PG–C–2296 **MCA–07X**

P.G. DEGREE EXAMINATION — DECEMBER 2023

Computer Application

Second Year

INTRODUCTION TO SOFTWARE ENGINEERING

Time : 3 hours Maximum marks : 70

PART A — ($5 \times 5 = 25$ marks)

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

All questions carry equal marks.

1. Explain about prototyping.

2. Brief spiral model.

3. Describe the roles played by system analyst.

4. Discuss in detail about software crisis.

5. Write short notes on formal technical reviews.

6. Enumerate on modular design.

7. Brief about system testing.

8. Discuss in detail about software prototyping.

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 the phases of software development.

10. Enumerate on software process models.

11. Illustrate quality concepts in detail.

12. Describe in detail about art of debugging.

13. Explain the black box testing in detail.

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PG–C-2300 **MCA–11X**

P.G. DEGREE EXAMINATION — DECEMBER 2023.

Computer Applications

Second Year

COMPUTER GRAPHICS

Time : 3 hours Maximum marks : 70

PART A — ($5 \times 5 = 25$ marks)

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

All questions carry equal marks.

1. Write the applications available for Computer Graphics?

2. Write the difference between View point and Clipping.

3. What is meant by scaling in 3D Transformation? Discuss.

4. Define Clipping. Give an Example.

5. What is meant by Aspect Ratio? Discuss in detail.

6. What is meant by View Transformation? Explain.

7. Define 'Revolution'. Explain with example.

8. What is meant by Parallel projection in Graphics?

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. Write the DDA Algorithm for drawing a line segment.

10. Explain about input device parameters.

11. Explain the concept of 3D viewing.

12. Explain window to view-port coordinate transformations.

13. Explain in detail about the two-dimensional transformation principles with examples.

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PG-C-2301 **MCA-12X**

P.G. DEGREE EXAMINATION – DECEMBER, 2023.

Computer Applications

Second Year

DESIGN AND ANALYSIS OF ALGORITHMS

Time : 3 hours Maximum marks : 70

PART A — ($5 \times 5 = 25$ marks)

Answer any FIVE questions out of Eight questions in 300 words

All questions carry equal marks

1. Define algorithm and write its characteristics.

2. What is top-down structured programming? Explain.

3. Explain hill climbing method in detail.

4. Explain the Quick Sort algorithm with an example.

5. Discuss the heap sort algorithm with example.

6. With illustration, explain knight's four problem.

7. Explain Ackermann's function in detail.

8. List the properties of various asymptotic notations.

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 the basic steps in the complete development of an algorithm with suitable example.

10. What is meant by Adjacency matrix? Explain briefly.

11. Explain how the travelling salesman problem can be solved by using branch and bound method.

12. Describe binary search in detail and provide the complete analysis with example

13. Explain in detail about Travelling Salesman Problem with suitable example.

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PG–C–2302 **MCA–13X**

P.G. DEGREE EXAMINATION — DECEMBER 2023

Computer Applications

Second Year

ACCOUNTING AND FINANCE ON COMPUTERS

Time : 3 hours Maximum marks : 70

PART A — ($5 \times 5 = 25$ marks)

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

All questions carry equal marks.

1. What is Double-Entry System?

2. What is Financial Statement Analysis?

3. What is Ratio Analysis?

4. What are the objectives of Funds Flow Statement?

5. State the Functions of Cost Accounting.

6. What is Suspense Account?

7. Explain the Techniques of Marginal Costing.

8. Define Budgetary Control.

PART B — $(3 \times 15 = 45$ marks)

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

All questions carry equal marks.

9. What are the difference between Trading Account and Profit and Loss Account?

10. The ratios relating to a company are given below:

Gross Profit	-	15% of Sales
Stock Velocity	-	6 months
Debtors Velocity	-	3 months
Creditors Velocity	-	3 months

Gross profit for the year 6 ending 31. Dec.1986 amounts to Rs. 60,000. Closing stock is equal to opening stock. Find out

(a) Sales

(b) Closing stock

(c) Sundry debtors

(d) Sundry Creditors.

11. From the following particulars, calculate earnings of a worker under:

(a) Time rate system.

(b) Piece wage rate.

