UG–C–2357 BSCS–07 X

U.G. DEGREE EXAMINATION — DECEMBER, 2023.

Computer Science

Second Year

APPLIED OPERATIONS RESEARCH

Time : 3 hours Maximum marks : 70

SECTION A — ($3 \times 3 = 9$ marks)

Answer any THREE questions out of Five questions in 100 words.

All questions carry equal marks.

1. Define Operations Research.

2. Give the example of goal programming.

3. List the applications of operation research mode

4. What is a replacement model?

5. What is linear programming?

SECTION B — (3 × 7 = 21 marks)

Answer any THREE questions out of Five questions in 200 words.

All questions carry equal marks.

6. Write the steps involved in solving LPP using Graphical method.

7. Describe the Goal programming give example.

8. Explain the N Jobs on M machines with example.

9. Discuss about Group Replacement policy.

10. Explain the scope of OR.

SECTION C — (4 × 10 = 40 marks)

Answer any FOUR questions out of Seven questions in 500 words.

All questions carry equal marks.

11. Solve by using simplex method,
Maximize $Z = \max$
$Z = 4x_1 + 10x_2$
Subject to
$$2x_1 + x_2 \le 10$$
$$2x_1 + 5x_2 \le 20$$
$$2x_1 + 3x_2 \le 18$$
$$x_1, x_2 \ge 0$$

12. A plastic manufacturer has 1,200 boxes of transparent wrap in stock at one factory and another 1,200 boxes at its second factory. The manufacturer has orders for this product from three different retailers, in quantities of 1000, 700 and 500 boxes respectively. He unit shipping costs (in Rs. per box) from the factories to the retailers are as follows.

	Retail $r1$	Retail $r2$	Retail $r3$
Factory A	14	13	11
Factory B	13	13	12

Determine the minimum cost shipping schedule for satisfying all demands from the current inventory. Formulate this as an LP model.

13. Describe the Dynamic Programming give example.

14. Discuss about the sequencing models with example.

15. Determine the optimum sequence for the five jobs, and minimum total elapsed time. Find also the idle time of machines M_1 and M_2.

16. Replacement of Machines with Considering the value of Money

17. Write short notes on

    (a) Types of floats, and

    (b) Reliability analysis.

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UG-C-2358 **BSCS-08X**

U.G. DEGREE EXAMINATION – DECEMBER, 2023.

Computer Science

Second Year

DESIGN AND ANALYSIS OF ALGORITHMS

Time : 3 hours Maximum marks : 70

PART A — ($3 \times 3 = 9$ marks)

Answer any THREE questions out of Five questions in 100 words

All questions carry equal marks

1. What is a Algorithms?

2. Define Top-Down.

3. What is a Jeep problem?

4. What is a Queue?

5. What mean by Selection sort?

PART B — ($3 \times 7 = 21$ marks)

Answer any THREE questions out of Five questions in 200 words

All questions carry equal marks

6. What is an algorithm? Write its importance.

7. Write short notes on Correctness of the Algorithms.

8. Discuss the algorithm for Recurrences.

9. Explain about the Basic Problem Solving Methods.

10. Discuss about the Linear Search.

PART C — ($4 \times 10 = 40$ marks)

Answer any FOUR questions out of Seven questions in 500 words

All questions carry equal marks

11. Write short notes Algorithms and its Development.

12. With suitable example, Explain the Adjacency list in detail.

13. Explain about the Binary Search Trees in detail.

14. Discuss about the Traveling Salesman Problem for five-city network-Recursion.

15. Explain about the Sorting Techniques in details.

16. Explain the Top-down structured Programming.

17. Explain Performance Analysis of Straight insertion Sort in detail.

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UG-C-2359 **BSCS-09X**

U.G. DEGREE EXAMINATION – DECEMBER, 2023.

Computer Science

Second Year

OBJECT ORIENTED PROGRAMMING WITH C++

Time : 3 hours Maximum marks : 70

PART A — (3 × 3 = 9 marks)

Answer any THREE questions out of Five question in 100 words.

All questions carry equal marks.

1. What is Token and Identifiers?

2. List out the example of Operator.

3. Give the example of Structure.

4. Define constructor.

5. What is a UML?

PART B — ($3 \times 7 = 21$ marks)

Answer any THREE questions out of Five questions in 200 words.

All questions carry equal marks.

6. Discuss about the Benefits and concepts.

7. Explain in detail the Scope resolution:: operator.

8. Briefly about the Multi-Dimensional arrays.

9. Write down the Function Overloading.

10. Difference between the While loop and Do while loop.

PART C — ($4 \times 10 = 40$ marks)

Answer any FOUR questions out of Seven questions in 500 words.

All questions carry equal marks.

11. Write in detail the Storage Classes give example.

12. Explain in detail the Switch case with example.

13. Discuss about the Addressing methods an example.

14. Write a program to find the roots of a quadratic equation.

15. Briefly in detail the friend function with program.

16. Explain in detail the inheritance with an example.

17. Describe the syntax of new and delete operator in C++.

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UG-C-2360 **BSCS-10X**

U.G. DEGREE EXAMINATION – DECEMBER, 2023.

Computer Science

Second Year

INTRODUCTION TO DATABASE MANAGEMENT SYSTEM

Time : 3 hours Maximum marks : 70

PART A — ($3 \times 3 = 9$ marks)

Answer any THREE questions out of Five questions in 100 words

All questions carry equal marks

1. What is DBMS?.

2. What is a Facilities?

3. Define : Sequential.

4. What is a RDBMS?

5. Give the example ER diagram.

PART B — ($3 \times 7 = 21$ marks)

Answer any THREE questions out of Five questions in 200 words

All questions carry equal marks

6. What is RDBMS? Write its objectives

7. Explain Single-valued dependencies in detail

8. What are the types of forms? Explain any one in detail.

9. Write the steps for Opening a Database and Creating Database

10. What are the objectives of Normalization?

PART C — ($4 \times 10 = 40$ marks)

Answer any FOUR questions out of Seven questions in 500 words.

All questions carry equal marks.

11. What are the different types of Database Models? Explain any two in detail.

12. What are the methods of File Organization? Explain any two in detail.

13. Explain functional dependency with suitable example.

14. What are the Pitfalls of RDBMS? Explain in detail.

15. Explain Relational Algebra and relational completeness in detail.

16. Explain the following SQL statements.

    (a) CREATE

    (b) SELECT

    (c) UPDATE

    (d) DELETE

    (e) INSERT.

17. Explain Knowledge based Management system in detail.
