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

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

MCA (2Yrs) I Year I Semester (R16) Regular & Supplementary End Semester Examinations – Dec 2018

(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)	Explain in detail about arithmetic operations with python program syntax.	10M
	OR	
Q.1(B)	Define function. Discuss various conditional statements with syntax.	10M
Q.2(A)	Define Inheritance. Explain in detail about Simple Inheritance, Multiple inheritance and Hybrid inheritance.	10M
	OR	
Q.2(B)	What is operator overloading? Write a Python code for operator overloading.	10M
Q.3(A)	What is stack? Explain various stack operations by writing a python code.	10M
	OR	
Q.3(B)	List out the applications of stack and write a python programme for matrix multiplication using arrays.	10M
Q.4(A)	Define Queue. Explain in detail about various operations of Queue with syntax.	10M
	OR	
Q.4(B)	Write a python code for creation, insertion and removing a node from a linked list.	10M
Q.5(A)	Write a short note on i. AVL Tree ii. Binary Search Tree	10M
	OR	
Q.5(B)	Explain in detail about the process of selection sort with python code.	10M

***** END*****

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MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

MCA (2Yrs) I Year I Semester (R16) Supplementary End Semester Examinations – Dec 2018

(Regulations: R16)

COMPUTER NETWORKS

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)	Write brief notes on categories of networks.	10M
	OR	
Q.1(B)	Explain ISO/ OSI reference model with neat diagram.	10M
Q.2(A)	Explain Error Detection and Correction techniques.	10M
	OR	
Q.2(B)	What is switching? Explain circuit and packet switching with their advantages and disadvantage	10M
Q.3(A)	Explain the functions and applications of TCP.	10M
	OR	
Q.3(B)	Define IPv4 and IPv6. Explain in detail about the importance of IPv4 and IPv6 in the field of networking.	10M
Q.4(A)	Discuss in detail about types of casting.	10M
	OR	
Q.4(B)	What is DNS? Explain the functions of SMTP.	10M
Q.5(A)	Explain in detail about IP and web Security.	10M
	OR	
Q.5(B)	Write brief notes on public key and private key cryptography mechanisms.	10M

***** END*****

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

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

MCA(2Yrs) I Year I Semester (R16) Supplementary End Semester Examinations – Dec 2018

(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) (a)What is degenerative tree? Write the simple UNION and FIND algorithms. 10M
(b)Generate the trees for the set {1, 2, 3, 4, ... n) by using Weighted rule.

OR

Q.1(B) i. Prove that : If $t_1(n) \in O(g_1(n))$ and $t_2 \in O(g_2(n))$, 10M
then $t_1(n) + t_2(n) \in O(\max\{g_1(n), g_2(n)\})$.

ii. Consider the following algorithm:

```
Algorithm Mystery(n)
// A non negative integer n
S←0
for i←1 to n do
    S ← S + I * i
return S
```

i. What does this algorithm compute?
ii. What is its basic operation?
iii. How many times is the basic operation executed?
iv. What is the efficiency class of this algorithm?

Q.2(A) i. Give brief description about the single source shortest path by using Greedy Technique. 10M
ii. Write a high – level description for Job Sequencing algorithm.

OR

Q.2(B) Find the minimum cost spanning tree for a graph G(6,10) with vertices named as a, b, c, d, e, f and edges ab=5, bc=1, af=5, ae=6, ed=8, fe=2, fd=5, cd=6, cf=4 and bf=4 using prim's algorithm. Justify your answer by solving the problem using Kruskal's algorithm showing results in each stages. 10M

Q.3(A) Give the recurrence used to solve knapsack problem using dynamic programming and explain in brief the same. Solve the following Knapsack problem using dynamic programming. Capacity W=5 10M

Item	1	2	3	4
Weight	2	1	3	2
Value	12	10	20	15

OR

Q.3(B) Explain Multistage graphs with example. Write multistage graph algorithm to forward approach. 10M

Q.4(A)	Explain backtracking concept. Illustrate N queens problem using backtracking to solve 4-Queens problem.	10M
	OR	
Q.4(B)	i. Write the control abstraction for LC- Search. ii. Write LCBB algorithm for the 0/1 knapsack problem.	10M
Q.5(A)	Give brief description about the Cooks theorem.	10M
	OR	
Q.5(B)	i. Explain the non-deterministic sorting and searching algorithms. ii. Discuss in detail the different classes in NP -Hard and NP - Complete.	10M

***** END*****

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

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

MCA (2 Yr) I Year I Semester (R16) Supplementary End Semester Examinations – Dec 2018

(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) Discuss the importance and uses of accounting. 10M

OR

Q.1(B) What is double entry system of accounting? Explain the golden rules of debit and credit with respect to different types of accounts. 10M

