MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE
(UGC-AUTONOMOUS)
MCA II Year I Semester (R22) Regular End Semester Examinations, February - 2024
MOBILE APPLICATION 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 A or B only

Q.No	Question	Marks	CO	BL
Q.1(A)	Discuss in detail about different android Flavors with example	12M	1	3
	OR			
Q.1(B)	Explain the Native Layer and Hardware Abstraction Layer (HAL).	12M	1	4
Q.2(A)	List and explain the different types of Menus in Android.	12M	2	3
	OR			
Q.2(B)	Describe the various types of Adapters.	12M	2	2
Q.3(A)	Discuss in detail about Alarms in Android. Explain the usages.	12M	3	4
	OR			
Q.3(B)	Explain the concept of AsyncTask in Android Threading.	12M	3	3
Q.4(A)	Illustrate the structure of content provider with net diagram.	12M	4	3
	OR			
Q.4(B)	Discuss the about SQLlite operations with examples.	12M	4	2
Q.5(A)	How to create app widgets in android application and explain with necessary program.	12M	5	4
	OR			
Q.5(B)	Briefly explain the different types of Sensors with suitable examples.	12M	5	3

*** END***

Question Paper Code: 22MCAP112

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE
(UGC-AUTONOMOUS)
MCA II Year I Semester (R22) Regular End Semester Examinations, February - 2024
FUNDAMENTALS OF DATA SCIENCE

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 A or B only

Q.No	Question	Marks	CO	BL
Q.1(A)	a) Describe life cycle of Data Science with neat diagram	6M	1	2
	b) Explain various Data Types in Data Science and discuss Data collection methods.	6M	1	3
	OR			
Q.1(B)	Describe Exploratory Data Analysis (EDA) and how missing data and outliers are handled in EDA using python libraries	12M	1	4
Q.2(A)	How simple and multiple linear regression model used to predict a continuous target variable.	12M	2	2
	OR			
Q.2(B)	Explain hierarchical clustering algorithm with an example.	12M	2	2
Q.3(A)	How to handle missing data and duplicates in dataset using python libraries.	12M	3	3
	OR			
Q.3(B)	Define dimensionality deduction. Explain principal component analysis with an example.	12M	3	2
Q.4(A)	Explain the Perceptual and cognitive principles of data visualization.	12M	4	2
	OR			
Q.4(B)	How to create geospatial visualization using GeoPandaslibrary discuss with relevant python code.	12M	4	3
Q.5(A)	Describe Natural Language Processing. Explain the its preprocessing steps in details.	12M	5	2
	OR			
Q.5(B)	Explain about AR(p),MA(q) and ARIMA(p,d,q) models with suitable example.	12M	5	3

*** END***

Hall Ticket No: ☐☐☐☐☐☐☐☐☐☐   Question Paper Code: 22MCAP113

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE
(UGC-AUTONOMOUS)
MCA II Year I Semester (R22) Regular End Semester Examinations, February - 2024
JAVA 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 A or B only

Q.No	Question	Marks	CO	BL
Q.1(A)	(i) Explain the Inheritance concepts in Java with suitable Examples.	6M	1	2
	(ii) What is Method Overloading? Explain with an Example.	6M	1	2
	OR			
Q.1(B)	What is the importance of a static keyword and Explain behavior of Static keyword at various variable level, method, block and class level?	12M	1	2
Q.2(A)	Examine the Differences between string and string Buffer classes in java, Explain few methods with suitable examples?	12M	2	3
	OR			
Q.2(B)	Write a Java program to create an interface Flyable with a method called fly_obj (). Create three classes Spacecraft, Airplane, and Helicopter that implement the Flyable interface. Implement the fly_obj() method for each of the three classes.	12M	2	4
Q.3(A)	Illustrate java Built in Exceptions and explain any 5 built in exceptions with suitable examples?	12M	2	2
	OR			
Q.3(B)	Identify various Thread Methods and Explain the importance of join(),resume() in a multiple Thread Environment?	12M	3	3
Q.4(A)	Write a Java program to create an array list, add some colors (strings) and print out the collection.	12M	4	4
	OR			
Q.4(B)	Explain The Character Streams in java and discuss the FileReader class to read the data from "input.txt" from a file directory.	12M	4	2
Q.5(A)	Explain the Delegate Event Model and explain the Event Sources and Listeners.	12M	5	2
	OR			
Q.5(B)	Develop a Frame Layout with the following UI Components JLabel, JButton, JList and explain its methods?	12M	5	3

*** END***

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE
(UGC-AUTONOMOUS)
MCA II Year I Semester (R22) Regular End Semester Examinations, February - 2024
DEEP 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 A or B only

