

F-1636

Sub. Code

7BIT1C1

B.Sc. DEGREE EXAMINATION, APRIL 2019

First Semester

Information Technology

PRINCIPLES OF INFORMATION TECHNOLOGY

(CBCS – 2017 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** the questions.

1. What is Information Technology?
2. Specify the uses of communication systems.
3. What is database?
4. Define User Interface.
5. Mention the purpose of Telnet.
6. What is digital signal?
7. Write the uses of optical disks.
8. What is file management system?
9. What is Information System?
10. What is Internet programming?

Part B**(5 × 5 = 25)**

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

11. (a) What are the recent developments in communication technology?

Or

- (b) Explain the ethics of Information Technology.

12. (a) Write the features of Word Processing software.

Or

- (b) Give a brief note on Intellectual Property Rights.

13. (a) Define EDI. Explain its features.

Or

- (b) Illustrate the different types of computer networks.

14. (a) Elaborate the concepts of compression and decompression.

Or

- (b) Give a brief account on File Management Systems.

15. (a) List and explain the five generations of programming language.

Or

- (b) What are the steps involved in programming? Explicate them.

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

16. Describe the recent developments in Computer Technology.
 17. Illustrate the different types of user interface.
 18. Discuss the different practical uses of communication and connectivity.
 19. Illustrate any two types of secondary storage devices.
 20. Give a brief account on Object Oriented Programming.
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F-1637

Sub. Code

7BIT2C1

B.Sc. DEGREE EXAMINATION, APRIL 2019

Second Semester

Information Technology

PROGRAMMING IN C AND DATA STRUCTURES

(CBCS – 2017 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. What is character set?
2. What is recursion?
3. Define Pointer.
4. How to declare a Multi Dimensional Array?
5. Write the primary advantage of union.
6. What is unformatted data file?
7. Define Queue.
8. What is Linked List?
9. What is Binary Tree?
10. Specify any two applications of Tree.

Part B

(5 × 5 = 25)

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

11. (a) Explain the different data types available in C language with suitable illustrations.

Or

- (b) Illustrate different types of conditional decision making statements with examples.

12. (a) How to declare and initialize the single dimensional array? Explicate.

Or

- (b) Write a short note on Dynamic Memory Allocation.

13. (a) What is a structure? Explain the syntax for structure declaration with an example.

Or

- (b) Write a C program to create a data file.

14. (a) Differentiate between stack and queue.

Or

- (b) Elaborate the concepts of Linked List in C.

15. (a) What is tree? Explain different types of Trees.

Or

- (b) Describe the applications of Tree.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. What is an operator? List and explain various types of operators in C.
17. Illustrate the procedures to passing pointers to functions in C.

18. Elaborate the concepts of opening and closing a data file.
 19. Write a short note on the following concepts:
(a) Infix (b) Postfix (c) Prefix
 20. How to represent the binary tree? Discuss its procedures.
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F-1638

Sub. Code

7BIT3C1

B.Sc. DEGREE EXAMINATION, APRIL 2019

Third Semester

Information Technology

JAVA PROGRAMMING

(CBCS – 2017 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. Mention the scope of a variable.
2. Define Literals.
3. What is a command line argument?
4. Draw the flowchart of simple if control.
5. How to define a class?
6. What is a vector?
7. Define exception.
8. What are thread class priority?
9. Give the purpose of an applet.
10. What are tabbed panes?

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

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

11. (a) Explain the general structure of a Java program.

Or

- (b) Write a program to read an array of integers and print the biggest among them.

12. (a) Explain method overriding with an example.

Or

- (b) Write a note on operators in Java.

13. (a) Explain method overloading with an example program.

Or

- (b) Write a note on interface.

14. (a) Explain life cycle of a thread.

Or

- (b) Elucidate different types of errors.

15. (a) How to pass the parameters to applets?

Or

- (b) Write an applet program to draw the polygons.

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

Answer any **three** questions.

16. Explain basic concepts of Object Oriented Programming.
17. Describe various decision making and looping statements.

18. Explain the process of creation and importing of user defined packages with examples.
 19. Explicate different exception handling mechanism with suitable examples.
 20. Elucidate the life cycle of a servlet.
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Sub. Code

7BIT4C1

B.Sc. DEGREE EXAMINATION, APRIL 2019

Fourth Semester

Information Technology

OPEN SOURCE SOFTWARE

(CBCS – 2017 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. What is Open Source?
2. What are the two distinct modes of operation of the CPU in Linux?
3. What is MySQL?
4. Write a syntax to display date using MySQL.
5. Give the syntax for viewing arrays in PHP.
6. What is type casting in PHP?
7. What is Python?
8. How to provide input in python?
9. List the packages available in Perl.
10. What is Data Manipulation?

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

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

11. (a) Discuss the Kernel mode and Linux mode of operations in Linux Environment.

Or

- (b) Write a short note on Cloning.

12. (a) Describe MySQL string functions with its syntax.

Or

- (b) What is metadata in MySQL? How to obtain and use it?

13. (a) Briefly explain the features of PHP.

Or

- (b) Illustrate various operators in PHP with examples.

14. (a) Write a short note on sequences in Python?

Or

- (b) How to create the functions in Python?

15. (a) Elaborate the concepts of working with files in Perl.

Or

- (b) Explain the basic rules applied for naming the PERL variables.

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

Answer any **three** questions.