Q.2(A) Briefly discuss the various types of subsidiary books. 10M

OR

Q.2(B) From the following Trial Balance of Mohit & Co, prepare Trading, Profit and Loss Account for the year ending 31st March 2010 and Balance Sheet as on that date. 10M

Particulars	Dr. (Rs)	Particulars	Cr (Rs)
Purchases	1,40,000	Sales	2,88,000
Opening Stock	1,30,000	Sundry Creditor	1,15,000
Plant & Machinery	80,000	Commission received	10,000
Cash in Hand	20,000	Bills payable	1,20,000
Sundry debtors	1,50,000	Capital	2,50,000
Salaries	48,000	Interest-Received	8,000
Insurance	12,000	Bank over draft	34,000
Land and buildings	1,50,000		
Wages	30,000		
Printing and Stationery	17,000		
Factory rent	3,000		
Furniture	5,000		
Patents	40,000		
	8,25,000		**8,25,000**

Adjustment: a) Closing Stock Rs.1,20,000

Q.3(A) Explain the FIFO and LIFO methods of inventory valuation. 10M

OR

Q.3(B) XYZ Company purchased a Machine on 1st January, 2006 for Rs. 1,00,000 and spent Rs. 10,000 for establishment. The company followed @ 10% depreciation every year. You are required to prepare Machinery account for 5 years under Straight line method and Diminishing Balance Method. 10M

Q.4(A) State the differences between funds flow statement and cash flow statement 10M

OR

Q.4(B) From the following balance sheet of M/S X Ltd., prepare a schedule of changes in Working Capital and a funds flow statement 10M

Liabilities	2015	2016	Assets	2015	2016
Equity Share Capital	1,50,000	2,00,000	Goodwill	36,000	20,000
15% Preference Share Capital	75,000	50,000	Buildings	80,000	60,000
P& L Account	15,000	24,000	Stock	10,000	15,000
Sundry Creditors	37,500	49,500	Debtors	1,19,000	1,54,500
General Reserve	20,000	35,000	Cash Balance	12,500	9,000
			Plant	40,000	1,00,000
	2,97,500	**3,58,500**		**2,97,500**	**3,58,500**

Q.5(A) What is bank reconciliation statement? How is it prepared? Explain. 10M

OR

Q.5(B) ii) The working capital of ABC Ltd., has deteriorated in recent years and now stands as under: 10M

Current Assets:

i. Inventory – Rs.560000

ii. Debtors – Rs. 350000

iii. Cash – Rs.70000

Current Liabilities:

i. Creditors – Rs.490000

ii. Bank loan – Rs.210000

a) Compute the current ratio and quick ratio

b) A further bank loan of Rs.50000 against debtors is under negotiation. Assuming the loan is received, calculate the revised current ratio and quick ratio.

*** **END*****

Hall Ticket No: | | | | | | | | | | | Question Paper Code: 16MBA108

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

MCA (2Yrs) I Year I Semester (R16) Supplementary End Semester Examinations – Dec 2018

(Regulations: R16)

MANAGEMENT INFORMATION SYSTEM

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)	Explain the role of information system in business today.	10M
	OR	
Q.1(B)	How information system is dealing the competitive advantage and management issues of an organization? Explain.	10M
Q.2(A)	What are the measures that are taken by an organization to manage data resources? Discuss.	10M
	OR	
Q.2(B)	Describe the functions of information systems.	10M
Q.3(A)	Elaborate the system development life cycle.	10M
	OR	
Q.3(B)	Discuss the pitfalls in MIS development.	10M
Q.4(A)	Explain the features and components of Expert system.	10M
	OR	
Q.4(B)	Describe the support facilities of the MIS office automation system.	10M
Q.5(A)	Explain in detail about the software quality assurance.	10M
	OR	
Q.5(B)	Write short notes on: (i) Software matrices, (ii) Ethics in an information society.	10M

*** END***

Hall Ticket No: | | | | | | | | | | | Question Paper Code: 16MCA109

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

MCA (2Yrs) I Year I Semester (R16) Supplementary End Semester Examinations – Dec 2018

(Regulations: R16)

SOFTWARE ENGINEERING

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)	Explain in detail about different software myths.	10M
	OR	
Q.1(B)	Discuss the different phases of unified process model with the help of a neat diagram.	10M
Q.2(A)	What are the Different dimensions of Design Model? Explain about each of them.	10M
	OR	
Q.2(B)	How the tasks in architectural design can be represented?	10M
Q.3(A)	Discuss the different steps in user interface design in detail.	10M
	OR	
Q.3(B)	What is an architectural pattern? Explain it with a suitable example.	10M
Q.4(A)	Illustrate about various integration testing approaches in detail.	10M
	OR	
Q.4(B)	Illustrate debugging process with the help of a diagram.	10M
Q.5(A)	Explain about software process and project metrics in detail.	10M
	OR	
Q.5(B)	Explain reverse engineering process with the help of a diagram.	10M

*** END***