

PG-A-1528

MSC-1X

**P.G. DEGREE EXAMINATION —
JULY, 2022.**

Computer Science

(CY 2021 Batch Onwards)

First Year

**MATHEMATICAL STRUCTURES FOR COMPUTER
SCIENCE**

Time : 3 hours

Maximum marks : 70

PART A — (5 × 5 = 25 marks)

Answer any FIVE questions out of Eight questions in
300 words.

All questions carry equal marks.

1. Explain the Tautology Logic Symbols with Truth table.
2. What is Binomial Theorem? Explain.
3. Discuss in detail about Topological Sorting.
4. Explain about Warshall's Algorithm.
5. Discuss in detail about Logic Networks.

6. Discuss about the Boolean algebra Structure.
7. Explain the concept of Hamiltonian Circuit.
8. Write short notes on Algebraic Structures.

PART B — ($3 \times 15 = 45$ marks)

Answer any THREE questions out of Five questions in 1,000 words.

All questions carry equal marks.

9. Explain about prove the correctness of an algorithm.
 10. Discuss about the pigeonhole principle algorithm.
 11. Write short notes on Recurrence relation.
 12. Explain the Traversal Algorithm.
 13. Explain about Finite-State Machines.
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MSC-2X

**P.G. DEGREE EXAMINATION —
JULY, 2022.**

Computer Science

(CY 2021 Batch Onwards)

First Year

DATA STRUCTURES

Time : 3 hours

Maximum marks : 70

PART A — (5 × 5 = 25 marks)

Answer any FIVE questions out of Eight questions in
300 words.

All questions carry equal marks.

1. Explain the concept of queue with illustrations.
2. Explain the basic concepts of Tabular method.
3. What is a Binomial Heaps? Explain with an example.
4. Write the short on Splay Trees.
5. Briefly explain TV Trees.

6. Briefly explain circular queue.
7. Distinguish between singly linked list and doubly linked list.
8. Explain the concept of Fibonacci Heaps.

PART B — ($3 \times 15 = 45$ marks)

Answer any **THREE** questions out of Five questions in 1,000 words.

All questions carry equal marks.

9. Explain the procedure to insert and delete a node in a singly linked list.
10. What are the two ways of representing binary trees? Explain with examples.
11. Explain the procedure to Skew Heaps with an example.
12. Explain the concept of AVL Trees.
13. Write the short notes on Point Quad Trees.

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MSC-3X

P.G. DEGREE EXAMINATION – JULY, 2022.

Computer Science

(From CY – 2020 onwards)

First Year

COMPUTER GRAPHICS

Time : 3 hours

Maximum marks : 70

PART A — (5 × 5 = 25 marks)

Answer any FIVE questions out of Eight questions in
300 words.

All questions carry equal marks.

1. What are the Input Devices in Computer Graphics?
2. Describe Raster scan System.
3. Explain the concept of Line segment clipping.
4. Briefly describe the Matrix Representation.
5. Explain about the Parallel Projection.

6. What is Depth buffer method? Explain?
7. Discuss about the 3-D Viewing transformation.
8. Explain the concept of line attributes.

PART B — (3 × 15 = 45 marks)

Answer any THREE questions out of Five questions in
1000 words.

All questions carry equal marks.

9. Discuss about DDA – Bresenham's algorithms.
 10. Explain about the Two dimensional transformations.
 11. Discuss about the Parallel Projection and Perspective Projection.
 12. Explain the interactive picture construction techniques.
 13. Explain about the Three dimensional display methods.
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MSC-4X

P.G. DEGREE EXAMINATION – JULY, 2022.

Computer Science

(From CY 2020 onwards)

First Year

**OBJECT ORIENTED ANALYSIS AND DESIGN –
OOAD**

Time : 3 hours

Maximum marks : 70

PART A — (5 × 5 = 25 marks)

**Answer any FIVE questions out of Eight questions in
300 words.**

All questions carry equal marks.