16. Describe the applications of Open Sources.
17. How do you sort query results in MySQL? Discuss.

18. Illustrate the procedures to handle file in PHP.
 19. Explain conditionals and loops in Python with examples.
 20. Discuss the various parsing rules available in Perl.
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F-1733

Sub. Code

7BITA3

U.G. DEGREE EXAMINATION, APRIL 2019

Information Technology

Allied – DISCRETE MATHEMATICS

(CBCS – 2017 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. What is Disjunction?
2. Define Well-formed Formula.
3. Specify the purpose of Normal Forms.
4. What is quantifier?
5. Define Isomorphism.
6. Write any two applications of graph theory.
7. Write the characteristics of a Tree.
8. Define Spanning tree.
9. What is meant by Lattice?
10. Mention the use of Posets.

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

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

11. (a) Describe propositional logic with an example.

Or

- (b) Distinguish between Atomic and Compound Statements.

12. (a) Write the principles of normal forms.

Or

- (b) What are the rules of Inference? Explicate them with examples.

13. (a) How to find the degree of vertex for Directed Graph? Explain with examples.

Or

- (b) Give a brief note on Bipartite graph.

14. (a) Elaborate the procedures of Kruskal's algorithm.

Or

- (b) Explicate the concepts of Eulerian-Hamiltonian graph.

15. (a) Define Sub lattices. What are the properties of Sub-lattices?

Or

- (b) What is meant by Boolean algebra? Illustrate any two Boolean functions.

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

16. Define Tautology. Describe its implementation with TT in detail.
 17. Discuss about theory of interference for predicate calculus.
 18. What is Graph? Illustrate the various types of graphs.
 19. Prove the following theorems:
 - (a) In every tree $T = (V, E)$, $|V| = |E| + 1$.
 - (b) For every tree $T = (V, E)$, if $|v| \geq 2$ then T has atleast two pendent vertices.
 - (c) For a loop-free undirected graph $G = (V, E)$.
 20. Illustrate the properties of Boolean algebra.
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F-1734

Sub. Code

7BITA4

U.G. DEGREE EXAMINATION, APRIL 2019

Information Technology

Allied: OPERATION RESEARCH

(CBCS – 2017 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. What is Operation Research?
2. What are the limitations of an O.R Model?
3. What is LPP?
4. Define Slack variable.
5. What is duality?
6. State Existence theorem of Duality.
7. Define an Unbalanced Assignment Problem.
8. What is the objective of traveling salesman problem?
9. Write the commonly used methods of finding BSF.
10. What is an unbalanced Transportation Problem?

Part B**(5 × 5 = 25)**Answer **all** questions, choosing either (a) or (b).

11. (a) Explain the general methods of solving O.R Models.

Or

- (b) What are the scope of O.R?

12. (a) Explain the procedure for forming a LPP model.

Or

- (b) Solve the following LPP by the graphical method

Maximize $Z = 3x_1 + 2x_2$

Subject to

$$-2x_1 + x_2 \leq 1$$

$$x_1 \leq 2$$

$$x_1 + x_2 \leq 3$$

and $x_1, x_2 \geq 0$

13. (a) Find the dual of the LPP

Maximize $Z = 3x_1 - x_2 + x_3$

Subject to

$$4x_1 - x_2 \leq 8$$

$$8x_1 + x_2 + 3x_3 \geq 12$$

$$5x_1 - 6x_3 \leq 13$$

and $x_1, x_2, x_3 \geq 0$

Or

- (b) Explain the steps involved in Branch and Bound Method.

14. (a) Give the mathematical formulation of Assignment Problem.

Or

- (b) Write short notes on Travelling Salesman Problem.

15. (a) Solve the following by Least Cost Method

		To			
		D	E	F	Supply
	A	6	4	1	50
From	B	3	8	7	40
	C	4	4	2	60
	Demand	20	95	35	

Or

- (b) Obtain an initial basic feasible solution to the following transportation problem using VAM.

		Store				
Warehouse		S ₁	S ₂	S ₃	S ₄	Availability
	A	5	1	3	3	34
	B	3	3	5	4	15
	C	6	4	4	3	12
	D	4	1	4	2	19
	Demand	21	25	17	17	80

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Explain the various phases in study of Operation Research.
17. Use Big -M Method to solve

Minimize $Z = 4x_1 + 3x_2$

Subject to

$2x_1 + x_2 \geq 10$

$-3x_1 + 2x_2 \leq 6$

$x_1 + x_2 \geq 6$

and $x_1, x_2 \geq 0$

18. Solve the following LPP using duality

Minimize $Z = 2x_1 + 2x_2$

Subject to

$2x_1 + 4x_2 \geq 1$

$-x_1 - 2x_2 \leq -1$

$2x_1 + x_2 \geq 1$

and $x_1, x_2 \geq 0$

19. Solve the following travelling salesman Problem:

	1	2	3	4	5
1	-	6	12	6	4
2	6	-	10	5	4
3	8	7	-	11	3
4	5	4	11	-	5
5	5	2	7	8	-

20. Solve the following transportation problem:

	Destination						
Origin	D ₁	D ₂	D ₃	D ₄	D ₅	D ₆	Supply
O ₁	5	3	7	3	8	5	3
O ₂	5	6	12	5	7	11	4
O ₃	2	1	3	4	8	12	2
O ₄	9	6	10	5	10	9	8
Demand	3	3	6	2	1	2	