

# **LOYOLA ACADEMY DEGREE & PG COLLEGE, OLD ALWAL**

**(An Autonomous and Reaccredited with 'A' Grade by NAAC)**

**MCA III semester Supplementary Examination, April - 2017**

**Subject : Design & Analysis of Algorithms**  
**Sub Code : MCA 11303**

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

**Answer the following questions:**

**(5\*20=100M)**

## **UNIT-I**

1. a) Write an algorithm for finding maximum element of an array. (10M)  
b) Explain about adjacency matrices (10M)
2. a) Define an algorithm? Explain the specification of an algorithm. (10M)  
b) What are Queues? Explain how queues are represented with necessary algorithm. (10M)

**(Or)**

3. a) Explain with an algorithm to solve "single source shortest paths" using Greedy method. (10M)  
b) Write an algorithm for quick sort? (10M)

**(Or)**

4. a) Define the problem "Job sequencing with Dead lines". (10M)  
b) Explain optimal Merge Patterns. (10M)

## **UNIT-III**

5. a) Explain about All – pairs shortest paths. (10M)  
b) Write an algorithm for BFS. (10M)
6. a) Explain the techniques for Graphs. (10M)  
b) Explain the travelling Sales person Problem. (10M)

**(Or)**

7. a) Explain Knapsack problem using "Branch –Bound" techniques. (10M)  
b) Explain about "8- Queen Problem" with Algorithm. (10M)
8. a) Explain about "Graph Colouring". (10M)  
b) Explain Sum of Subsets Problem. (10M)

## **UNIT-V**

9. a) Explain NP-Hard and NP-Complete. (10M)  
b) Explain NP- Hard Scheduling problem. (10M)
10. a) State and explain Cook's theorem. (15M)  
b) Explain about deterministic Algorithm. (05M)

# **LOYOLA ACADEMY DEGREE & PG COLLEGE, OLD ALWAL**

**(An Autonomous and Reaccredited with 'A' Grade by NAAC)**

**MCA (III semester) Semester Supplementary Examination, April - 2017**

**Subject : Operating Systems  
Sub Code : MCA 11304**

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

**Answer the following questions:**

**(5\*20=100M)**

## **UNIT-I**

1. a) What is process? What are the different states of a process? (8M)  
b) What is cooperating process? And explain it through shared memory and message passing? (12M)

**(Or)**

2. a) What is thread? And explain about multithreading> (10M)  
b) Explain about SJF and RR scheduling algorithms with an example. (10M)

## **UNIT-II**

3. a) Explain about Segmentation with paging? (10M)  
b) What is demand paging and explain about OPTIMAL and LRU page replacement algorithms? (10M)

**(Or)**

4. a) Explain the concepts of file sharing and protection? (10M)  
b) What is File System Mounting and Explain? (10M)

## **UNIT-III**

5. a) Explain classical problem of Synchronization? (12M)  
b) What is semaphore and what are the different types of semaphores? (8M)

**(Or)**

6. a) What is dead lock? What are the necessary conditions of deadlock? (8M)  
b) Write short notes on avoidance of deadlock using banker's algorithm? (12M)

## **UNIT-IV**

7. a) What is Disk Attachment and Explain ? (8M)  
b) Explain about FCFS AND SSTF Disk scheduling algorithms? (12M)

**(Or)**

8. a) Describe three circumstances under which blocking and non- blocking I/O should be used? (10M)  
b) Write short notes on kernel I/O Sub system? (10M)

## **UNIT-V**

9. a) Explain about memory management in LINUX? (8M)  
b) Explain Network Structure in detail? (12M)

**(Or)**

10. a) Explain static and dynamic linking in detail? (10M)  
b) Discuss various system components of windows-XP? (10M)

# **LOYOLA ACADEMY DEGREE & PG COLLEGE, OLD ALWAL**

(An Autonomous and Reaccredited with 'A' Grade by NAAC)

**MCA (III semester) Semester Supplementary Examination, April - 2017**

**Subject : Database Management System**  
**Sub Code : MCA 11302**

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

**Answer the following questions:**

**(5\*20=100M)**

## **UNIT-I**

1. a) Define DBMS . Give the advantages of DBMs.  
b) Define Entity. Explain types of entities.

**(Or)**

2. a) Define and explain primary and foreign key.  
b) Explain 1NF, 2NF.

(10M)  
(10M)

## **UNIT-II**

3. a) Explain selection and projection operator.  
b) Explain GROUP BY and HAVING clause with example.

**(Or)**

- 4.a) Explain joins in relational algebra.  
b) Give a example for trigger in SQL.

