R7332	Sub. Code
	541301

M.C.A. DEGREE EXAMINATION, NOVEMBER – 2022

Third Semester

Computer Applications

DATA MINING AND WAREHOUSING

(CBCS – 2020 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define Data Warehousing.

2. Define Data Mining.

3. What are the stages of KDD.

4. Mention some applications of Date Mining?

5. What is Association Rule?

6. Define decision Tree.

7. What is Clustering?

8. What is Machine Learning?

9. What is meant by Data Analytics?

10. Define Web Content Mining?

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Elucidate briefly about OLAP operations.

Or

(b) Explain Dimensional Modeling.

12. (a) Describe about the issues and challenges in Data Mining.

Or

(b) Brief about Data preprocessing.

13. (a) Explain Partition Algorithm.

Or

(b) Describe Back Propagation in classification.

14. (a) Describe about CLARANS Algorithm.

Or

(b) Compare and contrast supervised and unsupervised learning.

15. (a) Write about unstructured Text in detail.

Or

(b) Explain about the terminologies used in Big data environment.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Explain about the data warehouse architecture.

17. Summarize the applications of Data Mining.

18. Describe how Bayesian Classification helps in predicting class membership probabilities.

19. Elucidate briefly about the tree clustering principle in decision tree.

20. Write detailed note on Web Structure Mining.

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R7333	Sub. Code
	541302

M.C.A. (COMPUTER APPLICATIONS) DEGREE EXAMINATION, NOVEMBER – 2022

Third Semester

PYTHON PROGRAMMING

(CBCS – 2020 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A ($10 \times 2 = 20$)

Answer **all** questions.

1. Define the term decision table.

2. Write an algorithm to accept two numbers, Compute the sum and print the result.

3. What are keywords? Give examples.

4. Mention the use of ternary operator.

5. Present the flow of execution for a while statement.

6. Distinguish between break and continue statement in Python.

7. State the use of negative indexing of list with example.

8. What is a module? Give example.

9. How to achieve inheritance in Python?

10. Why use exceptions?

Part B (5 × 5 = 25)

Answer **all** the questions, choosing either (a) or (b).

11. (a) List and draw the symbols used in flowchart.

Or

(b) Write a note on top-down and bottom-up programming approach.

12. (a) What is a numeric literal? Give examples.

Or

(b) Summarize the use of arithmetic operators in Python with example.

13. (a) Analyze the input and output statement with example.

Or

(b) Appraise with an example nested if and elif header in Python.

14. (a) What is a dictionary in Python? Give example.

Or

(b) Illustrate the use date and time function in Python with code.

15. (a) Explain the following with example.

(i) Method overriding

(ii) Data hiding.

Or

(b) List the types of inheritance with programming examples.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Write down the steps for algorithmic problem solving in detail.

17. Sketch the structures of interpreter and compiler. Detail the differences between them. Explain how Python works interactive and script mode with examples.

18. Explain with an example while loop, break and continue statement in Python.

19. (a) Discuss about the syntax and structure of user defined functions in Python with example. (5)

    (b) Write a Python function to generate a multiplication table for 'N' value. (5)

20. Describe how exceptions are handled in Python with necessary examples.

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R7334

Sub. Code
541303

M.C.A. (Computer Applications) DEGREE EXAMINATION, NOVEMBER – 2022

Third Semester

SOFTWARE ENGINEERING

(CBCS – 2020 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A $(10 \times 2 = 20)$

Answer **all** the questions.

1. List the types of software.

2. What do you mean by Unified process?

3. What is data flow diagram?

4. Mention the use of functional modeling in object-oriented analysis.

5. Give the various types of architectural styles with example.

6. Which UI design patterns are used for the following:

   (a) Page layout

   (b) Tables

   (c) Shopping cart

   (d) Navigation through menus and web pages.

7. State the purpose of stub and driver used for testing.

8. How the DRE metric can be calculated in software quality metrics?

9. Why is software quality needed?

10. What is Scrum demo?

Part B $(5 \times 5 = 25)$

Answer **all** the questions, choosing either (a) or (b).

11. (a) List and explain the different parts of layered technology in software engineering.

Or

(b) Describe the concept of process patterns in software engineering.

12. (a) What is data modeling? How the data modeling relate to Graph databases?

Or

(b) Discuss the importance of flow-oriented modeling in software engineering.

