

F-2082

Sub. Code

7MCI1C2

M.Sc. DEGREE EXAMINATION, APRIL 2019

First Semester

Computer Science and Information Technology

PROGRAMMING IN C

(CBCS – 2017 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. Differentiate between a character constant and a string constant.
2. Write the general form of simple if statement.
3. What is a subscripted variable?
4. How is a string stored in an array?
5. Differentiate between an array and structure.
6. What are actual and formal arguments? What are the differences between them?
7. What is a pointer?
8. How is a pointer variable declared?
9. Define Stream.
10. Write the general format of fseek function.

Part B**(5 × 5 = 25)**

Answer **all** questions choosing either (a) or (b).

11. (a) What are the arithmetic and logical operators available in C? Give examples.

OR

- (b) Explain the switch-case construct in C with an example.
12. (a) How are the one-dimensional array elements read and written?

Or

- (b) Explain any five string functions with examples.
13. (a) Name the storage classes used in C and explain them.

Or

- (b) What is meant by call by value? Explain the call by value method of parameter passing.
14. (a) How do pointers and arrays work together?

Or

- (b) Explain the advantages of using pointers in C.
15. (a) What are the different modes of files? Describe.

Or

- (b) What is dynamic memory allocation? How does it help building complex programs?

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Compare the while structure with the do-while structure.
 17. Write a C program to arrange the given names in an alphabetical order.
 18. Write a C program to find the factorial of a given number using recursion.
 19. Write a C program to reverse the string using pointers.
 20. State the various file I/O functions and explain them in detail.
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Sub. Code

7MCI1C3

M.Sc. DEGREE EXAMINATION, APRIL 2019

First Semester

Computer Science and Information Technology

DATA STRUCTURE AND ALGORITHM

(CBCS – 2017 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. What do you mean by Data Structure?
2. What is sorting?
3. Differentiate between singly linked list and doubly linked list.
4. Find the postfix form of the following: $A * B / C + D$.
5. What is complete binary tree?
6. Define: Binary Search Tree.
7. What is the complexity of quick sort?
8. What are the drawbacks of linear search?
9. Define the term "Algorithm".
10. What is Big 'O' notation?

Part B $(5 \times 5 = 25)$

Answer **all** questions choosing either (a) or (b).

11. (a) Write the procedures to insert and delete an element in a list.

Or

- (b) Write the procedure for merging lists and explain it.

12. (a) Explain the various operations performed on stack.

Or

- (b) What is doubly linked list? Explain.

13. (a) What are the ways to represent a binary tree? Explain.

Or

- (b) Explain the preorder traversal of binary tree.

14. (a) Write an algorithm for insertion sort and give an example.

Or

- (b) Write a binary search algorithm and explain with examples.

15. (a) What are the components of space complexity? Describe.

Or

- (b) Why do we need algorithm analysis? Explain.

Part C $(3 \times 10 = 30)$ Answer any **three** questions.

16. Write the procedures to perform predecessor and successor in a list.
 17. What is a Stack? Explain the various applications of stacks.
 18. What do you mean by hashing? Explain any two popular hash functions.
 19. Explain about the merge sort with example.
 20. Write an algorithm for adding “n” natural numbers and find the time and space required by that algorithm.
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Sub. Code

7MCI1C4

M.Sc. DEGREE EXAMINATION, APRIL 2019

First Semester

Computer Science and Information Technology

COMPUTER FUNDAMENTALS AND ARCHITECTURE

(CBCS – 2017 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. Write the streamlined method procedure for conversion binary into decimal number.
2. Expand:
 - (a) ASCII
 - (b) EBCDIC.
3. Draw a Logic diagram of a 4-to-1 line multiplexer.
4. How many entries are there on a four-variable Karnaugh map?
5. What is a Half Adder?
6. What is D-flip flop?
7. What is a stack?
8. Define: Instruction Code.

9. Differentiate between CPU and Peripherals.
10. Distinguish between Main memory and Auxiliary Memory.

Part B (5 × 5 = 25)

Answer **all** questions choosing either (a) or (b).

11. (a) Convert decimal 150.5 into octal number.

Or

(b) What is the difference between 1's complement subtraction and 2's complement subtraction of binary numbers? Show it by example.
12. (a) What is sum-of product and product-of-sum? Explain with examples.

