

LOYOLA ACADEMY DEGREE & PG COLLEGE, OLD ALWAL
(An Autonomous and Reaccredited with 'A' Grade by NAAC)
MCA (III semester) Examinations, February 2015

Subject : Design and Analysis of Algorithms **Exam Time : 3hrs**
Code : MCA 11303 **Max. Marks : 100**

Answer the following questions

5×20M=100M

UNIT – I

1. (a) Define an algorithm. Explain about the properties of an algorithm. 10M
(b) How stacks and Queues are playing a role as an elementary data structure. Explain. 10M

OR

2. (a) What are the various tie asymptotic notations also the purpose of each one. 10M
(b) Explain about sets and disjoint set unions. 10M

UNIT – II

3. (a) Analyze Merge sort algorithm for average and worst case of sorting. 10M
(b) Explain about Knapsack problem using Greedy approach. 10M

OR

4. (a) Explain about Stassen's matrix multiplication using an example. 10M
(b) Explain the algorithms to find the Single source Shortest Path 10M

UNIT – III

5. (a) Explain about an algorithm approach of Travelling Salesman problem. 10M
(b) Explain about all pairs shortest path problem. 10M

OR

6. (a) Discuss about 0-1 knapsack problem. 10M
(b) Explain about in detail techniques to traversal of a graph. 10M

UNIT – IV

7. (a) Explain about backtracking of knapsack problem. 10M
(b) Explain about applications of DFS. 10M

OR

8. (a) Explain about 0/1 knapsack problem using branch-bound technique. 10M
(b) Show the state space tree generated for 8-puzzle problem. 10M

UNIT – V

9. Explain about Cook's theory with an example. 20M

OR

10. (a) Explain about P,NP, NP-hard and NP-Complete classes of an algorithm. 10M
(b) Explain about NP-Hard graph problems. 10M

LOYOLA ACADEMY DEGREE & PG COLLEGE, OLD ALWAL
(An Autonomous and Reaccredited with 'A' Grade by NAAC)
MCA (III semester) Examinations, February 2015

Subject : Software Engineering **Exam Time : 3hrs**
Code : MCA 11301 **Max. Marks : 100**

Answer the following questions

$5 \times 20M = 100M$

UNIT – I

1. a) What is the relationship between a process model, process specification, and process for a project? 12M
- b) You have to design a process for a project using the iterative development model. If the main objective of this project is high quality, what are the quality control tasks you will have in the process? Justify your answer— 8M

OR

2. a) Which of the development process models would you follow for the following projects? Give justifications. 12M
 - (i) A data entry system for office staff that has never used computers before. The user interface and user-friendliness are extremely important.
 - (ii) A new missile tracking system. It is not known if the current hardware/software technology is mature enough to achieve the goals.
- b) What types of effect will the project monitoring activity of the project management have on the development process? Explain with examples. 8M

UNIT – II

3. a) The basic goal of the requirements activity is to get an SRS that has some desirable properties. What is the role of modeling in developing such an SRS? List three major benefits that modeling provides, along with justifications, for achieving the basic goal. 12M
- b) Explain why architecture is not just one structure consisting of different parts and their relationship. 8M

OR

4. a) Write the SRS for the restaurant example. 8M
- b) What do you think is the relationship between the component and connector view and the module view? In the situations where this relationship is simple, how will you express it in one diagram? Explain. 12M

UNIT – III

5. a) For a group student project in the software engineering course, Prepare / Device a suitable monitoring plan, and plans for data collection for this monitoring. 8M
- b) If an association between classes has attributes of its own, how will you implement it. 6M
- c) Do a state modeling of three classes: String, B Tree and Symbol Table. 6M

OR

Contd...2

6. a) Suppose a customer gives a project to build parts of a larger system to your group, and other parts to some other groups. Your group has to use an internal tool of the customer, whose new version is to come out soon. Prepare a risk management plan for your project 12M
- b) The detailed design of a system can involve many persons, each developing the detailed design of a set of modules. Draw a process diagram for this method of detailed design development. 8M

