Hall Ticket No: | | | | | | | | | | | Question Paper Code: 16MCA107

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

MCA II Year I Semester (R16) Supplementary End Semester Examinations – May 2019

(Regulations: R16)

DATA STRUCTURES THROUGH PYTHON

Time: 3Hrs **Max Marks: 50**

Attempt all the questions. All parts of the question must be answered in one place only.
In Q.no 1 to 5 answer either Part-A or B only

Q.1(A)	i. Discuss on keywords in Python. ii. Write a Python program to print Palindrome string.	10M
	OR	
Q.1(B)	Explain in detail about functional calls and type conversion functions.	10M
Q.2(A)	What is Inline function? Discuss constructor and destructor functions with examples.	10M
	OR	
Q.2(B)	i. Illustrate Class and Object with example.	10M
Q.3(A)	Explain in detail about Infix and Postfix expressions and mention the applications of stack.	10M
	OR	
Q.3(B)	What is stack? Write a python code for implementing one dimensional array.	10M
Q.4(A)	What is Priority Queue? Explain array implementation of Priority Queue with example.	10M
	OR	
Q.4(B)	i. Differentiate between array and Linked list. ii. Write a python program to create double linked list.	10M
Q.5(A)	Explain the process of Quick Sort algorithm by considering the following example. 10, 80, 30, 90, 40, 50, 70	10M
	OR	
Q.5(B)	Discuss on functioning of Binary Search Tree operation with python syntax.	10M

*** END***

Hall Ticket No: | | | | | | | | | | | Question Paper Code: 16MCA110

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

MCA II Year I Semester (R16) Supplementary End Semester Examinations – May 2019

(Regulations: R16)

DESIGN AND ANALYSIS OF ALGORITHMS

Time: 3Hrs **Max Marks: 50**

Attempt all the questions. All parts of the question must be answered in one place only.
In Q.no 1 to 5 answer either Part-A or B only

Q.1(A) i. Define three asymptotic notations and express the following assertions using three asymptotic notations with proof from its definition n(n-1)/2 ii.$6*2^n - n^2$ iii. $100*n + 5$ ii. Give any two brute force-sorting algorithms to sort the given set of integer and find its complexities. 10M

OR

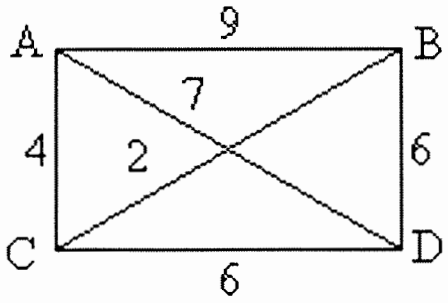
Q.1(B) Explain general plan of mathematical analysis of non-recursive algorithms with example 10M

Q.2(A) Give a suitable sorting algorithm that uses divide and conquer techniques, which divides problem size by considering values in the list. Analyze it for best and worst case efficiencies. 10M

OR

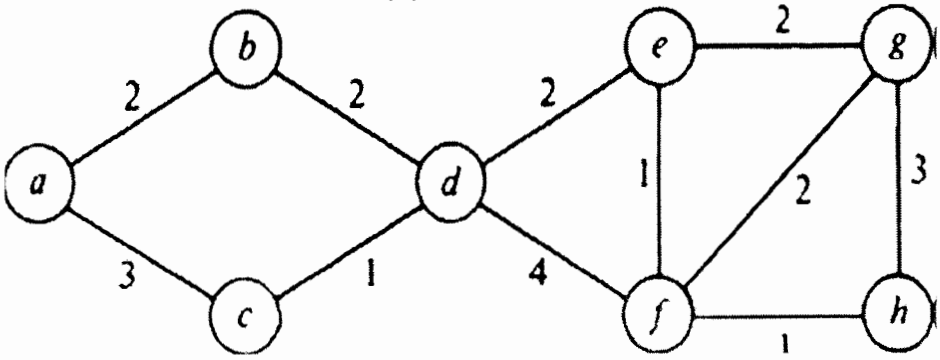
Q.2(B) Write merge sort algorithm and discuss its efficiency. Sort the list E, X, A, M, P, L, E in alphabetical order using merge sort. 10M

Q.3(A) Find the shortest path of a TSP for the following graph by using dynamic programming. 10M



OR

Q.3(B) Design an algorithm for Breadth first search. Identify the Breadth first traversal sequence of vertices for the following graph. 10M



