

19. (a) What do you mean by optimum utilization of resources? Explain.

Or

- (b) Define scalar chain as principle of management.
20. (a) Discuss the challenges and opportunities of the present managers.

Or

- (b) Explain about the various types of Departmentation.

PART C — (3 × 10 = 30)

Answer any THREE questions.

21. Compare Management and Administration.
22. What do you understand by decision making process? Explain.
23. Describe in detail about performance appraisal.
24. Enumerate the various Eyes of leadership with examples.
25. Impact of Information technology in management. Discuss.

S.No. 5281

P 22 MBANME 1

(For candidates admitted from 2022-2023 onwards)

P.G. DEGREE EXAMINATION, APRIL 2024.

Business Administration – Non Major Elective

PRINCIPLES OF MANAGEMENT

Time : Three hours

Maximum : 75 marks

PART A — (20 marks)

Answer ALL questions.

- I. (A) Multiple choice questions: (5 × 1 = 5)
1. Management deals with
- (a) Internal environment
 - (b) External environment
 - (c) Political and legal environment
 - (d) Both (a) and (b)
2. Strategic planning as a broad concept consists of
- (a) External analysis
 - (b) Corporate strategy
 - (c) Developing premises
 - (d) Strategy formulation and implementation

3. Sources of conflict
 - (a) Lack of communication
 - (b) Complexity of structure
 - (c) Lack of resources
 - (d) All of the above
4. Who has propounded ERG theory of motivation?
 - (a) Abraham Maslow
 - (b) Alderfer
 - (c) Victor Vroom
 - (d) Douglas McGregor
5. Which of the following is capable of doing maximum good to society?
 - (a) Business success
 - (b) Laws and regulation
 - (c) Ethics
 - (d) Professional management

(B) Fill in the blanks: (5 × 1 = 5)

6. Systematic evaluation of individual is _____.
7. _____ is about deciding in advance what should be done.
8. Choosing the right person for the job is _____.
9. In 'carrot and stick policy' stick denotes _____.
10. A self-regulating business model commits _____ accountability.

- II. Descriptive questions: (5 × 2 = 10)
 11. Define managerial communication.
 12. What are the characteristic of leadership?
 13. Brief about Matrix structure.
 14. Outline the term "Brainstorming".
 15. What is corporate social responsibility?

PART B — (5 × 5 = 25)

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

16. (a) Elaborate the significance of ethics in management.

Or

- (b) Outline the process of MBO.

17. (a) Elucidate the types and stages of planning.

Or

- (b) Explain the factors influencing the organization change.

18. (a) Differentiate between formal and informal organization.

Or

- (b) State the advantages of formal organization.

19. (a) Write a short note on Assignment Statements.

Or

(b) Write short notes on three address code with examples.

20. (a) Compare machine dependent and independent code optimization?

Or

(b) What are the issues in the design of a code generation?

PART C — (3 × 10 = 30)

Answer any THREE questions.

21. Explain in detail about Compiler construction tools.

22. Discuss in detail about the role of Lexical analyzer.

23. Explain in detail about top down parsing with suitable parse tree example.

24. Write the procedure to represent three address statements.

25. Explain in detail about the optimization of building blocks with suitable examples.

S.No. 3222

P 22 CSCC 22

(For candidates admitted from 2022–2023 onwards)

M.Sc. DEGREE EXAMINATION, APRIL 2024.

Computer Science

COMPILER DESIGN

Time : Three hours

Maximum : 75 marks

PART A — (20 marks)

Answer ALL questions.

I. (A) Multiple choice questions. (5 × 1 = 5)

1. Compiler should report the presence of _____ in the source program during translation process.

- (a) Classes (b) Objects
(c) Errors (d) Text

2. _____ is the output of lexical analyzer?

- (a) A parse tree (b) A list of tokens
(c) Intermediate code (d) None

3. How many types of parsers used for grammars?

- (a) 3 (b) 5
(c) 4 (d) 6

4. In three-address code, how many operator on the right side of an instruction?
- (a) most one (b) most three
(c) most four (d) most two
5. _____ for basic blocks containing several statements can be constructed by composing the functions corresponding to individual statements.
- (a) data-flow values (b) Monotonicity
(c) Non distributivity (d) Transfer functions
- (B) Fill in blanks : (5 × 1 = 5)
6. _____ represents the transition between image function's continuous values and its digital equivalent.
7. In Compiler, lexical analyzer is used for _____.
8. _____ grammar gives multiple parse trees for the same string.
9. _____ compiler runs on one machine and generates code for multiple machines.
10. DAG is a abbreviation of _____.

- II. Answer the following : (5 × 2 = 10)
11. Differentiate compiler and interpreter.
12. What is Token?
13. What are the problems associated with Top Down Parsing?
14. What is control and data flow analysis?
15. Define Optimization.

PART B — (5 × 5 = 25)

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

16. (a) Explain the phases of compiler.
Or
(b) Write a short note on error handling.
17. (a) Explain regular expression with an example.
Or
(b) Differentiate NFA and DFA.
18. (a) What is parsing? Write the types of parsing.
Or
(b) Differentiate LR and SLR Parsing.

19. (a) What are the properties available in transaction? Explain.

Or

- (b) Discuss about classification of failure in recovery system.
20. (a) How to access document based NoSQL system? Explain.

Or

- (b) Write short notes on Neo4j.

PART C — (3 × 10 = 30)

Answer any THREE questions.

21. Illustrate the architecture of database system with neat sketch.
22. What are the operations available the relational model? Explain in detail.
23. Illustrate basic structure of SQL queries with suitable example.
24. Describe the structure of storage recovery system in detail.
25. How to store the key values in NoSQL? Explain with example.

S.No. 3221

P 22 CSCC 21

(For candidates admitted from 2022–2023 onwards)

M.Sc. DEGREE EXAMINATION, APRIL 2024.

Computer Science

ADVANCED DATABASE MANAGEMENT SYSTEM

Time : Three hours

Maximum : 75 marks

PART A — (20 marks)

Answer ALL questions.