UNIT - IV

7. a) What is structured programming and how does it help improve the code quality. 12M
- b) Suppose a software has 3 inputs, each having a defined valid range. How many test cases will you need to test all the boundary values? Justify your answer 8M

OR

8. a) What are the major concepts that help to make a program more readable? 12M
- b) Differentiate between white box and black box testing. 8M

UNIT - V

9. a) Compare between reverse engineering and forward engineering. 12M
- b) What are SPI trends? Explain. 8M

OR

10. a) How CMMI playing a role in software process improvement, Explain. 12M
- b) Explain about the reverse engineering process of a software with suitable diagram. 8M

LOYOLA ACADEMY DEGREE & PG COLLEGE, OLD ALWAL

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MCA (III semester) Examinations, February 2015

**Subject : Operating System
Code : MCA 11304**

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

Answer the following questions

5×20M=100M

UNIT-I

1. (a) What is an operating system? Explain briefly the operating systems role in the overall Computer system. 12
 (b) What is Process Control Block? Explain its structure 08

OR

2. (a) Explain in detail round robin scheduling algorithm. With an example show how a smaller time quantum increases context switches. 12
 (b) Describe the differences between short-term, medium-term and long-term scheduling. 08

UNIT-II

3. Explain about the following 20
 (a) Static and Dynamic partition
 (b) File Concept
 (c) File-System Structure
 (d) Segmentation

OR

4. (a) What is paging? Discuss in detail about basic method in paging. Discuss briefly about the common techniques for structuring the page table 12
 (b) Consider the following segment table: 08

Segment	Base	Length
0	219	600
1	2300	14
2	90	100
3	1327	580
4	1952	96

What are the physical addresses for the following logical addresses?

- i. 0, 430
- ii. 1,10
- iii. 3,400
- iv. 4,112

UNIT-III

5. (a) Write the resource allocation algorithm for Deadlock detection 12
 (b) What are the four conditions that hold simultaneously in a system for the Deadlock Situation to arise? 08

OR

6. (a) A semaphore is a blocking synchronization primitive. Describe how they work with the aid of pseudo-code. You can assume the existence of a thread block () and a thread wakeup () function. 12
 (b) What are monitors and condition variables? 08

Contd ...2

UNIT-IV

7. (a) None of the disk-scheduling disciplines, except FCFS, is truly fair (Starvation may occur).
 i) Explain why this assertion is true.
 ii) Describe a way to modify algorithm such as SCAN to ensure fairness. 12
 (b) Describe about disk attachment in detail 08

OR

- OR

8. (a) Describe buffering in the I/O subsystem of an operating system. Give reasons why it is required, and give a case where it is an advantage, and a case where it is a disadvantage 12
 (b) Explain how double buffering improves the performance than a single buffer for I/O. Differentiate between logical I/O and device I/O. 08

UNIT-V

9. (a) Explain in detail the design principles, kernel modules, process management, scheduling in LINUX system 10
(b) Explain about Network Structure in detail 10

OR

- OR

10. (a) Explain about Windows XP Structure in details
(b) Explain about goals for the Windows files system 10 10

LOYOLA ACADEMY DEGREE & PG COLLEGE, OLD ALWAL

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MCA (III semester) Examinations, February 2015

**Subject : Design and Analysis of Algorithms
Code : MCA 11303**

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

Answer the following questions

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UNIT – I

1. (a) Define an algorithm. Explain about the properties of an algorithm. 10M
- (b) How stacks and Queues are playing a role as an elementary data structure. Explain. 10M

OR

2. (a) What are the various tie asymptotic notations also the purpose of each one. 10M
- (b) Explain about sets and disjoint set unions. 10M

UNIT – II

3. (a) Analyze Merge sort algorithm for average and worst case of sorting. 10M
- (b) Explain about Knapsack problem using Greedy approach. 10M

OR

4. (a) Explain about Stassen's matrix multiplication using an example. 10M
- (b) Explain the algorithms to find the Single source Shortest Path 10M

