

**MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE**

(UGC-AUTONOMOUS)

**MCA II Year I Semester (R18) Supplementary End Semester Examinations - October 2021**

(Regulations: R18)

**OBJECT ORIENTED PROGRAMMING**

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) Implement the method overriding using abstract class. 12M

**Description:**

Classes- Animal, Cat, Elephant, Here Animal is abstract class.

Members of Animal: name, type, color and show ().

Cat and Elephant are subclasses of Animal.

Override show() in each subclass.

**OR**

Q.1(B) i. Define a String and String Buffer? How to create Strings and String Buffer classes? 6M

ii. Write a Java program that checks whether a given string is palindrome or not. 6M

Q.2(A) What is an exception? Mention its types. Discuss in detail with example 12M

**OR**

Q.2(B) Explain inheritance basics by giving details of member access, super class and subclass relationship 12M

Q.3(A) What is synchronization? What are different ways of synchronizing threads? Give example for each. 12M

**OR**

Q.3(B) i. Explain the Thread Life cycle. 6M

ii. Discuss briefly about Serialization of objects with an example 6M

Q.4(A) i. What is meant by Collection Classes? Explain in detail. 6M

ii. Write short notes on networking classes with an example. 6M

**OR**

Q.4(B) Explain the following:

i. Hash Map 4M

ii. Hash Table 4M

iii. Hash Set 4M

Q.5(A) Write short notes on i. Event Sources 6M

ii. Event Listener Interfaces 6M

**OR**

Q.5(B) Write short notes on:

i. JLabel, JTextField 6M

ii. JScrollPane, JButton 6M

**\*\*\* END\*\*\***

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**FULL STACK WEB DEVELOPMENT**

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) Define Agile. Discuss the software development using Agile methodology with a neat diagram. 12M

**OR**

Q.1(B) i) How the User can get a good Experience on a website while working? Give the rules 6M  
ii) Discuss the concept of product design 6M

Q.2(A) i) Define selectors in CSS. Explain different types of CSS selectors with example 6M  
ii) Design a website form for a student registration in HTML using Shadows and Box Model in CSS 6M

**OR**

Q.2(B) Elaborate the HTML elements and the attributes with examples. 12M

Q.3(A) i) Explain try, catch, throw in javascript with example 6M  
ii) What is a function in java script? Create a java script program to print the Fibonacci series using function in java script. 6M

**OR**

Q.3(B) i) Write a javascript program to display the elements stored in an array in the form of a list 6M  
ii) What is meant by Document Object Model? Discuss DOM objects in detail. 6M

Q.4(A) What is meant by Joins? Mention the types of joins in SQL with example. 12M

**OR**

Q.4(B) i. Explain in detail the storage methodology of unstructured in NoSQL database. 6M  
ii. Mention some differences between RDBMS and NoSQL databases 6M

Q.5(A) List and explain the various Node JS authentication methods. 12M

**OR**

Q.5(B) Explain Session Based Authentication in Node JS detail. 12M

**\*\*\* END\*\*\***

Hall Ticket No:

Question Paper Code: 18MCAP109

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**INTRODUCTION TO MACHINE LEARNING**

**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) Discuss the perspectives and issues in machine learning. 6M  
ii) Illustrate the Bayesian belief Networks. 6M

**OR**

- Q.1(B) Explain the Maximum likelihood hypotheses for predicting probabilities. 12M

- Q.2(A) i) Illustrate the Appropriate Problems for Decision Tree Learning. 6M  
ii) Explain the problems faced in Decision Tree Learning. 6M

**OR**

- Q.2(B) Demonstrate multiple linear regressions with the help of example. 12M

- Q.3(A) i) Discuss the Bayesian Belief Network. 6M  
ii) Explain the Conditional independence Markov random fields. 6M

**OR**

- Q.3(B) Compare and contrast the Markov models and Hidden Markov models. 12M

- Q.4(A) i) Discuss the real-world examples of hierarchical clustering. 6M  
ii) State and explain the impact of Density based Clustering with real time scenario. 6M

**OR**

- Q.4(B) i) Discuss the various categorization of clustering techniques. 6M  
ii) Explain about k –Medoid algorithm. 6M

