MALLA REDDY COLLEGE OF ENGINEERING &TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

Sponsored by CMR Educational Society

(Affiliated to JNTU, Hyderabad, Approved by AICTE - Accredited by NBA & NAAC – „A" Grade - ISO 9001:2015 Certified) Maisammaguda, Dhulapally (Post Via Hakimpet), Secunderabad – 500100, Telangana State, India.
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DEPARTMENT OF INFORMATION TECHNOLOGY

III B.TECH I SEMESTER R18 SUPPLEMENTARY PREVIOUS QUESTION PAPERS

LIST OF SUBJECTS

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

Code No: R18A1205
MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY
(Autonomous Institution – UGC, Govt. of India)
III B.Tech I Semester Supplementary Examinations, June 2022
Artificial Intelligence
(EEE, CSE & IT)

Roll No										

Time: 3 hours   **Max. Marks: 70**

Answer Any **Five** Questions
All Questions carries equal marks.
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1	Define AI problems and its components. Explain how a problem solving agent works? Explain real-world AI problems with examples	**[14M]**
2	What is best first search? Explain in detail A* algorithm? Discuss BFS Algorithm	**[14M]**
3	Explain in detail about alpha-beta pruning with example.	**[14M]**
4	What is First Order Logic? State and Prove Baye's Theorem and mention its applications?	**[14M]**
5	Give a detail note on a generic knowledge-based agent. In the wumpus world, agent will have five sensors. Mention Various Other Knowledge Representation Schemes	**[14M]**
6	Prove the following assertion: for every game tree, the utility obtain by MAX using mini max decision against a suboptimal MIN will be never be lower than the utility obtained playing against an optimal MIN. Can you come up with a game tree in which MAX can do still better using a suboptimal strategy against a suboptimal MIN?	**[14M]**
7	Discuss in detail about Winston's Learning Program with its implementation details.	**[14M]**

8   What is an Expert System? List various components of Knowledge Base?   **[14M]**
Differentiate Forward and Backward Chaining?

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R18

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY
(Autonomous Institution – UGC, Govt. of India)
III B.Tech I Semester Supplementary Examinations, June 2022
Design and Analysis of Algorithms
(IT)

Roll No									

Time: 3 hours   **Max. Marks: 70**

Answer Any **Five** Questions
All Questions carries equal marks.
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1	Explain Binary search algorithm using Divide and Conquer method with an example	**[14M]**
2	Explain the concept of Merge sort and Quick sort with an algorithm, identify best sort technique among them, justify that?	**[14M]**
3 a)	Explain explicit and implicit constraints with an example.	**[6M]**
3 b)	Let m=15 and w= {3, 5, 6, 7}. Find all the possible sets of w that sum to m. Do this using sum of subset	**[8M]**
4 a)	Write an algorithm of AND/OR graph traversal	**[7M]**
4 b)	Describe Union and Find algorithms	**[7M]**
5 a)	Write the Kruskal's Algorithm, Explain the Algorithm.	**[7M]**
b)	Write the Prim's Algorithm, Explain the Algorithm.	**[7M]**
6 a)	Write about single source shortest path problem	**[7M]**
6 b)	Write about 0/1 knapsack problem using dynamic programming.	**[7M]**
7	Find the optimal tour by using travelling sales person problem using dynamic programming:	**[14M]**

$$\begin{bmatrix} 0 & 10 & 15 & 20 \\ 5 & 0 & 9 & 10 \\ 6 & 13 & 0 & 12 \\ 8 & 8 & 9 & 0 \end{bmatrix}$$

8	Explain NP-complete class. Show the relation between P, NP, NPC problems using a venn diagram	**[14M]**

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Code No: **R18A0555**
MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY
(Autonomous Institution – UGC, Govt. of India)
III B.Tech I Semester Supplementary Examinations, June 2022
Data Visualization
(IT)

Roll No										

Time: 3 hours   **Max. Marks: 70**

Answer Any **Five** Questions
All Questions carries equal marks.
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1.a.	Illustrate how to make statistical inferences from data.	**[7M]**
b.	The weights of baby giraffes are known to have a mean of 125 pounds and a standard deviation of 15 pounds. Assume there is a random sample of 40 baby giraffes. a) What is the probability that the sample mean will be between 120 and 130 pounds? b) What is the 75th percentile of the sample means of size n=40?	**[7M]**
2.a.	Explain the basic functions used to describe data in R.	**[7M]**
b.	Explain the Process of Descriptive Analysis.	**[7M]**
3.a.	Solve the following by using reshape2 package. a) Set a variable, "CarSurvey", using dcast() to reformat "moltenMtcars" to wide format, with "cyl" and "gear" in the first two columns. The aggregation function is "mean". b) Using the melt() function, format "airquality" with 1 measurement per Month/Day date. Set a variable called "weatherSurvey". c) Use the acast() function to get the means of "weatherSurvey" measurement variables by month. Also, remove not available values.	**[7M]**
b.	List and Explain data visualization techniques.	**[7M]**
4.a.	Why Date-time data is frustrating to work in R. Explain the use of *Lubridate* package.	**[7M]**
b.	Illustrate a methodology to summarize & visualize text using Watson Studio.	**[7M]**
5	Illustrate to read and write excel files using pandas.	**[14M]**
6	Explain the ***pandas library*** that contains extensive capabilities and features for working with date and time.	**[14M]**
7.a.	Explain how to draw Waffle Charts Using Python's Matplotlib.	**[7M]**
b.	Describe any three specialized visualization tools used in Matplotlib?	**[7M]**
8.a.	Explain the different types of bar plots supported by Seaborn.	**[7M]**
b.	Describe the best libraries for geospatial data visualization in python	**[7M]**

