

LOYOLA ACADEMY DEGREE & PG COLLEGE, OLD ALWAL

(An Autonomous and affiliated to Osmania University)

M.C.A III Semester Final Examination, January- 2018

Subject: MIS & M COMMERCE
Sub Code: MCA 17302

Exam Time: 3 hrs
Max Marks: 100 M

Answer all Questions:

[5 x 20 = 100 M]

UNIT - I

1. a) Define the system and explain the using of systems approach in problem solving. [10 M]
b) Explain how the using of information technology will improve the customer service. [10 M]
(OR)
2. a) Explain the impact of Information technology on business process Reengineering. [10 M]
b) Explain types of business processes and the role of Information technology. [10 M]

UNIT - II

3. Explain the software modules or subsystems of financial accounting system. [20 M]
(OR)
4. Explain Production Information services at tactical level and strategic level. [20 M]

UNIT - III

5. Explain Decision support system development life cycle. [20 M]
(OR)
6. Explain about knowledge management in the organization. [20 M]

UNIT - IV

7. What are B2B applications of E-Commerce. [20 M]
(OR)
8. a) Explain different models of E-Business. [10 M]
b) Explain different E-Commerce support services. [10 M]

UNIT - V

9. a) Explain mobile consumer services provided by mobile commerce. [10 M]
b) Explain Location based services provided by mobile commerce. [10 M]
(OR)
10. a) Explain mobile Applications in E-commerce. [10 M]
b) Explain mobile shopping & Advertising. [10 M]

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LOYOLA ACADEMY DEGREE & PG COLLEGE, OLD ALWAL

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M.C.A III Semester Final Examination, Dec/Jan- 2017/18

Subject: Software Engineering

Exam Time: 3 hrs

Sub Code: MCA 17305

Max Marks: 100 M

Answer the following questions:

(5*20=100M)

UNIT-I

1. a) Explain about the Software Quality Attributes. (10M)
- b) Define Software Engineering .Write note on Software Engineering Approach. (10M)

(Or)

2. a) Discuss about Incremental and Spiral models (10M)
- b) Explain about Project Management Process. (10M)

UNIT - II

3. a) Explain the role of SRS. (8M)
- b) Explain the characteristics and components of an SRS (12M)

4. a) Explain about Pipe & filter style of architecture. (8M)
- b) Discuss about Components and Connectors. (12M)

UNIT – III

5. a) Explain about Coupling and Cohesion. (10M)
- b) Explain about COCOMO model. (10M)

6. a) Discuss in detail Risk Engineering. (10M)
- b) Discuss about Object Oriented Design. (10M)

UNIT – IV

7. a) Discuss about Black box testing and white box testing with an example. (12M)
- b) Write Programming Principles and guidelines. (8M)

8. a) Explain Testing Process. (10M)
- b) Explain unit testing and Metrics (10M)

UNIT – V

9. a) Explain about business Process reengineering. (10M)
- b) Explain about Reverse engineering restructuring. (10M)

10. a) Explain about Software Maintenance. (10M)
- a) Explain SPI return on Investment and SPI trends. (10M)

LOYOLA ACADEMY DEGREE & PG COLLEGE, OLD ALWAL

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M.C.A III Semester Final Examination, Dec/Jan- 2017/18

Subject: Database Management Systems
Sub Code: MCA 17306

Exam Time: 3 hrs
Max Marks: 100 M

Answer the following:

UNIT-I

- 1) (a) What are the Advantages of DBMS?
(b) Explain the difference between Strong Entity and Weak Entity.
(c) Write about Integrity Constraints.

(5*20=100M)

(Or)

- 2) (a) What is Aggregation? Explain with the help of an example.
(b) Explain Lossless-Join Decomposition, Dependency-Preserving Decomposition.
(c) What is Normalization? Explain 3NF, BCNF.

UNIT-II

- 3) Consider the following Schema:

Deposit (branch-name, account-number, customer-name, balance)

Customer (customer-name, street, customer-city)

Borrow (branch-name, loan-number, customer-name, amount)

Write the queries in relational algebra, tuple relational calculus.

- (i) Find the name of the Customers who have an account or loan or both? (5*4=20)
(ii) Find the name of the Customers who have an account but not a loan?
(iii) Find Customer-name and Street of all customers?
(iv) Find Customer-name who live in Secunderabad?
(v) Find Customer-name and City whose balance is greater than 50,000?