Or

(b) What is the Demultiplexer? Draw the logic circuit for 1-to-16 demultiplexer.
13. (a) What is a Flip-Flop? Explain the RS and JK flip-flop.

Or

(b) Discuss in detail about the binary parallel adder.
14. (a) What are data transfer and data manipulation instructions? Describe.

Or

(b) Explain any five addressing modes with examples.
15. (a) Describe the operations of Magnetic Tape.

Or

(b) Explain in detail about the asynchronous data transfer.

Part C $(3 \times 10 = 30)$ Answer any **three** questions.

16. Find the octal, binary and hexadecimal number for the following decimal numbers.
 - (a) 45
 - (b) 20.
 17. State and prove Demorgan's Theorem of Boolean algebra.
 18. What is a subtractor? Discuss about the half-subtractor and full-subtractor.
 19. What are the arithmetic and logic micro operations? Explain with examples.
 20. Explain in detail the different mappings used for cache memory. Compare them.
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F-2086

Sub. Code

7MCI1E2

M.Sc. DEGREE EXAMINATION, APRIL 2019

First Semester

Computer Science and Information Technology

Elective — OPERATING SYSTEM

(CBCS – 2017 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. What is an Operating System?
2. Differentiate between page and segment.
3. What is PCB?
4. Define: Deadlock.
5. What is parallel processing?
6. What are the four basic functions of device management?
7. Define: Data Compression.
8. Differentiate between file and database.
9. What are the three types of files supported by Unix operating system?
10. List out the exec family of commands in Unix.

Part B

(5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Describe the evolution of operating system software.

Or

- (b) Write the algorithm for best-fit and first-bit allocation.

12. (a) Compare job scheduling and process scheduling.

Or

- (b) Explain about the round-robin process scheduling algorithm.

13. (a) Describe the master/slave multiprocessing configuration.

Or

- (b) Explain the producers-consumers problem.

14. (a) Write a short note on levels in a file management system.

Or

- (b) Write down the features of network operating system.

15. (a) Explain the design goals of Unix operating system.

Or

- (b) Describe the memory management in Unix operating system.

Part C $(3 \times 10 = 30)$

Answer any **three** questions.

16. Explain briefly about the types of operating system.
 17. Describe the various strategies for handling deadlock.
 18. What are the three categories of direct-access storage devices? Explain.
 19. Discuss about the different file organizations.
 20. Explain the functions of any ten user command interfaces in Unix.
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Sub. Code

7MCI2C1

M.Sc. DEGREE EXAMINATION, APRIL 2019

Second Semester

Computer Science and Information Technology

DATABASE TECHNOLOGY

(CBCS – 2017 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. What is a major purpose of a database system?
2. What is Denormalization?
3. Define: Query Tree.
4. Write down any two features of SQL.
5. What is a deadlock, and how can it be avoided?
6. Differentiate between single-user and multi-user system.
7. What is a distributed database?
8. What are the different types of multimedia sources?
9. What are the goals that data mining attempts to facilitate?
10. Define: Data marts.

Part B**(5 × 5 = 25)**

Answer **all** questions choosing either (a) or (b).

11. (a) What are the main concepts in the Entity-Relationship Model? Explain.

Or

- (b) Explain any four relational algebra operations.

12. (a) What are the steps involved in query processing? Explain.

Or

- (b) What is meant by the term heuristic optimization? Discuss the main heuristics that are applied during query optimization.

13. (a) What is the objective of concurrency control? Explain the three main problems in concurrency control.

Or

- (b) Explain the distinction between the terms serial schedule and serializable schedule.

14. (a) What are the advantages of distributed database? Explain.

Or

- (b) What are spatial data types and models? Explain.

15. (a) What are the characteristics of data warehouse? Describe.

Or

- (b) Explain about the GRANT and REVOKE commands in SQL.

Part C $(3 \times 10 = 30)$

Answer any **three** questions.