UNIT – III

5. (a) Explain about an algorithm approach of Travelling Salesman problem. 10M
- (b) Explain about all pairs shortest path problem. 10M

OR

6. (a) Discuss about 0-1 knapsack problem. 10M
- (b) Explain about in detail techniques to traversal of a graph. 10M

UNIT – IV

7. (a) Explain about backtracking of knapsack problem. 10M
- (b) Explain about applications of DFS. 10M

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8. (a) Explain about 0/1 knapsack problem using branch-bound technique. 10M
- (b) Show the state space tree generated for 8-puzzle problem. 10M

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9. Explain about Cook's theory with an example. 20M

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LOYOLA ACADEMY DEGREE & PG COLLEGE, OLD ALWAL
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 MCA (III semester) Examinations, February 2015

Subject	:	DBMS	Exam Time	:	3hrs
Code	:	MCA 11302	Max. Marks	:	100

Answer the following questions

5×20M=100M

UNIT – I

1. (a) What is DBMS? What are the advantages of DBMS? 6M
- (b) List the steps involved in converting an ER diagram into relational model? 6M
- (c) What is normalization? Explain about 1NF, 2NF and 3NF. 8M

OR

2. (a) Explain about the functionality of an ER Diagram with a suitable example. 8M
- (b) Explain about integrity constraint. 6M
- (c) Explain about 4NF and 5NF. Marks. 6M

UNIT – II

3. Consider the following database. 20M

Movie(title, year, length, inColor, studioName, producerC#)

StarsIn(movieTitle, movieYear, starName)

MovieStar(name, address, gender, birthdate)

MovieExec(name, address, cert#, netWorth)

Studio(name, address, presC#)

Write the queries for the following in relational algebra, tuple relational calculus, domain relational calculus and SQL.

- a) Find the address of MGM studios.
- b) Find Sandra Bullock's birthdate.
- c) Find all the stars that appear either in a movie made in 1980 or a movie with "Love" in the title.
- d) Find all executives worth at least \$10,000,000.
- e) Find all the stars who either are male or live in Miami (have Miami as part of their address).

OR

4. (a) Explain about cursors in SQL. 10M
- (b) What are the set operations in SQL? Explain the purpose of each operation. 10M

UNIT - III

5. (a) Explain about various file organizations. 10M
- (b) Compare between Tree structured index with Hash based index. 10M

OR

6. (a) Explain about index sequential access method (ISAM). How it is different from the sequential access method. 10M
- (b) How extendible hashing different from the linear hashing. Explain. 10M

UNIT - IV

7. (a) How transaction management manages concurrent execution of transactions. Explain. 10M
(b) Explain about deadlock dealing techniques. 10M
- OR**
8. (a) Explain about lock-based concurrent control. 10M
(b) Explain about concurrent control without locking. 10M

UNIT - V

9. (a) Explain about recovery related structures. 10M
(b) Explain about mandatory access control. 10M
- OR**
10. (a) Explain about crash recovery technique. 10M
(b) Discuss about statistical database in maintaining security. 10M

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LOYOLA ACADEMY DEGREE & PG COLLEGE, OLD ALWAL
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MCA (III semester) Examinations, February 2015

Subject : Software Engineering **Exam Time : 3hrs**
Code : MCA 11301 **Max. Marks : 100**

Answer the following questions

$5 \times 20M = 100M$

UNIT – I

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UNIT – II

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UNIT – III

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6. a) Suppose a customer gives a project to build parts of a larger system to your group, and other parts to some other groups. Your group has to use an internal tool of the customer, whose new version is to come out soon. Prepare a risk management plan for your project 12M
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UNIT - IV

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UNIT - V

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3M

LOYOLA ACADEMY DEGREE & PG COLLEGE, OLD ALWAL

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

MCA (III semester) Pre-final Examination, February 2015

Subject : Operation Research
Code : MCA 14305

Exam Time : 3 hrs
Max. Marks : 80

Answer any one from each unit.

