

PG-C-2288

MCA-10X

**U.G. DEGREE EXAMINATION —
FEBRUARY 2023.**

Computer Application

First Year

THEORY OF COMPUTER SCIENCE

Time : 3 hours

Maximum marks : 70

SECTION A — (5 × 5 = 25 marks)

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

1. Write short note on Equivalence Classes?
2. Write the properties of Context Free Grammar in detail?
3. Write short note on Relations operations?
4. What is Graph? Explain the categories.
5. Write short note on Atomic logic?
6. Explain any two matrix representation of graph.

7. Define adjacency matrix of the graph G explain with an example.
8. Discuss about Trees in details.

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

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

9. Discuss in detail about function types.
 10. State and prove pumping lemma for Context free languages.
 11. Prove that U , the universal language is recursively enumerable but not recursive.
 12. What do you mean by Regular Language? Explain the applications of Pumping lemma.
 13. Discuss about various Normal Forms.
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MCA-11X

**P.G. DEGREE EXAMINATION,
FEBRUARY 2023**

Computer Application

Second 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 question carry equal marks.

1. Discuss about Point plotting.
2. Define the functions of any five input devices.
3. Illustrate on Composite transformation.
4. Discuss about Convex polygon clipping.
5. Illustrate on Z-Buffer Algorithm.
6. Illustrate on three dimensional composite transformations.

7. Discuss about User's model.
8. Write a note on Command language.

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 Bresenham's Line Drawing Algorithm.
10. Explain the 2-Dimensional basic transformations
in detail.
11. Explain Sutherland-Hodgeman polygon clipping.
12. Describe in detail about Three-dimensional
viewing.
13. Discuss in detail about the components of user
interface.

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MCA-12X

**P.G. DEGREE EXAMINATION –
FEBRUARY 2023.**

Computer Application

Second Year

DESIGN AND ANALYSIS OF ALGORITHMS

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 is an Algorithm? Write its needs and importance.
2. Develop an algorithm to find largest value from the given list.
3. Write a note on Top-down structured Programming.
4. State on Isomorphism and Adjacency Lists.
5. Illustrate on Jeep Problem.

6. Write an algorithm to implement Factorial for the given number.
7. Discuss about Single server problem.
8. Briefly describe the principles of Quick sort.

PART B — (3 × 15 = 45 marks)

Answer any THREE questions out of Five questions
in 1000 words

All questions carry equal marks.

9. Describe the basic steps to develop an algorithm with suitable example.
10. Illustrate on performance analysis of straight insertion sort.
11. Explain the representation of trees with example.
12. Discuss about recursion with the illustration of Fibonacci series.
13. Explain Heap sort algorithm with example.

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MCA-13X

**P.G. DEGREE EXAMINATION,
FEBRUARY 2023**

Computer Application

First Year

**ACCOUNTING AND FINANCE ON
COMPUTERS**

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. Write a note on Journal and Ledger.
2. What do understand by balance sheet? Illustrate with a simple example.
3. Discuss about tools available for financial analysis.
4. A worker is paid 25 paise per hour for completing a work within 8 hours. If he completes the work within 6 hours, calculate his wages under Halsey plan when the rate of premium is 50%.

5. Discuss about Overheads.
6. Write short notes on ABC Analysis.
7. What is working capital and how it can be managed?
8. From the following data, calculate B.E.P.

Particulars	Rs.
Selling price per unit	200
Direct material cost per unit	80
Direct labour cost per unit	20
Direct expenses per unit	20
Overhead per unit	30
Fixed overheads total	Rs.2,00,000

PART B — (3 × 15 = 45 marks)

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

All questions carry equal marks.

9. X Company has purchased and issued materials as follows :

1.1.2018	Stock of materials	200 units @ Rs.2.50 per unit
3.1.2018	Purchased	300 units @Rs.3.00 per unit
7.1.2018	Purchased	500 units @Rs.4.00 per unit
10.1.2018	Issued	600 units

12.1.2018	Purchased	400 units @Rs.4.00 per unit
18.1.2018	Issued	500 units
24.1.2018	Purchased	400 units @Rs.5.00 per unit
28.1.2018	Issued	200 units

Prepare the stores ledger under LIFO method.

10. Describe in detail about Fund flow analysis.
11. Discuss in detail about financial statements and its limitation.
12. Rama Ltd., furnishes you the following data relating to the year 2017.

Particulars	First half of the year (Rs.)	Second half of the year (Rs.)
Sales	45,000	50,000
Total Cost	40,000	43,000

Assuming that there is no change in prices and variable costs and that the fixed expenses are incurred equally in the two half year periods, calculate for the year 2017 :

- (a) Profit Volume Ratio
- (b) Fixed Expenses
- (c) Break Even Sales
- (d) Percentage of MOS.

13. Describe in detail about budgeting.

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**P.G. DEGREE EXAMINATION —
FEBRUARY 2023.**

Computer Application

Second Year

COMMUNICATION SKILLS

Time : 3 hours

Maximum marks : 70

SECTION A — (5 × 5 = 25 marks)

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

All questions carry equal marks.

1. Write short note on Process Communication Model.
2. Write the Advantages of Listening in Communication Skill.
3. Write short note on Group Discussion.
4. What is meant by Body Language? Explain the categories.

5. Write short note on Report Writing.
6. Explain the methods of Questioning.
7. Define Interview Process? Explain the types.
8. Discuss in detail about Article Writing.