- I. (A) Multiple choice questions: (5 × 1 = 5)
1. Database languages can be used to _____ the data in the database.
- (a) Read (b) Store
(c) Update (d) All of the above
2. Relational algebra is a _____ query language that takes two relations as input and produces another relation as on output of the query.
- (a) Relational (b) Structural
(c) Procedural (d) Fundamental

3. Aggregate functions are functions that take a _____ as input and return a single value.
- Collection of values
 - Single value
 - Aggregate value
 - Both collection of values and single value
4. _____ allows only committed data to be read, but does not require repeatable reads
- Read uncommitted
 - Serializable
 - Repeatable read
 - Read committed
5. Which of the following is a NoSQL Database Type?
- SQL
 - Document databases
 - JSON
 - All of the mentioned
- (B) Fill in the blanks: (5 × 1 = 5)
6. A database is _____ with Data Manipulation Language.
7. _____ is a set of one or more attributes taken collectively to uniquely identify a record.
8. All aggregate functions except _____ ignore null values in their input collection.
9. In _____ isolation, each transaction is given its own version of the database.
10. NoSQL databases is used mainly for handling large volumes of _____ data.

11. Answer the following: (5 × 2 = 10)
- What are the applications available in database system?
 - Illustrate schema diagrams.
 - Write note on Views.
 - Compare atomicity and durability in transaction.
 - How to store the key values in NoSQL?

PART B — (5 × 5 = 25)

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

16. (a) How to design a database? Explain.
- Or
- (b) Write short notes on database users and administrators.
17. (a) Illustrate basic structure of relational model in detail.
- Or
- (b) Write short notes on 3NF.
18. (a) What are the set operations available in SQL? Explain with example.
- Or
- (b) Write short notes on integrity constraints.

18. (a) Discuss about Activity stack using an example.

Or

- (b) Discuss the Intent filter using a suitable illustration.

19. (a) Describe the various layout styles.

Or

- (b) Describe the various sorts of Android menus.

20. (a) Explain how do you develop and publish a mobile application with example.

Or

- (b) Describe the process of reading data from a database.

SECTION C — (3 × 10 = 30)

Answer any THREE questions.

21. Describe IOS devices in detail, using an example to highlight its features.
22. Describe Android architecture in detail.
23. Demonstrate Android services with example.
24. Explain in detail about the idea of input control using an appropriate example.
25. Explain how to create and add data to a SQL database in Android in detail.

S.No. 3224

P 22 CSCC 2 B

(For candidates admitted from 2022-2023 onwards)

M.Sc. DEGREE EXAMINATION, APRIL 2024

Computer Science — Core Choice Course

MOBILE APPLICATION DEVELOPMENT

Time : Three hours

Maximum : 75 marks

SECTION A — (20 marks)

Answer ALL questions

1. (A) Multiple choice questions: (5 × 1 = 5)
1. Which framework is not used in iOS?
- (a) Foundation framework
- (b) UIKit framework
- (c) App kit Framework
- (d) Core Motion framework
2. What is the life cycle of broadcast receivers in android?
- (a) Send Intent()
- (b) On Receive()
- (c) Implicit Broadcast()
- (d) Sent Broadcast()

3. Status data receipt of the android system via
 - (a) Intents
 - (b) A Content provider
 - (c) Network receivers
 - (d) Altering permissions
 4. What runs in the background and does not have any UI components?
 - (a) Applications
 - (b) Services
 - (c) Resolvers
 - (d) Intent
 5. Which of the following is the core module of android for internet computing?
 - (a) SQL lite RDBMS
 - (b) SQL server RDBMS
 - (c) Open Source
 - (d) None of the mentioned
- (B) Fill in the blanks : (5 × 1 = 5)
6. While developing android applications on _____.
 7. The screen orientation is an attribute of _____ element.
 8. _____ is the recommended way for sharing data across packages.

9. Creating a UI android requires careful use of _____.
 10. If you want to share the data across the all applications should go for _____.
- II. Answer the following : (5 × 2 = 10)
11. Define web application.
 12. What are the advantages of IOS?
 13. Define Dalvik VM.
 14. What is meant by Android stack?
 15. How do use phone book in Android application?

SECTION B — (5 × 5 = 25)

Answer ALL questions, choosing either (a) or (b)

16. (a) Examine open source software (OSS) using a case study.
 Or
 (b) Clarify the various types of Android devices.
17. (a) Briefly describe the Linux kernel.
 Or
 (b) Describe the activity life cycle using a clear diagram.

19. (a) Write a short note on Assignment Statements.

Or

(b) Write short notes on three address code with examples.

20. (a) Compare machine dependent and independent code optimization?

Or

(b) What are the issues in the design of a code generation?

PART C — (3 × 10 = 30)

Answer any THREE questions.

21. Explain in detail about Compiler construction tools.

22. Discuss in detail about the role of Lexical analyzer.

23. Explain in detail about top down parsing with suitable parse tree example.

24. Write the procedure to represent three address statements.

25. Explain in detail about the optimization of building blocks with suitable examples.

S.No. 3222

P 22 CSCC 22

(For candidates admitted from 2022–2023 onwards)

M.Sc. DEGREE EXAMINATION, APRIL 2024.

Computer Science

COMPILER DESIGN

Time : Three hours

Maximum : 75 marks

PART A — (20 marks)

Answer ALL questions.

I. (A) Multiple choice questions. (5 × 1 = 5)

1. Compiler should report the presence of _____ in the source program during translation process.

- (a) Classes (b) Objects
(c) Errors (d) Text

2. _____ is the output of lexical analyzer?

- (a) A parse tree (b) A list of tokens
(c) Intermediate code (d) None

3. How many types of parsers used for grammars?

- (a) 3 (b) 5
(c) 4 (d) 6

4. In three-address code, how many operator on the right side of an instruction?

- (a) most one (b) most three
(c) most four (d) most two

5. _____ for basic blocks containing several statements can be constructed by composing the functions corresponding to individual statements.

- (a) data-flow values (b) Monotonicity
(c) Non distributivity (d) Transfer functions

(B) Fill in blanks : (5 × 1 = 5)

6. _____ represents the transition between image function's continuous values and its digital equivalent.

7. In Compiler, lexical analyzer is used for _____.

8. _____ grammar gives multiple parse trees for the same string.

9. _____ compiler runs on one machine and generates code for multiple machines.

10. DAG is a abbreviation of _____.

II. Answer the following : (5 × 2 = 10)

11. Differentiate compiler and interpreter.

12. What is Token?

13. What are the problems associated with Top Down Parsing?

14. What is control and data flow analysis?

15. Define Optimization.

PART B — (5 × 5 = 25)

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

16. (a) Explain the phases of compiler.

Or

(b) Write a short note on error handling.

17. (a) Explain regular expression with an example.

