LOYOLA ACADEMY DEGREE & PG COLLEGE, OLD ALWAL

(An Autonomous and Affiliated to Osmania University)

MCA II semester Weekly Examinations, February - 2018

Subject: Accounting & Financial Management — Exam Time: 55 mins

Subject Code: MCA 16202 — Max. Mark: 30

Answer any two of the following Questions: **(2*15=30M)**

1. Define Accounting. Explain its concepts and Conventions.

2. Journalise the following transactions.

Date	Particulars	Amt
Jan 1	Commenced business with cash	5, 00,000
Jan 3	Deposited into Bank	7,000
Jan 5	Withdrew from Bank	5,000
Jan 9	Purchased goods from Deva	8,000
Jan 10	Cash Purchased	9,000
Jan 11	Sold goods for Cash	13,000
Jan 15	Sold goods to Nandu	14,000
Jan 17	Goods sold to Deva	500
Jan 19	Goods returned by Nandu	800
Jan 21	Wages paid	700
Jan 23	Salaries paid	800
Jan 25	Interest Received	1,200
Jan 26	Dividend Received	900
Jan 29	Cash paid to Deva in full settlement of his account	7,000

3. Prepare Trial Balance as on 31/12/2012

Particulars	Amount
1. Capital	24,000
2. Stock	8,500
3. Furniture	2,600
4. Purchases	8,950
5. Cash	7,300
6. Wages	300
7. Sales	22,500
8. Buildings	12,000
9. Sales Returns	1,900
10. Trade Expenses	1,000
11. Purchases return	350
12. Discount Received	970
13. Office rent	2,270
14. Salary	3,000

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LOYOLA ACADEMY DEGREE & PG COLLEGE, OLD ALWAL

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MCA II semester Weekly Examinations, February - 2018

Subject: Operations Research — **Exam Time: 55 mins**

Subject Code: MCA 16203 — **Max. Mark: 30**

Answer any <u>two</u> of the following:

1. (a) Define terms optimum solution and unbounded solution in Graphical method. **(05M)**

   (b) Solve LPP using graphical method **(10M)**

   Max $z = 7x_1+10x_2$

   Stc: $x_1+x_2 \leq 30000$

   $x_2 \leq 12000$

   $x_1 \geq 6000$

   nnc : $x_1, x_2 \geq 0$

2. (a) Define degeneracy? Give steps to solve degeneracy? **(5M)**

   (b) Solve the following problem by simplex method **(10M)**

   Max $z = 6x_1+4x_2$

   Stc: $2x_1+3x_2 \leq 30$

   $3x_1+2x_2 \leq 24$

   $x_1+x_2=3$ and

   nnc: $x_1, x_2 \geq 0.$

3. (a) What are the assumptions of LPP? **(05M)**

   (b) Solve the following using Simplex method: **(10M)**

   Maximize $z = 6x_1+8x_2$

   Stc: $5x_1+10x_2 \leq 60$

   $4x_1+4x_2 \leq 40$

   nnc : $x_1, x_2 \geq 0$

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LOYOLA ACADEMY DEGREE & PG COLLEGE, OLD ALWAL

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MCA II semester Weekly Examinations, February - 2018

Subject: C++ & Data Structures

Subject Code: MCA 16204

Exam Time: 55 mins

Max. Mark: 30

Answer any <u>two</u> Questions:

1. (a) Differentiate call by value and call by reference.
   (b) Write a programs to demonstrate class and an object. **(8+7M)**

2. (a) What is function overloading? Explain with the help of a program.
   (b) Write a program to demonstrate passing objects to functions, **(8+7M)**

3. (a) Write about different types of parameters in C++ with examples.
   (b) What is a class and object? Write in detail about defining class and its members. **(8+7M)**

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LOYOLA ACADEMY DEGREE & PG COLLEGE, OLD ALWAL

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MCA II semester Weekly Examinations, March - 2018

Subject: Operating Systems **Exam Time: 55 mins**

Subject Code: MCA 16205 **Max. Mark: 30**

Answer any <u>two</u> of the following:

1. Explain different Directory structures with example?

2. (a) Explain different File allocation methods?
   (b) Describe Free Space management?

