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Question Paper Code: 18MCAP111

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

MCA II Year II Semester (R18) Regular End Semester Examinations – November 2020

(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) Briefly explain the data mining functionalities. (06) 12M
Explain the various methods of data transformation. (06)
OR
- Q.1(B) Describe the major issues in data mining. (06) 12M
Demonstrate the classification of data mining systems. (06)
-
- Q.2(A) Define data warehouse and explain the three-tier architecture of data warehouse. 12M
OR
- Q.2(B) What is multidimensional data model? Explain the following schemas for multi-dimensional databases-Stars, Snowflakes, and Fact Constellations. 12M
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- Q.3(A) Explain the following terms: 12M
i) Fuzzy sets ii) Rough Set Approach iii) Genetic Algorithm (4+4+4)
OR
- Q.3(B) Explain the classification by Decision Tree Induction. 12M
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- Q.4(A) Explain the hierarchical clustering method in detail. 12M
OR
- Q.4(B) Explain the working of DBSCAN. 12M
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- Q.5(A) Explain the regression and trend analysis in Time-Series data. 12M
OR
- Q.5(B) Explain how mining in spatial data is performed? 12M

***** END*****

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DATA STRUCTURES AND 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) i) Differentiate Big oh and omega notation with example 6M
ii) Explain an algorithm to implement insertion and deletion on a singly linked list. 6M

OR

- Q.1(B) i) List and explain the applications of queues. 6M
ii) Write the procedure to convert an infix expression into postfix form. Convert the following infix expression into post fix by using the above procedure. $x + y * z + (p * q + r) * s..$ 6M

- Q.2(A) Show how Quick Sort sorts the following sequences of keys: 1, 1, 1, 1, 1, 1, 1 and 5, 5, 8, 3, 4, 3, 2 12M

OR

- Q.2(B) Consider the array of ten elements 310, 285, 179, 652, 351, 423, 861, 254, 450, 520. Sort the given array of elements using Merge Sort. 12M

- Q.3(A) Explain the properties of Binary search tree? Construct Binary search tree for the following elements: 47, 12, 75, 88, 90, 73, 57, 1, 85, 50, 62 12M

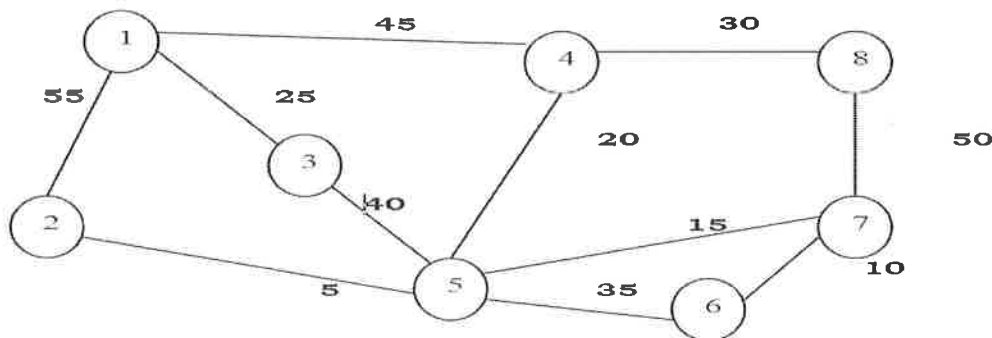
OR

- Q.3(B) Explain about Inorder, Preorder and Postorder traversals? Perform Inorder, Preorder and postorder for the binary tree. 12M

- Q.4(A) Discuss the various Single source shortest path problems with an example. 12M

OR

- Q.4(B) Show the step by step procedure of deriving the minimum cost spanning tree using prim's and kruskal's algorithm on the below graph. 12M



- Q.5(A) Solve the following 0/1 Knapsack problem using dynamic programming $m=6, n=3, (w_1, w_2, w_3)=(2,3,3), (p_1, p_2, p_3)=(1,2,4).$ 12M

OR

- Q.5(B) Define backtracking. List and explain its applications. 12M

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Question Paper Code: 18MCAP113

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MCA II Year II Semester (R18) Regular End Semester Examinations – November 2020

(Regulations: R18)

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) What is cloud computing? Discuss deployment models of cloud computing. (06) 12M
Explain different types of computing paradigm (06)

OR

Q.1(B) i. Define virtualization. Explain virtualization modes in detail. (6M) 12M
ii. List Relative Merits of Virtualization at Various Levels. (6M)

Q.2(A) i. Draw neat diagram of mash-up integration service platform. Discuss in detail. (6M) 12M
ii. Explain Cloud-Enabling Technologies in Hardware, Software, and Networking in tabular format.(6M)

OR

Q.2(B) What are the advantages of “Software as a Service” (SaaS)? Explain with an example 12M

Q.3(A) i. What is live migration? Explain all stages of live migration (6M) 12M
ii. Explain the properties of Service Oriented Architecture. (6M)

OR

Q.3(B) i. Explain Layered architectural development of the cloud platform for IaaS, PaaS, and SaaS applications over the Internet.(6M) 12M
ii. Explain the design objectives for cloud computing. (6M)

Q.4(A) i. Explain the concept of S3 provided by Amazon Web Services.(6M) 12M
ii. What are different types of Service Level Agreement (SLA)? Explain.(6M)

OR

Q.4(B) How Emerging Economies and Different Industries are Getting Benefit From Cloud Computing? 12M

Q.5(A) What are your security measures for protecting your data centers and other facilities using Cloud Computing? 12M

OR

Q.5(B) What are the various Legal Challenges in Cloud Computing? Explain. 12M

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MCA II Year II Semester (R18) Regular End Semester Examinations – November 2020

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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) Explain Android stack with a diagram. 12M

OR

Q.1(B) Create a user interface for getting personal information for email registration using XML. 12M

Q.2(A) Explain various menus in Android. 12M

OR

Q.2(B) Create an android application to show student marks by providing exam number, assume your own data. 12M

Q.3(A) i. What is meant by services in android? Draw the diagram for the services life cycle. 4M
 ii. Develop an android application to demonstrate the working methodology of android services. 8M

OR

Q.3(B) i. What is meant by threading in android? 2M
 ii. Explain how threading plays an important role in android application. 10M

Q.4(A) Explain in detail about Android file system in your own words. 12M

OR

Q.4(B) Develop an Android application to store contact details in SQLite. 12M

Q.5(A) Discuss in detail the various application widgets in Android. 12M

OR

Q.5(B) i. Discuss briefly on Sensor Manager Class, Sensor Class. 6M
 ii. Explain Sensor Event Listener Interface in android. 6M

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Hall Ticket No:

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Question Paper Code: 18MCAP408

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

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MCA II Year II Semester (R18) Regular End Semester Examinations – November 2020

(Regulations: R18)

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) Explain in detail about security attack and security services. 12M

OR

Q.1(B) Illustrate the process of Encryption using DES algorithm. 12M

Q.2(A) Describe Chinese Remainder Theorem with an example. 12M

OR

Q.2(B) Perform the RSA algorithm on the given data and explain how encryption and decryption are performed on the message: $p=17, q=31; e=7; M=2$. 12M

Q.3(A) Explain Secure Hash Algorithm in detail 12M

OR

Q.3(B) Discuss about message digest and message authentication codes 12M

Q.4(A) Illustrate the process behind the Diffie - Hellman Key Exchange. 12M

OR

Q.4(B) What is PGP? How authentication and confidentiality is maintained in PGP 12M

Q.5(A) Explain about IP security architecture with a neat diagram 12M

OR

Q.5(B) How can you say that intrusion detection is the backbone of information system? Justify along with its categories 12M

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