Or

(b) Differentiate NFA and DFA.

18. (a) What is parsing? Write the types of parsing.

Or

(b) Differentiate LR and SLR Parsing.

(6 pages)

S.No. 3227

P 22 CSE 2 C

(For candidates admitted from 2022-2023 onwards)

M.Sc. DEGREE EXAMINATION, APRIL 2024.

Computer Science – Elective

GREEN COMPUTING

Time : Three hours

Maximum : 75 marks

PART A — (20 Marks)

Answer ALL questions.

- I. (A) Multiple choice questions: (5 × 1 = 5)
1. Which of the following factors does not contribute to Business to Environmental Intelligence Impact across Organization?
- (a) Technical Process
 - (b) Social Dimensions
 - (c) Economic Dimensions
 - (d) Financial Process

2. _____ is a philosophy of managing interaction of company with its current and potential future customers.

- (a) Relational Marketing
- (b) Customer Relationship Management
- (c) Customer care
- (d) Supply Chain Management

3. EPEAT stands for _____.

- (a) Electronic Product Environmental Assessment Tool
- (b) Electric Product Environmental Assessment Tool
- (c) Electronic Purchase Environmental Assessment Tool
- (d) E-commerce Product Assessment Tool

4. The _____ is a non-profit consortium whose mission is to become the global authority on resource efficiency in information technology and data centres.

- (a) National grid
- (b) Electric grid
- (c) Green grid
- (d) Regional grid

5. _____ are ways to conduct Green IT Audits.

- (a) Walkthrough
- (b) Interviews
- (c) Audits
- (d) All of these

(B) Fill in the blanks: (5 × 1 = 5)

6. _____ is the development of a suitable global strategic vision for an enterprise.

7. GIS stands for _____.

8. Creating more logical IT resources, within one physical system is called _____.

9. _____ can be social groups that transcend the organizational boundaries to discuss and form opinions on green issues.

10. _____ deals with computing at a microscopic level.

II. Answer the following: (5 × 2 = 10)

11. Define green grid.

12. What is the purpose of the Green reengineering?

13. What is Green data centre?

14. List the various Green metrics.

15. What are green IT strategies?

PART B — (5 × 5 = 25)

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

16. (a) Describe the four encompassing layers of a comprehensive green IT vision for an enterprise.

Or

(b) Illustrate the range of impacts of green IT strategies.

17. (a) Explain the core concept of Green process reengineering.

Or

(b) Discuss the various aspects of green solutions architecture.

18. (a) What are the factors that influence green data centre? Explain.

Or

(b) Explain the deliverables of Green grid in detail.

19. (a) Describe the role-based view of Green IT in detail.

Or

(b) Discuss green IT audit and its types.

20. (a) Describe the primary Green IT drivers for Good Mead Hospital.

Or

(b) Explain briefly environmentally responsible business strategies.

PART C — (3 × 10 = 30)

Answer any THREE questions.

21. Explain the application in environmental domain in detail.

22. Describe the individual, organizational, and collaborative green processes and their reengineering.

23. Illustrate the virtualization architecture in detail.

24. Explain the roles and skill sets of Green-Collar workers in detail.

25. Discuss the social and technical dimensions of AuPack.

(6 pages)

S.No. 3237

P 22 CSCC 41

(For candidates admitted from 2022–2023 onwards)

M.Sc. DEGREE EXAMINATION, APRIL 2024.

Computer Science

AGILE TECHNOLOGY

Time : Three hours

Maximum : 75 marks

PART A — (20 Marks)

Answer ALL questions.

I. (A) Multiple Choice Questions (5 × 1 = 5)

1. Which of the following is a characteristic of Agile Project Management?
 - (a) Rigid Project plans
 - (b) Minimal customer involvement
 - (c) Emphasis on process documentation
 - (d) Adaptive and flexible approach

2. Which Agile method is based on Lean Production principles?
 - (a) SCRUM
 - (b) Feature Driven Development
 - (c) Crystal
 - (d) Extreme Programming
3. According to Earl's Schools of KM, what is the Knowledge Evolution Cycle?
 - (a) Development, Distribution, Deployment, Leveraging
 - (b) Acquisition, Refinement, Distribution, Deployment
 - (c) Development, Acquisition, Refinement, Distribution
 - (d) Leveraging, Deployment, Refinement, Acquisition
4. The term "Agile Metrics" in this unit refers to:
 - (a) Measurements of project success
 - (b) Metrics for traditional project management
 - (c) Statistical analysis of customer feedback
 - (d) Performance indicators in Agile development

5. Why is Requirements Elicitation crucial in Agile Processes?

- (a) To create a detailed project plan
- (b) To identify and understand project stakeholders
- (c) To ensure fixed requirements throughout the project
- (d) To determine financial metrics

(B) Fill in the blanks (5 × 1 = 5)

6. The Agile Manifesto and Principles emphasize individuals and interactions over _____ and tools.
7. Roles and Practices in Agile teams help define the responsibilities and actions of team members in the software _____.
8. The Story-Card Maturity Model (SMM) assesses the level of maturity in using story-cards for effective _____ in Agile teams.
9. The Agile Requirements Abstraction Model provides a structured approach to abstracting and defining software _____.

10. Agile Metrics provide valuable insights into the _____ and progress of a software project.

II. Answer the following: (5 × 2 = 10)

11. State the significance of Agile Team Interactions in project development.
12. Compare the Lifecycle of Agile development with traditional software development.
13. Define Agile Information Systems and their role in development.
14. Why is Managing Unstable Requirements crucial in Agile development?
15. What is the Agile Approach to Quality Assurance?

PART B — (5 × 5 = 25)

Answer ALL questions, Choosing either (a) or (b).

16. (a) Write short notes on Agile Documentations and their role in projects.

Or

(b) Describe Agile Manifesto and elaborate on its underlying principles.

17. (a) Explain the SCRUM framework and its application in software development.

Or

- (b) Contrast the roles and practices in Lean Production and Adaptive Software Development.

18. (a) Discuss the role of Agile Information Systems in decision-making processes briefly.

Or

- (b) Compare the roles of Story-Cards in Agile methodologies and conventional project management.

19. (a) Describe the overview of Requirements Engineering using Agile methodologies.

Or

- (b) Explain current Agile practices and their implications in Requirements Engineering.

20. (a) Explain the significance and application of Agile Metrics in software development projects.

Or

- (b) Elaborate on the unique challenges and benefits of Agile in Global Software Development.