(Or)

- 4) (a) Explain Aggregate Functions in SQL.
(b) Explain Group by and Order by clause in SQL.
(c) Explain Cursors in SQL, with Example.

UNIT-III

- 5) (a) Explain Heap Files, Sorted Files, Cluster files in comparison of File organization.
(b) Write an Algorithm for Deletion from B+ Tree of order n .
(c) Explain difference between Extendible and Linear Hashing.

(7+6+7)

(Or)

- 6) (a) Give an overview of ISAM.
(b) Construct a B+ Tree for the following set of Key values, where a node in the tree can accommodate at most three pointers.
11,23,24,33,46,48,60,72,84,96

(10+10)

(P.T.O)

UNIT-IV

(6+6+7)

- 7) (a) Explain Serializability of transaction management.
(b) Explain Time-Stamp-Based concurrency control.
(c) What is a Deadlock? Explain Deadlock Prevention.

(Or)

(10+10)

- 8) (a) Explain ACID Properties of Transaction Management.
(b) Explain Two Phase Locking (2PL) Protocol to ensure Serializability.

UNIT-V

- 9) (a) Write about various data structures used for recovery.
(b) Explain discretionary access control in SQL for Grant and Revoke commands. **(10+10)**

(Or)

- 10) (a) Explain with examples, 3 main objectives when designing a secure database applications. **(6+6+8)**
(b) Explain check pointing.
(c) Explain Database Security Issues.

LOYOLA ACADEMY DEGREE & PG COLLEGE, OLD ALWAL

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M.C.A III Semester Final Examination, Dec/Jan- 2017/18

Subject: Design & Analysis of Algorithms
Sub Code: MCA 17307

Exam Time: 3 hrs
Max Marks: 100 M

(5*20=100M)

Answer the following:

UNIT - I

1. a) Write different algorithm performance analysis.
b) What is a stack? Explain stack operations with example.
- (Or)
2. a) What is graph? Explain adjacency matrix of graph with an example.
b) Give an algorithm to perform tree traversing procedures with example.

UNIT - II

3. a) Explain Strassen's matrix multiplication with the help of an example.
b) Write an algorithm to perform quick sort procedure with example.
- (Or)
4. a) What is greedy method? Explain the procedure for job sequencing with deadlines problem.
b) Write an algorithm with example to perform knapsack problem.

UNIT - III

5. Explain multi stage graph with the help of example graph and display shortest distance.
- (Or)
6. a) Write an algorithm for single-source shortest path problem with example.
b) What is DFS? Give an example.

UNIT - IV

7. What is graph colouring problem? Write an algorithm with an example.
- (Or)
8. Explain travelling sales men problem with example, using Branch and Bound.

UNIT - V

9. a) Explain NP-Hard Graph Problem with the help of an algorithm.
b) Write about NP-Completeness.
- (Or)
10. a) Write about basic concepts of deterministic and non-deterministic problems with example.
b) Write about some simplified NP-Hard Problem with example.

LOYOLA ACADEMY DEGREE & PG COLLEGE, OLD ALWAL
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M.C.A III Semester Final Examination, Dec/Jan- 2017/18

Subject: Object Oriented Programming Using Java

Sub Code: MCA 17308

Exam Time: 3 hrs

Max Marks: 100 M

Answer the following:

(5*20=100M)

UNIT-I

1. a) What is Object Oriented Programming? Explain three OOP principles. (10M)
b) Explain types of data types in java. (10M)

OR

2. a) What is constructor? Explain types of constructors with example program. (10M)
b) Explain method overriding with an example program. (10M)

UNIT-II

3. a) Explain the ways to create a thread with an example program. (10M)
b) What is exception handling? Write a program to demonstrate user-defined exception. (10M)

OR

4. Explain String class methods in java with examples. (20M)

UNIT-III

5. a) Explain Deque and its methods. (10M)
b) Explain Vector with an example program. (10M)

OR

6. a) Explain Date class with an example program. (10M)
b) Explain Map interfaces in java. (10M)

UNIT-IV

7. a) Explain Reader and Writer class methods. (10M)
b) Write a program to demonstrate FileWriter class. (10M)