16. Explain the various components of a database system.
 17. Explain the different categories of SQL Commands.
 18. Discuss about the two-phase locking protocol.
 19. What is a web? Explain the different search techniques in web databases.
 20. Discuss the issues of database security.
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7MCI2C2

M.Sc. DEGREE EXAMINATION, APRIL 2019

Second Semester

Computer Science and Information Technology

JAVA PROGRAMMING

(CBCS – 2017 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. What is World Wide Web? What is the contribution of Java to the World Wide Web?
2. What is a token? State the Java character set.
3. What are the advantages of shorthand assignment operator?
4. Write the syntax of switch statement.
5. What do you mean by method overloading?
6. Write down the rules for naming classes.
7. Differentiate between local applet and remote applet.
8. List out any two methods defined by Applet.
9. Write down any two uses of JDBC.
10. Define: RMI.

Part B

(5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) What are the Java support systems? Explain.

Or

- (b) Describe the structure of a typical Java program.

12. (a) List out the bitwise operators of Java and give an example.

Or

- (b) What are the different types of if statements available in Java? Illustrate with an example.

13. (a) How does Java handle strings?

Or

- (b) Compare and contrast between concrete class and abstract class.

14. (a) How applets differ from applications?

Or

- (b) Explain the life cycle of Applet.

15. (a) What are the types of enterprise beans? Explain.

Or

- (b) Explain any two SQL statements with example.

Part C**(3 × 10 = 30)**Answer any **three** questions.

16. Explain the features of Java.
 17. Discuss the three loop constructs in Java with examples.
 18. Describe the various forms of implementing interfaces. Give examples.
 19. Write an applet to draw National flag with color.
 20. Describe the life cycle methods of a servlet.
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7MCI2C3

M.Sc. DEGREE EXAMINATION, APRIL 2019

Second Semester

Computer Science and Information Technology

COMPUTER NETWORKS

(CBCS – 2017 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. What is a protocol?
2. Differentiate between broadcast and point-to-point links.
3. Distinguish between analog and digital signals.
4. What is ISDN?
5. What is the basic idea of an ALOHA system?
6. How does a single bit error differ from a burst error?
7. What is the function of a router?
8. What is RPC?
9. What is Virtual Terminal?
10. Define : cryptography.

Part B

(5 × 5 = 25)

Answer **all** questions choosing either (a) or (b).

11. (a) What do you mean by computer network? What are the uses of computer networks?

Or

- (b) Name the five basic network topologies and explain it.

12. (a) Describe the theoretical basis for data communication.

Or

- (b) Compare Circuit switching and Packet switching.

13. (a) Compare Pure ALOHA and Slotted ALOHA.

Or

- (b) Write a procedure for simplex stop-and-wait protocol.

14. (a) What is the mechanism of sliding window flow control? Describe.

Or

- (b) Describe the design issues of session layer.

15. (a) Explain the design issues of application layer.

Or

- (b) What are the five basic functions of email system? Explain.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Discuss about seven layers of ISO OSI reference model.
 17. What are the Guided media? Explain two of them.
 18. Explain in detail about the Error Detection and Correction codes.
 19. What is Congestion Control? Describe the principles of congestion control.
 20. Explain about the Data Compression Techniques.
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7MCI2E1

M.Sc. DEGREE EXAMINATION, APRIL 2019

Second Semester

Computer Science and Information Technology

**Elective — COMPUTER ORIENTED NUMERICAL
METHODS**

(CBCS – 2017 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. Write a note on bisection method.
2. Write the formula for Newton Raphson method.
3. What are the iterative methods used for solving simultaneous linear algebraic equations.
4. Write about Gauss elimination method.
5. Write the Gauss's forward interpolation formula.
6. Write Bessel's formula.
7. Write the Newton's backward difference formula to compute the first derivative.

8. Write Simpson's $\frac{1}{3}$ rule.
9. Write Taylor's series about the point x_0 .
10. Write the modified Euler's method.

Part B $(5 \times 5 = 25)$

Answer **all** questions choosing either (a) or (b).

11. (a) Determine the root of $xe^x - 3 = 0$ correct to three decimal places, using the method of false position.

Or

- (b) Using Newton-Raphson method, find correct to three decimal places the equation $x^3 - 6x + 4 = 0$.
12. (a) Solve by Gauss elimination method the following equations.

$$3x - y + 2z = 12$$

$$x + 2y + 3z = 11$$

$$2x - 2y - z = 2.$$

Or

- (b) Solve the following equations by the method of triangularisation.

$$2x + y + 4z = 12$$

$$8x - 3y + 2z = 20$$

$$4x + 11y - z = 33.$$

13. (a) The following are data from the steam Table:

Temperature °C: 140 150 160 170 180

Pressure kg f/cm²: 3.685 4.854 6.302 8.076 10.225

Using Newton's formula, find the pressure of the steam for a temperature of 142°.