Q.No	Question	Marks	CO	BL
Q.1(A)	Explain the Neural Network layers with Feed Forward Propagation in detail.	12 M	1	2
	OR			
Q.1(B)	Elaborate the Multilayer Perceptron with Back Propagation in Neural Network with example.	12 M	1	3
Q.2(A)	Describe the Restricted Boltzmann Machines with Hopfield network problem.	12M	2	2
	OR			
Q.2(B)	Describe the Application of Deep Learning in detail.	12M	2	2
Q.3(A)	Briefly discuss the Application of CNN.	12M	3	2
	OR			
Q.3(B)	Discuss in detail about Parameter Sharing in CNN.	12M	3	2
Q.4(A)	Explain the Long Short-Term Memory (LSTM) Network in detail.	12M	4	2
	OR			
Q.4(B)	Discuss in detail the Bi-directional RNN.	12M	4	2
Q.5(A)	Explain Deep Belief Network in detail	12M	5	2
	OR			
Q.5(B)	Elaborate in detail the Architecture of AutoEncoder.	12M	5	3

*** END***

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE
(UGC-AUTONOMOUS)

MCA II Year I Semester (R22) Regular End Semester Examinations, February - 2024
SOFTWARE QUALITY ASSURANCE AND TESTING

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 A or B only

Q.No	Question	Marks	CO	BL
Q.1(A)	(i). Differentiate between verification and validation. (ii). What do you understand by software testing? What kind of testing is required during software lifecycle? Illustrate.	4M 8M	1	3
	OR			
Q.1(B)	(i). Explain about the different software quality models. (ii). Explain in detail about View of Quality.	6M 6M	1	4
Q.2(A)	Discuss the advantages and disadvantages of top-down and bottom-up testing	12M	2	2
	OR			
Q.2(B)	Describe in brief notes (i). Hardware Design Verification Tests. (ii). Hardware and Software Compatibility Matrix.	6M 6M	2	2
Q.3(A)	Explain different types of functional testing.	12M	3	2
	OR			
Q.3(B)	Examine the differences between load testing and stress testing?	12M	3	2
Q.4(A)	What do you mean by ISO quality models? Explain SEI –CMM and ISO 9000 certification. Also explain their relevance in detail	12M	4	4
	OR			
Q.4(B)	Examine McCall's quality factors.	12M	4	3
Q.5(A)	(i). What is Software Quality Assurance? What are the activities associated with SQA group? (ii). What are the Defect reduction techniques? Explain Inspection in detail.	6M 6M	5	3
	OR			
Q.5(B)	Explain the purpose of root cause analysis? Does it have a strong impact on your software quality?	12M	5	5

*** END***

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE
(UGC-AUTONOMOUS)
MCA II Year I Semester (R22) Regular End Semester Examinations, February - 2024
REINFORCEMENT 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 A or B only

Q.No	Question	Marks	CO	BL
Q.1(A)	Explain the important objectives of reinforcement learning.	12M	1	4
	OR			
Q.1(B)	Discuss the Markov Reward Process.	12M	1	3
Q.2(A)	Write short notes on following terms. ii) Monte Carlo Prediction. ii) Monte Carlo Control. iii) Monte Carlo Estimation of Action Values	12M	2	2
	OR			
Q.2(B)	List and explain the advantages of using Monte Carlo Policy Gradient methods.	12M	2	4
Q.3(A)	Difference between episode and epoch in Deep Q-Learning	12M	3	3
	OR			
Q.3(B)	i) What do the Alpha and Gamma parameters represent in Q Learning? Explain	6M	3	1
	ii) Explain the Monte-Carlo and Actor-Critic Methods.	6M		4
Q.4(A)	i) What are model-free RL and model-based RL? Explain	6M	4	1
	ii) Explain the Dual Gradient Decent.	6M	4	2
	OR			
Q.4(B)	Describe the advanced Policy Gradients.	12M	4	4
Q.5(A)	List and explain the applications used in MARL Algorithm.	12M	5	4
	OR			
Q.5(B)	Difference between PPO and DDPG	12M	5	3

*** END***

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE
(UGC-AUTONOMOUS)
MCA II Year I Semester (R22) Regular End Semester Examinations, February - 2024
SOFTWARE PROJECT MANAGEMENT

