

F-6548

Sub. Code

7MIT1C1

M.Sc. DEGREE EXAMINATION, NOVEMBER 2021

First Semester

Information Technology

COMPUTER ARCHITECTURE

(CBCS – 2017 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. Convert the octal 736.4 into a decimal.
2. Compare hardwired control and microprogrammed control.
3. What is Pseudo instruction?
4. What is subroutine?
5. List any two data transfer instructions.
6. What is a Stack?
7. What is polling?
8. Compare Isolated and Memory-mapped I/O.
9. What is locality of refence?
10. Compare page and page frame.

Part B

(5 × 5 = 25)

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

11. (a) Explain about the Full-Adder.

Or

- (b) Explain about SR Flip-Flop.

12. (a) Write briefly about Assembly language and Machine language.

Or

- (b) Explain the Interrupt cycle with a suitable flowchart.

13. (a) Explain briefly about Instruction formats.

Or

- (b) Write briefly about Reduced Instruction set computer.

14. (a) Explain the CPU-IOP communication with a flowchart.

Or

- (b) Explain the Addition and Subtraction algorithm with a flowchart.

15. (a) Write briefly about Memory Hierarchy.

Or

- (b) Discuss the Characteristics of multiprocessors.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Explain the Instruction cycle with a suitable diagram.
 17. Explain the Second pass of assembler with a suitable flowchart.
 18. Explain any five addressing modes.
 19. Explain briefly about Direct Memory Access.
 20. Explain briefly about Associate memory.
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F-6549

Sub. Code

7MIT1C2

M.Sc. DEGREE EXAMINATION, NOVEMBER 2021

First Semester

Information Technology

DATA STRUCTURES AND ALGORITHMS

(CBCS – 2017 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. Define space complexity.
2. Why Queue is called as FIFO structure?
3. Define divide and conquer.
4. What is the pre condition to implement binary search?
5. Define feasible solution.
6. Differentiate merge sort and quick sort.
7. Draw the binary search tree for the given word for, do, while, int and if
8. What is External path length?
9. What is connected components?
10. Define Queen Problem.

Part B

(5 × 5 = 25)

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

11. (a) What are the distinct Area of Algorithm? Explain.

Or

- (b) Develop an algorithm to push and pop the element in to the stack.

12. (a) Write a procedure to find minimum and maximum element in the array.

Or

- (b) Write an algorithm for insertion sort.

13. (a) Consider the instance of knapsack problem. Let $n = 3, m = 20$, $(p_1, p_2, p_3) = (25, 24, 35)$ and $(w_1, w_2, w_3) = (18, 15, 10)$ find four feasible solution.

Or

- (b) Explain the concepts of optimal storage on tapes.

14. (a) Discuss the concepts of reliability design.

Or

- (b) What is travelling sales man problem? How it is solved by Dijkstra's algorithm?

15. (a) Write an algorithm for breadth first search.

Or

- (b) Explain with example Hamiltonian cycles.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Write an algorithm for magic square and explain.
 17. Write an algorithm for Binary search and explain with example.
 18. Explain the diagrammatic representation of spanning tree using Prim's method.
 19. How multistage problem is solved using Dynamic programming?
 20. What are the types of tree traversal? Explain with example.
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Sub. Code

7MIT1C3

M.Sc. DEGREE EXAMINATION, NOVEMBER 2021

First Semester

Information Technology

ADVANCED JAVA PROGRAMMING

(CBCS – 2017 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. Write the usage of Driver manager.
2. What is panel?
3. Define servlet.
4. Write the usage of session task.
5. List the types of Enterprise Bean.
6. What is the use of deployment descriptor in EJB?
7. Define Remote Interface.
8. What is the purpose of RMI compiler?
9. How MVC is dividing the components of an application?
10. List the predefined variables of JSP.

Part B

(5 × 5 = 25)

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

11. (a) How does JDBC works? Explain.

Or

- (b) Explain about AWT supporting font types.

12. (a) Write a program to display a message using servlet.

Or

- (b) How security concepts are implemented in servlet? Explain.

13. (a) Explain the EJB interface and classes.

Or

- (b) Discuss on control structure of Perl.

14. (a) Explain the implementation of remote Interface.

Or

- (b) How RMI use the Inter ORB protocol? Explain.