Answer any THREE questions.

21. Explain the key characteristics of Agile Software Development and its advantages over traditional methods.

22. Describe the Adaptive Software Development approach, emphasizing its lifecycle, work products, and practices.

23. Differentiate the challenges associated with migrating to Agile methodologies in knowledge management.

24. Elaborate on the complexities and advantages of Agile Requirements Prioritization methodologies.

25. Describe the financial and production metrics employed in Feature Driven Development (FDD).

(6 pages)

S.No. 3238

P 22 CSCC 42

(For candidates admitted from 2022–2023 onwards)

M.Sc. DEGREE EXAMINATION, APRIL 2024.

Computer Science

CLOUD COMPUTING

Time : Three hours

Maximum : 75 marks

SECTION A — (20 marks)

Answer ALL questions.

- I. (A) Multiple choice questions: (5 × 1 = 5)
1. Which of the following is an example of the cloud?
- (a) Amazon Web Services (AWS)
 - (b) Dropbox
 - (c) Cisco WebEx
 - (d) All of the above
2. The Face.com and windows Azure are examples of
- (a) IaaS
 - (b) PaaS
 - (c) SaaS
 - (d) Both (a) and (b)

3. Which of the following is a type of data disaster?
- (a) Insufficient Resource
 - (b) Hosted tools
 - (c) Database corruption
 - (d) Operational Efficiency
4. Aneka's fundamental component for resource management is _____.
- (a) Membership Catalogue
 - (b) Index Service
 - (c) Reservation Service
 - (d) Resource Provisioning Service.
5. Which cloud service model is most suitable for running scientific applications that require high-performance computing resources?
- (a) Software as a Service (SaaS)
 - (b) Platform as a Service (PaaS)
 - (c) Infrastructure as a Service (IaaS)
 - (d) Function as a Service (FaaS)

(B) Fill in the blanks : (5 × 1 = 5)

6. The technology used to distribute service requests to resources is referred to as _____.
7. In Infrastructure as a Service (IaaS), _____ Cloud Platform provided by Amazon.
8. _____ Service, users can store and access their data online without owning physical hardware.
9. _____ is the lowest level of the software stack representing in the Aneka Container.
10. The primary concern regarding data security in cloud-based business applications is _____.

II. Answer the following questions. (5 × 2 = 10)

11. What is cloud?
12. Define pay-as-you-go.
13. List the benefits of IaaS.

14. Write the common configuration of storage node.
15. Define CRM.

SECTION B — (5 × 5 = 25)

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

16. (a) Compare service-oriented and utility oriented computing in historical developments.

Or

- (b) Illustrate architecture of Microsoft hyper-v in technology.

17. (a) Provide some examples of SaaS implementation.

Or

- (b) Discuss about open challenges of cloud in detail.

18. (a) Write short notes on Storage as a Service.

Or

- (b) Discuss about role of disasters in cloud with example.

19. (a) Compare public and private cloud development in Aneka clouds.

Or

(b) Describe about Management tools of Aneka in detail

20. (a) Discuss implementation of Healthcare : ECG analysis in the cloud

Or

(b) Explain application of ERP in detail

SECTION C — (3 × 10 = 30)

Answer any THREE questions.

21. Elaborate cloud computing reference model with neat sketch.

22. Classify the various types of clouds in detail.

23. Explain the various types of disasters recovery planning in detail

24. Describe about application and service model of Aneka SDK.

25. Explain any two Business and customer applications in cloud computing.

18. (a) What is the role of internet in web marketing? Discuss.

Or

(b) Write a brief note on Do's and Dont's on web.

19. (a) Write short notes on online store fronts.

Or

(b) Discuss in brief about web advertising.

20. (a) What are the implementation procedures of ERP? Explain.

Or

(b) Write short notes on procurement in ERP.

SECTION C — (3 × 10 = 30)

Answer any THREE questions.

21. How do you establish knowledge management through IT? Discuss in detail.

22. Describe in detail about major problems in technology transfer collaboration agreements.

23. Elaborate in detail about Internet and law in web marketing.

24. What is E-Mail Marketing? Explain in detail with an example.

25. Explain in detail about ERP business blueprint planning.

S.No. 3239

P 22 CSIBC/ P 22 ITIBC/

P 22 MCAISE

(For candidates admitted from 2022–2023 onwards)

M.C.A./M.Sc. DEGREE EXAMINATION, APRIL 2024

Information Technology/ Computer Science/
Computer Application

TECHNOLOGY INNOVATION AND SUSTAINABLE
ENTERPRISE

Time : Three hours

Maximum : 75 marks

SECTION A — (20 marks)

Answer ALL questions

I. (A) Multiple choice questions: (5 × 1 = 5)

1. Which of the following is not limitation of current Internet?

(a) Insufficient capacity throughout the backbone

(b) Network architecture limitations

(c) Insufficient reach

(d) Best-efforts QOS

2. The primary source of Financing during the yearly years of e-commerce was _____.
- Bank loan
 - Large retail firm
 - Initial public offerings
 - Venture capital funds
3. Which of the following is not considered to be one of the three phases of e-commerce?
- Innovation
 - Consolidation
 - Preservation
 - Reinvention
4. Expertise and experience of Organizational members that has not been formally documented is _____.
- Knowledge sharing
 - Tacit knowledge
 - Organizational learning
 - Organizational memory
5. What is influencer marketing?
- Marketing through social media influencers
 - Marketing through traditional media channels
 - Marketing through email campaigns
 - Marketing through search engine ads
- (B) Fill in the blanks : $(5 \times 1 = 5)$
6. _____ is the term for the ratio of people who click on an advertisement to the number of people who view it.

7. Ability of system or process to handle increasing amount of work is _____.
8. Digital Marketing started in the year _____.
9. _____ is a type of digital marketing involves sending commercial messages to group of people.
10. SAP stands for _____.
- II. Answer ALL questions : $(5 \times 2 = 10)$
11. What are the goals of sustainable technology?
12. Brief note on R and D in Technology Transfer.
13. Define Internet.
14. Write the role of email marketing.
15. List the components of ERP.

SECTION B — $(5 \times 5 = 25)$

Answer ALL questions, choosing either (a) or (b)

16. (a) Bring out the business strategies related to knowledge management.
- Or
- (b) How do you create knowledge management in organization? Explain.
17. (a) Write short notes on the problems in finalization of agreement.
- Or
- (b) Discuss in brief about patterns and intellectual property rights.

