MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE
(UGC-AUTONOMOUS)
MCA(2Y) I Year I Semester (R16) Supplementary End Semester Examinations – June 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)	i) Explain basic modes in Python.	4M
	ii) What is multiple assignment statement? Explain various multiple assignment statements.	1M+5M

OR

Q.1(B)	i) Explain the usage of break, continue and pass statements in control statements.	6M
	ii) Explain the functions with variable length arguments.	4M

Q.2(A)	i) What is function overloading? Write a simple python program to implement function overloading.	1M+4M
	ii) What is abstract data type? Explain with example.	1M+4M

OR

Q.2(B)	i) What is data structure? Write classification of data structures.	1M+3M
	ii) What is function template? Explain suitable python code to implement Python code.	1M+5M

Q.3(A)	i) Write a python program to find the sum of two matrices.	5M
	ii) What is regular expression? Explain with example.	1M+4M

OR

Q.3(B)	i) Describe different expression notations.	3M
	ii) What are primitive operations of stack? Write algorithm and program to implement the operations.	1M+6M

Q.4(A)	i) What is ADT of queue? Explain all operations in ADT of queue	1M+4M
	ii) What is circular list? Explain it.	1M+4M

OR

Q.4(B)	What is doubly linked list? Explain insertion and deletion operations in doubly linked list.	2M+8M

Q.5(A)	i) What is tree traversal? Explain different tree traversals.	1M+3M
	ii) Write algorithm and python code to create binary search tree.	3M+3M

OR

Q.5(B)	i) What is searching? Explain different kinds of searching techniques.	1M+3M
	ii) What is sorting? Write python code to implement merge sort.	1M+5M

*** END***

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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)   With a neat diagram, explain the functionality of layers, protocols and interfaces.   10M

OR

Q.1(B)   Explain the following   10M
     i.   SMTP
     ii.   FTP
     iii.   SSH

Q.2(A)   Write short notes on the following   10M
     i.   Crossbar Switching
     ii. Space Division Switching
     iii. Time Division Switching

OR

Q.2(B)   What is the significance of data link layer? Explain the design issues of data link layer.   10M

Q.3(A)   i. What is pure ALOHA and slotted ALOHA? Mention the advantages of slotted ALOHA.   10M
     ii. Explain about Manchester encoding.

OR

Q.3(B)   i. How the Virtual LANs work.   10M
     ii. What are the techniques for channelization?

Q.4(A)   i. Explain the working of domain name system.   10M
     ii. What is multimedia? Explain in detail about voice over IP?

OR

Q.4(B)   Write short notes on the following   10M
     i.   DNS
     ii.   WWW
     iii.   FTP

Q.5(A)   Explain Unicast and Multicast routing with an example.   10M

OR

Q.5(B)   What are the differences between message confidentiality and message integrity?   10M
Can you have confidentiality without integrity? Can you have integrity without
confidentiality? Justify your answer

*** END***

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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)   Describe Software Engineering. Write about generic process models.   10M

OR

Q.1(B)   Explain the mechanism of Agile programming and Extreme process.   10M

Q.2(A)   Write about flow oriented modeling and object oriented modeling.   10M

OR

Q.2(B)   What is the software design quality? Explain the attributes, models and design issues   10M
of quality.

Q.3(A)   Write about golden rules.   10M

OR

Q.3(B)   With an example, define the various steps for interface design.   10M

Q.4(A)   Explain the process of conditional statements and looping statements testing.   10M