UNIT-I

1. a) What are the assumptions of LPP.
b) Solve the given LPP using simplex method.

$$\text{Max } Z = 3x + 2y \text{ subject to constraints}$$

$$2x + y \leq 40$$

$$x + y \leq 24$$

$$2x + 3y \leq 60 \quad x, y \geq 0$$

6M
10M

2. a) Define to degeneracy? Give the steps to solve degeneracy?
b) Using Big M method solve the given LPP

$$\text{Min } Z = 53x_1 + 3x_2 \text{ subject to constraints}$$

$$2x_1 + 4x_2 \leq 12$$

$$2x_1 + 2x_2 = 10$$

$$5x_1 + 2x_2 \geq 10 \quad x_1, x_2 \geq 0$$

6M
10M

UNIT-II

3. a) Find the optimal solution for the transportation problem.

10M

		Destinations				Availability
Sources	1	A	B	C	D	
		15	0	20	10	50
	2	12	8	11	20	50
Demand	3	0	16	14	18	100
		30	40	60	70	

- b) Write the algorithm of Matrix minima method.

6M

4. a) Difference between transportation and transshipment problems.

6M

- b) Consider the problem with 2 sources and 3 destinations. The unit cost of transportation between different possible nodes is given in the table. Find the optimal shipping plan such that the total cost is minimised.

10M

		S ₁	S ₂	D ₁	D ₂	D ₃	Destination
Sources	S ₁	0	3	12	4	12	
	S ₂	5	0	3	6	10	
	D ₁	8	10	0	4	20	
	D ₂	20	12	5	0	15	
	D ₃	8	10	30	8	0	

Supply values for S₁, S₂ sources are 800 and 700 respectively. Demand values for destinations D₁, D₂, D₃ are 500, 400, 600 respectively.

Contd ... 2

UNIT-III

5. Solve the following assignment problem using Hungarian method?

		Project				
		A	B	C	D	E
Crew	1	20	30	25	15	35
	2	25	10	40	12	28
	3	15	18	22	32	24
	4	29	8	34	10	40
	5	35	23	17	26	45

16M

6. Find the optimum integer solution to the following LPP.

$$\text{Max } Z = 8x_1 + 6x_2 \quad \text{subject to constraints}$$

$$8x_1 + 4x_2 \leq 85$$

$$3x_1 + 6x_2 \leq 95$$

$$x_1, x_2 \geq 0 \quad \text{and integers}$$

UNIT-IV

6M

7. a) Explain dynamic programming?

- b) Using dynamic programming problem solve the following LPP.

$$\text{Max } Z = x + 9y \quad \text{subject to constraints}$$

$$2x + y \leq 25$$

$$y \leq 11$$

$$x, y \geq 0$$

10M

8. a) Write the difference between PERT and CPM

- b) Find the critical path for the following data and give the project duration.

Activity	Predecessor	Duration
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

UNIT-V

9. a) Explain graphical method to solve $m \times 2$ game.

- b) Solve the following game using dominance property.

Player B

Player A	6	2	4	8
	2	-1	1	12
	2	3	3	4
	5	2	6	10

6M

10M

10. a) Define (i) Saddle point (ii) Optimal solution

- b) Solve the following game using LPP.

(iii) Value of the game

6M

10M

Player B

Player A	1	-1	3
	3	5	-3
	6	2	-2

LOYOLA ACADEMY DEGREE & PG COLLEGE, OLD ALWAL
(An Autonomous and Reaccredited with 'A' Grade by NAAC)
MCA (III semester) Examinations, February 2015

Subject : Operating System
Code : MCA 11304

Exam Time : 3hrs
Max. Marks : 100

Answer the following questions

$5 \times 20M = 100M$

UNIT-I

1. (a) What is an operating system? Explain briefly the operating systems role in the overall Computer system. 12
 (b) What is Process Control Block? Explain its structure 08
- OR**
2. (a) Explain in detail round robin scheduling algorithm. With an example show how a smaller time quantum increases context switches. 12
 (b) Describe the differences between short-term, medium-term and long-term scheduling. 08

