D–6624

Sub. Code
41211

DISTANCE EDUCATION

P.G.D.C.A. EXAMINATION.

MAY 2021 EXAMINATION

&

MAY 2020 ARREAR EXAMINATION

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. Convert the binary number $(01011.1011)_2$ into decimal.

2. Convert (0.345)10 into an octal number:

3. Define Full Adder.

4. What is De Multiplexers?

5. What are the registers generally contained in the processor?

6. Define instruction codes.

7. Describe ISR.

8. What are the various mechanisms for implementing I/O operations?

9. What is cycle stealing?

10. What is virtual page number?

PART B — (5 × 5 = 25 marks)

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

11. (a) How do you subtract a number in 2'complement?

Or

(b) Write the Laws of Boolean Algebra.

12. (a) What is the difference between a full-adder and a half-adder?

Or

(b) Write the functions of Shift Registers and List its types.

13. (a) Give a brief account on Computer Instructions.

Or

(b) Clarify the concept of Timing and Control.

14. (a) How to organize the elements in the stack? Explain.

Or

(b) Write a note on Program Control.

15. (a) Elucidate the concept of Cache memory.

Or

(b) Write a short note on Main memory.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. What is the purpose of binary coding system? Explain the terms BCD, EBCDIC, ASCII CODE, GRAY CODE, and EXCESS-3 CODE

17. List and explain the different types of Flip-flops.

18. Elucidate the concept of Instruction Codes.

19. Briefly explain the technique of Asynchronous Data transfer.

20. What is the Auxiliary Memory? Explain its working mechanism.

———————

D–6625

Sub. Code
41212

DISTANCE EDUCATION

P.G.D.C.A. EXAMINATION.

MAY 2021 EXAMINATION

&

MAY 2020 ARREAR EXAMINATION

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 the questions.

1. What is polymorphism?

2. Define operations.

3. Define class object.

4. What are constructors in C++?

5. How does C++ support multiple inheritance?

6. Can abstract class have data members in C++?

7. Why templates are used in C++?

8. What is manipulators?

9. What is exception handling?

10. Why is it necessary to overload an operator in C++?

PART B — (5 × 5 = 25 marks)

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

11. (a) What is a copy constructor in C++ give an example?

Or

(b) Short note on hierarchy of conso1e stream classes.

12. (a) What is constant parameter and explain?

Or

(b) Describe the array of pointers to objects.

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

Or

(b) Illustrate the pure virtual functions.

14. (a) What is multiple argument and with example?

Or

(b) Discuss about the sequential access to a file.

15. (a) Short note on exceptions in constructors and destructors.

Or

(b) Illustrate the exception in class templates.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Illustrate OOP concepts in detail.

17. Describe the constructors and default constructor.

18. Give a brief notes on any three inheritance.

19. Explain about the generic programming with template.

20. Discuss about exception in inheritance tree.

———————

D–6626

Sub. Code
41213

DISTANCE EDUCATION

P.G.D.C.A. EXAMINATION.

MAY 2021 EXAMINATION

&

MAY 2020 ARREAR EXAMINATION

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. What are the primitive data types?

2. What are the characteristics of arrays?

3. Define : Header Linked list.

4. What are the applications of queue?

5. What is the use of binary tree traversals?

6. What do you meant by forest in tree data structure? Give example.

7. List the types of searching techniques.

8. What is the role of array in binary search?

9. What is time and space complexity of quick sort algorithm?

10. List the applications of sorting of elements.

PART B — (5 × 5 = 25 marks)

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

11. (a) How will you define and access elements of one dimensional array? Explain.

Or

(b) Write short note on : Time complexity of algorithms with its notation.

12. (a) What is Stack? How will you implement stack operations? Explain with diagram.

Or

(b) Briefly explain about working principle of circular queue.

13. (a) How will you perform insertion and deletion operations on binary tree? Explain with suitable examples.

Or

(b) Write short note on : Binary Search Tree.

14. (a) How will you represent binary search using arrays? Explain.

Or

(b) Elucidate about time and space complexity of binary search technique.

15. (a) How searching algorithm differs from sorting algorithm? Explain.

Or

(b) Write short note on : Radix Sort.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. What are two-dimensional arrays? How will you represent two-dimensional arrays? Give example.

