Hall Ticket No: | | | | | | | | | | |

Question Paper Code: 16MCA107

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

MCA(2Yrs) I Year I Semester (R16) Supplementary End Semester Examinations –December 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)	Write short notes on: i) List ii) Tuple iii) Dictionary	10M
	OR	
Q.1(B)	i) Write the features of python. ii) Explain the usage of variables? How to represent variables in python.	5M 5M
Q.2(A)	i) Define a Class and object. Write a python code for class and object. ii) Write Short notes on: i. Constructor ii. Destructor	5M 5M
	OR	
Q.2(B)	i) Explain different kinds of loops with syntaxes with simple example. ii) Explain the use of break and continue statements.	5M 5M
Q.3(A)	Define a stack. Explain the stack operations with suitable example program.	10M
	OR	
Q.3(B)	i) How to create an array in python? How to insert an element in an array by using predefined functions? ii) Explain the need of various data types and their arrays.	5M 5M
Q.4(A)	Write a python code to insert, delete and display nodes in a Double linked list?	10M
	OR	
Q.4(B)	i) Write a short notes on B-Trees. ii) Write an algorithm to insert and remove the nodes in single linked lists.	5M 5M
Q.5(A)	Explain in detail about i.Insertion Sort ii.Selection Sort	5M 5M
	OR	
Q.5(B)	Write a python code for Binary Search Tree operations.	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 –December 2019

(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)	State the importance of addressing in Network architecture?	2M
	Illustrate the functionality of TCP/IP model?	8M
	OR	
Q.1(B)	Define Autonomous system?	2M
	Justify the need for Network Protocol Architecture with example?	8M
Q.2(A)	State the advantages of OFC?	2M
	Explain the Data Link Layer Protocols and its functionality in detail?	8M
	OR	
Q.2(B)	Define Noise and Interference?	2M
	Elaborate the transmission medium available for data communication?	8M
Q.3(A)	Describe the Ethernet and its types in detail?	10M
	OR	
Q.3(B)	Define Routing and Routing Table?	4M
	Explain the routing protocols available for data communication?	6M
Q.4(A)	Explain about Remote Login?	5M
	Demonstrate the DNS operations and protocols involved in it?	5M
	OR	
Q.4(B)	Discuss about the Network Management protocols and its working nature in detail?	10M
Q.5(A)	Explain the different types of attacks?	5M
	Demonstrate the Digital Signature in detail?	5M
	OR	
Q.5(B)	Explain about the fallowing i) Confidentiality ii) Authentication iii) Integrity iv) Non-repudiation	10M

***** END*****

Hall Ticket No: | | | | | | | | | | |

Question Paper Code: 16MCA110

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

MCA(2Y) I Year I Semester (R16) Supplementary End Semester Examinations –December 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)	Give the algorithm for matrix multiplication and find the time complexity of the algorithm using step – count method.	10M
	OR	
Q.1(B)	i. Explain the properties of an algorithm with an example. ii. Differentiate between Bigoh and omega notation with example	10M
Q.2(A)	Show the result of running Merge sorting technique on the sequence 38,27,43,3,9,82,10	10M
	OR	
Q.2(B)	Explain the greedy technique for solving the Job Sequencing problem.	10M
Q.3(A)	Explain the Travelling sales man problem.	10M
	OR	
Q.3(B)	Draw an Optimal Binary Search Tree for n=4 identifiers (a1,a2,a3,a4) = (do,if, read, while) P(1:4)=(3,3,1,1) and Q(0:4)=(2,3,1,1,1)	10M
Q.4(A)	Give the solution to the 8-queens problem using backtracking method with algorithm.	10M
	OR	
Q.4(B)	Explain the Graph – coloring problem. And draw the state space tree for m= 3colors n=4 vertices graph. Discuss the time and space complexity.	10M
Q.5(A)	i. Explain the basic concepts of P, NP, NP-Complete and NP-Hard. ii. Discuss in detail on Clique Decision problem	10M
	OR	
Q.5(B)	i. Explain a NP-Hard code generation problem. ii. State and explain CooK's theorem	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 –December 2019