(10M)  
(10M)

## **UNIT-III**

5. a) Explain primary and secondary indexes.  
b) Explain ISAM.

**(Or)**

6. a) Explain tree based indexing.  
b) Explain static hashing.

(10M)  
(10M)

## **UNIT-IV**

7. a) Explain ACID properties of transaction.  
b) Explain strict 2PL.

**(Or)**

8. a) Explain serializability in transactions.  
b) Explain lock management in concurrency control.

(10M)  
(10M)

## **UNIT-V**

9. Explain ARIES. (20M)

**(Or)**

10. a) What is log protocol  
b) Explain Discretionary access control. (10M)  
(10M)

**LOYOLA ACADEMY DEGREE & PG COLLEGE, OLD ALWAL**  
 (An Autonomous and Re-Accredited with 'A' Grade by NAAC)

**Subject : Operations Research**  
**Sub. Code : MCA 11305**

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

1. a) What is linear programming.  
 b) Solve the following problem by Simplex method

$$\text{Maximize } Z = 6X_1 + 4X_2$$

$$\text{Subject to } 2X_1 + 3X_2 \leq 30$$

$$3X_1 + 2X_2 \leq 24$$

$$X_1 + X_2 = 3 \text{ and}$$

$$X_1, X_2 \geq 0$$

**UNIT - I**

**(4M)**  
**(16M)**

2. a) Write about (i) Sensitivity analysis (ii) Duality  
 b) Solve the following problem using graphical Method

$$\text{Maximize } Z = 7X_1 + 10X_2$$

$$\text{Subjected to } X_1 + X_2 \leq 30000$$

$$X_2 \leq 12000$$

$$X_1 \geq 6000$$

$$X_1, X_2 \geq 0$$

**(Or)**

**(6M)**  
**(14M)**

**UNIT - II**

3. a) Determine initial basic feasible solution to the following transportation problem using North – West corner method

**(16M)**

	<b>Destination</b>				
	<b>W</b>	<b>X</b>	<b>Y</b>	<b>Z</b>	<b>Supply</b>
<b>A</b>	11	13	17	14	250
<b>B</b>	16	18	14	10	300
<b>C</b>	21	24	13	10	400
<b>Demand</b>	200	225	275	250	

**(P.T.O)**

- b) Write about mathematical model for transportation problem  
**(Or)**
4. a) write about transshipment model  
 b) Solve the following transshipment problem

Origin	Destinations				Capacity
	1	2	3	4	
A	8	13	4	3	80
B	15	12	5	9	120
C	-	11	8	1	150
D	6	5	1	1	70
Requirements	350	350	130	130	

### UNIT - III

5. a) State the theorem on which solution methodology for assignment problem is evolved?  
 b) A Company has a team of four salesmen and there are four districts where the company wants to start its business. After taking into account the capabilities of salesmen and the nature of districts, the company estimates that the profit per day in rupees for each district as below

(16M)

Profits

	P <sub>1</sub>	P <sub>2</sub>	P <sub>3</sub>	P <sub>4</sub>
S1	16	10	14	11
S2	14	11	15	15
Salesmen S3	15	15	13	12
S4	13	12	14	15

Find the assignment of salesmen to various districts which will yield maximum profit?

**(Or)**

6. a) Explain the Cutting -Plain algorithm?  
 b) Explain the Zero- One Implicit Enumeration algorithm?

(10M)

(10M)

7. a) Enumerate all the characteristics of Dynamic Programming problem  
 b) formulate the following problem as a dynamic programming problem.  
 Minimize  $Z=(X_1+2)^2 + X_2 X_3 - (X_4-5)^2$   
 Subject to  $X_1+X_2 X_3+X_4 \leq 5$ ;  $x_1, x_2, x_3, x_4$  are non negative integers.  
 Find the optimum solution. What is the optimum solution if the right hand side of the constraint is 3 instead of 5

(4M)

(16M)

(Or)

8. Given the following information draw the network diagram, Find Earliest and Latest occurrence Time and find the critical Path and its duration (20M)

Activity	A	B	C	D	E	F	G	H	I	J	K	L
Immediate predecessor	-	-	-	B,C	A	C	E	E	D,F,H	E	I,J	G
Duration(days)	9	4	7	8	7	5	10	8	6	9	10	2

### UNIT - V

9. a) Define the term Fair game, Strategy and Saddle point (6M)  
 b) Solve the following game matrix which represents the payoff to the player  
 A . Find the optimal strategies for each player (14M)