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 A or B only

Q.No	Question	Marks	CO	BL
Q.1(A)	i) What is the need of Software Project Management? ii) Give the steps to identify project scope and objectives.	6M 6M	1	2
	OR			
Q.1(B)	i) Discuss the various types of software projects. ii) Identify how the feasibility of an individual project can be evaluated.	6M 6M	1	3
Q.2(A)	i) What is Risk? Discuss about Risk Management process. ii) Identify the various paradigms, principles to manage the risks in project.	6M 6M	2	3
	OR			
Q.2(B)	Briefly describe the top down and bottom up approach of the estimation in detail.	12M	2	2
Q.3(A)	Identify the various network planning model and make a comparison between them. Explain rules for constructing precedence network with an example	12M	3	3
	OR			
Q.3(B)	Show the steps for identifying the critical path for an example network with neat diagram and tell how the critical activities can be identified.	12M	3	3
Q.4(A)	i) Give the advantages and disadvantages of the EVA approach. ii) Organize the techniques of visualizing progress.	6M 6M	4	2
	OR			
Q.4(B)	Assess the importance of cost monitoring in detail.	12M	4	2
Q.5(A)	i) Discover the objectives of managing people and organizing teams. ii) Compose the 3 basic objectives of organizational behavior proposed by Taylor.	12M	5	3
	OR			
Q.5(B)	i) Describe the various models of Motivation in detail. ii) Classify the different leadership style.	6M 6M	5	2

*** END***

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE
(UGC-AUTONOMOUS)
MCA II Year I Semester (R22) Regular End Semester Examinations, February - 2024
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 A or B only**

Q.No	Question	Marks	CO	BL
Q.1(A)	Describe the SWOC Analysis for Self-Awareness.	12M	1	2
	OR			
Q.1(B)	Explain about the open-mindedness importance in design thinking with examples.	12M	1	2
Q.2(A)	Discuss about the steps involved in empathy process.	12M	2	3
	OR			
Q.2(B)	Classify the various assessment tools used in Design Thinking.	12M	2	2
Q.3(A)	Illustrate the importance of "Yes But" and "Yes And" during the ideation? Do you think will these two additions to statements will have any impact in the discussions?	12M	3	2
	OR			
Q.3(B)	Discuss about the innovation and creativity in design thinking.	12M	3	3
Q.4(A)	List out the steps involved in Market Testing.	12M	4	2
	OR			
Q.4(B)	Explain Prototyping and different types in prototyping. How does idea clustering, selection and grouping help develop a prototype?	12M	4	2
Q.5(A)	Justify the following statement		5	5
	i. Design thinking is a team sport	6M		
	ii. Altruistic approach plays a major role in Design Thinking.	6M		
	OR			
Q.5(B)	When Braun and Oral-B enlisted Colin and Hecht to help a Consultancy come up with an IoT electric toothbrush, the manufacturers initially wanted to develop a sophisticated data-tracking tool that could sense how well users were brushing each and every tooth, tell them about their gum sensitivity, and play music. The designers convinced them to instead think about how additional technology could solve a couple of really big frustrations with the product. "A toothbrush is already loaded with guilt, that you're not doing it properly or enough," Colin says. "The companies weren't thinking about the customers' experience. They were thinking about the toothbrush the same way you would an athletic activity tracker, that it records and processes information." Instead of adding to a user's neurosis about brushing, Colin and Hecht wanted to give them less to worry about. The two features they decided would be most useful were around charging the	12M	5	2

toothbrush and ordering replacement heads. At home, the toothbrush charges on a dock through induction but also comes equipped with a USB hookup for use on the road. The other problem to tackle was ordering replacement heads. You notice that the brush is worn down when you use it, but often forget to order a replacement after you leave the bathroom. To solve that problem, the designers built an app that the toothbrush connects to via Bluetooth. Pressing a button on the brush sends a reminder notification to your phone to buy replacements. "We're curators of technology and looking for what's realistic and what's pleasurable and beneficial to users," Colin says of the philosophy guiding their design decisions.

Question:

1. Explain the design thinking phenomenon involved in this case.

*** END***

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE
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MCA II Year I Semester (R22) Regular End Semester Examinations, February - 2024

MANAGEMENT INFORMATION SYSTEMS

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 A or B only

Q.No	Question	Marks	CO	BL
Q.1(A)	Classify the various contemporary approaches to Information Systems?	12M	1	2
	OR			
Q.1(B)	Explain the information systems for various management groups.	12M	1	2
Q.2(A)	Comment on the problems faced by organizations with traditional file environment.	12M	2	2
	OR			
Q.2(B)	Elucidate the database management approach to data management.	12M	2	3
Q.3(A)	Discuss the prototyping method of systems development	12M	3	2
	OR			
Q.3(B)	Explain the steps involved in developing information systems	12M	3	2
Q.4(A)	Present tools and technologies for safeguarding information systems	12M	4	3
	OR			
Q.4(B)	Information systems are vulnerable. Justify the statement with proper explanation.	12M	4	3
Q.5(A)	Discuss the privacy issues arising out of usage of information systems	12M	5	2
	OR			
Q.5(B)	Explain internet-based security measures available for business organizations.	12M	5	2

*** END***