OR

8. a) Explain Serialization in detail. (10M)
b) Explain CharArrayReader class with an example program. (10M)

UNIT-V

9. a) Explain Applet tag with attributes. (10M)
b) Write an applet program to demonstrate passing parameters to applet. (10M)

OR

10. a) Explain types of JDBC Drivers in detail. (10M)
b) Write a program to demonstrate Prepared Statement interface. (10M)

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LOYOLA ACADEMY DEGREE & PG COLLEGE, OLD ALWAL

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M.C.A III Semester Supplementary Examination, June - 2018

Subject: Design & Analysis of Algorithms
Sub Code: MCA 17307

Exam Time: 3 hrs

Max Marks: 100 M

Answer the following:

(5*20=100 M)

UNIT-I

1. a) Write the structure of an algorithm with example.
b) Explain disjoint sets with the help of an example.

(Or)

2. a) Write Randomized algorithm with example.
b) What is graph? Give an example and construct the adjacency matrix for the considered example.

UNIT - II

3. Write about Binary search algorithm with the help of an example solution.

(Or)

4. a) What is optimal storage on tapes problem? Explain the algorithm concerned to this.
b) Explain the problem 'Single source multiple paths' problems with example.

UNIT - III

5. What is dynamic programming? Explain multistage problem with example.

(Or)

6. a) What is spanning tree? Consider an example graph and generate spanning trees from that.
b) Write an algorithm to perform 0/1 knapsack reliability design.

UNIT - IV

7. What is 8-queen problem? Explain algorithm related to 8-queen problem solution.

(Or)

8. a) Explain knapsack problem related to backtracking.
b) What is the purpose of Hamiltonian Cycles? Explain its algorithm.

UNIT - V

9. Explain Cook's theorem and its applications.

(Or)

10. a) Explain deterministic and non-deterministic problems with example.
b) Write the basic concepts related to NP-Hard and NP-Completeness problem.

LOYOLA ACADEMY DEGREE & PG COLLEGE, OLD ALWAL

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M.C.A III Semester Supplementary Examination, June - 2018

**Subject: Software Engineering
Sub Code: MCA 17305**

**Exam Time: 3 hrs
Max Marks: 100 M**

Answer the following questions:

(5*20=100M)

UNIT-I

1. a) Define Software Engineering. Write notes on Software Engineering approach. (10M)
b) Explain Software Engineering challenges in detail. (10M)
- (Or)
2. a) Explain about Waterfall model and Prototyping model. (10M)
b) Explain about Project Management Process. (10M)

UNIT-II

3. a) Explain the Need for SRS. (10M)
b) Explain the characteristics and components of SRS. (10M)
- (Or)
4. a) Explain the Component and Connector View. (10M)
b) Explain the various Architecture Styles of C& C view. (10M)

UNIT-III

5. a) Explain about Coupling and Cohesion. (10M)
b) Discuss in detail about Risk Engineering (10M)
- (Or)
6. a) Explain about COCOMO model. (10M)
b) Define Quality. Explain about Quality. (10M)

UNIT-IV

7. a) Explain about White Box Testing in detail. (12M)
b) Write short notes on Unit Testing. (8M)
- (Or)
8. a) Write about Programming Principles and guidelines in Coding. (10M)
b) Explain about Coding Process. (10M)

UNIT-V

9. a) What is Reengineering? Explain about Software Reengineering process in detail. (20M)
- (Or)
10. a) Explain about Software Maintenance . (5M)
b) Explain Software Process Improvement in detail. (15M)

LOYOLA ACADEMY DEGREE & PG COLLEGE, OLD ALWAL

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M.C.A III Semester Supplementary Examination, June - 2018

Subject: Object Oriented Programming using Java
Sub Code: MCA 11308

Exam Time: 3 hrs
Max Marks: 100 M

Answer the following questions:

(5*20=100M)

UNIT-I

1. a) Explain features of java. (10M)
b) Explain types of operators in java. (10M)
- (Or)
2. a) Explain method overloading with an example program. (10M)
b) Explain abstract class with an example program. (10M)

UNIT-II

3. a) Explain built-in exceptions in java. (10M)
b) Explain Thread Priorities with an example program. (10M)
- (Or)
4. a) Explain String Buffer class methods in java with examples. (10M)
b) Explain primitive type wrapper classes in java. (10M)