Q.4(A)	Draw and explain the tree organization of the 4-queen solution space- number the nodes using D	10M
	OR	
Q.4(B)	State 0/1 knapsack problem and design an algorithm of LC Branch and Bound and find the solution for the knapsack instance of n = 4; (pi, p2, p3, p4) = (10, 10, 12, 18); (w1. w2, w 3, w4) = (2, 4, 6, 9) and M = 15.	10M
Q.5(A)	(a)Explain about decision problem with an example (b)Explain how NP-hard and NP-complete problems are classified.	10M
	OR	
Q.5(B)	State and prove 3-satisfiablity problem is NP-Complete	10M

***** END*****

Hall Ticket No: | | | | | | | | | | | Question Paper Code: 16HUM403

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

MCA II Year I Semester (R16) Supplementary End Semester Examinations – May 2019

(Regulations: R16)

FINANCIAL ACCOUNTING FOR MANAGERS

Time: 3Hrs **Max Marks: 50**

Attempt all the questions. All parts of the question must be answered in one place only.
In Q.no 1 to 5 answer either Part-A or B only

Q.1(A) Define Accounting. Explain the objectives of accounting. 10M

OR

Q.1(B) What is Account? Give the broad classification of accounts with suitable examples. 10M

Q.2(A) Is the agreement of trial balance a conclusive proof of the accuracy of a book keeper? If not, what are the errors, which remain undisclosed by the trial balance? 10M

OR

Q.2(B) Cheritha's Trial Balance as on 31st March, 2017 is given below. You are required to prepare Trading and Profit and Loss Account for the year ended 31st March, 2017 and Balance Sheet as on that date after taking into account the given adjustments.

Trial Balance as on 31st March, 2017

Particulars	Amt. (Rs.)	Particulars	Amt. (Rs.)
Purchases	98,000	Capital	
Machinery	4,000		70,000
Building	1,00,000		
Stock (1.04.2016)	15,000	Reserve	7,000
Printing and Stationery	1,750	Creditors	45,000
Sundry Debtors	35,000	Bank overdraft	12,000
Salaries	11,000		
Insurance	700	Sales	1,58,000
Sundry Expenses	3,500	Bills payable	250
Furniture	8,000	Purchase Returns	3,500
Investment	10,000		
Cash	4,000		
Advertisement	800		
Carriage Inwards	1,300		
Travelling Expenses	2,700		
	2,95,750		**2,95,750**

Adjustment:

(1) Closing stock is valued at the cost of Rs. 15,000.

Q.3(A) Distinguish between straight line method and diminishing balance method of depreciation. 10M

OR

Q.3(B) What is goodwill? Explain the methods of valuation of goodwill. 10M

Q.4(A) What is cash flow statement? How is it prepared? Explain. 10M

OR

Q.4(B) From the following Balance Sheeet of X Ltd. Co as on 31st December 2005 and 2006. 10M
You are required to prepare.

i. A schedule of Changes in Working Capital
ii. A funds flow statement

Liabilities	2005	2006	Assets	2005	2006
Share Capital	1,00,000	1,00,000	Goodwill	12,000	12,000
General Reserve	14,000	18,000	Buildings	40,000	36,000
P& L Account	16,000	13,000	Plant	374,000	36,000
Sundry Creditors	8,000	5,400	Investments	10,000	11,000
Bills Payable	1,200	800	Stock	30,000	23,000
Provision for Taxation	16,000	18,000	Debtors	18,000	19,000
Provision for Doubtful Debts	400	600	Bills Receivables	2,000	3,200
			Cash Balance	6,600	15,200
	1,55,600	**1,55,800**		**1,55,600**	**1,55,800**

Q.5(A) What are the financial ratios? Discuss their significance. 10M

OR

Q.5(B) The following is the revenue statement of Hind Traders Limited for the year ended 31st March,2018. 10M

Particulars	Amount
Sales	5,00,000
Less: Cost of goods sold	3,00,000
Gross profit	2,00,000
Less: Operating expenses	1,20,000
Operating profit	80,000
Add: Non-operating income	12,000
	92,000
Less: Non-operating expenses	4,000
Net profit	88,000
Less: Tax @ 50%	44,000
Net profit after tax	44,000

Calculate: (i) Gross Profit Ratio (ii) operating Ratio (iii) operating profit Ratio and (iv) Net Profit Ratio.

*** **END*****