19. (a) Justify how Raspberry Pi is different from a desktop computer.

Or

- (b) Explain arduino hardware with help of a diagram.

20. (a) Explain the relationship between ICT and IoT.

Or

- (b) Illustrate how to choose a Cloud Service model?

PART C — (3 × 10 = 30)

Answer any THREE questions.

21. Illustrate the reasons for the convergence of technologies and the move to IoT.
22. Explain M2M towards IoT standardized architecture.
23. What are the various types of IoT communication models? Explain.
24. Describe different Raspberry Pi models in the headless mode.
25. How to use a cloud-based IoT platform? Explain.

S.No. 3240

P 22 CSVAC 2

(For candidates admitted from 2022–2023 onwards)

M.Sc. DEGREE EXAMINATION, APRIL 2024.

Computer Science – Value Added Course

FOUNDATION OF IOT

Time : Three hours

Maximum : 75 marks

PART A — (20 marks)

Answer ALL questions.

- I. (A) Multiple choice questions : (5 × 1 = 5)
1. Which of the following is not an IoT device?
(a) Table (b) Laptop
(c) Arduino (d) Tablet
2. The relation between IoT and M2M is _____.
(a) IoT is part of M2M
(b) M2M is the part of IoT
(c) Both are same
(d) None of the above

3. Which mode assumes that it is the gateway's responsibility to connect to the central repository server?

- (a) Factory Bootstrap
- (b) Server limited Bootstrap
- (c) Client Initiated Bootstrap
- (d) Bootstrap

4. Which of the following is true about Arduino IoT devices?

- (a) They are open-source software
- (b) They can only read analog inputs
- (c) They have their own operating systems
- (d) They don't have pre-programmed firmware

5. How many numbers of the elements in the open IoT architecture?

- (a) Four elements (b) Five elements
- (c) Six elements (c) Seven elements

(B) Fill in the blanks : (5 × 1 = 5)

6. An IoT network is a collection of _____ devices.

7. M2M applications would use _____ for storage and analysis.

8. IoT gateway must provide _____.

9. Arduino Codes are referred to as _____ in the Arduino IDE.

10. In IoT, does the _____ layer help in end to end communication.

II. Answer the following questions. (5 × 2 = 10)

11. Write the examples of IoT device.

12. What is M2M?

13. List the challenges of WSM.

14. Brief note on Raspberry pi.

15. Write about data storage in cloud.

PART B — (5 × 5 = 25)

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

16. (a) Examine IoT's growth and development.
Or

(b) Describe software for embedded systems.

17. (a) Outline the architecture of IoT with diagram.
Or

(b) Analyse IoT value chains with figure.

18. (a) Explain the types of actuators with neat sketch.

Or

(b) Describe about components of WSNs in detail.

19. (a) Explain DBSCAN algorithm.

Or

(b) Discuss the classification of charts in Tableau.

20. (a) Explain Multimedia mining and the various data formats.

Or

(b) Provide an overview of data mining tools WEKA.

SECTION C — (3 × 10 = 30)

Answer any THREE questions.

21. Explain the classification of data mining systems.
22. Explain the phases of Apriori algorithm with an example.
23. Describe feature selection measures in decision tree algorithm with an example.
24. Provide a detailed view on Partitioning Clustering approaches.
25. Explain the pre-processing steps for handling unstructured data and Bag of words approach.

S.No. 3553

P 22 ITCC 2 B

(For candidates admitted from 2022–2023 onwards)

M.Sc. DEGREE EXAMINATION, APRIL 2024

Information Technology — Core Choice Course

DATA MINING TECHNIQUES AND TOOLS

Time : Three hours

Maximum : 75 marks

SECTION A — (20 marks)

Answer ALL questions.

- I. (A) Choose the correct answer : (5 × 1 = 5)
 1. Data mining algorithms can be applied on _____
 - (a) Only Structured Data
 - (b) Unstructured
 - (c) Does not support Unstructured data
 - (d) All formats of data
 2. Data in different units of measurement has to be _____ before performing data mining tasks
 - (a) Cleaned
 - (b) Normalized
 - (c) Transformed
 - (d) Removed with outliers

3. _____ of features is criteria in Selection of independent variables in Regression models.
- (a) Correlation (b) Relation
(c) No correlation (d) Covariance
4. Spatial data is represented in _____ format
- (a) Raster and Vector
(b) Geo tag
(c) Unstructured
(d) Structured numerical data
5. Clustering of objects in data mining is based on
- (a) Similarity
(b) Variance
(c) Nearest neighbour
(d) All (a), (b), and (c)
- (B) Fill in the blanks : (5 × 1 = 5)
6. Data mining is based on _____ approach.
7. KNN impute missing value replacement is based on.
8. False positive in confusion matrix is.
9. Bell shaped curve in histogram is called as _____.
10. The technique used to reduce words to their root words is _____.

- II. Answer ALL questions : (5 × 2 = 10)
11. Define Data mining.
12. Describe support measure with an example.
13. Explain Bayes rule with mathematical notation.
14. Brief on linkage metrics in hierarchical clustering.
15. Define Graphs. What does node and edge represent.

SECTION B — (5 × 5 = 25)

Answer ALL questions.

16. (a) Explain the sub fields of data mining systems.
- Or
- (b) Compare Database Vs Data mining.
17. (a) Explain the process of ETL.
- Or
- (b) Provide a detailed view on data reduction techniques.
18. (a) Explain Support Vector machines and various types of kernels.
- Or
- (b) Brief on evaluation methods used for analysing prediction.

18. (a) How to measure voltages up to 5V? Explain.
Or
(b) How long a switch is pressed?
19. (a) How to connect and use LEDs?
Or
(b) How to measure the temperature?
20. (a) How to create delays? Explain.
Or
(b) Write the steps to turn the cursor and display On or Off.

SECTION C — (3 × 10 = 30)

Answer any THREE questions.

21. Explain about the different IoT enabling technologies in detail.
22. How to structuring the code into function blocks in Arduino? Explain.
23. Explain about the sending formatted text and numeric data from Arduino.
24. Describe about controlling Servo Rotation with a Potentiometer or Sensor.
25. Explain about the use of time and date with an example.

S.No. 3556

P 22 ITE 2 C

(For candidates admitted from 2022–2023 onwards)

M.Sc. DEGREE EXAMINATION, APRIL 2024.

