

Hall Ticket No:

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Question Paper Code: 18MCAP107

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

MCA II Year I Semester (R18) Regular & Supplementary End Semester Examinations -Mar' 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) i. Define a class in java? With an example program using a class and a method illustrate the concept. 6M
ii. What is constructor? How a constructor can be overloaded? Give example 6M

OR

- Q.1(B) i. Write Short notes on this, static and super keywords with an example 6M
ii. Explain method overloading with suitable program. 6M

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- Q.2(A) Define Abstract Class in Java. Explain the differences between abstract classes and interfaces in java with example 12M

OR

- Q.2(B) Write a java program that handles the Divide by Zero exception and Array Out of Bound exception. Use try-catch to handle them manually. 12M

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- Q.3(A) i. What are the stream classes available in Java? Explain any two with suitable example. 6M
ii. Discuss briefly Runnable interface. 6M

OR

- Q.3(B) i. Write a program to create and read a file using File Write and File Reader class. 6M
ii. Discuss the File Input Stream and File Output Stream classes. 6M

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- Q.4(A) Discuss in brief:
i. String Tokenizer and Hash Set class with an example 6M
ii. TCP/IP Client Sockets 6M

OR

- Q.4(B) i. What are difference between Iterator and List Iterator interface? 6M
ii. Write a program to remove the elements from end and middle of the list. 6M

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- Q.5(A) i. Write briefly about: JList and JTable with example 6M
ii. What is meant by Event Handling? Mention some event handling mechanisms 6M

OR

- Q.5(B) Write short notes on:
i. JLabel, JTextField 6M
ii. JScrollPane, JButton 6M

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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) Explain the design principles that use the concepts of SOLID. 12M
- OR**
- Q.1(B) i) Discuss the elements of visual design 6M
ii) What is User Experience in web design? Explain the significance of User Experience. 6M
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- Q.2(A) i) Explain 2D and 3D transformation in detail with example 6M
ii) Create a Login form using HTML and CSS. When the user moves the mouse over the login button the color of the box and the pointer of the mouse should change. 6M
- OR**
- Q.2(B) i) How borders can be applied in a web page created in HTML using CSS3. 6M
ii) Explain about CSS in detail. Create a CSS file with different properties. 6M
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- Q.3(A) i) Mention any two Java script events with example. 6M
ii) How string operations can be performed using JavaScript? Explain with example 6M
- OR**
- Q.3(B) i) Write a java script program to demonstrate the working of Strings 6M
ii) Illustrate the conditional constructs in javascript with example. 6M
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- Q.4(A) i. Create a database with the following fields for employee salary processing system with the following fields: ENO, ENAME, DATE_OF_BIRTH, DATE_OF_JOIN, DEPARTMENT, SALARY 3M
ii. Insert necessary data using insert query. 2M
iii. Then update the salary of those employees whose DATE_OF_JOIN is < 31-MAR-2020 by 3500. 2M
iv. Delete the data of those employees whose DATE_OF_BIRTH is < 31-MAY-1991. 3M
v. Find out the Sum of salary, Average salary, Minimum salary and Maximum salary of the employees from the employee database. 3M
- OR**
- Q.4(B) Discuss NoSQL in detail and mention the differences between NoSQL databases and Relational Databases 12M
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- Q.5(A) Briefly explain the File system interaction in Node JS. 12M
- OR**
- Q.5(B) Discuss the authentication methods in Node JS elaborately. 12M

***** END*****

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MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

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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 Maximum likelihood and least squared Error hypotheses. 6M
ii) List and explain the real time applications of Machine learning. 6M

OR

- Q.1(B) i) Discuss the Bayes Theorem. 6M
ii) Explain the Bayesian Belief Network. 6M

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- Q.2(A) i) Construct a Decision Tree for the learning concept "Play Tennis". 6M
ii) List and discuss advantages and disadvantages about k-NN. 6M

OR

- Q.2(B) Build a classification model that estimates the probability of admission based on the exam scores using logistic regression. 12M

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- Q.3(A) i) Discuss the Markov conditional independence model for Machine learning.
ii) Give a brief note on Graphical models.

OR

- Q.3(B) Explain the Bayesian Belief Network in Machine Learning. 12M

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- Q.4(A) What is the use of Distance measures in Clustering and write different distance measures used in clustering. 12M

OR

- Q.4(B) i) Discuss about agglomerative hierarchical clustering. 6M
ii) Explain the Partitioned based Clustering. 6M

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- Q.5(A) i) What are the limitations of back propagation algorithm? Discuss. 12M
ii) Illustrate the example of face recognition using ANN.

OR

- Q.5(B) Explain about multilayer perceptron with back propagation with an example. 12M

***** END*****

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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) i. Compare the OSI model and TCP/IP model. 6M
ii. Discuss different types of guided transmission media. 6M
OR
- Q.1(B) Explain the need for Network Protocol Architecture with example. 12M
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- Q.2(A) What is access control? Explain CSMA in detail. 12M
OR
- Q.2(B) Define flow control. Discuss Simple and Wait ARQ in detail. 12M
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- Q.3(A) i. Discuss the header format of IPv4 datagram. 6M
ii. Differentiate between IPv4 and IPv6 packet headers. 6M
OR
- Q.3(B) Define switching. Discuss the types of switching techniques in detail. 12M
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- Q.4(A) i. Define socket. State the role of port number and IP address. 4M
ii. Provide TCP header format and explain each header field in detail. 8M
OR
- Q.4(B) i) Write short notes on SMTP and FTP. 6M
ii) Describe TCP protocol with its header fields in detail. 6M
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- Q.5(A) Explain Substitution and Transposition Cipher functionalities in detail. 12M
OR
- Q.5(B) i. State the different types of attacks. 4M
ii. Demonstrate the DES in detail. 8M

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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) Discuss the origin and principles of design thinking. 12M

OR

Q.1(B) What are the best practices of design thinking? Analyze SWOC. 12M

Q.2(A) Elaborate the steps involved in the process of empathy. 12M

OR

Q.2(B) Assess the tools and roots of empathy. 12M

Q.3(A) What is creativity? How do you enhance the creativity among your friends? 12M

OR

Q.3(B) What are the rules for brain storming? How do you utilize brainstorming technique for policy ideas? 12M

Q.4(A) How do you evaluate ideas? Also state the criteria for idea ranking. 12M

OR

Q.4(B) Discuss in detail about market testing. 12M

Q.5(A) Is design thinking a team sport? If yes, substantiate your answer. 12M

OR

Q.5(B) 12M

CASE STUDY

Actor **Sonu Sood** has been conferred with the prestigious SDG Special Humanitarian Action Award by the **United Nations** Development Program (UNDP), for his philanthropic services during the coronavirus lockdown. Actor **Sonu Sood**, who is often dubbed as the 'messiah of migrants' for his philanthropic work during the coronavirus induced lockdown, has been conferred with the prestigious SDG Special Humanitarian Action Award by the United Nations Development Programme (UNDP). The Dabangg actor has received the award for extending a helping hand and sending lakhs of migrants and stranded students across geographies abroad, back to their homes. Besides that, he has also been providing free education and medical facilities to young children and has been creating free employment opportunities to the needy in the wake of the COVID-19 pandemic.

The Problem: One of the largest exodus (great number of people leaving their existing places) of migrant workers in the history of our country happened.

- a. Why did the people leave their existing places and moved to their natives? (3)
- b. Enumerate the reasons why Hon'ble Sonu Sood took up the "Project Ghar Bhejo." (3)
- c. "Compassionate Empathy of Design Thinking Strategy" has been adopted by Hon'ble Sonu Sood. Justify. (4)

*** END***