OR

Q.4(B)   Write about whitebox testing and blackbox testing.   10M

Q.5(A)   In detail explain the process of risk management.   10M

OR

Q.5(B)   Write short notes on metrics and Software re-engineering.   10M

*** END***

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MCA (2Y) I Year I Semester (R16) Supplementary End Semester Examinations – June 2018
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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. Briefly explain the time complexity, space complexity estimation.	5M
	ii. Write recursive function to find nth Fibonacci number.	5M
	OR	
Q.1(B)	i. Discuss about the review of elementary data structure.	5M
	ii. Explain Heap sort with the example.	5M
Q.2(A)	What is minimum spanning tree? How to find minimum spanning tree for an undirected graph explain with example?	10M
	OR	
Q.2(B)	Explain divide – and – conquer method with merge sort algorithm. Give an example.	10M
Q.3(A)	Discuss in detail about the biconnected components of a graph.	10M
	OR	
Q.3(B)	How is dynamic programming applied to solve the travelling salesperson problem? Explain in detail with an example.	10M
Q.4(A)	Explain the algorithm for finding all m-colorings of a graph.	10M
	OR	
Q.4(B)	Write a complete branch-and-bound algorithm for the job sequencing with deadlines problem. Use the fixed tuple sizeformulation.	10M
Q.5(A)	i. Differentiate between NP-Complete and NP-hard problems.	6M
	ii. What is Cook's theorem? How it is applied to solve NP Hard problems?	4M
	OR	
Q.5(B)	Explain the NP-hard code generation problem with an example.	10M

*** END***

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MCA (2Y) I Year I Semester (R16) Supplementary End Semester Examinations – June 2018
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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) What is double entry system of accounting? Explain the objectives and uses of double   10M
entry system of accounting.

OR

Q.1(B) Write short notes on: 10M
   i)   Book-keeping versus Accounting
   ii) Classification of Accounts

Q.2(A) Discuss the various types of subsidiary books in brief.   10M

OR

Q.2(B) For the following transactions, you are required to pass necessary journal entries, post   10M

them into appropriate ledgers and also prepare trial balance.

Jan 1. Commenced business with a capital of Rs. 10000

 ,,   2. Bought Furniture for cash Rs. 3000

 ,,   6. Goods sold to D on credit Rs. 1500

 ,,   19. Cash deposited into bank Rs. 500

 ,,   20. Received interest Rs. 500

 ,,   30. Paid rent Rs. 500

 ,,   30. Paid salary to P Rs.1000

Q.3(A) Define goodwill. Describe the various methods of goodwill valuation.   10M

OR

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

Q.4(A) What is funds flow statement? Describe the steps in the preparation of funds flow statement. **10M**

<div align="center">OR</div>

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

Liabilities	2005	2006	Assets	2005	2006
Share Capital	1,00,000	1,00,000	Goodwill	12,000	12,000
General Reserve		18,000	Buildings	40,000	36,000
	14,000				
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) Discuss the various types of financial ratios with their significance. **10M**

<div align="center">OR</div>

Q.5(B) From the following Trading and Profit & Loss A/C of Rim Zim Limited for the year **10M** ended 31st March 2012. Calculate i. Gross Profit Ratio ii. Net Profit Ratio, iii. Operating Ratio, iv. Operating Profit Ratio

Particulars	Rs.	Particulars	Rs.
To Opening Stock	5,00,000	By Sales	20,00,000
To Purchases	11,00,000	By Closing Stock	6,00,000
To Wages	3,00,000		
To Factory Overheads	2,00,000		
To Gross Profit	5,00,000		
	26,00,000		26,00,000
To Administration Expenses	75,000	By Gross Profit	5,00,000
To Selling & Distribution Exp.	50,000		
To Interest on Debenture	20,000		
To Depreciation	60,000		
To Loss on Sale of Motor Car	5,000		
To Net Profit	3,20,000		
	5,30,000		5,30,000

<div align="center">*** END***</div>

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

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MCA (2Y) I Year I Semester (R16) Supplementary End Semester Examinations – Dec 2017

(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 in detail about the Information systems impact on business firms.	10M
	OR	
Q.1(B)	How information system helps to achieve competitive advantage?	10M
Q.2(A)	What are centralised and de-centralised Information systems? Explain in detail.	10M
	OR	
Q.2(B)	How databases improve business performance and decision making by Managing data Resources.	10M
Q.3(A)	Compare and contrast the differences between Structured development method and prototype method.	10M
	OR	
Q.3(B)	What are the Pitfalls in MIS development? Explain with suitable examples.	10M
Q.4(A)	Explain briefly how computer based information systems can enhance marketing function in an organization.	10M
	OR	
Q.4(B)	List out the technologies and tools for protecting information resources.	10M
Q.5(A)	What are software metrics? Why and how software metrics are used?	10M
	OR	
Q.5(B)	Discuss the social challenges of Information technology.	10M

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