MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

MCA(2Yrs) I Year II Semester (R18) Supplementary End Semester Examinations –December 2019

(Regulations: R18)

DATA WAREHOUSING AND DATA MINING

Time: 3Hrs   Max Marks: 60

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 Data Mining? Explain What Kinds of Patterns can be Mined?   12M

OR

Q.1(B)   What is Data Pre-processing? Explain in detail about Data Transformation and Data   12M
Discretization

Q.2(A)   What is Data Warehouse? Explain in detail about implementation of Data Warehouse   12M

OR

Q.2(B)   Using Apriori algorithm find all frequent item sets in the database D with   12M
Min support -2

T_id	Items
1	1,3,4
2	2,3,5
3	1,2,3,5
4	2,5

Q.3(A)   Explain the following   12M
   i.   Bayesian Classification
   ii.   Rule Based Classification

OR

Q.3(B)   Describe the various techniques for improving Classifier Accuracy.   12M

Q.4(A)   What is Clustering? Explain the different types of Clustering methods.   12M

OR

Q.4(B)   Explain K Means algorithm with an example   12M

Q.5(A)   Explain the following   12M
   i.   Text mining
   ii.   Spatial data mining
   iii.   Web usage mining

OR

Q.5(B)   What are the salient features of Time Series data mining? Explain.   12M

*** END***

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DATA STRUCTURES & ALGORITHMS

Time: 3Hrs   Max Marks: 60

> 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 the algorithm for the deletion and reverse operations on doubly linked list.   12M

OR

Q.1(B) Explain how stack is used to convert the following infix expression in to postfix form   12M
A+B*C+(D*E+F)*G

Q.2(A) Write the algorithm for insertion sort and merge sort with examples and discuss their   12M
complexities

OR

Q.2(B) Construct max heap for the following: 12M
140, 80 , 30 , 20 ,10 ,40 ,30 ,60 ,100 ,70 ,160 ,50 , 130, 110, 120 and discuss the Time
complexity

Q.3(A) i) Write an ADT to construct an Binary Tree   12M
ii)Suppose the following sequences list nodes of a binary tree T in preorder and inorder ,
respectively :
Preorder : A, B, D, C, E, G, F, H, J
Inorder : D, B, A, E, G, C, H, F, J
Draw the diagram of the tree.

OR

Q.3(B) i)Write ADT representation of AVL Tree   12M
ii)Give a precise expression for the minimum number of nodes in an AVL tree of height h
and what is the minimum number of nodes in an AVL tree of height 15?

Q.4(A) Write down the prim's algorithm and find the minimum spanning tree for the following   12M
graph
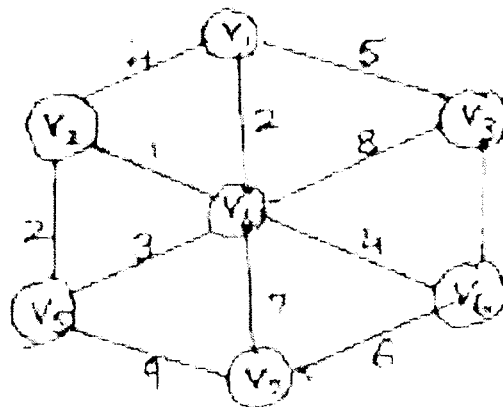
OR

Q.4(B) i) Write a routine to implement Kruskal's algorithm   12M
ii) Discuss in detail about bi connectivity

Q.5(A) Explain Travelling sales person problem LCBB procedure with the following instance and 12M
draw the portion of the state space tree and find an optimal tour.

$$
\begin{array}{ccccc}
\infty & 20 & 30 & 10 & 11 \\
15 & \infty & 16 & 4 & 2 \\
3 & 5 & \infty & 2 & 4 \\
19 & 6 & 18 & \infty & 3 \\
16 & 4 & 7 & 16 & \infty \\
\end{array}
$$

OR

Q.5(B) Solve the following instance of 0/1 Knapsack problem using Dynamic programming n = 3; 12M
(W1, W2, W3) = (3, 5, 7); (P1, P2, P3) = (3, 7, 12); M = 4.