UNIT-III

5. a) Explain Collection interfaces with an example program. (10M)
b) Explain string tokenizer. (10M)
- (Or)
6. a) Explain Calendar class and its methods. (10M)
b) Explain Array List with an example program. (10M)

UNIT-IV

7. a) Explain Input Stream and Output Stream class methods. (10M)
b) Write a program to demonstrate File Input Stream. (10M)
- (Or)
8. a) Explain Char Array Writer with an example program. (10M)
b) Explain Serialization in detail. (10M)

UNIT-V

9. a) Explain Applet class and its methods. (10M)
b) Write a program to demonstrate Simple Banner Applet. (10M)
- (Or)
10. a) Explain JDBC Architecture and Write a jdbc program to create a student table with roll no and name columns. (10M)
b) Explain Result Set interface with an example program. (10M)

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M.C.A III Semester Supplementary Examination, June - 2018

Subject: Database Management Systems
Sub Code: MCA 17306

Exam Time: 3 hrs
Max Marks: 100 M

Answer the following questions:

(5*20=100M)

UNIT-I

1. (a) Explain Conceptual schema, Physical schema, External schema.
(b) Explain ER-Diagram.
(c) Explain 1NF, 2NF, 3NF.

(7+7+6)

(Or)

2. (a) Explain differences between File systems versus DBMS.
(b) Write briefly about Entities and Attributes in ER-Diagram.
(c) Explain problems caused by Redundancy.

(6+6+8)

UNIT-II

3. (a) Consider the following Schema:
Lives (person-name, street, city)
Works (person-name, company-name, salary)
Located-in (company-name, city)
Manages (person-name, manager-name)

Write the queries in relational algebra, tuple relational calculus.

- (i) Find the name of all the employees who work for HDFC?
(ii) Find the name and city of employees who work for SBI?
(iii) Find the name, street, city of employees who work for HDFC and earn more than 30,000?
(iv) Find all employees who live in the same city has the company they work for?
(v) Find all the employees who do not work for SBI? **(5*4=20)**
- (a) Explain DDL,DML,DCL commands in SQL.
(b) Explain Nested Queries in SQL, with Example.
(c) Explain Triggers in SQL, with Example. **(7+6+7)**

UNIT-III

5. (a) Write about Hash-Based indexing, Tree-Based indexing.
(b) Write an Algorithm for insertion into B+ Tree of order d .
(c) Write about Static Hashing and Linear Hashing. (7+6+7)
- (Or)
6. (a) What are the different available alternatives for the data entries in an index?
(b) Construct a B+ Tree for the following set of Key values
1,2,3,5,7,11,17,19,23,29,31 assuming that the tree is initially empty, values are added in ascending order , where a node in the tree can accommodate at most four pointers ? (10+10)

UNIT-IV

7. (a) What is a Scheduler? Explain a Schedule involving two transactions.
(b) Explain briefly about Shared Lock, Exclusive Lock.
(c) Explain Optimistic Concurrency control. (6+6+7)
- (Or)
8. (a) Explain ACID Properties of Transaction Management.
(b) Write Short notes on Multiple-Granularity Locking and Serializability. (10+10)

UNIT-V

9. (a) Explain ARIES.
(b) Explain the role of DBA in Security-Related aspects of database design.
(c) Write Short Notes on Write-Ahead logging. (10+5+5)
- OR
10. (a) Explain Recovery from System Crash(Analysis Phase ,Redo Phase, Undo Phase).
(b) Explain Grant and Revoke on Views and Integrity Constraints. (10+10)

LOYOLA ACADEMY DEGREE & PG COLLEGE, OLD ALWAL

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M.C.A III Semester Final Examinations, December - 2018

**Subject: Management Information Systems & M-Commerce Exam Time: 3 hrs
Sub Code: MCA17302 Max Marks: 100 M**

Answer the following: **(5*20=100M)**

UNIT - I

1. a) Define the system and explain the using of systems approach in problem solving. **(10M)**
b) Explain in detail about the impact of Information Technology on Business Process Engineering. **(10M)**

(Or)