Or

- (b) Interpolate by means of Gauss's backward formula the sales of a concern for the year 1966 given that

Year:	1931	1941	1951	1961	1971	1981
Sales (in lakhs of rupees):	12	15	20	27	39	52

14. (a) From the following table of values of x and y , find

$\frac{dy}{dx}$ and $\frac{d^2y}{dx^2}$ for $x = 1.05$.

x	1.00	1.05	1.10	1.15
y	1.00000	1.02470	1.04881	1.07238
x	1.20	1.25	1.30	
y	1.09544	1.11803	1.14017	

Or

- (b) Dividing the range into 10 equal parts, find the approximate value of $\int_0^{\pi} \sin x \, dx$ by Trapezoidal rule.

15. (a) Solve the equation $\frac{dy}{dx} = 1 - y$ with the initial condition $x = 0, y = 0$, using Euler's algorithm and tabulate the solutions at $x = .1, .2$.

Or

- (b) Find the value of y for $x = 0.1$ by Picard's method, given that $\frac{dy}{dx} = \frac{y-x}{y+x}, y(0) = 1$.

Part C $(3 \times 10 = 30)$ Answer any **three** questions.

16. Use Horner's method, find the root of the equation $x^3 - 3x + 1 = 0$ correct to 3 decimal places.
17. Solve by Gauss-Seidel method of iteration the equations.
 $27x + 6y - z = 85$
 $6x + 15y + 2z = 72$
 $x + y + 54z = 110.$
18. Given the values
- | | | | | |
|--------|------|------|------|------|
| x | 14 | 17 | 31 | 35 |
| $f(x)$ | 68.7 | 64.0 | 44.0 | 39.1 |
- Find the value of $f(x)$ corresponding to $x = 27$ by Lagrange's interpolation formula.
19. Use Romberg's method to compute $\int_0^1 \frac{1}{1+x^2} dx$ correct to 4 decimal places.
20. Apply the fourth order Runge-Kutta method, to find an approximate value of y when $x = 0.2$, given that $y' = x + y, y(0) = 1.$
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7MCI2E2

M.Sc. DEGREE EXAMINATION, APRIL 2019

Second Semester

Computer Science and Information Technology

Elective — RESOURCE MANAGEMENT TECHNIQUE

(CBCS – 2017 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. Write the standard form of L.P.P.
2. Define degenerate feasible solution.
3. Define O.R.
4. Write the formula for average annual total cost when t is a continuous variable.
5. Define a two-person zero-sum game.
6. Define the value of the game.
7. What is a critical path?
8. Define free float.
9. Write the mathematical formulation of a transportation problem.
10. Which method is used to find an optimum solution for a transportation problem?

Part B

(5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Use the graphical method to solve the following LPP:

$$\text{Maximize } Z = 2x_1 + 3x_2$$

$$\text{Subject to the constraints : } x_1 + x_2 \leq 30$$

$$x_1 - x_2 \geq 0$$

$$x_2 \geq 3$$

$$0 \leq x_1 \leq 20$$

$$\text{and } 0 \leq x_2 \leq 12.$$

Or

- (b) Explain the general linear programming problem.
12. (a) Discuss the general solution methods for O.R. models.

Or

- (b) A firm is considering replacement of a machine, whose cost price is Rs. 12,200 and the scrap value Rs. 200. The running (maintenance and operating) costs in rupees are found from experience to be as follows:

Year :	1	2	3	4	5	6	7	8
Running cost :	200	500	800	1200	1800	2500	3200	4000

When should the machine be replaced?

13. (a) Explain the Maximin-Minimax principle.

Or

- (b) For the game with the following payoff matrix, determine the optimum strategies and the value of the game:

$$P_1 \begin{pmatrix} P_2 & \\ 5 & 1 \\ 3 & 4 \end{pmatrix}$$

14. (a) Draw the network for the following data:

Activity : A B C D E F G H I J
 Predecessor : - - A B C,D C,D E E F,G H,I

Or

(b) Write the rules for network construction.