3. What is Semaphore? Explain how Dining philosopher problem is solved using Semaphores?

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LOYOLA ACADEMY DEGREE & PG COLLEGE, OLD ALWAL

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MCA II semester Weekly Examinations, April - 2018

Subject: Computer Networks **Exam Time: 55 mins**

Subject Code: MCA 16206 **Max. Mark: 30**

Answer any two of the following:

1. Explain in detail about Classful addressing.

2. What are the different types of Routing Protocols .Explain in detail about Distance Vector Routing Protocol.

3. Explain in detail about the various connecting devices.

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LOYOLA ACADEMY DEGREE & PG COLLEGE, OLD ALWAL

(An Autonomous and Affiliated to Osmania University)

MCA (II semester) Pre final Examination, April- 2018

Subject : Accounting & Financial Management **Exam Time: 3 hrs**

Sub Code : MCA 16202 **Max. Marks: 80**

Answer any one from each unit: **(5*16=80M)**

UNIT-I

1. Write about Accounting concepts and conventions.

(Or)

2. Journalise the following in the books of Mr. Ramu and Post them in ledger

Jan 2015		
Jan 1	Started business with cash	5, 00,000
2	Purchased furniture	50,000
3	Sold goods to Mr Ravi	60,000
4	Paid rent	6,000
5	Deposited into Bank	75,000
6	Withdrew cash for Personal use	10,000
7	Cash received from Mr Ravi in full settlement of his account	59,000
8	Purchased goods from Mr.Kiran	10,000

UNIT-II

3. Write about the Importance of Financial Statements .Explain them with the help of Proforma and Explain the adjustments in detail.

(Or)

4. From the following Trial Balance of Mr. Ramesh Prepare Final accounts.

Particulars	Debit	Particulars	Credit
Purchases	25200	Sales	61200
Furniture	1600	Capital	35000
Wages	3500	Purchases Returns	200
Machinery	20000	Creditors	4400
Opening Stock	18000	Bank overdraft	3000
Sales returns	1200	Bills payable	2000
Debtors	10000		
Carriage	200		
Salaries	10600		
Commission Paid	500		
Rent and Taxes	2000		
Cash	8000		
Drawings	5000		
	105800		105800

Adjustments:

1. Closing Stock 16800
2. Outstanding Salaries 400
3. Prepaid rent 200
4. Write off bad debts 400
5. Depreciation on Machinery by 10%

(P.T.O)

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UNIT-III

5. Define Fund Flow and list down the steps and Proforma involved in making fund flo

(Or)

6. From the given data calculate
   (a) Gross profit ratio
   (b) Net profit ratio
   (c) Current ratio
   (d) Quick ratio
   (e) Absolute liquid ratio
   (f) Inventory Turnover ratio
   (g) Debtors Turnover ratio
   (h) Creditors Turnover ratio.

Sales	25, 20,000
Credit Purchases	16, 00,000
Cost of Sales	19, 20,000
Net profit	3, 60,000
Net worth	15, 00,000
Debt	9, 00,000
Creditors	4, 00,000
Other Current Liabilities	2, 00,000
Fixed assets	14, 40,000
Inventory	8, 00,000
Debtors	5, 00,000
Cash	2, 60,000

UNIT-IV

7. Write a detailed notes on various capital Budgeting Techniques.

(Or)

8.

Year	**Net Cash Inflow**
1	7000
2	7000
3	7000
4	7000
5	7000
6	8000
7	10000
8	15000
9	10000
10	4000

Using 10% cost of Capital determine
(a) Pay back Period (b) NPV
Initial Investment / Cash outflow is Rs 60,000.

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UNIT-V

9. The following figures of Sales and Profit for two periods are available in respect of a concern.

	Sales	Profit
Period I	100000	15000
Period II	120000	23000

You are required to calculate

1. P/V Ratio
2. Fixed cost
3. BEP
4. Sales required to earn a profit of 20,000

(Or)

10. What is the meaning of Budget. Explain Fixed and Variable and Semi Variable Budget.

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LOYOLA ACADEMY DEGREE & PG COLLEGE, OLD ALWAL

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MCA (II semester) Pre final Examination, April- 2018

Subject : Operations Research — Exam Time: 3 hrs

Sub Code : MCA 16203 — Max. Marks: 80

Answer any one from each unit: **(5*16=80M)**

UNIT-I

1. a) Define the terms: (4M)
   (i) Optimal Solution
   (ii) Unbounded solution
   (iii) Slack Variable
   (iv) Degenerate Solution

   b) Solve the following Linear Programming Problem using Graphical method. (12M)

$$\text{Max } z = 20x_1+30x_2$$

$$\text{STC: } 3x_1+3x_2 \le 36$$
$$5x_1+2x_2 \le 50$$
$$2x_1+6x_2 \le 60$$
$$\text{NNC: } x_1, x_2 \ge 0.$$

(Or)