- Q.5(A) List and explain the appropriate problems in Multilayer perceptron. 12M

**OR**

- Q.5(B) i) Explain the Remarks on Back Propagation algorithm. 6M  
ii) Differences between Machine learning and Deep Learning. 6M

**\*\*\* END\*\*\***

Hall Ticket No: 

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Question Paper Code: 18MCAP110

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**COMPUTER NETWORKS**

**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 topology? Discuss different types of topologies. 12M

**OR**

Q.1(B) i. Discuss performance criteria of Networks. 6M

ii. State the different Network Models available in detail. 6M

Q.2(A) What is Cyclic Redundancy Check? Given a remainder 111, data unit 10110011 and divisor 1001. Is there any error in the data unit? Justify your answer. 12M

**OR**

Q.2(B) i. Discuss the different kind of networking devices. 6M

ii. What is sliding window protocol? Discuss one of the protocols. 6M

Q.3(A) What is routing? Discuss the Distance Vector Routing with an example. 12M

**OR**

Q.3(B) i. Discuss the header format of IPv4 datagram. 6M

ii. Define switching. Discuss datagram networks in detail. 6M

Q.4(A) Explain the TCP connection management phases with suitable timeline diagram. 12M

**OR**

Q.4(B) i. Discuss the UDP protocol in detail. 6M

ii. Explain the SMTP in detail. 6M

Q.5(A) Explain Symmetric and Asymmetric key cryptography in detail. 12M

**OR**

Q.5(B) Demonstrate the RSA algorithm with suitable example. 12M

**\*\*\* END\*\*\***

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**INTRODUCTION TO DESIGN THINKING**

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) How do you evaluate the utility of design thinking? Explain. 12M
- OR**
- Q.1(B) Explain about the innovations and creativity in design thinking. 12M
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- Q.2(A) What are the steps in empathy process? Explain. 12M
- OR**
- Q.2(B) Analyze the components of empathy and list its applications in your life. 12M
- 
- Q.3(A) Explain the 4-C model of creativity with suitable examples. 12M
- OR**
- Q.3(B) What is mind mapping? Mind map your experience of difficulties in palle velugu bus travelling. 12M
- 
- Q.4(A) Describe the steps involved in market testing. 12M
- OR**
- Q.4(B) How does idea clustering, selection and grouping helps in developing a prototype? 12M
- 
- Q.5(A) Narrate any business model presentation of your choice. 12M
- OR**
- Q.5(B) Victor is the head of a division in a state agency. He has been in his management position for 15 years and has worked his way up to his current position. Throughout his career, he has seen many people leave and join the department. He has stayed because he enjoys public service and working with familiar faces in the agency. He also knows that he brings his many years of experiences in a public agency to the table when solving problems. His personality fits the working environment of a state agency; he likes working with the familiarity of rules and procedures.
- Victor is proud of his service, but he is really looking forward to his retirement, which, for him, is not coming soon enough. Within the last few years, lots of changes have occurred on a department level that is also changing much of the familiar procedures, rules, and norms that Victor has been accustomed to during his 25 years in the department. Some of these changes include hiring younger staff, reorganization of job responsibilities, performance plans to increase staff competencies and skills in new areas, and recent layoffs to help balance the budget.
- As part of his attempt to make his mark on the division, and to bring in past experiences that he thinks can be of value, Victor proposed numerous ideas for the division at a staff meeting. His staff—which, in recent years, has become increasingly more diverse in demographics and cultural backgrounds—suggests improvements and

changes to his ideas. They are not so sure that his changes are the most appropriate given the overall strategic directions of the department. Furthermore, they are not sure how they can implement strategies when the ideas call for outdated resources and technology. Some of the younger staff members are more vocal and mention recent trends and practices in strategic thinking that could be more beneficial to accomplishing the division goals.

Victor views these suggestions as attacks directed at him and as resistance on the part of the staff. He feels like every time he makes a suggestion, he is thrown a curveball from one of the younger staff members. Why is this happening to him now? He knows he has to manage this. He cannot let this type of dynamic go on for an additional five years—or could he?

1. Where does Victor's motivation to lead come from?
2. How would you describe Victor's self-concept and the influence of it on his leadership?

**\*\*\* END\*\*\***