(c) Halsey plan and

(d) Rowan plan

Wage rate-Rs.2 per hour

Production per hour- 4 units

Dearness allowance – Re. 1. per hour

Standard time fixed – 80 hours

Actual time taken – 50 hours

Production – 250 units

12. Explain the various types of Ratio Analysis.

13. (a) Draw up a flexible budget for production at 75% capacity on the basis of the following data for a 50% activity.

	Per unit (Rs)
Materials	100
Labour	50
Variable expenses (Direct)	10
Administrative Expenses (50% Fixed)	40,000
Selling and Distribution expenses (60 % Fixed)	50,000
Present production (50% Activity)	1,000 units

Or

(b) Explain the classification of costs.

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PG–C–2303 **MCA–14X**

P.G. DEGREE EXAMINATION — DECEMBER 2023

Computer Applications

Second Year

COMMUNICATION SKILLS

Time : 3 hours Maximum marks : 70

PART A — ($5 \times 5 = 25$ marks)

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

All questions carry equal marks.

1. What are the styles of reading in Communication Skill?

2. Write the merits and de-merits of speaking and listening.

3. What is meant by mock interview? How it is planned?

4. Write the purpose of Seminar. How it is Supporting for Communication?

5. How to express and identify body language in Communication?

6. What are the types of Expression techniques available in communication skill?

7. Explain about Article Writing.

8. List the tools available for personality development in Communication Skill.

PART B — ($3 \times 15 = 45$ marks)

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

All questions carry equal marks.

9. Discuss about the barriers of Intra personal Communication.

10. Explain in detail about Mock Group Discussion.

11. Describe about Conversation. How it is handled using Telephone?

12. Brief about Negotiation Techniques in Communication skill.

13. Describe in detail about Lateral Thinking.

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PG-C-2304 **MCA-15X**

P.G. DEGREE EXAMINATION – DECEMBER, 2023.

Computer Applications

Second Year

COMPUTER NETWORKS

Time : 3 hours Maximum marks : 70

PART A — ($5 \times 5 = 25$ marks)

Answer any FIVE questions out of Eight Questions in 300 words

All questions carry equal marks

1. Explain about communication satellites.

2. What is sliding window protocols? Discuss the working process.

3. Define firewall. Explain different types of firewall.

4. Write short notes on transport layer congestion control policy.

5. Discuss about JPEG and MPEG standards.

6. What are collision free protocols? Explain.

7. Explain the concept of Tunneling.

8. Write short notes on WWW.

PART B — ($3 \times 15 = 45$ marks)

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

All questions carry equal marks.

9. Discuss about different types of transmission media.

10. What is ISDN? Explain Broadband ISDN with the help of block diagram.

11. Explain about error detection and error correction codes.

12. Explain the connection establishment and termination in TCP with neat diagram.

13. What is pure ALOHA and slotted ALOHA? What is the efficiency? Justify your answer.

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PG–C–2305 **MCA–16X**

P.G. DEGREE EXAMINATION — DECEMBER 2023

Computer Application

Second Year

OPERATIONS RESEARCH

Time : 3 hours Maximum marks : 70

SECTION A — ($5 \times 5 = 25$ marks)

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

All questions carry equal marks.

1. Bring out the differences between transportation problem and assignment problem.

2. Write short note on Linear Programming.

3. Explain the basic characteristics of queuing System.

4. Explain the different types of strategy in game theory.

5. Solve the following L.P.P. graphically

Maximize $Z = 100x_1 + 40x_2$

Subject to $5x_1 + 2x_2 \leq 1000$

$3x_1 + 2x_2 \leq 900$

$x_1 + 2x_2 \leq 500$ and

$x_1 \; x_2 \geq 0$

6. Explain the Characteristics of Dynamic Programming.

7. Explain the graphical method solving give LLP.

8. Discuss the various steps involved in the solution of $(2 \times n)$ and $(m \times 2)$.

SECTION B — $(3 \times 15 = 45$ marks)

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

9. A manufacturer produces two products A and B. Both the products are processed on two different machines. The available capacity of first machine is 12 hours and that of second machine is 9 hours per day. Each unit of product A requires 3 hours on both machines and each unit of product B requires 2 hours on first machine and 1 hour on second machine. Each unit of product A is sold at Rs. 7 profit and that of B at a profit of Rs. 4. Find the production level per day for maximum profit graphically.

10. Solve the transportation problem by using

(a) VAM

(b) LCM

(c) NWC.