2. a) Write the dual of the following: (4M)

$$\text{Minimize } z = 3x_1-2x_2+4x_3$$

$$\text{STC : } 3x_1+5x_2+4x_3 \ge 7$$
$$6x_1+x_2+3x_3 \ge 4$$
$$7x_1-2x_2-x_3 \le 10$$
$$x_1-2x_2+5x_3 \ge 3$$
$$4x_1+7x_2-2x_3 \ge 2$$
$$\text{NNC: } x_1, x_2 \text{ and } x_3 \ge 0.$$

   b) Solve the following using Two Phase Method (12M)

$$\text{Minimize } z = x_1+x_2$$

$$\text{STC: } 2x_1+4x_2 \ge 4$$
$$x_1+7x_2 \ge 7$$

$$\text{NNC : } x_1, x_2 \ge 0.$$

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UNIT-II

3. a) Write the procedure for Matrix Minima Method (LCM). (6M)
   b) Find the initial basic feasible solution using VAM and find the Optimal Solution using u-v method (10M)

	1	2	3	4	Supply
1	3	1	7	4	300
Source 2	2	6	5	9	400
3	8	3	3	2	500
Demand	250	350	400	200	

(Or)

4. Consider the following transshipment problem with two sources and three destinations. The unit cost of transportation between different possible nodes is given in the table. Find the optimal Shipping plan such that total cost is minimized. (16M)

		Destination					
		S1	S2	D1	D2	D3	Supply
Source	S1	0	3	12	4	12	800
	S2	5	0	3	6	10	700
	D1	8	10	0	4	20	-
	D2	20	12	5	0	15	-
	D3	8	10	30	8	0	-
Demand		-	-	500	400	600	

UNIT-III

5. Solve the given Assignment problem using Hungarian Method. (16M)

	Operator				
	1	2	3	4	5
1	10	12	15	12	8
2	7	16	14	14	11
Job 3	13	14	7	9	9
4	12	10	11	13	10
5	8	13	15	11	15

(Or)

6. Find the Optimum Integer Solution using LPP. (16M)

Max $z=4x_1+3x_2$

STC: $x1+2x_2 \leq 4$

$2x_1+x_2 \leq 6$

NNC: $x_1, x_2 \geq 0$

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UNIT-IV

7. a) Difference between PERT and CPM . (4M)
   b) Consider the table of a project. (12M)
   (i) Construct Critical Path Network
   (ii) Compute the Earliest Start Time (EST) and Latest Finishing time (LFT).
   (iii) Identify the Critical path and Project Duration.

Activity	A	B	C	D	E	F	G	H	I	J	K	L	M	N
Predecessor	-	-	-	B	A	A	B	C,D	C,D	E	F,G,H	F,G,H	I	J,K
Duration	2	6	4	3	6	8	3	2	2	5	4	3	13	7

(Or)

8. a) Using the Dynamic Programming solve the following LPP (12M)

$$\text{Max } z=3x_1+5x_2$$

$$\text{STC: } x_1 \leq 4$$

$$x_2 \leq 6$$

$$3x_1+2x_2 \leq 18$$

$$\text{NNC: } x_1, x_2 \geq 0$$

   b) Write a note of applications on Dynamic Programming. (4M)

UNIT-V

9. a) Define (i) Saddle point (iii) Optimal Solution
   (ii) Value of the game (03M)
   b) Solve the following game using Dominance Property (13M)

Player B

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

(Or)

10. a) Explain graphical method to solve 2xn game. (06M)
    b) Solve the following game using LPP (10M)

Player B

Player A			
	1	-1	-1
	-1	-1	3
	-1	2	-1

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LOYOLA ACADEMY DEGREE & PG COLLEGE, OLD ALWAL

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MCA (II semester) Pre final Examination, April- 2018

Subject : C++ & Data Structures **Exam Time: 3 hrs**

Sub Code : MCA 16204 **Max. Marks: 80**

Answer any one from each unit: **(5*16=80M)**

UNIT-I

1. a) Explain OOPS concepts in C++.
   b) Explain Inline functions with an example
   c) What is function overloading? Explain with an example. **(6+4+6)**

(Or)

2. a) Differentiate call by value and call by reference.
   b) Write short notes on default and constant parameters.
   c) Write a C++ program for matrix multiplication. **(6+4+6)**

UNIT-II

3. a) Explain different types of constructors with examples.
   b) Write a program to demonstrate dynamic arrays.
   c) Write about different forms of new operators. **(6+6+4)**

(Or)

4. a) What is a class? How to define a class and object. Give examples.
   b) Write a C++ program to carry out arithmetical operations on two complex numbers. **(6+10)**

UNIT-III

5. a) What is operator overloading? Explain operator function as a member function and a friend function.
   b) What are class templates? Explain with example? **(8+8)**