15. (a) Determine an initial basic feasible solution to the following transportation problem using North-West Corner method:

					Availability
	5	3	6	2	19
	4	7	9	1	37
	3	4	7	5	34
Demand	16	18	31	25	

Or

(b) Write a note on unbalanced transportation problem.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Use Simplex method to solve the following LPP :

Maximize $Z = 4x_1 + 10x_2$

Subject to the constraints :

$2x_1 + x_2 \leq 50$

$2x_1 + 5x_2 \leq 100$

$2x_1 + 3x_2 \leq 90$

$x_1 \geq 0$ and $x_2 \geq 0$.

17. Discuss the classification of models in O.R.

18. Solve the following game graphically :

		Player B	
		B ₁	B ₂
Player A	A ₁	1	-3
	A ₂	3	5
	A ₃	-1	6
	A ₄	4	1
	A ₅	2	2
	A ₆	-5	0

19. The following table gives the activities in a construction project and time duration :

Activity	Preceding activity	Normal time (days)
1-2	-	20
1-3	-	25
2-3	1-2	10
2-4	1-2	12
3-4	1-3, 2-3	5
4-5	2-4, 3-4	10

- (a) Draw the activity network of the project.
- (b) Determine the critical path and the project duration.

20. Solve the following transportation problem :

					Supply
3 7 6 4					5
2 4 3 2					2
4 3 8 5					3
Demand	3	3	2	2	

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7MCI2E3

M.Sc. DEGREE EXAMINATION, APRIL 2019

Second Semester

Computer Science and Information Technology

Elective – THEORY OF COMPUTATION

(CBCS – 2017 onwards)

Time : 3 Hours

Maximum : 75 Marks

Section A

(10 × 2 = 20)

Answer **all** questions.

1. Define the Language of DFA.
2. Define: Non deterministic finite automata.
3. Write any two closure properties of Regular Languages.
4. Define a string homomorphism.
5. Define: Parse Trees.
6. Define: Deterministic Pushdown Automata.
7. Define the term turning machine.
8. Define: Unit productions.
9. Define: Recursive language.
10. Define: Post's correspondence problem.

Section B $(5 \times 5 = 25)$

Answer **all** questions, choosing either (a) or (b).

11. (a) Let x be a real number. Then prove that $\lceil x \rceil = \lfloor x \rfloor$ if and only if x is an integer.

Or

- (b) Convert to a DFA the following NFA:

	0	1
$\rightarrow p$	$\{q, s\}$	$\{q\}$
$*q$	$\{r\}$	$\{q, r\}$
r	$\{s\}$	$\{p\}$
$*s$	ϕ	$\{p\}$

12. (a) Convert the regular expression $(0+1)^*1(0+1)$ to an ϵ -NFA.

Or

- (b) If L is a regular language over alphabet Σ , then prove that $\bar{L} = \Sigma^* - L$ is also a regular language.
13. (a) Draw a parse tree for the palindrome grammar of $P \rightarrow \epsilon, P \rightarrow 0, P \rightarrow 1, P \rightarrow OPO, P \rightarrow 1P1$.

Or

- (b) If $L = N(P)$ for some DPDA P , then prove that L has an unambiguous context-free grammar.

14. (a) Prove that the context – free languages are closed under the following operations:
- (i) Union
 - (ii) Concatenation
 - (iii) Closure ($*$) and positive closure ($+$)
 - (iv) Homomorphism.

Or

- (b) Draw the transition diagram for a turing machine that accepts strings of the form 0^n1^n .
15. (a) Prove that L_{ne} is recursively enumerable.

Or

- (b) State Kruskal's Algorithm.

Section C

(3 × 10 = 30)

Answer any **three** questions.

16. Prove that a language L is accepted by some DFA if and only if L is accepted by some *NFA*.
17. State and prove the pumping lemma for regular languages.
18. If $L = N(P_N)$ for some PDA $P_N = (Q, \Sigma, \Gamma, \delta_N, q_0, Z_0)$, then prove that there is a PDA P_F such that $L = L(P_F)$.
19. Discuss the transition diagrams for Turing Machines
20. Prove that every non trivial property of the RE languages is undecidable.