Player B

		1	2	3
1		9	1	4
Player A	2	0	6	3
	3	5	2	8

OR

10. a) Explain the graphical method for  $2 \times n$  or  $m \times 2$  games (4M)  
 b) Find the optimal solution for the following game using graphical method.(16M)

Player B

	1	2	3	4	5
1	4	2	5	-6	6
Player A	2	7	-9	7	4

# LOYOLA ACADEMY DEGREE & PG COLLEGE, OLD ALWAL

(An Autonomous and Affiliated to Osmania University)

M.C.A III Semester Supplementary Examination, Oct/Nov - 2017

Subject : Design & Analysis of Algorithms  
Sub. Code : MCA 11303

Exam Time : 3 hrs  
Max. Marks : 100

Answer the following Questions:

(5\*20=100M)

## UNIT-I

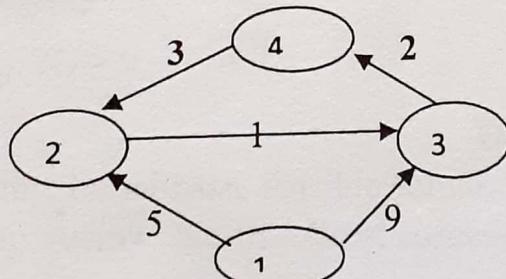
1. (a) Define an algorithm? Explain the Performance analysis of an algorithm? (5M)  
(b) What are stacks? Write an algorithm for stack operations with an example. (15M)  
(Or)  
2. (a) What are Circular Queues? Explain with example. (10M)  
(b) What are SETS and Disjoint sets, Explain with an example. (10M)

## UNIT-II

3. (a) Explain Job sequencing with Deadlines ?Let n=5,  
 $(P_1, P_2, P_3, P_4, P_5) = (10, 3, 33, 11, 40)$  and  $(D_1, D_2, D_3, D_4, D_5) = (3, 1, 1, 2, 2)$   
Find optimum solution using greedy method? (12M)  
(b) Differentiate between Greedy method and Dynamic Programming (8M)  
(Or)  
4. (a) Compare and contrast BFS and DFS? (8M)  
(b) Explain with an algorithm to solve “single source shortest paths” using greedy method (12M)

## UNIT-III

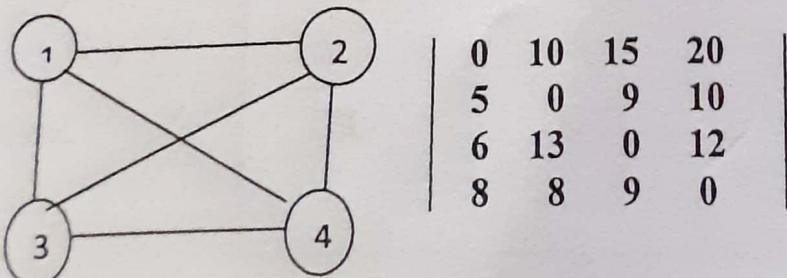
5. (a) Compute all pair shortest path for following graph (12M)



- (b) Explain in detail about “Multistage graphs”. (8M)  
Or

6. (a) Differentiate greedy and Dynamic Programming? (5M)

- (b) Explain Travelling sales person problem. Find the minimum cost tour for the following graph with cost matrix. (15M)



#### **UNIT-IV**

7. (a) Write a recursive backtracking algorithm for sum of subsets problem. (8M)  
(b) Explain in detail about “8-Queens problem” (12M)
- (Or)
8. (a) What is Hamiltonian Cycle? Discuss backtracking algorithm that finds all The Hamiltonian Cycles in a graph. (10M)  
(b) Explain 0/1 Knapsack problem using “ Branch and bound techniques”. (10M)

#### **UNIT-V**

9. (a) Explain NP Hard and NP Complete Problems. (10M)  
(b) Explain about deterministic and Non deterministic algorithm. ? (10M)
- (Or)
10. (a) What is “ cook’s theorem”. Explain in detail. (12M)  
(b) Describe about Clique problem? (8M)

# LOYOLA ACADEMY DEGREE & PG COLLEGE, OLD ALWAL

(An Autonomous and Re-Accredited with 'A' Grade by NAAC)