UNIT-II

3. Explain about the following 20
 - (a) Static and Dynamic partition
 - (b) File Concept
 - (c) File-System Structure
 - (d) Segmentation
- OR**
4. (a) What is paging? Discuss in detail about basic method in paging. Discuss briefly about the common techniques for structuring the page table 12
 (b) Consider the following segment table: 08

Segment	Base	Length
0	219	600
1	2300	14
2	90	100
3	1327	580
4	1952	96

What are the physical addresses for the following logical addresses?

- i. 0, 430
- ii. 1,10
- iii. 3,400
- iv. 4,112

UNIT-III

5. (a) Write the resource allocation algorithm for Deadlock detection 12
 (b) What are the four conditions that hold simultaneously in a system for the Deadlock Situation to arise? 08
- OR**
6. (a) A semaphore is a blocking synchronization primitive. Describe how they work with the aid of pseudo-code. You can assume the existence of a thread block () and a thread wakeup () function. 12
 (b) What are monitors and condition variables? 08

Contd ...2

UNIT-IV

7. (a) None of the disk-scheduling disciplines, except FCFS, is truly fair (Starvation may occur).
 i) Explain why this assertion is true. 12
 ii) Describe a way to modify algorithm such as SCAN to ensure fairness. 08
 (b) Describe about disk attachment in detail

OR

- OR**

8. (a) Describe buffering in the I/O subsystem of an operating system. Give reasons why it is required, and give a case where it is an advantage, and a case where it is a disadvantage 12
 (b) Explain how double buffering improves the performance than a single buffer for I/O. Differentiate between logical I/O and device I/O. 08

UNIT-V

9. (a) Explain in detail the design principles, kernel modules, process management, scheduling in LINUX system 10
(b) Explain about Network Structure in detail 10

OR

10. (a) Explain about Windows XP Structure in details 10
(b) Explain about goals for the Windows files system 10

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MCA (III semester) Examinations, Feb/Mar- 2015

Subject : Operations Research
Code : MCA 14305

Exam Time : 3hrs
Max. Marks : 100

Answer the following questions

5×20M=100M

UNIT - I

1. a) Define the terms (i)Alternate optimum solution (ii) Infeasible solution (4M)
 - b) Solve the following Linear programming problem using simplex method. (16M)
- Maximize $Z=5x_1 + 3x_2 + 7x_3$
Subject to $x_1 + x_2 + 2x_3 \leq 22$
 $3x_1 + 2x_2 + x_3 \leq 26$
 $x_1 + x_2 + x_3 \leq 18$
 $x_1, x_2, \text{and } x_3 \geq 0$

OR

2. a) Write the dual of the following LPP. (5M)
- Maximize $Z=4x_1 + 10x_2 + 25x_3$
Subject to $2x_1 + 4x_2 + 8x_3 = 25$
 $4x_1 + 9x_2 + 8x_3 = 30$
 $6x_1 + 8x_2 + 2x_3 = 40$
 $x_1, x_2, \text{and } x_3 \geq 0$
- b) Solve the following LPP using Big M method? (15M)
- Maximize $Z=2x_1 + 3x_2$
Subject to $x_1 + x_2 \geq 6$
 $7x_1 + x_2 \geq 14$
 $x_1 \text{ and } x_2 \geq 0$

UNIT - II

3. a) Write the procedure for Least cost method. (5M)
- b) Determine an initial basic feasible solution to the following transportation using Northwest – corner cell method (15M)

		Destination					
		A1	B1	C1	D1	E1	Supply
Origin	A	2	11	10	3	7	4
	B	1	4	7	2	1	8
	C	3	9	4	8	12	9
Demand		3	3	4	5	6	

OR

4. A company has factories at four different places {1,2,3 and 4} which supply items to Warehouses A,B,C,D and E. Monthly a factory capacities are 200,175,150 and 325 respectively. Monthly Warehouse Requirements are 110,90,120,230 and 160 respectively. Unit shifting costs{in rupees} are given in the following table. (20M)

		TO					
		A1	B1	C1	D1	E1	
From	1	13	-	31	8	20	
	2	14	9	17	26	10	
	3	25	11	12	17	15	
	4	10	21	13	-	17	

Shipments from 1 to B and from 4 to D are not possible. Determine the optimum Distribution plan to minimize the shipping cost.

