

**D-4638**

**Sub. Code**

**41211**

DISTANCE EDUCATION

P.G.D.C.A. EXAMINATION, DECEMBER 2020.

First Semester

Computer Applications

DIGITAL COMPUTER ORGANIZATION

(CBCS 2018-19 Academic Year Onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. What is the Octal Equivalent of the decimal no  $(417)_{10}$ .
2. Convert the hexadecimal number  $(IE2)_{16}$  to decimal.
3. Define Half Adder.
4. What is Multiplexers?
5. What is the use of buffer register?
6. Define interrupt.
7. What is index register?
8. Describe device interface.
9. What is the use of cache memory?
10. What is virtual address?

PART B — (5 × 5 = 25 marks)

Answer ALL the Questions choosing either (a) or (b)

11. (a) Write the Laws of Boolean Algebra.

Or

- (b) Clarify the concept of Sum of Products and Product of Sum.

12. (a) List the applications of multiplexer.

Or

- (b) Write a note on Fixed Point Representation.

13. (a) List and explain the types of instructions formats.

Or

- (b) Give a brief account on computer registers.

14. (a) Clarify the concept of Program Control.

Or

- (b) Write a note on Peripheral devices.

15. (a) What is Associative Memory? How it is works.

Or

- (b) Write a short note on Auxiliary Memory.

PART C — (3 ×10 = 30 marks)

Answer any THREE questions.

16. Convert the following
  - (a) 111012 Binary to decimal number.
  - (b) 456 Decimal to binary number.
  - (c) 1468 Octal to decimal number.
  - (d) 5BC16 Hexadecimal to decimal number.
17. Explain the working of half adder with logic diagram and truth table.
18. List and explain the different instruction cycles.
19. Elucidate the concept of Addressing Modes.
20. Briefly explain the concept of Virtual Memory.

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**D-4639**

**Sub. Code**

**41212**

DISTANCE EDUCATION

P.G.D.C.A. EXAMINATION, DECEMBER 2020.

First Semester

Computer Applications

OBJECT ORIENTED PROGRAMMING WITH C++

(CBCS 2018-19 Academic Year Onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Define object.
2. What is manipulators?
3. Define class object.
4. What is inline function?
5. What is the benefit of inheritance in C++?
6. How does function overloading work in C++?
7. Why templates are used in C++?
8. What is file pointers?
9. What is destructors?
10. What are exceptions in C++?

PART B — (5 × 5 = 25 marks)

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

11. (a) Explain the polymorphism.

Or

- (b) Write a short note on formatted console I/O.

12. (a) Discuss about accessing class members.

Or

- (b) What is dynamic constructor and explain?

13. (a) Write a short note on multiple inheritance.

Or

- (b) Explain the conversion between basic data types.

14. (a) What is template in C++ with example?

Or

- (b) What are file opening modes explain with example?

15. (a) Write a short note on exception handling mechanism.

Or

- (b) Illustrate the handling uncaught exceptions.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Explain about the

- (a) Inheritance  
(b) User-defined manipulators.

17. Describe the private member function.
  18. Illustrate the binary operator overloading.
  19. Explain about the function templates.
  20. Describe the exceptions in constructors and destructors.
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**D-4640**

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**41213**

DISTANCE EDUCATION

P.G.D.C.A. EXAMINATION, DECEMBER 2020.

First Semester

DATA STRUCTURES AND ALGORITHMS

(CBCS 2018-19 Academic year onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Define Data Structure.
2. What is an Array?
3. List the applications of stacks.
4. State the difference between queues and linked lists.
5. Define degree of the node.
6. What is meant by level of the tree?
7. Define Searching
8. Mention the types of searching.
9. Define bubble sort.
10. What are the advantages of insertion sort?

PART B — (5 × 5 = 25 marks)

Answer ALL the Questions choosing either (a) or (b)

11. (a) Illustrate the concepts of Primitive Data types.

Or

- (b) Write a short note on two dimensional Arrays.

12. (a) How is it possible to insert different types of elements in stack?

Or

- (b) How to traverse the linked list? Explain.

13. (a) Explicate the concepts of Binary tree.

Or

- (b) Give brief account on Hashing Techniques.

14. (a) How to use the binary search algorithm? Explain.

Or

- (b) Write a note on Linear Search.

15. (a) Explain the quick sort algorithm and derive the time constraint.

Or

- (b) Write a short note on Tree sort.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Describe the types of datastructures with example.
17. Give a brief notes on operation on stacks with necessary example.