M.C.A III Semester Supplementary Examination, Oct/Nov - 2017

**Subject : Operations Research**  
**Sub. Code : MCA 11305**

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

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## UNIT - I

1. a) What is linear programming.  
b) Solve the following problem by Simplex method

$$\text{Maximize } Z = 6X_1 + 4X_2$$

$$\text{Subject to } 2X_1 + 3X_2 \leq 30$$

$$3X_1 + 2X_2 \leq 24$$

$$X_1 + X_2 = 3 \text{ and}$$

$$X_1, X_2 \geq 0$$

**(Or)**

2. a) Write about (i) Sensitivity analysis (ii) Duality  
b) Solve the following problem using graphical Method

$$\text{Maximize } Z = 7X_1 + 10X_2$$

$$\text{Subjected to } X_1 + X_2 \leq 30000$$

$$X_2 \leq 12000$$

$$X_1 \geq 6000$$

$$X_1, X_2 \geq 0$$

## UNIT - II

3. a) Determine initial basic feasible solution to the following transportation problem using North – West corner method

(16M)

	Destination				
	W	X	Y	Z	Supply
A	11	13	17	14	250
Origin B	16	18	14	10	300
C	21	24	13	10	400
Demand	200	225	275	250	

(P.T.O)

b) Write about mathematical model for transportation problem  
(Or)

(4M)

4. a) write about transshipment model

(16 M)

b) Solve the following transshipment problem

Origin	Destinations				Capacity
	1	2	3	4	
A	8	13	4	-	80
B	15	12	5	3	120
C	-	11	8	9	150
D	6	5	1	1	70
Requirements	350	350	130	130	

### UNIT - III

5. a) State the theorem on which solution methodology for assignment problem is evolved?

(4M)

b) A Company has a team of four salesmen and there are four districts

where the company wants to start its business. After taking into account the capabilities of salesmen and the nature of districts, the company estimates that the profit per day in rupees for each district as below

(16M)

#### Profits

	P <sub>1</sub>	P <sub>2</sub>	P <sub>3</sub>	P <sub>4</sub>
S1	16	10	14	11
S2	14	11	15	15
Salesmen S3	15	15	13	12
S4	13	12	14	15

Find the assignment of salesmen to various districts which will yield maximum profit?

(Or)

6. a) Explain the Cutting -Plain algorithm?

(10M)

b) Explain the Zero- One Implicit Enumeration algorithm?

(10M)

7. a) Enumerate all the characteristics of Dynamic Programming problem  
b) formulate the following problem as a dynamic programming problem

(4M)

Minimize  $Z = (X_1+2)^2 + X_2 X_3 - (X_4-5)^2$

Subject to  $X_1 + X_2 X_3 + X_4 \leq 5$ ;  $x_1, x_2, x_3, x_4$  are non negative integers.

Find the optimum solution. What is the optimum solution if the right hand side

of the constraint is 3 instead of 5

(4M)

### UNIT - IV

Minimize  $Z = (X_1+2)^2 + X_2 X_3 - (X_4-5)^2$

(4M)

Subject to  $X_1 + X_2 X_3 + X_4 \leq 5$ ;  $x_1, x_2, x_3, x_4$  are non negative integers.

Find the optimum solution. What is the optimum solution if the right hand side

(4M)

(16M)

(Or)

8. Given the following information draw the network diagram, Find Earliest and Latest occurrence Time and find the critical Path and its duration (20M)

Activity	A	B	C	D	E	F	G	H	I	J	K	L
Immediate predecessor	-	-	-	B,C	A	C	E	E	D,F,H	E	I,J	G
Duration(days)	9	4	7	8	7	5	10	8	6	9	10	2

### UNIT - V

9. a) Define the term Fair game, Strategy and Saddle point (6M)  
 b) Solve the following game matrix which represents the payoff to the player  
 A . Find the optimal strategies for each player (14M)

Player B

		1	2	3
		9	1	4
Player A		0	6	3
3		5	2	8

### OR

10. a) Explain the graphical method for  $2 \times n$  or  $m \times 2$  games (4M)  
 b) Find the optimal solution for the following game using graphical method.(16M)

Player B

		1	2	3	4	5
		4	2	5	-6	6
Player A		7	-9	7	4	8
1	2	3	4	5	6	7

**LOYOLA ACADEMY DEGREE & PG COLLEGE, OLD ALWAL**

(An Autonomous and Re-Accredited with 'A' Grade by NAAC)

M.C.A III Semester Supplementary Examination, Oct/Nov - 2017

**Subject : Operations Research**  
**Sub. Code : MCA 11305**

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

**UNIT - I**

1. a) What is linear programming. (4M)  
b) Solve the following problem by Simplex method (16M)

$$\text{Maximize } Z = 6X_1 + 4X_2$$

$$\text{Subject to } 2X_1 + 3X_2 \leq 30$$

$$3X_1 + 2X_2 \leq 24$$

$$X_1 + X_2 = 3 \text{ and}$$

$$X_1, X_2 \geq 0$$

**(Or)**

2. a) Write about (i) Sensitivity analysis (ii) Duality (6M)  
b) Solve the following problem using graphical Method (14M)

$$\text{Maximize } Z = 7X_1 + 10X_2$$

$$\text{Subjected to } X_1 + X_2 \leq 30000$$

$$X_2 \leq 12000$$

$$X_1 \geq 6000$$

$$X_1, X_2 \geq 0$$

**UNIT - II**

3. a) Determine initial basic feasible solution to the following transportation problem using North – West corner method (16M)