2. a) Explain in detail about the process of Reengineering work. **(12M)**
b) What are the five steps in Business Process Redesign? Explain. **(08M)**

UNIT - II

3. Explain about Operational Accounting and Financial Information systems. **(20M)**
(Or)
4. Explain about Production Information Systems in Tactical and Strategic level. **(20M)**

UNIT - III

5. Explain Decision Support System in detail. **(20M)**
(Or)
6. a) Explain about Knowledge Management in the organization. **(10M)**
b) Explain about Group Decision Support Systems. **(10M)**

UNIT - IV

7. a) Define E-Commerce What are B2B applications of E-Commerce. **(10M)**
b) Explain different models of E-Business. **(10M)**
(Or)
8. a) Explain different E-Commerce support services. **(10M)**
b) Explain about the Ethical and legal issues in E-commerce. **(10M)**

UNIT-V

9. a) Explain Mobile consumer services provided by Mobile commerce. **(10M)**
b) Explain Mobile shopping & Advertising. **(10M)**
(Or)
10. a) Explain Mobile Applications in E-commerce. **(10M)**
b) Explain Location based services provided by Mobile commerce. **(10M)**

LOYOLA ACADEMY DEGREE & PG COLLEGE, OLD ALWAL
(An Autonomous and Affiliated to Osmania University)
M.C.A III Semester Final Examinations, December - 2018
Subject: Software Engineering

Subject: Software Engineering
Sub Code: MCA17305

Exam Time: 3 hrs
Max Marks: 100 M

Answer the following:

$$(5^* 20 = 100 \text{ M})$$

- Unit-I**

1. Explain the following terms with examples (20M)
(i) Cost (ii) Schedule (iii) Quality (iv) Scale

2. List out and explain the various Software Development Process Models with example (Or) (20M)

Unit-II

3. a) Explain the value of a good SRS. (10M)
b) Explain about the functional specifications with use cases. (10M)

(Or)

4. a) Explain about Components and Connector View. (10M)
b) Explain about the various Architectural styles of C & C view. (10M)

Unit-III

5. a) Explain about COCOMO model. (10M)
b) Explain about Coupling and Cohesion. (10M)

(Or)

6. a) Explain about Risk Management. (10M)
b) Write about Detailed design verification metrics (10M)

Unit-IV

7. a) Explain about Coding Process (10M)
b) Write short notes on Unit Testing. (10M)

(Or)

8. a) Explain about Black Box Testing. (10M)
b) List out and explain different testing metrics. (10M)

Unit-V

9. Explain about Reverse Engineering and Forward Engineering in detail. (20M)
(Or)

10. Explain about SPI frameworks, SPI Return on Investment and SPI Trends. (20M)

LOYOLA ACADEMY DEGREE & PG COLLEGE, OLD ALWAL
(An Autonomous and Affiliated to Osmania University)
M.C.A III Semester Final Examinations, December - 2018

Subject: Database Management Systems
Sub Code: MCA17306

Exam Time: 3 hrs
Max Marks: 100 M

Answer any one from each unit:

(5* 20 = 100 M)

UNIT-I

- 1) (a) Compare the data base system with traditional file system (6+10+4)
(b) What is an entity and Relationship? Explain ER modeling with the help of data base for a student Management System.
(c) Write about Aggregation.

(Or)

- 2) (a) Differentiate the View and Table (6+7+7)
(b) What are the steps to be followed to convert a relation in 3NF to BCNF?
(c) Discuss the candidate key, Primary key and foreign key with an Example

UNIT-II

- 3) (a) Consider the following table:

Employee (EMP_name,DEPT_name,Salary)

- i) Find the EMP names which is getting lowest salary
ii) Find the DEPT names which has highest average salary
iii) Find all the DEPT where more than 60 employees working
iv) Find all employees whose salary is higher than the average salary of their DEPT (4 *5=20)

(Or)

- 4) (a) Write short notes on difference, union, rename and Cartesian product operations in relational algebra (8+4+8)
(b) Explain Group by and having clause in SQL with an Example.
(c) Discuss the correlated nested query with any one example.

UNIT-III

- 5) (a) Discuss in detail about primary and secondary file organization. (7+6+7)
(b) Explain about insertion, deletion of B+ trees.
(c) Explain briefly Hash based indexing.