17. Discuss in detail about how to create, insert and delete element from doubly linked list.

18. Explain in detail about various hashing techniques with suitable examples.

19. Describe the Linear tree search technique with suitable example.

20. Explain in detail about sorting numbers using bubble sort algorithm with example.

———————

D–7135

Sub. Code
41221

DISTANCE EDUCATION

P.G.D.C.A. EXAMINATION

MAY 2021 EXAMINATION

&

MAY 2020 ARREAR EXAMINATION

Second Semester

SOFTWARE ENGINEERING

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Define: Software.
2. What is the use of requirement analysis?
3. Define: DFD.
4. What is meant by validation requirement?
5. Define: User interface.
6. Write any two architectural styles.
7. Define: Unit testing.
8. What is the use of stress testing?
9. Define: RMMM plan.
10. What are software reviews?

SECTION B — (5 × 5 = 25 marks)

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

11. (a) List and explain the myths on software.

Or

(b) Write a note on CMMI model.

12. (a) Discuss about Requirement Engineering tasks.

Or

(b) Explain the concept of Scenario based modeling with suitable examples.

13. (a) Explain the concept of Architectural Design.

Or

(b) Discuss about golden rules for user interface design.

14. (a) Discuss about White-Box testing with an example.

Or

(b) Explain the metrics for software maintenance.

15. (a) Give an account on software risks.

Or

(b) Discuss about ISO 9000 quality standards for software.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Describe the characteristics and phases of Waterfall Model.

17. Elaborate on the process of building the Analysis Model.

18. Explain the process of User interface design.

19. Explain the various Testing Strategies.

20. Describe practices involved in quality management of software.

———————

D–7136

Sub. Code
41222

DISTANCE EDUCATION

P.G.D.C.A. EXAMINATION

MAY 2021 EXAMINATION

&

MAY 2020 ARREAR EXAMINATION

Second Semester

RELATIONAL DATABASE MANAGEMENT SYSTEMS (RDBMS)

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Define: Database.

2. What is meant by Entity? Give an example.

3. Define: DML.

4. State the syntax/query to create a table with four attributes.

5. What is meant by referential integrity?

6. Define: Inner join.

7. List any four set operations.

8. Define: BCNF.

9. What is a concurrent transaction?

10. Define: B+ trees.

SECTION B — (5 × 5 = 25 marks)

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

11. (a) List any five differences between file system and database system.

Or

(b) Discuss the concept of E-R model.

12. (a) Write a note on Keys.

Or

(b) Explain the correlated nested queries on tables with suitable examples.

13. (a) Explain the various set operations with example queries.

Or

(b) Discuss about dependency preserving decomposition.

14. (a) Explain the characteristics of valid transactions.

Or

(b) Write a note on multiple granularity.

15. (a) Give an account on cluster indexes.

Or

(b) Discuss the concept of ISAM.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Describe the characteristics of various data models.

17. Explain the operations on Relational Calculus with suitable queries.

18. Elaborate on various Normal forms with example.

19. Explain the working of lock based protocols.

20. Describe about performance tuning with respect to B+ trees.

———————

D–7137

Sub. Code
41223

DISTANCE EDUCATION

P.G.D.C.A. EXAMINATION

MAY 2021 EXAMINATION

&

MAY 2020 ARREAR EXAMINATION

Second Semester

COMPUTER GRAPHICS

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL the questions.

1. What is DVST? Give its importance.
2. What is mean by Resolution?
3. Define Blobby object.
4. Write short notes on active transformations.
5. Define translation.
6. What are the type of clipping?
7. What is a quadric surface?
8. What is a scripting system?
9. What do you mean by shading of objects?
10. Define computer graphics animation.

SECTION B — (5 × 5 = 25 marks)

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

11. (a) Describe in detail about the DDA line Generation algorithm?

Or

(b) Explain in detail about graphic monitors.

12. (a) Write a detailed note on Scaling.

Or

(b) Explain with an example the Cohen-Sutherland line clipping algorithm.

13. (a) Discuss about 3 Dimensional display methods.

Or

(b) Explain in detail about logical input design devices.

14. (a) Write down the XYZ color model.

Or

(b) Explain in detail about the boundary representation of three dimensional objects.

15. (a) Compare and contrast RGB and CMY.

Or

(b) Explain the morphing.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Explain the midpoint circle drawing algorithm. Give a suitable example.

17. Explain the different 2D transformations in detail.

18. Explain visible surface detection methods in detail.

19. Explain what is meant by Bezier curve. Also explain the properties of Bezier curve.

20. Explain the illumination models in detail.

———————