SECTION B — (3 × 15 = 45 marks)

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

9. Explain speech Delivery techniques.
 10. How participation techniques improve Personality? Explain.
 11. Discuss about Negotiation Management.
 12. What is the purpose of Seminar in Communication? Explain.
 13. Explain the art of Conversation. Write the benefits.
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MCA-15X

**P.G. DEGREE EXAMINATION —
FEBRUARY 2023.**

Computer Application

Second Year

COMPUTER NETWORKS

Time : 3 hours

Maximum marks : 70

SECTION A — (5 × 5 = 25 marks)

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

All questions carry equal marks.

- 1. Write the characteristics of Hardware Network.**
- 2. What are the functions of Data Link Protocol?
Explain?**
- 3. List out the benefits of Firewall. Explain.**
- 4. Write short on Transport protocol elements.**
- 5. Explain the operation of Telephone System.**

6. Discuss about Sliding Window protocol.
7. Write in detail about Routing Algorithm.
8. What is Fragmentation? How it works in Computer Networks.

SECTION B — (3 × 15 = 45 marks)

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

9. Explain in detail about Transmission Media.
 10. Discuss about Transmission Control Protocol (TCP) in Computer Network.
 11. Explain in detail about various standards of Images.
 12. Explain the operations of ATM on Money withdraw Casestudie.
 13. Discuss about Crash Recovery in Computer Networks.
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**U.G. DEGREE EXAMINATION –
FEBRUARY, 2023.**

Computer Application

Second Year

OPERATIONS RESEARCH

Time : 3 hours

Maximum marks : 70

SECTION A — (5 × 5 = 25 marks)

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

All questions carry equal marks.

1. Describe different phases of Operation Research.
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

$$\text{Maximize } Z = 100x_1 + 40x_2$$

$$\text{subject to } 5x_1 + 2x_2 \leq 1000$$

$$3x_1 + 2x_2 \leq 900$$

$$x_1 + 2x_2 \leq 500 \text{ and}$$

$$x_1, x_2 \geq 0$$

6. Compare Assignment Problem and Transportation problem.
7. Explain the graphical method of solving LPP.
8. Discuss the various steps involved in the solution of $(2 \times n)$ and $(m \times 2)$.

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

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

9. Bring out the basic assumptions of transportation model.

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. Discuss the case study for the use of operations research techniques in Insulator India Limited for optimized production.

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**P.G. DEGREE EXAMINATION —
FEBRUARY 2023**

Computer Application

Second Year

OPERATING SYSTEMS

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 the semaphore.
2. Discuss the concept of round robin scheduling.
3. Explain the memory management with bit-maps.
4. Explain the directories with examples.
5. Write short notes on system call.
6. Explain the interrupt handler in detail.

7. Write about the multiprogramming with variable partitions.
8. Describe the security in detail.

PART B — (3 × 15 = 45 marks)

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

All questions carry equal marks.

9. Describe the interprocess communication in detail.
 10. Explain the deadlock in detail.
 11. Explain in detail about virtual memory.
 12. Discuss the concept of file storage.
 13. Explain the process management in detail.
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MCA-18X

**P.G. DEGREE EXAMINATION —
FEBRUARY 2023**

Computer Application

Second Year

OBJECT ORIENTED ANALYSIS AND DESIGN

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 evolution of object model.
2. Write about the use case of object oriented analysis.
3. Explain about the construction.
4. What is the concept of UML diagram?
5. Describe the relationship among objects.

6. Explain the classification of classes.
7. Discuss the concept of transmission.
8. Explain the programming UML.

PART B — (3 × 15 = 45 marks)

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

All questions carry equal marks.

9. What is object model? Explain it.
 10. Explain the object oriented analysis in detail.
 11. Explain the object oriented design and development.
 12. What is a diagram? Explain the Class Diagram and Object diagram
 13. Explain the micro development process.
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**P.G. DEGREE EXAMINATION –
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Computer Application

Second Year

INTERNET PROGRAMMING

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 the basic concept of Internet programming.**
- 2. Illustrate on WWW design issues.**
- 3. Bring out the structure of Web pages.**
- 4. Write short notes on Internet Explorer.**
- 5. Discuss about VB Script. Give example.**

6. Bring out the basic features of PERL.
7. Discuss about Netscape navigator Plug-Ins. Write its use.
8. Make a note on VDO live Technology.

PART B — (3 × 15 = 45 marks)

Answer any THREE questions out of Five questions
in 1000 words

All questions carry equal marks.

9. Describe the significances of developing Intranet applications.
10. Discuss about Cascading style sheet. Explain the steps to create frames.
11. Explain about Java Application Program Interface.
12. How do you create ActiveX control to Activate a Web Page? Discuss.
13. Illustrate the procedures to add graphics to Web pages.

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MCA-20X

**P.G. DEGREE EXAMINATION –
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Computer Application

Second Year

VISUAL PROGRAMMING

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 do you understand by Windows programming? Discuss its basic features.**
- 2. Write short notes on SDK.**
- 3. Write a VB program to find factorial for the given number using function.**
- 4. What are VB Tool box controls? Explain any two with example.**

5. Briefly discuss about Objects and classes.
6. Write short notes on serialization. Give example.
7. Discuss about Exception handling.
8. Illustrate on ODBC connectivity.

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 Dynamic Linking Libraries.
10. Explain the concept of Looping statements with its syntax in VB. Write a VB program to find largest value in an array.
11. Describe the significances of MFC File Handling
12. Discuss in detail about VC++ Components.
13. With an example explain the concept of Multiple Document Interface.