	1	2	3	4	11
I	21	16	25	13	13
II	17	18	14	23	13
III	32	27	18	41	19
Demand	6	10	12	15	

11. Elucidate in detail the various phases in while solving in operation research problem.

12. Describe Monte Carlo method of stimulation.

13. Maximize $y_1\ y_2\ y_3$

Subject to $y_1 + y_2 + y_3 = 5$;

$y_1, y_2, y_3 \geq 0$

PG–C–2306 **MCA-17X**

P.G. DEGREE EXAMINATION — DECEMBER 2023.

Computer Application

Second Year

OPERATING SYSTEMS

Time : 3 hours Maximum marks : 70

PART A — ($5 \times 5 = 25$ marks)

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

ALL questions carry equal marks.

1. What is an operating system? Explain with example.

2. Describe about the system calls.

3. Discuss the deadlock prevention.

4. What are the goals of I/O software? Discuss

5. Brief the multiprogramming with fixed partitions.

6. Write about the multiprogramming with variable partitions.

7. Explain the concept of shared file.

8. Discuss about the protection mechanisms.

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 in detail about the inter-process communication.

10. Write any two scheduling in process management and explain it.

11. Describe the memory management without swapping or paging.

12. Explain the page replacement algorithms.

13. Describe in detail about disk space management.

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PG-C–2307 **MCA-18X**

P.G. DEGREE EXAMINATION — DECEMBER 2023.

Computer Application

Second Year

OBJECT ORIENTED ANALYSIS AND DESIGN

Time : 3 hours Maximum marks : 70

PART A — ($5 \times 5 = 25$ marks)

Answer any FIVE questions out of Eight questions in 300 words

1. Explain the interplay of classes and objects.

2. Describe the nature of a class.

3. How to Identify the classes and objects. Explain it.

4. What are CRC cards? Describe it.

5. Discuss the design concepts.

6. Discuss about the refactoring.

7. Brief the UML concepts.

8. Write about the state diagram.

PART B — ($3 \times 15 = 45$ marks)

Answer any Three questions out of Five question in 1000 words.

9. Explain the evolution of the object model.

10. Discuss about the object-oriented analysis

11. Explain in detail about development process.

12. Describe the macro development process in detail.

13. Explain any four UML diagram in detail.

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PG–C–2308 **MCA–19X**

P.G. DEGREE EXAMINATION — DECEMBER, 2023.

Computer Applications

Second Year

INTERNET PROGRAMMING

Time : 3 hours Maximum marks : 70

PART A — ($5 \times 5 = 25$ marks)

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

All questions carry equal marks.

1. What do you mean by security and encryption? Explain.

2. What is the structure of the Web page? Explain.

3. What is package? Explain its importance.

4. How to create ActiveX control? Explain.

5. How Java Script differs from VB Script?

6. What is constructor? Explain it with an example.

7. Explain about layers.

8. What is Perl Operators. Explain with example.

PART B — ($3 \times 15 = 45$ marks)

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

All questions carry equal marks.

9. How to develope an Intranet applications? Explain.

10. What is web browser? Explain different types of browsers.

11. Explain about object oriented concepts in Java.

12. Discuss in detail about image and hyperlinks.

13. Design a webpage to demonstrate application form using HTML form tags.

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PG–C–2309 **MCA–20X**

P.G. DEGREE EXAMINATION — DECEMBER 2023

Computer Applications

Second Year

VISUAL PROGRAMMING

Time : 3 hours Maximum marks : 70

PART A — ($5 \times 5 = 25$ marks)

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

All questions carry equal marks.

1. Brief about windows programming.

2. Explain any six form properties.

3. Give a brief account on debugging in VC++.

4. Discuss how to handle the exception in VC++?

5. Write a Visual Basic program to implement binary search.

6. What are the ways to create control array?

7. Explain the features of combo box.

8. What are the different types of dialog boxes in VB?

PART B — $(3 \times 15 = 45$ marks)

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

All questions carry equal marks.

9. Discuss about the Software Development Kit (SDK) in detail.

10. Explain the conditional statements in VB with examples.

11. How to design and create a menu in VC++?

12. Explain Flex Grid control with its general properties.

13. Write short notes on:

    (a) Object Linking and Embedding

    (b) ODBC

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