- 1. Describe Object-Oriented Modeling (OOM).**
- 2. What are the different types of relationships in UML?**
- 3. Discuss in detail about Class and Object Diagrams.**
- 4. What are the advantages and Disadvantages of OOA?**

5. What are Events and signals? Explain.
6. Discuss about the Testing and Quality.
7. Explain the concept of Interaction diagrams.
8. Write short notes on time and space.

PART B — (3 × 15 = 45 marks)

Answer any THREE questions out of Five questions in
1000 words.

All questions carry equal marks.

9. Explain about the Software Development Life Cycle.
 10. Discuss about the Use case Diagrams and Activity Diagrams.
 11. Write short notes on state chart diagrams.
 12. Explain about the Events and Signals in OOAD.
 13. Explain about Basic Structural Modeling.
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MSC-5X

**P.G. DEGREE EXAMINATION –
JULY, 2022.**

Computer Science

(From CY – 2020 onwards)

First Year

ADVANCED DBMS

Time : 3 hours

Maximum marks : 70

PART A — (5 × 5 = 25 marks)

Answer any **FIVE** questions out of Eight questions in
300 words.

All questions carry equal marks.

1. Describe Distributed Query Processing.
2. Write short notes on ODL and OQL.
3. Discuss in detail about Spatial Data Types.
4. What are the advantages of Big Data Storage?
5. Explain about the XML Query Languages.

6. Discuss in detail about Concurrency Control.
7. Explain the concept of Syntax and Semantics of Datalog Language.
8. Write short notes on Native XML Databases.

PART B — (3 × 15 = 45 marks)

Answer any THREE questions out of Five questions in
1000 words.

All questions carry equal marks.

9. Explain about the Client-Server Architectures.
 10. Discuss about the Object Relational Database.
 11. Write short notes on DB2 and TSQL2.
 12. Explain about the Mobile Transaction Models.
 13. Explain about Cloud Storage Architectures.
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MSC-6X

**P.G. DEGREE EXAMINATION –
JULY, 2022.**

Computer Science

(From CY – 2020 onwards)

First Year

COMPUTER ARCHITECTURE

Time : 3 hours

Maximum marks : 70

PART A — (5 × 5 = 25 marks)

Answer any FIVE questions out of Eight questions in
300 words.

All questions carry equal marks.

1. Discuss in detail about Flynn' Classification.
2. Write short notes on Pipelining of Processing.
3. Discuss in detail about Arithmetic Pipeline.
4. Explain the Cube interconnection network.
5. Explain about the SIMD Interconnection Networks.

6. Discuss in detail about Vector processing.
7. Explain the concept of Classification of Pipeline processors.
8. Write short notes on Matrix Operations.

PART B — (3 × 15 = 45 marks)

Answer any THREE questions out of Five questions in 1000 words.

All questions carry equal marks.

9. Explain about the Architecture of parallel system.
 10. Discuss about the Comparison of Temporal and Data Parallel Processing.
 11. Write short notes on Job sequencing and Collision prevention.
 12. Explain about the Multiprocessor Architecture.
 13. Explain about Analysis of parallel Sorting Algorithms.
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MSC-7X

**P.G. DEGREE EXAMINATION —
JULY 2022.**

Computer Science

(From CY – 2020 Onwards)

First Year

MOBILE COMPUTING

Time : 3 hours

Maximum marks : 70

PART A — (5 × 5 = 25 marks)

**Answer any FIVE questions out of Eight questions in
300 words.**

All questions carry equal marks.

- 1. List out the importance of voice technology.**
- 2. Draw and explain about SMS architecture.**
- 3. Summarize about digital audio broadcasting.**
- 4. What are advantages and disadvantages of feedback-based TCP?**

5. Describe components of sensor mote.
6. Analyze personal digital assistant.
7. Explain about classification of MAC protocols.
8. Draw Bluetooth architecture and explain the functionalities of Bluetooth in detail.

PART B — ($3 \times 15 = 45$ marks)

Answer any THREE questions out of Five questions in 1000 words.

All questions carry equal marks.

9. Explain three-tier architecture with a neat diagram.
10. Generalize the functionalities of GPRS.
11. Define multiplexing. Explain about types of multiplexing with neat diagram.
12. Describe in detail about issues in Ad hoc wireless networks.
13. State about location based routing protocols in WSNs in detail.

