

Suryadatta Education Foundation's
Suryadatta Institute of Mass Management and Communication (SIMMC)

MCA Department

End -Term Examination- October, 2024

MCA II Year (SEM-III)

Subject: Mobile Application Development

Subject Code: IT 31

Total Marks: 50

Date: 21/10/2024

Time: 10:00 am to 12:30 pm

Note: 1) *All Questions are compulsory.*

2) *Figures to the right indicate full marks.*

Q1. Attempt any four questions:

[4*10=40]

- a) Write an Android application to display an Alert Dialog Box at the click of a button.
- b) What is Intent? Explain types of intent with suitable example.
- c) Demonstrate Array Adapter using list view to display the list of MCA subjects.
- d) What is the Activity life cycle? Explain methods of activity with the program.
- e) Write an android application using SQLite to create an employee (eid, ename, edept, esalary) table and insert a record in the table and display appropriate message on toast to user.
- f) Demonstrate webview to display a webpage in an android application.
- g) Write a short note on JSON parsing with example.

Q 2. Attempt any two short notes:

[2*5=10]

- a) Project structure
- b) Android Architecture
- c) Flutter Architecture
- d) Advantages of React Native
- e) Android Menu

Suryadatta Education Foundation's
Suryadatta Institute of Management and Mass Communication (SIMMC)
MCA Department

End -Term Examination- Oct,2024

MCA-II year (SEM -III)

Subject: DATA WAREHOUSING AND DATA MINING

Subject Code: IT-32

Total Marks: 50

Date:

Time:

Instructions to the candidates:

1) All questions are compulsory. 2) Draw neat labelled diagrams wherever necessary

Q1 (a) Using Bayes a classification to classify the sample data: {6, 43}. As male or female. Training data is given. **5 Marks**

Person	Height	Weight
Male	6.2	82
Male	5.11	65
Male	5.7	58
Male	5.11	55
Female	4.10	42
Female	5.5	50
Female	5.0	43
Female	5.75	50

(b) A consultancy wants to categories MCA students into classes as Excellent, Good, and Average. The data collected from students are their average percentage in MCA- I year and result of the aptitude test conducted by the consultancy. Solve the problem using decision tree Algorithm **5 Marks**

Q2 (a) Apply FP-Growth tree algorithm to construct FP-Tree & find the frequent item sets. Consider following data set with minimum support 30%. **5 Marks**

TID	List of Items
1	Apple, Mango, Cocount, Banana
2	Banana, Berries, Coconut, Mango, Chikoo
3	Berries, Coconut, Dates, Grapes
4	Watermelon, Coconut, Mango
5	Apple, Banana, Chikoo, Dates
6	Apple, Berries
7	Apple, Coconut, Grapes, Banana
8	Mango, Watermelon, Coconut
9	Banana, Mango, Coconut

b) Consider following data set and find the frequent item sets with minimum support count 2 using Apriori Algorithm **5 Marks**

TID	List of Items
T1	Hot Dogs, Buns, Ketchup
T2	Hot Dogs, Buns
T3	Hot Dogs, Coke, Chips
T4	Chips, Coke
T5	Chips, Ketchup
T6	Hot Dogs, Coke, Chips

Q3 (a) Write K-mean clustering algorithm and apply on the following data set to group it into two clusters. $D = (0.5, 0.7, 0.9, 0.6, 0.4, 0.3, 0.10, 0.12, 0.14, 0.16, 0.35, 0.36, 0.11, 0.45, 0.58)$ **5 Marks**

(b) What are agent based and database based approaches in web mining? Explain with example **5 Marks**

Q4 (a) Explain Hierarchical clustering using examples. **5 Marks**

(b) Apply KNN classification algorithm for the given dataset and predict the class for $X (P1 = 3, P2 = 7) (K = 3)$ **5 Marks**

P1	P2	Class
7	7	False
7	4	False
3	4	True
1	4	True

Q2. Attempt any two short notes:

[2*5=10Marks]

- (a) Text-mining
- (b) Data mining architecture
- (c) Explain Agglomerative and divisive clustering mechanism
- (d) Tools used for data warehouse development.

Best of Luck

Suryadatta Education Foundation's
Suryadatta Institute of Management and Mass Communication (SIMMC)
MCA Department

End -Term Examination- Oct,2024

MCA-II year (SEM -III)

**Subject: KNOWLEDGE REPRESENTATION & ARTIFICIAL
INTELLIGENCE: ML, DL**

Subject Code: IT-34

Total Marks: 50

Date:23/10/2024

Time:10 AM-12.30PM

Note: 1) All Questions Are Compulsory

2) Solve Any FOUR questions

Q1 (a)What is knowledge representation? Explain the different techniques of KR. [5]

(b) What is Artificial Intelligence? Discuss Applications of AI. [5]

Q2 (a) Why do we need Artificial Intelligence? [5]

(b) Write a FOL of following statement. [5]

i) Mary loves everyone.

ii) No one talks.

iii) Everyone loves everyone.

iv) Everyone loves everyone except himself.

v) Someone loves everyone.

Q3 (a) Differentiate between supervised and un supervised learning. [5]

(b) Calculate the linear regression coefficient and obtain the lines of regression for the

following data

[5]

X	1	2	3	4	5	6	7
Y	9	8	10	12	11	13	14

find the least square regression line $y = ax + b$,
estimate the value of y when x is 10.