Contd...2

UNIT - III

5. Solve the assignment problem which is shown below using the branch - and - bound algorithm. The cell entries represent the processing time in hours(c_{ij}) of the job i if it is assigned to the operator j. (20M)

		Operator j			
		1	2	3	4
Job i	1	13	5	8	10
	2	9	15	18	10
	3	12	14	10	10
	4	10	14	9	12

OR

6. Solve the following integer linear programming problem optimally.

$$\text{Maximize } Z = 2x_1 + 5x_2$$

$$\text{Subject to } 3x_1 + 6x_2 \leq 24$$

$$6x_1 + 12x_2 \leq 18$$

$$2x_1 + 8x_2 \leq 20$$

$$x_1, x_2 \geq 0 \text{ and integers}$$

(20M)

UNIT - IV

7. A distance network consists of eleven nodes which are distributed as shown in the following table. Find the shortest path from Node 1 to Node 11 and the corresponding distance. (20M)

Arc	Distance	Arc	Distance
1-2	8	5-8	12
1-3	7	5-9	7
1-4	1	6-9	9
2-5	5	7-9	6
3-5	9	7-10	13
3-6	2	8-11	4
3-7	8	9-11	2
4-7	10	10-11	15

OR

8. The details of the project are given below. Find the critical path and construct the CPM network. (20M)

Activity	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
Immediate Predecessors	-	-	-	A	A	B	B	C	C	D	E	F	G	H	I	J,K,L	M,N,O,
Duration(months)	4	8	5	4	5	7	4	8	3	6	5	4	12	7	10	5	8

9. a) Define (i) Mini max principle (ii) Value of game
 b) Define Dominance property?

(4M)

Solve the following problem. Consider the 4×4 game played by players A&B and solve it optimally?

		Player B			
		1	2	3	4
Player A	1	6	2	4	8
	2	2	-1	1	12
	3	2	3	3	9
	4	5	2	6	10

Contd...3

LOYOLA ACADEMY DEGREE & PG COLLEGE, OLD ALWAL

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

M.C.A III Semester Supplementary Examinations, August - 2015

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

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

Unit -I

1. (a) Write an algorithm to find fibonaci sequence for 'n' number .Obtain the time Complexity. (10M)
(b) Explain various representation of stack with necessary algorithm. (10M)
(Or)
2. (a) Define Binary search tree. Write an algorithm for searching in a binary search tree. (10M)
(b) Define Graph .Explain various Graph representations. (10M)

Unit -II

3. (a) Explain Merge Sort with example .Give its time complexity. (10M)
(b) Explain the applications of spanning tree. (10M)
(Or)
4. (a) Explain with an algorithm to solve knapsack problem using greedy method. (10M)
(b) Compute the minimal cost spanning tree for any given graph using Kruskal's algorithm. (10M)

Unit -III

5. (a) Define Dynamic programming .Give suitable examples. (10M)
(b) Discuss in detail about All –Pair Shortest Path. (10M)
(Or)
6. (a) Explain binary tree traversal techniques. (10M)
(b) Explain Breadth first search with an example. (10M)

Unit -IV

7. (a) Explain Sum of subsets problem with an example. (10M)
(b) Discuss Hamiltonian cycles giving an algorithm to find all Hamiltonian cycles. (10M)
(Or)
8. (a) Explain O/I knapsack problem using Branch – one –Bound technique. (10M)
(b) What is graph coloring? Give an example. (10M)