Information Technology — Elective

INTERNET OF THINGS

Time : Three hours

Maximum : 75 marks

SECTION A — (20 Marks)

Answer ALL questions.

- I. (A) Choose the correct answer (5 × 1 = 5)
1. A _____ is the component that executes a program in an IoT system.
- (a) micro converter
 - (b) microcontroller
 - (c) microsensor
 - (d) Mini Computer
2. What is the Arduino UNO?
- (a) Software
 - (b) Hardware device
 - (c) Network
 - (d) Protocol

3. What is another name for I2C?
 - (a) Signal wire interface
 - (b) Two wire interfaces
 - (c) UART
 - (d) USART
4. Full form of LPWAN:
 - (a) Low Power Wide Area Network
 - (b) Lower Power Wide Area of Network
 - (c) Low Protocol Wide Area of Network
 - (d) Long Protocol Wider Area Network
5. M2M stands for:
 - (a) MAC to MAC communication
 - (b) Machine to MAC communication
 - (c) Machine to machine communication
 - (d) MAC to machine communication

(B) Fill in the blanks (5 × 1 = 5)
6. Every board of Arduino has a five volts _____ regulator.
7. _____ indicates that the function is expected to return no information to the function from which it was called.

8. What is the full form of HDLC?
9. Which sensor is linear and low accuracy?
10. Expand LCD _____
- II. Answer ALL questions (5 × 2 = 10)
11. What is wireless sensor networks?
12. What is the difference between Float and Double on Arduino?
13. What is resistors?
14. What is Digital Temperature Sensors?
15. What is WAV file?

SECTION B — (5 × 5 = 25)

Answer ALL the questions either (a) or (b).

16. (a) Write about the IoT applications in smart cities.
- Or
- (b) Describe about the Logical design of IoT.
17. (a) Explain about the simple primitive types in Arduino.
- Or
- (b) How to work with group of values? Explain.

19. (a) What do you mean by optimum utilization of resources? Explain.

Or

(b) Define scalar chain as principle of management.

20. (a) Discuss the challenges and opportunities of the present managers.

Or

(b) Explain about the various types of Departmentation.

PART C — (3 × 10 = 30)

Answer any THREE questions.

21. Compare Management and Administration.

22. What do you understand by decision making process? Explain.

23. Describe in detail about performance appraisal.

24. Enumerate the various Eyes of leadership with examples.

25. Impact of Information technology in management. Discuss.

S.No. 5281

P 22 MBANME 1

(For candidates admitted from 2022–2023 onwards)

P.G. DEGREE EXAMINATION, APRIL 2024.

Business Administration – Non Major Elective

PRINCIPLES OF MANAGEMENT

Time : Three hours

Maximum : 75 marks

PART A — (20 marks)

Answer ALL questions.

I. (A) Multiple choice questions: (5 × 1 = 5)

1. Management deals with

- (a) Internal environment
- (b) External environment
- (c) Political and legal environment
- (d) Both (a) and (b)

2. Strategic planning as a broad concept consists of

- (a) External analysis
- (b) Corporate strategy
- (c) Developing premises
- (d) Strategy formulation and implementation

3. Sources of conflict
 (a) Lack of communication
 (b) Complexity of structure
 (c) Lack of resources
 (d) All of the above
4. Who has propounded ERG theory of motivation?
 (a) Abraham Maslow (b) Alderfer
 (c) Victor Vroom (d) Douglas McGregor
5. Which of the following is capable of doing maximum good to society?
 (a) Business success
 (b) Laws and regulation
 (c) Ethics
 (d) Professional management
- (B) Fill in the blanks: (5 × 1 = 5)
6. Systematic evaluation of individual is _____.
7. _____ is about deciding in advance what should be done.
8. Choosing the right person for the job is _____.
9. In 'carrot and stick policy' stick denotes _____.
10. A self-regulating business model commits _____ accountability.

- II. Descriptive questions: (5 × 2 = 10)
11. Define managerial communication.
12. What are the characteristic of leadership?
13. Brief about Matrix structure.
14. Outline the term "Brainstorming".
15. What is corporate social responsibility?

PART B — (5 × 5 = 25)

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

16. (a) Elaborate the significance of ethics in management.
 Or
 (b) Outline the process of MBO.
17. (a) Elucidate the types and stages of planning.
 Or
 (b) Explain the factors influencing the organization change.
18. (a) Differentiate between formal and informal organization.
 Or
 (b) State the advantages of formal organization.

S.No. 3551

P 22 ITCC 22

(For candidates admitted from 2022–2023 onwards)

M.Sc. DEGREE EXAMINATION, APRIL 2024.

Information Technology

FOUNDATIONS OF INFORMATION SECURITY

Time : Three hours

Maximum : 75 marks

PART A — (20 marks)

Answer ALL questions.

- I. (A) Choose the correct answer (5 × 1 = 5)
1. When selling software, software manufacturers limit their liability using _____
 - (a) End-User License Agreements
 - (b) Confidentiality agreements
 - (c) Software development agreements
 - (d) By developing error-free software and code so there is no liability
2. Which of the following affects availability?
 - (a) Cross-site scripting
 - (b) SQL injection
 - (c) Denial
 - (d) Packet sniffing

18. (a) List out the controlling access in security administration.

Or

- (b) Give a brief note on the system life cycle in application software security.

19. (a) Explain about the network access control.

Or

- (b) Write a brief note about unified threat management.

20. (a) Briefly discuss the types of threats in malware.

Or

- (b) Write down the steps for safe recovery techniques and practices.

PART C — (3 × 10 = 30)

Answer any THREE questions.

21. Write in detail about the evolution of the Internet of Things.
22. Describe about the malicious attack with its types.
23. Discuss about the data classification standards.
24. Demonstrate the three categories of network security risk.
25. Explain attacks with their types.

3. The change management process includes _____ and control. _____
- Clearance; classification
 - Document; data
 - Hardware inventory; software development
 - Configuration; change
4. _____ layer of the OSI Reference Model is most commonly responsible for encryption.
- Application
 - Presentation
 - Session
 - Transport
5. A _____ is a network of compromised computers that attackers use to launch attacks and spread malware.
- Black network
 - Botnet
 - Attacknet
 - Trojan store
- (B) Fill in the blanks : (5 × 1 = 5)
6. The _____ is the weakest link in an IT infrastructure.
7. _____ is a software tool that used to capture packets from a network.