18. Elucidate the concept of Binary Search Tree.
  19. Briefly explain the concepts of Linear Search.
  20. Write an algorithm for Bubble with sort and explain example.
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**41221**

DISTANCE EDUCATION

P.G.D.C.A. EXAMINATION, DECEMBER 2020.

Second Semester

SOFTWARE ENGINEERING

(CBCS 2018 – 2019 Academic Year Onwards)

Time : 3 hours

Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL the questions.

1. List any four characteristics of Software.
2. Define: SRS.
3. What is meant by Unified process?
4. Define: Object-oriented analysis.
5. What is meant by Software Architecture?
6. Write any four rules for a good User Interface.
7. Define: Integration Testing.
8. What is the use of validation testing?
9. Define: Risk mitigation.
10. What is meant by Formal technical review?

PART B — (5 × 5 = 25 marks)

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

11. (a) Explain the framework for Software.

Or

- (b) Write a note on Evolutionary Process Model.

12. (a) Explain the concept of Requirement Engineering.

Or

- (b) Write a note on Behavioural modeling.

13. (a) Explain the concept of Architectural styles and patterns.

Or

- (b) Explain the steps involved in creating user interface design.

14. (a) Give an account on Black-Box testing with an example.

Or

- (b) Discuss the various categories of metrics.

15. (a) Explain the types of Software risks.

Or

- (b) Discuss about software risk monitoring and management.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Explain the characteristics of Incremental Process Model.

17. Describe the concept of Software Modeling.

18. Explain the process of designing Architecture of Software.
  19. Describe the various Testing Strategies in detail.
  20. Elaborate on ISO 9000 quality standards for Software.
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**41222**

DISTANCE EDUCATION

P.G.D.C.A. DEGREE EXAMINATION, DECEMBER 2020.

Second Semester

RELATIONAL DATABASE MANAGEMENT SYSTEMS  
(RDBMS)

(CBCS 2018 –19 Academic Year Onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. What is meant by Schema?
2. Define: Instance.
3. Define: DDL.
4. Classify the programmers of Database System.
5. Define: Referential Integrity.
6. What are the different types of Joins?
7. Give examples of any four aggregate functions.
8. Define: 3NF.
9. What is meant by Exclusive lock in concurrent transactions?
10. Define: Binary trees.

PART B — (5 × 5 = 25 marks)

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

11. (a) List any five features of Database System.

Or

- (b) Write a note on Data Abstraction.

12. (a) Explain the various integrity constraints.

Or

- (b) Discuss the altering tables and views with suitable examples.

13. (a) Explain the usage of Aggregative operators with example queries.

Or

- (b) Write a note on Lossless join decomposition.

14. (a) Discuss about the importance of Atomicity and Durability.

Or

- (b) Write a note on Serializability.

15. (a) Discuss the concept of Hash based indexing.

Or

- (b) Give an account on B+ trees.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Explain the various data models with suitable examples.
17. Describe the operations with respect to Relational Algebra.

18. Elaborate on various Normal forms with example.
  19. Explain the working of Time stamp based protocols on concurrent transactions.
  20. Describe about Indexed Sequential Access Methods.
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**41223**

DISTANCE EDUCATION

P.G.D.C.A. EXAMINATION, DECEMBER 2020.

Second Semester

COMPUTER GRAPHICS

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours

Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions

1. What is persistence?
2. What is mean by Addressability?
3. List out a few attributes of output primitives
4. Write short notes on active and passive transformations.
5. Define Affine transformation.
6. How will you clip a point?
7. What is the various representation schemes used in three dimensional objects?
8. What is the use of Projection reference point?
9. What do you mean by illumination?
10. Define morphing.



SECTION B — (5 × 5 = 25 marks)

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

11. (a) Describe in detail about the overview of graphics systems?

Or

- (b) Explain detail about raster and random scan systems.
12. (a) Write a detailed note on the basic two dimensional transformations.

Or

- (b) Explain with an example the Hodgeman polygon clipping algorithm.
13. (a) Differentiate parallel and perspective projections.

Or

- (b) Explain in detail about quadric surfaces.
14. (a) Write down the back face detection algorithm.

Or

- (b) Explain in detail about the different color models.
15. (a) Write short note on Ray Tracing.

Or

- (b) Explain the Boolean operations that can be performed on objects.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions

16. Explain the filled area primitives. Give a suitable example.
17. Explain the different 2D viewing in detail.
18. Explain curves and surface methods in detail.
19. Explain in detail about 3D Geometric transformations.
20. Explain the steps involved in the design of animation sequence.

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