Unit -V

9. (a)What is non –deterministic algorithm? Give example. (10M)
(b) Explain decision problem. Give examples? (10M)
(Or)
10. (a) Explain AND/OR graph decision problem. (10M)
(b) Explain directed Hamiltonian cycles. (10M)

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M.C.A III Semester Supply Examinations, August - 2015

Subject : Data Base Management System
Sub. Code : MCA 11302

Exam Time : 3 hrs
Max. Marks : 100

Answer the following questions:

(5*20M = 100)

Unit -I

1. (a) Explain the following (4*5=20M)
 - a. Normal forms
 - b. Weak Entity set and strong Entity set
 - c. Primary key constraint
 - d. Ternary relationship

(Or)

2. (a) Describe about dependency preserving decomposition. (10+10=20M)
(b) Explain aggregation and generalisation with an example.

Unit -II

3. For the relation database write Relation Algebra, Structured Query Language, Tuple Relational Calculus and Domain Relational Calculus Queries (20M)

Branch (Br-name, assets, Br-city)

Customer (Cust-name, Street, cust-city)

Deposit (Br-name, Acc-no, Cust-name, balance)

Borrow (Br-name, loan-no, Cust-name, amount)

- a. Find all customers who have a loan at the bank and the cities in which they live.
- b. Find the name of the Branch with assets more than 1, 00,000.
- c. Find the name of the city with at least one customer.
- d. Find the name of the customer and the balance in his account.
- e. Find the names of the customer who have a deposit account and loan account.

(Or)

4. (a) Explain the purpose of cursors. (2*10=20M)
(b) Define and explain embedded SQL and Dynamic SQL.

UNIT-III

(6+14=20M)

5. (a) Explain the concept of 'Format of a node' in B+Tree.
(b) Explain the properties of Indexes.

(Or)

6. Explain Extendable hashing and linear hashing. (20M)

UNIT-IV

7. (a) Explain the design issues of concurrency control without locking. $(2*10=20M)$
(b) Differentiate between 'Consistency' and Isolation.
(Or)
8. (a) Explain locked based concurrency control
(b) Explain conflict serializability with suitable examples.

UNIT-V

$(2*10=20M)$

9. (a) Explain about Mandatory Access control.
(b) Explain about check pointing and WAL.
(Or)
10. (a) Explain the importance of authorisation graph in Access Control. $(2*10=20M)$
(b) Write short notes on database security.

LOYOLA ACADEMY DEGREE & PG COLLEGE, OLD ALWAL

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M.C.A III Semester Supply Examinations, August - 2015

Subject : Software Engineering

Exam Time : 3 hrs

Sub. Code : MCA 11301

Max. Marks : 100

Answer any one from each unit. All question carry equal marks: (5*20=100M)

Unit -I

1. (a) Explain about project management process? (10M)
- (b) Explain about cost, schedule and quality of software? (10M)
- (Or)
2. (a) Explain models of software development process. (10M)
- (b) Explain various phases of software life cycle in waterfall model? (10M)

Unit-II

3. (a) Explain the role of SRS in detail? (10M)
- (b) Explain the components of an SRS? (10M)
- (Or)
4. (a) Explain about pipe & filter style of architecture? (10M)
- (b) Describe the importance of software requirement process. (10M)

Unit-III

5. (a) Explain in detail Risk Management planning? (10M)
- (b) Explain about project Schedule and staffing (10M)
- (Or)
6. (a) Explain design verification metrics? (10M)
- (b) Explain in detail design concepts? (10M)

Unit-IV

7. (a) Explain programming principles and guidelines in detail? (10M)
- (b) Write in brief about levels of testing? (10M)
- (Or)
8. (a) Explain bout different types of cohesion? (10M)
- (b) Describe the Whitebox testing with control flow based criteria? (10M)

Unit-V

9. (a) Explain about business process reengineering? (10M)
- (b) Explain about Reverse engineering restructuring. (10M)
- (Or)
10. (a) Explain SPI Frameworks? (10M)
- (b) Explain about SPI return on investment? (10M)