8. There are several types of software development methods, but most traditional methods based on the _____ model.
9. _____ is a suite of protocols developed by the Department of Defence to provide a highly reliable and fault-tolerant network infrastructure
10. _____ named as unwanted message.
- II. Answer ALL questions. (5 × 2 = 10)
11. Define IP mobility.
12. Write a note on malicious software.
13. Mention the advantages and disadvantages of security outsourcing.
14. What is TCP/IP?
15. Give a note on intrusion tools and techniques.

PART B — (5 × 5 = 25)

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

16. (a) What are the critical challenges in IoT?
- Or
- (b) Write a short note about information security systems.
17. (a) Discuss on the importance of the Attacks countermeasure.
- Or
- (b) Illustrate the steps in the risk management process.

19. (a) Explain query optimization and execution.

Or

(b) Write short notes on Concurrency control.

20. (a) Explain runtime issues in power management.

Or

(b) Explain the difference between micro kernel and monolithic kernel.

PART C — (3 × 10 = 30)

Answer any THREE questions.

21. Explain the detail concept of Multiprocessor Operating Systems.
22. Explain the resource allocation graph algorithm for deadlock avoidance.
23. Distinguish the difference between Buffering and Caching in Operating System.
24. Explain the key functionalities of Database Operating Systems
25. Explain the components of Mobile Operating Systems.

S.No. 3550

P 22 ITCC 21

(For candidates admitted from 2022–2023 onwards)

M.Sc. DEGREE EXAMINATION, APRIL 2024

Information Technology

ADVANCED OPERATING SYSTEMS

Time : Three hours

Maximum : 75 marks

PART A — (20 marks)

Answer ALL questions

- I. (A) Choose the correct answer : (5 × 1 = 5)
1. In short-term scheduler, which module gives the control to process the CPU?
 - (a) Scheduler
 - (b) Interrupt
 - (c) Dispatcher
 - (d) Buffer
2. _____ is not an approach to Handle Deadlock.
 - (a) Detect and recover
 - (b) Deadlock Avoidance
 - (c) Virtual memory
 - (d) Deadlock prevention

3. A memory buffer used to accommodate a speed differential is called _____.
- (a) Stack pointer (b) Cache
(c) Disk buffer (d) Accumulator
4. Operating System maintains the page table for each _____.
- (a) Process (b) Thread
(c) Instruction (d) Address
5. The OS X has _____ type of kernel.
- (a) Hybrid kernel (b) Micro kernel
(c) Monolithic kernel (d) Both (b) and (c)
- (B) Fill in the blanks : (5 × 1 = 5)
6. If a process fails, most operating system write the error information to a _____.
7. In real time operating system _____ should be minimal.
8. The information about all files is kept in _____.
9. The two steps the operating system takes to use a disk to hold its files are _____ and _____.
10. The number of processes completed per unit time is known as _____.

- II. Answer ALL questions : (5 × 2 = 10)
11. Explain process synchronization.
12. Define distributed deadlock detection.
13. Explain the types of buffers.
14. What is the most common synchronization primitive?
15. Define Kernel and its function.

PART B — (5 × 5 = 25)

Answer ALL questions, choosing either (a) or (b)

16. (a) Discuss operating System design issues.
- Or
- (b) Explain Layered Approach Structure in detail.
17. (a) Explain System Architecture with a neat diagram.
- Or
- (b) Explain various necessary conditions for deadlock occurrence in distributed systems.
18. (a) Explain the ways to implement distributed file system.
- Or
- (b) Brief the types of scalability with an example.

18. (a) What is the role of internet in web marketing? Discuss.

Or

(b) Write a brief note on Do's and Dont's on web.

19. (a) Write short notes on online store fronts.

Or

(b) Discuss in brief about web advertising.

20. (a) What are the implementation procedures of ERP? Explain.

Or

(b) Write short notes on procurement in ERP.

SECTION C — (3 × 10 = 30)

Answer any THREE questions.

21. How do you establish knowledge management through IT? Discuss in detail.

22. Describe in detail about major problems in technology transfer collaboration agreements.

23. Elaborate in detail about Internet and law in web marketing.

24. What is E-Mail Marketing? Explain in detail with an example.

25. Explain in detail about ERP business blueprint planning.

S.No. 3239

P 22 CSIBC/ P 22 ITIBC/
P 22 MCAISE

(For candidates admitted from 2022–2023 onwards)

M.C.A./M.Sc. DEGREE EXAMINATION, APRIL 2024

Information Technology/ Computer Science/
Computer Application

TECHNOLOGY INNOVATION AND SUSTAINABLE
ENTERPRISE

Time : Three hours

Maximum : 75 marks

SECTION A — (20 marks)

Answer ALL questions

I. (A) Multiple choice questions: (5 × 1 = 5)

1. Which of the following is not limitation of current Internet?

(a) Insufficient capacity throughout the backbone

(b) Network architecture limitations

(c) Insufficient reach

(d) Best-efforts QOS

2. The primary source of Financing during the yearly years of e-commerce was _____.
- Bank loan
 - Large retail firm
 - Initial public offerings
 - Venture capital funds
3. Which of the following is not considered to be one of the three phases of e-commerce?
- Innovation
 - Consolidation
 - Preservation
 - Reinvention
4. Expertise and experience of Organizational members that has not been formally documented is _____.
- Knowledge sharing
 - Tacit knowledge
 - Organizational learning
 - Organizational memory
5. What is influencer marketing?
- Marketing through social media influencers
 - Marketing through traditional media channels
 - Marketing through email campaigns
 - Marketing through search engine ads
- (B) Fill in the blanks : (5 × 1 = 5)
6. _____ is the term for the ratio of people who click on an advertisement to the number of people who view it.

7. Ability of system or process to handle increasing amount of work is _____.
8. Digital Marketing started in the year _____.
9. _____ is a type of digital marketing involves sending commercial messages to group of people.
10. SAP stands for _____.
- II. Answer ALL questions : (5 × 2 = 10)
11. What are the goals of sustainable technology?
12. Brief note on R and D in Technology Transfer.
13. Define Internet.
14. Write the role of email marketing.
15. List the components of ERP.

SECTION B — (5 × 5 = 25)

Answer ALL questions, choosing either (a) or (b)

16. (a) Bring out the business strategies related to knowledge management.
- Or
- (b) How do you create knowledge management in organization? Explain.
17. (a) Write short notes on the problems in finalization of agreement.
- Or
- (b) Discuss in brief about patterns and intellectual property rights.