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Sub. Code

7MCI2E5

M.Sc. DEGREE EXAMINATION, APRIL 2019

Second Semester

Computer Science and Information Technology

**Elective : FUNDAMENTALS OF GRID AND CLOUD
COMPUTING**

(CBCS – 2017 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. What is the functional role of grid computing?
2. What are the four basic principles of basic automatic computing systems?
3. What is OGSi?
4. Define: Authentication.
5. What is Cloud computing?
6. Write down any two benefits of Cloud Computing.
7. What are the disadvantages of cloud development?
8. Write down any features of IBM.
9. Write down any two problems related to cloud computing.
10. What is SaaS?

Part B

(5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Describe the characteristics and capabilities of a business on-demand.

Or

- (b) What is a SOA? Explain the service-oriented architecture.

12. (a) Write a short note on Commercial Data Center.

Or

- (b) Explain about the security standards for Grid Computing.

13. (a) What are the six key properties of cloud computing from Google's Perspective? Explain.

Or

- (b) How cloud computing works? Explain.

14. (a) Why develop web-based applications? Explain.

Or

- (b) Explain the cloud service development tools.

15. (a) Explain the characteristics of SaaS.

Or

- (b) Explain the features of Google App Engine.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Discuss about the component layers of grid protocol architecture.
 17. Explain the five layers of OGSA architectural organization.
 18. What are the advantages and disadvantages of cloud computing? Explain.
 19. Explain the Amazon web service components and services.
 20. Discuss the various services provided by Microsoft Office.
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Sub. Code

7MCI2E6

M.Sc. DEGREE EXAMINATION, APRIL 2019

Second Semester

Computer Science and Information Technology

Elective — COMPUTER GRAPHICS

(CBCS – 2017 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. What do you mean by computer graphics?
2. What are the disadvantages of DDA algorithm?
3. What is an output primitive?
4. What is the need of homogeneous coordinates?
5. What do you mean by View port?
6. What is meant by dragging?
7. Write the matrix representation of translation of Three Dimensional transformation.
8. Define : Reflection in 3D.
9. Differentiate between parallel and perspective projection.
10. What is cavalier projection?

Part B $(5 \times 5 = 25)$

Answer **all** questions choosing either (a) or (b).

11. (a) Explain the functions of mouse and joysticks.

Or

- (b) What is the primary goal of standardized graphics software? Explain.

12. (a) What are the attributes of line? Explain briefly.

Or

- (b) Explain the matrix representation of two-dimensional rotation.

13. (a) Describe the window-to-view port transformation.

Or

- (b) Explain the concepts of segments.

14. (a) Explain about the three dimensional graphics package.

Or

- (b) What is shearing in 3D? Explain.

15. (a) Write a short note on projections.

Or

- (b) Write down the steps of a depth-buffer algorithm.

Part C $(3 \times 10 = 30)$

Answer any **three** questions.

16. Discuss DDA line drawing algorithm in detail.
17. Describe the translation and scaling two-dimensional transformations.

18. Explain any two interactive-construction techniques.
 19. Describe any two three-dimensional display methods.
 20. Discuss about the back-face detection and scan-line method algorithms.
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F-2100

Sub. Code

7MCI3E4

M.Sc. DEGREE EXAMINATION, APRIL 2019

Third Semester

Computer Science and Information Technology

Elective : DATAMINING AND WAREHOUSING

(CBCS – 2017 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. Define the term “Data Mining”.
2. What is called machine learning?
3. What is a data warehouse?
4. Define: Metadata.
5. Why is important to have a data mining query language?
6. What is data generalization?
7. What is decision tree?
8. Define: Prediction.
9. What is a time-series database?
10. What are the three types of dimensions in a spatial data cube?

Part B

(5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Describe the taxonomy on data mining tasks.

Or

- (b) Explain any two data mining techniques.

12. (a) Explain the different schemas for multidimensional databases.

Or

- (b) What are OLAP operations? Explain.

13. (a) What is data cleaning? Describe.

Or

- (b) Define : Data reduction. Explain the strategies for data reduction.

14. (a) What are Bayesian classifiers? Explain.

Or

- (b) Describe the density based methods.

15. (a) What are the types of data in cluster analysis? Describe.

Or

- (b) Write the K-means algorithm and explain it.

Part C $(3 \times 10 = 30)$

Answer any **three** questions.

16. Explain the various steps in data mining process.
 17. Describe the data warehouse backend process.
 18. Discuss about the data mining primitives.
 19. Write the backpropagation algorithm and explain it.
 20. What are the major clustering methods? Explain briefly
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