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Code No: **R18A0353**

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MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY
(Autonomous Institution – UGC, Govt. of India)
III B.Tech I Semester Supplementary Examinations, June 2022
Enterprise Resource Planning
(CSE & IT)

Roll No										

Time: 3 hours   **Max. Marks: 70**

Answer Any **Five** Questions
All Questions carries equal marks.
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1	What do mean by data mining? Briefly discuss the process of data mining.	**[14M]**
2	Discuss about the technologies that are used to improve the capabilities of ERP system.	**[14M]**
3	Discuss briefly the strategical measures to be taken by the top management for successful ERP implementation.	**[14M]**
4	Explain the different phases in ERP implementation life cycle.	**[14M]**
5	Analysis the various functions of supply chain management.	**[14M]**
6	What are the various subsystems of the Plant Maintenance System? Explain in detail.	**[14M]**
7	Analyse the maintenance of ERP system in mobile platform. How would it impact on manufacturing industries?	**[14M]**
8 a	Give an account of various ERP add–ons and Extended ERP system	**[7M]**
b	Write a short note on web enabled and wireless technologies.	**[7M]**

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Code No: **R18A0464**
MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY
(Autonomous Institution – UGC, Govt. of India)
III B.Tech I Semester Supplementary Examinations, June 2022
Embedded Systems
(CSE & IT)

Roll No										

Time: 3 hours   **Max. Marks: 70**

Answer Any **Five** Questions
All Questions carries equal marks.
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1	What is microprocessor? What are the different types of instructions in 8086 microprocessors?	**[14M]**
2	Explain addressing modes of 8086 microprocessor with examples.	**[14M]**
3	Explain the various purposes of embedded systems in detail with illustrative examples	**[14M]**
4	Explain the characteristics of a typical embedded system in detail and give the Applications of embedded systems	**[14M]**
5	What are Sensors and actuators? Explain their role in Embedded system design? Illustrate with an example.	**[14M]**
6	a. Explain the merits and limitations of parallel port over serial RS-232 interface.	**[6M]**
	b. Explain in detail about RS 232 Interface.	**[8M]**
7	Explain super loop based approach for embedded firmware design.	**[14M]**
8	Briefly explain Object Oriented Language and Embedded Programming in C++ with examples	**[14M]**

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Code No: **R18A0513**

R18

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY
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III B.Tech I Semester Supplementary Examinations, June 2022
Python Programming
(CSE & IT)

Roll No										

Time: 3 hours   **Max. Marks: 70**

Answer Any **Five** Questions
All Questions carries equal marks.
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1	a)	Implement usage of any two decision making statements of python with example code	**[7M]**
	b)	Explain implementation and usage of a List data type.	**[7M]**
2	a)	What is dictionary? Explain the methods available in dictionary	**[7M]**
	b)	Elucidate the string and its methods with an example	**[7M]**
3	a)	Explain call by value and call by reference in python with suitable programs	**[7M]**
	b)	Explain lambda function with an example	**[7M]**
4	a)	Explain the function arguments in python	**[7M]**
	b)	If the age of Ram, Sam, and Khan are input through the keyboard, write a python program to determine the eldest and youngest of the three	**[7M]**
5	*a)*	What is recursive function? Write recursive function to find factorial of a number	**[8M]**
	b)	Differentiate global and local variables	**[6M]**
6	*a)*	Explain about basic data type comprehensions in Python	**[7M]**
	b)	Create a program for linear search using Arrays	**[7M]**
7	*a)*	Demonstrate the use of Exception Handling in Python	**[10M]**
	b)	What are packages? Give an example of package creation in Python.	**[4M]**
8	*a)*	How do we achieve code reusability in python? Illustrate with a sample python code.	**[10M]**
	b)	Give the importance of Django Framework	**[4M]**

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R18

Code No: **R18A0517**
MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY
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III B.Tech I Semester Supplementary Examinations, June 2022
Web Technologies
(IT)

Roll No										

Time: 3 hours   **Max. Marks: 70**

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

1	How to design a web page using HTML frames? Explain in detail with suitable example?	**[14M]**
2	Develop a JavaScript that checks whether given number is a prime or not.	**[14M]**
3	Explain in detail how XML data is parsed with an example?	**[14M]**
4	Define operator. Explain different operators used in PHP with an example?	**[14M]**
5	Develop a Servlet program that handles an HTTP POST request and explain with a neat sketch?	**[14M]**
6	How to use Cookies & Sessions for session tracking in Servlets? Explain with an example?	**[14M]**
7	Explain briefly various classes and interfaces from Javax.sql.* package for the database connectivity?	**[14M]**
8	What are JSP Implicit Objects? Explain briefly with suitable examples?	**[14M]**

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