(6 pages)

S.No. 3565

P 22 ITCC 41

(For candidates admitted from 2022–2023 onwards)

M.Sc. DEGREE EXAMINATION, APRIL 2024.

Information Technology

SOFTWARE PROJECT MANAGEMENT

Time : Three hours

Maximum : 75 marks

PART A — (20 marks)

Answer ALL questions.

- I. (A) Multiple choice questions: (5 × 1 = 5)
1. The first step in project planning is to _____
 - (a) Determine the budget
 - (b) Select a team organization model
 - (c) Determine the project constraints
 - (d) Establish the objective and scope
 2. Identify the sub-process of process improvement _____
 - (a) Process analysis
 - (b) Process design
 - (c) Process distribution
 - (d) Process identification

3. A 66.6% risk is considered as _____
 - (a) Very low
 - (b) Low
 - (c) Moderate
 - (d) High
4. Select the software configuration management concept that aids to control change?
 - (a) Procedure
 - (b) Baseline
 - (c) Audit
 - (d) Test
5. The field of organizational behavior examines such questions as the nature of leadership, effective team development, and _____
 - (a) Interpersonal conflict resolution, motivation of individuals
 - (b) Organizational control; conflict management
 - (c) Motivation of individuals
 - (d) Planning development

(B) Fill in the blanks: (5 × 1 = 5)

6. Project evaluation will be based on _____
7. Work content and expected outcomes are called _____ in project management.
8. The first step in the risk management process is _____
9. _____ serves as an excellent training ground for future senior executives in most organizations.
10. Hackman and Oldham believe that the implementation of core job characteristics in job design will increase employees' _____.

II. Answer the following: (5 × 2 = 10)

11. Define risk evaluation.
12. List the objectives of planning.
13. Define monte carlo simulation.
14. What are the different types of contracts?
15. What are the methods used to improve motivation?

PART B — (5 × 5 = 25)

Answer ALL questions choosing either (a) or (b)

16. (a) Explain in detail about various activities of software management.

Or

- (b) Describe how cost-benefit evaluation techniques can be used to choose the best among competing project proposal.

17. (a) List and explain various software effort estimation techniques.

Or

- (b) What are the advantages and disadvantages of the RAD models?

18. (a) Draw and explain activity table for forward pass and backward pass.

Or

- (b) Explain risk planning and control in detail.

19. (a) Explain in detail about creating the framework for monitoring and control.

Or

- (b) Explain the earned value analysis methods.
20. (a) Explain the Hackman and Oldham's Job Characteristics Model.

Or

- (b) Discuss in detail about the organizational structures.

PART C — (3 × 10 = 30)

Answer any THREE questions.

21. Describe the cash flow forecasting with different cost benefit evaluation techniques.
22. Examine the COCOMO II parametric productive model in detail with the steps in effort estimation technique.
23. Describe with suitable example, how the effect of risk on project schedule is evaluated using PERT?

24. Illustrate the various types of contracts with example. Summarize the advantages and disadvantages of each type.

25. Describe the various models of motivation in detail.
-

(6 pages)

S.No. 3567

P 22 ITVAC 2

(For candidates admitted from 2022 – 2023 onwards)

M.Sc. DEGREE EXAMINATION, APRIL 2024.

Information Technology — Value Added Course

CYBER SECURITY FUNDAMENTALS

Time : Three hours

Maximum : 75 marks

SECTION A — (20 marks)

Answer ALL questions.

- I. (A) Choose the correct answer. (5 × 1 = 5)
1. Which category does a DDoS attack fall under in the classification of cyber crime?
- (a) Financial Crimes
 - (b) Cyber-espionage
 - (c) System Interference
 - (d) Data breaches

2. What is a keylogger used for in cyber crime?
- (a) Encryption
 - (b) Data exfiltration
 - (c) Monitoring keystrokes
 - (d) Network analysis
3. The main purpose of network forensics is _____
- (a) Recovering deleted files
 - (b) Analyzing network traffic and logs
 - (c) Mobile device analysis
 - (d) Disk imaging
4. What is "Packet sniffing" in network hacking?
- (a) Intercepting and analyzing network traffic
 - (b) Modifying router configurations
 - (c) Creating virtual private networks
 - (d) Network optimization

5. The purpose of anti-malware software is _____

- (a) Encrypting data
- (b) Detecting and removing malicious software
- (c) Controlling physical access points
- (d) Preventing unauthorized access

(B) Fill in the blanks. (5 × 1 = 5)

6. _____ is a common cryptocurrency demanded by ransomware attackers due to its perceived anonymity
7. What is the decentralized and distributed ledger technology that underlies most cryptocurrencies?
8. Wireless forensics involves the analysis of data transmitted over _____
9. In web hacking 'Session Hijacking' involves taking over a user's active _____ session
10. Intrusion detection and prevention techniques are essential for safeguarding network _____

II. Answer ALL questions. (5 × 2 = 10)

- 11. Define Block chain
- 12. Define network forensics
- 13. What is Packet Sniffing?
- 14. Brief about the term "Digital Forensics".
- 15. Give short notes on Device Encryption.

SECTION B — (5 × 5 = 25)

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

16. (a) Write the impact of Ransomware attacks on organizations.

Or

- (b) Discuss the fundamentals of Bitcoin and how it ensures the security and privacy.

17. (a) Write the challenge and potential solutions posed by encrypted communication in network forensics.

Or

- (b) Detail about the steps involved in conducting a wireless forensics investigation.

18. (a) Describe the characteristics of Ransomware in cyber security.

Or

- (b) Explain the importance and benefits of Continuous Monitoring in scanning.

19. (a) Discuss the key skills and knowledge areas required for a successful career in digital forensics.

Or

- (b) Explain the significance of following the rules of evidence in digital forensics.

20. (a) Write the impact of physical theft on the confidentiality and integrity of sensitive data.

Or

- (b) Explore the role of access control policies in preventing abuse of privileges.

SECTION C — (3 × 10 = 30)

Answer any THREE questions.

21. Detail about classification of cyber criminals.
22. Elaborate the steps involved in conducting malware forensics after detecting a ransomware attack.
23. Explore the challenges and mitigation strategies associated with "Password Cracking" techniques.
24. Describe in detail about the challenges and strategies in preserving volatile digital evidence during incident response.
25. Discuss the challenges organizations face in implementing effective intrusion detection and prevention strategies.
-