13. (a) What is software architecture? Explain.

Or

(b) Describe the golden rules for user interface design.

14. (a) Explain how the various types of loops are tested.

Or

(b) Compare white box and black box testing.

15. (a) Present and explain the steps are required to perform statistical quality assurance.

Or

(b) How many phases are there in Scrum? Explain.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Construct and explain the waterfall model of software development process.

17. What is requirements elicitation? Briefly describe the various activities performed in requirement elicitation phase.

18. List and explain any five fundamental software design concepts.

19. What is objective of software testing? List the various types of testing that are carried out during complete SDLC.

20. What is FDD in agile? How is FDD different from Scrum? List and explain the stages of FDD.

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R7335	Sub. Code
	541557

M.C.A. DEGREE EXAMINATION, NOVEMBER – 2022

Third Semester

Computer Applications

Elective : III – INFORMATION AND CYBER SECURITY

(CBCS – 2020 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A $(10 \times 2 = 20)$

Answer **all** questions.

1. List out the critical characteristics of information

2. What is meant by balancing Security and Access?

3. How information assets are classified?

4. What is a VPN and what are its technologies?

5. Differentiate Symmetric encryption and Asymmetric encryption.

6. What is the need for information security?

7. What is risk?

8. Define Cipher text.

9. What are the positions of security personnel in information security hierarchy?

10. List few applications of Steganography?

Part B (5 × 5 = 25)

Answer **all** questions choosing either (a) or (b)

11. (a) What do you understand by the term "CRYPTOGRAPHY" in detail?

Or

(b) Enumerate the phases of security system development life cycle.

12. (a) Discuss the components of an information systems.

Or

(b) Describe the various categories of threats to information.

13. (a) Enumerate different types of attacks on computer-based systems.

Or

(b) Discuss about three types of security policies? Explain.

14. (a) What is cryptography? Discuss the different cipher methods with suitable Examples.

Or

(b) Explain the concept of digital signature.

15. (a) Explain the protocols used to provide secured communication.

Or

(b) Explain the schematics of image compression standard JPEG.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. What is Cyber Crime? How its classified? What are the different types of cyber crimes towards an individual?

17. Explain the architecture of firewall. What are the characteristics of firewall?

18. What is Password Cracking? List out four guidelines that need to be followed to avoid password cracking?

19. Explain with examples the various classical encryption schemes.

20. Describe about the intrusion detection system (IDS) and their approaches in protecting network and host information assets.

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R7336	Sub. Code
	541562

M.C.A. DEGREE EXAMINATION, NOVEMBER - 2022

Third Semester

Computer Applications

Elective IV – BIG DATA ANALYTICS

(CBCS – 2020 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **ALL** questions.

1. What is Map Reduce?

2. List out the best practices of Big Data Analytics.

3. What is machine learning?

4. DefineR.

5. Write short notes on clustering.

6. What do you mean by Cluster Analysis?

7. Write down the characteristics of Big Data Applications.

8. Write down the four computing resources of Big Data Storage.

9. What is stock market and how it works?

10. What is Stock Market Prediction?

Part B (5 × 5 = 25)

Answer **ALL** the questions, choosing either (a) or (b).

11. (a) What is Bigdata? Describe the main features of a big data in detail.

Or

(b) Discuss the following in detail

(i) Conventional challenges in big data

(ii) Nature of Data

12. (a) Compare and contrast analysis and reporting in data analytics with suitable example.

Or

(b) What is Hadoop? Explain its components.

13. (a) Explain advantages and disadvantages of big data analytics.

Or

(b) Explain the difference between structure and unstructured data.

14. (a) How evaluation is performed on decision trees?

Or

(b) Illustrate with an example using R to perform a k-means analysis.

15. (a) With the help of suitable example explain how to model decision trees in R.

Or

(b) What are the important objectives of Machine Learning?

Part C

$(3 \times 10 = 30)$

Answer any **THREE** questions.

16. Describe the steps involved in support vector-based inference methodology.

17. Describe the prediction error and regression techniques.

18. What are big data analytics? Explain four 'V's of Big data. Briefly discuss applications of big data.

19. Discuss Big Data in Healthcare, Transportation & Medicine.

20. What are the advantages of Hadoop? Explain Hadoop Architecture and its Components with proper diagram.

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