CMR ENGINEERING COLLEGE: : HYDERABAD
UGC AUTONOMOUS
I–B.TECH–II–Semester End Examinations (Supply) - January- 2022
DATA STRUCTURES
(Common to CSC, CSD, CSE, CSM, ECE, IT, MECH)

[Time: 3 Hours]   [Max. Marks: 70]

Note: This question paper contains two parts A and B.
   Part A is compulsory which carries 20 marks. Answer all questions in Part A.
   Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART-A   (20 Marks)

1. a)	Defend how an array is different from linked list?	[2M]
b)	Explain about queue operations in brief?	[2M]
c)	List the applications of Dictionaries?	[2M]
d)	Define hash functions?	[2M]
e)	Describe Splay tree with example?	[2M]
f)	Distinguish between BST and AVL tree?	[2M]
g)	Distinguish between graph and tree?	[2M]
h)	Differentiate graph traversal techniques?	[2M]
i)	Define Compressed Tries?	[2M]
j)	Define pattern matching?	[2M]

PART-B   (50 Marks)

2.	Define the implementation of Queue with array and linked list?	[10M]
	OR	
3.	Discuss briefly about the operations used in single linked list?	[10M]
4.	Distinguish between double hashing, rehashing and extendible hashing?	[10M]
	OR	
5.	Discuss briefly about the various operations used in Dictionaries?	[10M]
6.	Determine the procedure to insert and delete an element into an AVL Tree?	[10M]
	OR	
7.	Explain about Red-Black tree with example?	[10M]
8.	Implement Merge sort using C?	[10M]
	OR	
9.	Illustrate the concept of Heap sort with example?	[10M]
10.	Explain about Knuth-Morris-Pratt algorithm with example?	[10M]
	OR	
11.	Distinguish between Suffix tries and Compressed Tries?	[10M]

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