Q4 (a) Explain Convolutional Neural Network (CNN)

[5]

(b) Calculate Accuracy, Precision, recall and F1 score from the following confusion matrix

[5]

TP 1984	FN 447
FP 336	TN 107

True label	Cat	Dog
	TP 1984	FN 447
Dog	FP 336	TN 107
Predicted label		Cat Dog

Q.5) (a) What is deep learning? Explain the importance of deep learning and illuminate the algorithm of ANN.

[5]

(b) Explain Different Types of Machine Learning. Explain Logistic Regression Model in detail.

Q.6) (a) Construct the truth - table for the following.

[5]

i) $(p \wedge q) \wedge (p \vee q)$ ii) $(p \wedge q) \rightarrow p$

(b) Why do we use pooling layers in CNN?

[5]

Q7. Attempt any two short notes:

[2*5=10]

(a) Application of AI

(b) Chat bot

(c) NLP

(d) Training data and Testing data

Suryadatta Education Foundation's

**Suryadatta Institute of Management and Mass Communication (SIMMC)
MCA Department**

End -Term Examination- Oct,2024

MCA-II year (SEM -III)

Subject :Software Testing & Quality Assurance.

Subject Code:IT-33

Total Marks: 50

Date: 24 Oct 2024

Time:10 Am to 12.30 PM

Note:

Q 1 (a) Explain smoke testing & Sanity testing. 5

(b) What are software quality metrics. Explain process quality metrics. 5

OR

(a) What is the difference between functional and non-functional testing? 5

(b) Define software quality assurance. Also explain SQA activities. 5

Q 2 (a) Write in detail levels of testing 5

(b) Explain Mutation testing. 5

OR

(a) Explain the various types of Black box testing techniques. 5

(b) Explain Defect life cycle 5

Q 3 (a) Explain V Model. Also write Advantages V Model. 5

(b) What is Boundary Value Analysis? 5

OR

(a) What is Test Plan. 5

(b). What is the white box testing? Explain its techniques. 5

Q 4 (a) Write detail test plan for online registration & examination application. Candidate will register through valid email ID & will book date & time slot from available dates & time slots. Candidate will select subject from list of subjects given. Application will send user ID & password to the candidate's email ID. On the date & time, candidate will login with given user ID & Password Application will display multiple choice questions & will accept choice from candidate. At the end of given time, application will display the marks

10

OR

(b). Write a Test Case on Login Form .And following specifications should be consider 10
Username:

- 1] Username field will accept min 4 and max 10 characters.
- 2] 1st letter will always alphabet.
- 3] Special characters are not allowed.
- 4] Blank spaces are not allowed.
- 5] Numbers are allowed, from 2nd position.

Password:

- 6] Password will display */\$/?
- 7] Password ranges 8 to 16 characters.
- 8] Accept all special characters.
- 9] Function keys are not allowed.

Q 5. Attempt any two short notes:

[2*5=10]

- (a) i>.Appium ,ii> JMeter
- (b) i>. MTBF, ii>. MTTR
- (c) i>.Quality Control,ii>Quality Assurance
- (d) i>.Walkthrough, ii> Inspection

Suryadatta Education Foundation's
Suryadatta Institute of Management and Mass Communication (SIMMC)

MCA Department

End -Term Examination- Oct,2024

MCA-II year (SEM –III)

Subject: Cloud Computing

Subject Code: IT-35

Total Marks: 50

Date:25/10/2024

Time:10 am To 12:30 pm

Note: 1. Draw suitable diagrams wherever necessary

- | | |
|--|---|
| Q1(a)What do you understand about trends in cloud computing? | 5 |
| (b)Explain Pros and Cons of Cloud Computing. | 5 |
| Q2 (a)Explain SOA of Cloud Computing. | 5 |
| (b) Explain VM and VMWARE. | 5 |
| Q3 (a) Discuss SOAP and REST in detail. | 5 |
| (b) Describe edge computing in detail. | 5 |
| Q4 (a) Why cloud bursting is important in Cloud Computing. | 5 |
| (b) Discuss security architecture in Cloud Computing. | 5 |

Q2. Attempt any twoshort notes:

[2*5=10]

- (a) XEN
- (b) Cloud Governance
- (c) Cloud Availability
- (d) Cloud Migration

Suryadatta Education Foundation's

Suryadatta Institute of Management and Mass Communication (SIMMC)

MCA Department

End -Term Examination- Oct,2024

MCA-II year (SEM -III)

Subject: Cryptocurrency & Network Security

Subject Code: OC 32

Total Marks: 25

Date: 25th Oct, 24

Time: 02.00 PM to 03.30 PM

Note:

1. All four questions are compulsory.
 2. Draw the diagrams also when necessary.
-

1) Discuss the differences between symmetric and asymmetric encryption algorithms. Provide examples of each and explain in network security? [5]

2) By using Play fair cipher method, Do the encryption & collect Ciphertext. Assume "communication" is the plaintext and "computer" is the encryption key. [5]

OR

By using vernam cipher substitution method, so the encryption. Assume plain text is "How is the Exam". What should be the cipher text

3) What is RSA Algorithm? Explain its component in detail and write the advantages of RSA Algorithm. [5]

4) Write the short note on following (Attempt any two): [10]
a. Diffie-Hellman key exchange Algorithm
b. Digital Signature
c. DES Algorithm

----- Best of Luck -----