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MSC-8X

**P.G. DEGREE EXAMINATION —
JULY 2022.**

Computer Science

(From CY- 2020 onwards)

First Year

DATA WAREHOUSING AND DATA MINING

Time : 3 hours

Maximum marks : 70

PART A — (5 × 5 = 25 marks)

**Answer any FIVE questions out of Eight questions in
300 words.**

All questions carry equal marks

- 1. List out the OLAP operations and explain the same with an example.**
- 2. Describe the taxonomy of data mining tasks.**
- 3. Summarize in detail about various kinds of association rules.**

4. Describe in detail about Bayesian classification method.
5. Analyze the desirable properties of Clustering algorithm.
6. Explain different types of OLAP tools in detail.
7. Describe in detail about transformation tools.
8. What are the prediction techniques supported by a data mining systems?

PART B — (3 × 15 = 45 marks)

Answer any THREE questions out of Five questions in 1000 words.

All questions carry equal marks.

9. Explain multidimensional data model with a neat diagram.
10. (a) Generalize why we need data preprocessing step in data warehousing.
(b) Explain the various methods of data cleaning and data reduction technique.
11. Generalize and Discuss about constraint based association rule mining with examples and State how association mining to correlation analysis is dealt with.

12. Describe about the process of classification using back propagation.
 13. What is clustering? Describe in detail about the features of k-means partitioning method.
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**P.G. DEGREE EXAMINATION —
JULY, 2022.**

Computer Science

(From CY – 2020 onwards)

First Year

ANALYSIS OF ALGORITHMS

Time : 3 hours

Maximum marks : 70

PART A — (5 × 5 = 25 marks)

**Answer any FIVE questions out of Eight questions each
in 300 words.**

All questions carry equal marks.

- 1. Discuss Fundamentals of the analysis of algorithm efficiency elaborately.**
- 2. Explain in detail merge sort. Illustrate the algorithm with a numeric example. Provide complete analysis of the same.**

3. Describe about Optimal Binary Search Trees with example using Dynamic Programming.
4. Analyze how to solve Hamiltonian circuit problem using Backtracking technique.
5. Discuss the importance of Modular Arithmetic of Algebraic Problems.
6. Write short notes on randomized algorithms with example.
7. Describe binary search. Provide the complete analysis with an example.
8. Summarize Flow shop scheduling problem with example.

PART B — ($3 \times 15 = 45$ marks)

Answer any **THREE** questions out of Five questions
each in 1000 words.

All questions carry equal marks.

9. Write about two major phases of performance evaluation of an algorithm.
10. Describe in detail about Kruskals Algorithm with example and analyze its efficiency.

11. Generalize All Pair Shortest Path algorithm with example using Dynamic Programming.
 12. Summarize in detail about Traveling Salesman Problem with example using branch and bound technique with example.
 13. Discuss in detail about NP-Hard Scheduling Identical Processors problem with example.
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P.G. DEGREE EXAMINATION —
JULY, 2022.

Computer Science

[From CY–2020 onwards]

First Year

ADVANCED SOFTWARE ENGINEERING

Time : 3 hours

Maximum marks : 70

PART A — (5 × 5 = 25 marks)

Answer any FIVE questions out of Eight questions in
300 words.

All questions carry equal marks.

1. Explain about user requirements and system requirements.
2. List out the issues of user-interface design.
3. Summarize in detail about software prototyping.
4. Write short notes on agile software engineering model.
5. Describe in detail about software maintenance.

6. Analyze the desirable properties and importance of various system model.
7. Write about importance of monitoring and control systems in real-time software design.
8. Illustrate on rapid application development of software engineering process.

PART B — (3 × 15 = 45 marks)

Answer any THREE questions out of Five questions
in 1000 words.

All questions carry equal marks.

9. Explain in detail about software requirements of software engineering process model.
10. Generalize the various application architectures of designing phase.
11. Discuss about critical system development process.
12. Describe in detail about formal methods of software engineering.
13. Summarize in detail about risk management process.