(Or)

- 6) (a) Give an overview of Extendable Hashing with an Example.
(b) Construct a B+ Tree to insert the following values (Order of tree is 3)
32,11,15,13,7,22,15,44,67,4 (10+10)

(P.T.O)

=:2:=

UNIT-IV

- 7) (a) What is schedule? Explain about serializable and non serializable schedules. (6+8+6)
(b) Explain concurrency control.
(c) Discuss the Phantom problem

(Or)

- 8) (a) Discuss the Atomicity and durability of transaction management
(b) Discuss the Anomalies due to interleaved Execution.
(c) Short note on 2PL

(8+10+2)

UNIT-V

- 9) (a) What are the steps needed for recovery from system crash.
(b) Explain the Update Log Record and Compensation Log Record
(c) Short note on Check pointing

(8+8+4)

(Or)

- 10) (a) Define Access control and discuss the Mandatory Access control
(b) Role of DBA
(c) Define WAL

(8+8+4)

LOYOLA ACADEMY DEGREE & PG COLLEGE, OLD ALWAL
(An Autonomous and Affiliated to Osmania University)
M.C.A III Semester Final Examinations, December - 2018

Subject: Design & Analysis of Algorithms
Sub Code: MCA17307

Exam Time: 3 hrs
Max Marks: 100 M

Answer any one from each unit:

(5* 20 = 100 M)

UNIT-I

1. a) Define time complexity. Describe different notations used to represent their complexities.
b) What is a queue? Discuss the basic operations performed on queues.
- (Or)
2. a) what do you mean by algorithm? List some of the properties of it.
b) What is graph? Explain adjacency matrix of graph with an example.

UNIT-II

3. a) Write and explain the divide-and-conquer merge sort algorithm? Also compute its time complexity.
b) Explain the Stassen's matrix multiplication concept with an example.
- (Or)
4. a)What is spanning tree? Explain the Prims algorithm with an example.
b) What is greedy method? Explain the procedure for the job sequencing with deadline problem.

UNIT-III

5. a) Discuss the dynamic programming solutions for the travelling sales person problem.
b) Write a pseudo code of the dynamic programming algorithm for solving optimal binary search tree.
- (Or)
6. a)Write an algorithm for single-source shortest path problem with an example.
b) What is BFS? Give an example.

UNIT-IV

7. a)Write the control abstraction of backtracking.
b) Explain the applications of backtracking.
- (Or)
8. What is Graph Coloring Problem? Write an algorithm with an example.

UNIT-V

9. a) State and explain Cook's theorem.
b) Explain the strategy to prove that a problem is NP-hard.
- (Or)
10. a) Distinguish between deterministic and non-deterministic algorithms.
b)Write about NP-Completeness.

Answer any one from each unit:

UNIT-I

1. a) What is an Array. Explain types of arrays with example program. (10 M)
b) Explain Java's iteration statements with syntax and example program. (10 M)
- (Or)**
2. a) Explain how to implement multiple inheritance using interfaces with example program. (10 M)
b) Define package? Explain how do we create and access a user-defined package with example (10 M)

UNIT-II

3. a) Explain Java's built-in Exceptions and one built-in exception related example program. (10 M)
b) Explain any 5 String class methods in Java with examples. (10 M)
- (Or)**
4. a) Explain how to create a new thread by extending Thread with an example program. (10 M)
b) Explain java .lang package related classes and interfaces. (10 M)

UNIT-III

5. Explain ArrayList class, the LinkedList class, the HashSet class and the TreeSet class in Java. (20 M)
- (Or)**
6. a) Explain StringTokenizer class methods and BitSet class methods in Java. (10 M)
b) Explain Observable class methods and Timer class methods. (10 M)

UNIT-IV

7. What is serialization? Explain classes and interfaces that support serialization in detail. (20 M)
- (Or)**
8. a) Write a program to demonstrate File Output Stream class. (10 M)
b) Explain CharArrayWriter class with an example program. (10 M)

UNIT-V

9. a) Write an applet program to demonstrate passing parameters to Applet. (10 M)
b) Explain init(), start(), paint(), stop() and destroy() methods of an Applet. (10 M)
- (Or)**
10. a) Explain types of JDBC drivers in detail. (10 M)
b) Explain Result Set interface with an example program. (10 M)