions  
All Questions carries equal marks.

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- 1 Discuss about the advantage of heuristic search techniques and explain generic best first search strategy [14M]
- 2 a. Define Artificial Intelligence. Explain the techniques of A.I. Also describe the characteristics of Artificial Intelligence. [7M]  
b. Discuss about how backtracking search strategy performs. [7M]
- 3 Describe the mini max algorithm with an example. [14M]
- 4 a. Discuss about backward chaining algorithm [7M]  
b. Describe probabilistic reasoning with example. [7M]
- 5 Explain how to represent Knowledge in an Uncertain Domain. [14M]
- 6 a. Discuss about Knowledge Representation Issues in detail. [7M]  
b. Explain rule based methods for uncertain reasoning. [7M]
- 7 a. Explain how to do learning from examples. [7M]  
b. Describe the role of information gain in decision tree learning. [7M]
- 8 Explain the Expert System Architecture with the help of a neat diagram [14M]

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**MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY**

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**III B.Tech I Semester Supplementary Examinations, July/August 2021****Design and Analysis of Algorithms****(IT)**

<b>Roll No</b>									
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**Time: 3 hours****Max. Marks: 70**

Answer Any **Five** Questions  
All Questions carries equal marks.

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- 1.a** Solve the recurrence relation using substitution method. **[8M]**
- $$T(n) = \begin{cases} T(1) & n = 1 \\ 2T(n/2) + 5 & n > 1 \end{cases}$$
- 1.b** Define Recursion? Write the algorithm for Towers of Hanoi problem. **[6M]**
- 2.a** Explain in detail about Strassen's Matrix Multiplication **[7M]**
- 2.b** Explain about various asymptotic notations to represent time complexity with examples **[7M]**
- 3.a** Explain the general method of backtracking technique by solving 8-Queens problem. **[7M]**
- 3.b** Describe Weighted Union and Collapsing Find algorithms. **[7M]**
- 4.a** Briefly explain Connected components and Bi-connected components. **[8M]**
- 4.b** Write about the constraints and criterion function used in backtracking. **[6M]**
- 5.a** Find an Optimal Solution to the knapsack instance  $n=4$ ,  $m=5$ ,  $(P_1, P_2, \dots, P_4) = (10, 20, 15, 25)$  and  $(W_1, W_2, \dots, W_4) = (4, 3, 2, 5)$  using Greedy method **[7M]**
- 5.b** What is Spanning tree? Compare and Contrast Prim's and Kruskal's algorithms. **[7M]**
- 6.a** Define Feasible solution and Optimal solution? Find the Optimal solution and feasible solutions for the given Job sequencing with deadlines problem.  $n=7$ ,  $(p_1, p_2, p_3, p_4, \dots, p_7) = (3, 5, 20, 18, 1, 6, 30)$  and  $(d_1, d_2, d_3, d_4, \dots, d_7) = (1, 3, 4, 3, 2, 1, 2)$ . **[7M]**
- 6.b** Write an Algorithm to find single source shortest paths of a given directed graph. **[7M]**
- 7.a** Explain All pairs shortest path problem with an example? **[10M]**
- 7.b** Explain the general method of dynamic programming technique. **[4M]**
- 8a** Define Cook's theorem and prove it. **[6M]**
- 8.b** Solve the given knapsack problem using LCBB.  $N=4$ , **[8M]**  
 $(p_1, p_2, p_3, p_4) = (10, 10, 12, 18)$ ,  $(w_1, w_2, w_3, w_4) = (2, 4, 6, 9)$  and  $m=15$ .

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Code No: **R18A0517****MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY****(Autonomous Institution – UGC, Govt. of India)****III B.Tech I Semester Supplementary Examinations, July/August 2021****Web Technologies****(IT)**

<b>Roll No</b>									
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**Time: 3 hours****Max. Marks: 70**

Answer Any **Five** Questions  
All Questions carries equal marks.

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- 1 (a). Create HTML Form with all types of input fields like text boxes, check boxes, radio buttons and select option [9M]  
(b). Demonstrate different types of events with suitable examples [5M]
- 2 (a). Explain all CSS Types with suitable examples [6M]  
(b). Create a HTML form with validation like email validation [8M]
- 3 (a). Explain briefly about XML DOM processor with appropriate example [8M]  
(b). Write PHP any user defined function with arguments and return values [6M]
- 4 (a). Create Well-formed and Valid XML document with either DTD or XML Schema for library information system. [9M]  
Note:- You are allowed to assume your own attributes for library information system  
(b). Write PHP program to find average of array elements using Function [5M]
- 5 (a). Explain Servlet Life cycle and list out steps to deploy servlet in Application server [7M]  
(b). Demonstrate HTTP Session handling technique with example [7M]
- 6 (a). List out some important classes and methods in Javax.servlet and Javax.servlet.Http packages [5M]  
(b). Explain briefly and write programs for URL rewriting , hidden form field session handling techniques using Java servlets [9M]
- 7 (a). Write a PHP program which connects to data base and access details stored in table and displays the results [10M]  
Note:- Assume any database table with at-least two columns and two rows  
(b). Write short notes on types of JDBC Drivers [4M]
- 8 (a). Explain JSP Directives in detail with examples [8M]  
(b). List and Explain JSP Implicit Objects [6M]

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Code No: R18A0555

**MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY**  
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**III B.Tech I Semester Supplementary Examinations, July/August 2021**

**Data Visualization**

**(IT)**

<b>Roll No</b>									
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**Time: 3 hours**

**Max. Marks: 70**

Answer Any **Five** Questions  
All Questions carries equal marks.

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- 1 a. Explain the need of Normal Probability Distribution with examples. [6 M]  
b. Write a short note on
  - i) Random Variables
  - b) Descriptive Statistics
- 2 a. What is a Package in R? How to install and use a packages in R. [7 M]  
b. Write a short note on Vector data type in R. [7 M]
- 3 Write the process of handling missing values in R using R - Script [14M]
- 4 Explain DPLYR package and its functions each with an example. [14M]
- 5 Discuss in detail the Numpy Array Creation, manipulation, Indexing, Statistical Functions with suitable examples. [14M]
- 6 a. Illustrate with suitable examples Dictionary Data Structure and its various operations. [7M]  
b. Write a function to my\_func(String ) that returns Occurrences of each letter in a string passed as a parameter to my\_func()  
my\_func("Hello") should return a dictionary  
{“H” : 1, ‘e’: 1, ‘l’ : 2, ‘o’: 1}
- 7 Explain briefly Widgets and Word Clouds in Data Visualizations [14M]
- 8 a. Explain the Features of Seaborn Library. [7M]  
b. Describe the insights derived using Distribution Plots [7M]

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