*** END***

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CLOUD COMPUTING

Time: 3Hrs   Max Marks: 60

> 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 layered Service Oriented Architecture.	6+6
	Elaborate the VM Primitive operations.	M
	OR	
Q.1(B)	What is Single-System image? Discuss about architecture of sever cluster.	6+6
	Elaborate on the data center virtualization.	M
Q.2(A)	Discuss about the deciding on Cloud Migration.	4+8
	Explain the seven-step model of Migration into the cloud.	M
	OP	
Q.2(B)	Explain the evolution of SaaS.	6+6
	Discuss about the following integration platforms	M
	1. Jitterbit 2. Boomi	
Q.3(A)	Explain the migration techniques in detail.	8+4
	Elaborate the provisioning to meet SLA commitments.	M
	OR	
Q.3(B)	Discuss the life cycle of VM provisioning.	6+6
	Explain the design of Resource Via Web Service (RVWS).	M
Q.4(A)	Discuss about three important performance related issues that arise while adopting HPC in the cloud.	12M
	OR	
Q.4(B)	Elaborate the life cycle of SLA.	6+6
	Explain different types of SLA.	M
Q.5(A)	Discuss the following common change management models	6+6
	i) Lewin's change management model	M
	ii) Deming Cycle	
	OR	
Q.5(B)	Elaborate the classical producer consumer relationship in the design, implementation and production of service.	6+6
	Write shorts note jurisdictional issues raised by virtualization and data location.	M

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MOBILE APPLICATION DEVELOPMENT USING ANDROID

Time: 3Hrs   Max Marks: 60

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 Android and Give the History of Android.	6M
	ii. List out different Android versions.	6M
	OR	
Q.1(B)	i. What are the features of Android?	4M
	ii. Explain the anatomy of an Android Project.	8M
Q.2(A)	i. List out different types of Adapters and explain.	6M
	ii. Explain about List View.	6M
	OR	
Q.2(B)	i. Explain Options menus with examples.	6M
	ii. What is Alert Dialog? How it works?	6M
Q.3(A)	i. How HTTP connection is to establish using different methods?	6M
	ii. Describe custom broadcasts.	6M
	OR	
Q.3(B)	i. What is URI? How it can be created.	6M
	ii. Explain AsyncTask with its basic methods.	6M
Q.4(A)	i. Explain about content providers.	6M
	ii. List out and explain various Android blocks.	6M
	OR	
Q.4(B)	Write in detail about android file system.	12M
Q.5(A)	i. What is an Application Widget?	4M
	ii. What can you say about Android Application Widgets?	8M
	OR	
Q.5(B)	Write short notes on: i. Live Wallpaper.	6M
	ii. Handlers	6M

*** END***

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WEB PROGRAMMING THROUGH PHP

Time: 3Hrs   Max Marks: 60

> 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. What are the different types of lists in HTML	(6+6)
	ii. Discuss the different data types and operators supported in PHP	M
	OR	
Q.1(B)	i. Discuss various types of control statements in PHP	(6+6)
	ii. With suitable example explain numeric and associative array in PHP	M
Q.2(A)	i. Explain the user defined functions in PHP with an example.	(6+6)
	ii. Write a PHP function to find the number is prime or not	M
	OR	
Q.2(B)	i. What is Regular Expression and explain any two PHP's built-in pattern-matching functions	(6+6)
		M
	ii. Explain any three string functions.	
Q.3(A)	i. Explain the Object Oriented concepts in PHP.	12M
	ii. How to Create a class in PHP? Explain with example	
	OR	
Q.3(B)	i. What's the difference between "errors" and "exceptions". Explain with example	(6+6)
	ii. Explain Multiple Exceptions in php with example	M
Q.4(A)	Explain the architecture of Web databases with neat diagram	12M
	OR	
Q.4(B)	i. What is the difference between Primary key and Foreign Key?	(6+6)
	ii. What is a join? Explain its types.	M
Q.5(A)	i. What is a PHP form? Explain with an example	(6+6)
	ii. Explain with an example how to Open and Close a Connection to MySQL in PHP	M
	OR	
Q.5(B)	i. What is a PHP Session	(6+6)
	ii. Explain with example how to Start and Destroy a PHP Session	M

*** END***

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CRYPTOGRAPHY AND NETWORK SECURITY

Time: 3Hrs   Max Marks: 60

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 any two Substitution Technique and list their merits and demerits.	12M
	OR	
Q.1(B)	Draw the general structure of DES and explain the encryption and decryption process.	12M
Q.2(A)	Write short notes on (i) Fermat and Eluer's Theorem (ii) Chinese Remainder Theorem	12M
	OR	
Q.2(B)	Perform encryption and decryption using RSA algorithm with p=3, q=11, e=7 and N=5.	12M
Q.3(A)	Explain in detail about Message Authentication Requirements.	12M
	OR	
Q.3(B)	Discuss Secure Hash Algorithm with neat diagram.	12M
Q.4(A)	Discuss Diffie-Hellman Key Exchange Protocol with suitable example.	12M
	OR	
Q.4(B)	What is PGP? Examine how authentication and confidentiality is maintained in PGP.	12M
Q.5(A)	Draw neat diagram of IP Security Scenario and Explain in detail.	12M
	OR	
Q.5(B)	Explain Secure Electronic Transaction with neat diagram.	12M

*** END***