15. (a) What is scriptlets? How it is implemented in JSP?

Or

- (b) Discuss on java mail component.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Briefly give an overview of swing.

17. How applet is used for servlet communication? Explain.

18. Illustrate with diagram about EJB architecture.
 19. Explain the following (a) Registering Remote object
(b) Writing RMI client.
 20. How Java bean is implemented in JSP? Explain.
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7MIT1C4

M.Sc. DEGREE EXAMINATION, NOVEMBER 2021.

First Semester

Information Technology

**PROFESSIONAL COMPETENCY AND
COMMUNICATIVE SKILLS**

(CBCS – 2017 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. What is copyright?
2. What is mozilla?
3. Name any two types of blogs.
4. What is twitter?
5. List any four numerical operators used in scilab.
6. What is scilab?
7. What is communication?
8. List any two features of spoken English.
9. Write the significance of a report.
10. What are the different types of letters?

Part B

(5 × 5 = 25)

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

11. (a) Write a brief note on Red Hat Linux.

Or

- (b) Write a brief note on free software licenses.

12. (a) Write briefly about conversational skills.

Or

- (b) Write briefly about Google + and LinkedIn.

13. (a) Write about windows management and workspace customization using scilab.

Or

- (b) Write about graphics windows and library functions of scilab.

14. (a) Write about the objective of spoken English and word formation.

Or

- (b) Write briefly about the process of communication

15. (a) Discuss about the structure of a letter.

Or

- (b) Write briefly about the C's of communication.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Discuss in detail about intellectual property.

17. Write briefly about group discussion and interview skills.

18. Explain briefly about
 - (a) Menu bar of scilab.
 - (b) Editor of scilab.
 19. Write about the
 - (a) Features of good speech
 - (b) Features of good speaker.
 20. Discuss about
 - (a) Steps of precise writing
 - (b) Technical reports.
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Sub. Code

7MIT1E1

M.Sc. DEGREE EXAMINATION, NOVEMBER 2021.

First Semester

Information Technology

Elective- DISCRETE MATHEMATICS

(CBCS – 2017 onwards)

Time : 3 Hours

Maximum : 75 Marks

Section A

(10 × 2 = 20)

Answer **all** questions.

1. State truth table for negation.
2. What do you mean by atomic statement?
3. Define Conjunctive Normal form.
4. What is Open statement?
5. Draw a graph with 5 vertices and find its degrees.
6. Give an example for complete graph.
7. What is spanning tree?
8. What do you mean by Hamiltonian graph?
9. State idempotent law in lattice.
10. Give one example for transitive relation.

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

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

11. (a) Explain conjunction and disjunction statements

Or

- (b) Show that

$$P \rightarrow (Q \rightarrow R) \Leftrightarrow (P \wedge Q) \rightarrow P \rightarrow (\sim Q \vee R)$$

12. (a) Explain Predicate Calculus with suitable example.

Or

- (b) Show that $R \rightarrow S$ can be derived from the premises $P \rightarrow (Q \rightarrow S)$, $\neg RVP$ and Q .

13. (a) What do you mean by Isomorphic graph? Explain with an example.

Or

- (b) Define circuit and degree of a graph. Give one example.

14. (a) Show that a connected graph with n vertices and $n-1$ edges is a tree.

Or

- (b) Write the steps involving in Dijkstra's Algorithm.

15. (a) Explain partially ordering with suitable example.

Or

- (b) Let $X = \{a, b, c\}$ and the relation \subseteq be the relation on the $p(A)$. Draw a Hasse diagram of $(p(X), \subseteq)$.

Section C

(3 × 10 = 30)

Answer any **three** questions.

16. Establish that
$$\neg (P \wedge Q) \rightarrow (\neg P \vee (\neg P \vee Q)) \Rightarrow (\neg P \vee Q)$$
17. What is PDNF? Obtain PDNF of
$$P \rightarrow ((P \rightarrow Q) \wedge \neg(\neg Q \vee \neg P)).$$
18. Explain with suitable examples Paths, cycles and connectedness.
19. Show that a connected graph is Eulerian if and only if all the vertices of the graph is even degree.
20. Show that the relation congruence modulo 5 over the set of positive integers is an equivalence relation.