	<b>Destination</b>				<b>Supply</b>
	<b>W</b>	<b>X</b>	<b>Y</b>	<b>Z</b>	
<b>A</b>	11	13	17	14	250
<b>B</b>	16	18	14	10	300
<b>C</b>	21	24	13	10	400
<b>Demand</b>	200	225	275	250	

(P.T.O)

b) Write about mathematical model for transportation problem (4M)

4. a) write about transshipment model (Or) (4M)

b) Solve the following transshipment problem (16 M)

Origin	Destinations				Capacity
	1	2	3	4	
A	8	13	4	-	80
B	15	12	5	3	120
C	-	11	8	9	150
D	6	5	1	1	70
Requirements	350	350	130	130	

### UNIT - III

5. a) State the theorem on which solution methodology for assignment problem is evolved? (4M)
- b) A Company has a team of four salesmen and there are four districts where the company wants to start its business. After taking into account the capabilities of salesmen and the nature of districts, the company estimates that the profit per day in rupees for each district as below (16M)

Profits

	P <sub>1</sub>	P <sub>2</sub>	P <sub>3</sub>	P <sub>4</sub>
S1	16	10	14	11
S2	14	11	15	15
Salesmen S3	15	15	13	12
S4	13	12	14	15

Find the assignment of salesmen to various districts which will yield maximum profit?

(Or)

6. a) Explain the Cutting -Plain algorithm? (10M)
- b) Explain the Zero- One Implicit Enumeration algorithm? (10M)

### UNIT - IV

7. a) Enumerate all the characteristics of Dynamic Programming problem  
b) formulate the following problem as a dynamic programming problem.

$$\text{Minimize } Z = (X_1+2)^2 + X_2 X_3 - (X_4-5)^2$$

$$\text{Subject to } X_1 + X_2 X_3 + X_4 < 5 ; X_1, X_2, X_3, X_4 \text{ are non negative integers.}$$

Find the optimum solution. What is the optimum solution if the right hand side of the constraint is 3 instead of 5

(16M)

(Or)

8. Given the following information draw the network diagram, Find Earliest and Latest occurrence Time and find the critical Path and its duration (20M)

Activity	A	B	C	D	E	F	G	H	I	J	K	L
Immediate predecessor	-	-	-	B,C	A	C	E	E	D,F,H	E	I,J	G
Duration(days)	9	4	7	8	7	5	10	8	6	9	10	2

9. a) Define the term Fair game, Strategy and Saddle point (6M)  
 b) Solve the following game matrix which represents the payoff to the player  
 A . Find the optimal strategies for each player (14M)

Player B

	1	2	3
1	9	1	4
2	0	6	3
3	5	2	8

OR

10. a) Explain the graphical method for  $2 \times n$  or  $m \times 2$  games (4M)  
 b) Find the optimal solution for the following game using graphical method.(16M)

Player B

	1	2	3	4	5
1	4	2	5	-6	6
2	7	-9	7	4	8

# **LOYOLA ACADEMY DEGREE & PG COLLEGE, OLD ALWAL**

**(An Autonomous and Affiliated to Osmania University)**

**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**

**Answer the following:**

**(5\*20=100M)**

## **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**

**(An Autonomous and Affiliated to Osmania University)**

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

**Subject: Database Management Systems**

**Exam Time: 3 hrs**

**Sub Code: MCA 17306**

**Max Marks: 100 M**

**Answer the following:**

**(5\*20=100M)**

## **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.

**(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. **(6+6=8)**
- (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. **(7+6+7)**
- (b) Write an Algorithm for Deletion from B+ Tree of order  $n$ .
- (c) Explain difference between Extendible and Linear Hashing.

**(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)**

- 8) (a) Explain ACID Properties of Transaction Management. **(10+10)**  
(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**

(An Autonomous and Affiliated to Osmania University)

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)

# **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  
Sub Code: MCA 17305**

**Exam Time: 3 hrs  
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)
- (Or)**
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)
- (Or)**
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)
- (Or)**
10. a) Explain about Software Maintenance. (10M)
  - a) Explain SPI return on Investment and SPI trends. (10M)