(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)	Compare waterfall model and incremental process model with neat diagrams.	10M
	OR	
Q.1(B)	Describe principles and human factors of Agile process.	10M
Q.2(A)	Distinguish between Data modeling (ERD) and Flow-Oriented modeling (DFD).	10M
	OR	
Q.2(B)	With a neat diagram, explain structured view design and architectural mapping using data & flow.	10M
Q.3(A)	Explain in detail the issues and steps of Interface design.	10M
	OR	
Q.3(B)	Discuss the advantages and disadvantages of Architectural patterns.	10M
Q.4(A)	With an example, Illustrate the purpose of stress testing and performance testing in software development.	10M
	OR	
Q.4(B)	Explain the importance of boundary value analysis in Black-Box testing.	10M
Q.5(A)	Differentiate process and project metrics.	10M
	OR	
Q.5(B)	How do you identify risks for an entire software project? Explain with an example.	10M

*** END***

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

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

MCA(2Y) I Year I Semester (R16) Supplementary End Semester Examinations –December 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 double entry system of accounting. Discuss the objectives and importance of accounting. 10M

OR

Q.1(B) (i) What are the golden rules of debit and credit? 5M
(ii) Discuss the uses of accounting. 5M

Q.2(A) What are the accounting concepts? Explain any five in detail. 10M

OR

Q.2(B) The following balances are obtained from the books of XYZ Ltd., for the year ending 31st March, 2018. 10M

Particulars	Dr. Rs.	Cr. Rs.
Purchases and Sales	4,50,000	9,63,000
Returns	30,000	15,000
Debtors and Creditors	6,00,000	3,66,000
Drawings and Capital	72,000	3,18,000
Interest received		12,000
Salaries	90,000	
Wages	60,000	
Rent	66,000	
Printing and stationery	24,000	
Insurance	36,000	
Opening stock	1,50,000	
Office expenses	36,000	
Furniture	60,000	
Total	**16,74,000**	**16,74,000**

Adjustment: a) Closing Stock Rs.4,00,000
You are required to prepare Trading, Profit & Loss A/c and a Balance Sheet.

Q.3(A) Distinguish between straight line method and written down value method. 10M

OR

Q.3(B) The following is the record of receipts of certain materials during February, 2019: 10M

February 1 Received 400 units @ Rs. 10 per unit
February 4 Received 300 units @ Rs. 11 per unit
February 16 Received 200 units @ Rs. 12 per unit
February 25 Received 400 units @ Rs. 13 per unit

During February 2019, the following issues of materials are made

February 10 Issued 200 units
February 15 Issued 100 units
February 17 Issued 200 units
February 20 Issued 200 units
February 26 Issued 100 units
February 28 Issued 200 units

Show how these transactions will appear in the Stores Ledger under LIFO Method and state the amount of inventory of February 28, 2019.

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

OR

Q.4(B) What is funds flow statement? Explain the steps in the preparation of funds flow statement. 10M

Q.5(A) What are the profitability ratios? Explain their significance. 10M

OR

Q.5(B) From the following Balance Sheet calculate: 10M

(a) Current Ratio.
(b) Quick Ratio.
(c) Super quick ratio
(d) Working capital ratio.

Liabilities	Rs.	Assets	Rs.
Equity share capital	1,00,000	Cash in hand	2,000
6% preference share capital	1,00.000	Cash at Bank	10,000
7% Debentures	40,000	Bills receivable	30,000
8% Public debt	20,000	Investments	20,000
Bank over draft	40,000	Sundry debtors	70,000
Sundry Creditors	60,000	Closing stock	40,000
Outstanding expenses	7,000	Plant and Machinery	1,00,000
Proposed dividend	10,000	Furniture	30,000
Reserves	1,50,000	Land and Buildings	2,20,000
Provision for taxation	20,000	Goodwill	35,000
Profit & loss account	20,000	Preliminary expenses	10,000
	5,67,000		**5,67,000**

*** END***