(Or)

6. a) Explain the role of inheritance in OOP? Write about various types of inheritance.
   b) Write a C++ program using function templates to find maximum and minimum in an array. **(8+8)**

UNIT-IV

7. a) Explain operations on a stark when it is represented with a linked list.
   b) Write C++ function to insert an element into a singly linked list. **(8+8)**

(Or)

8. a) What is Hashing? Explain different types of Hashing.
   b) Write C++ functions to insert and delete an element in a circular queue. **(8+8)**

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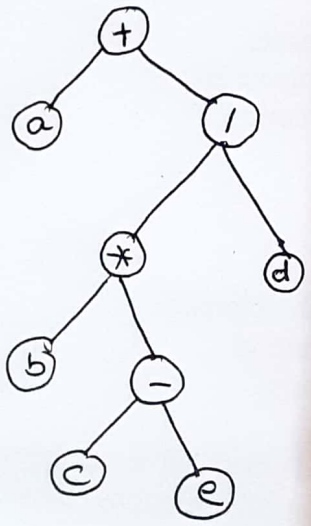
UNIT-IV

9. a) Define graph. Write about different graph representations.
   b) Write an algorithm for DFS. Take sample graph and do DFS for it. (10+6)

(Or)

10. a) Define Binary Tree. State any two properties of Binary trees. Discuss tree representations.
    b) Write algorithm for traversals on trees. Write Inorder, prorder and postorder traversals for the following tree. (6+10)



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LOYOLA ACADEMY DEGREE & PG COLLEGE, OLD ALWAL

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MCA (II semester) Pre final Examination, April- 2018

Subject : Operating Systems **Exam Time: 3 hrs**

Sub Code : MCA 16205 **Max. Marks: 80**

Answer any one from each unit: **(5*16=80M)**

UNIT-I

1. a) Explain the role of Operating System in regard to process management and memory management? **(8M)**
   b) Explain briefly about the following **(8M)**
   (i) System Calls (ii) Threads

(Or)

2. a) Explain scheduling criteria? **(2M)**
   b) Explain FCFS, Priority, SJF, RR algorithms in detail . Calculate the average Turn around time and Average waiting time for following example using FCFS, SJF, RR (t=3), Priority.

Process	Arrival Time	Prur	Priority
P_1	0	8	2
P_2	1	4	1
P_3	2	9	3
P_4	3	5	4

UNIT-II

3. a) What is a page fault? Explain how does the operating system handle page fault? **(8M)**
   b) Explain about the following **(8M)**
   (i) File Structure (ii) Directory Structure

(Or)

4. Write short notes on : **(4*4)**
   a) Segmentation b) Swapping c) Demand paging
   d) Thrashing

UNIT-III

5. a) Explain classical problems of Synchonization in detail? **(4M)**
   b) Explain about Monitors in detail ? With example? **(12M)**

(Or)

6. a) Explain about Deadlocks and its necessary conditions? **(4M)**
   b) Explain about Bankers algorithm for deadlock avoidance? **(12M)**

UNIT-IV

7. a) What is Disk structure? **(2M)**
   b) Explain the following Disk scheduling Algorithms with example. **(14M)**
   (i) SSTF (ii)FICFS (iii) SCAN (iv) C-SCAN
   (v) LOOK (vi) C-LOOK

(Or)

8. a) Write short notes on Kernel I/O Sub System? **(8M)**
   b) Write short notes on DMA. **(8M)**

UNIT-V

9. a) Explain process Management and Scheduling in LINUX systems. **(8M)**
   b) Explain about Network Structure in detail? **(8M)**

(Or)

10. Explain the Structure and Design principles of Windows. **(16M)**

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LOYOLA ACADEMY DEGREE & PG COLLEGE, OLD ALWAL

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MCA (II semester) Pre final Examination, April- 2018

Subject : Computer Networks — **Exam Time: 3 hrs**

Sub Code : MCA 16206 — **Max. Marks: 80**

Answer any one from each unit: (5*16=80M)

UNIT-I

1. a) Explain TCP/IP model with a neat diagram. (10M)
   b) Explain different Transmission impairments. (6M)

(Or)

2. a) Explain about Co-axial, Twisted pair and Fiber Optics Transmission media. (8M)
   b) Explain Line Coding Schemes with an example and a neat sketch. (8M)

UNIT-II

3. a) Explain the following mechanism of Flow and Error control. (16M)
   (i) Stop and Wait (ii) GO-Back-NARQ (iii) Selective Repeat ARQ

(Or)

4. Explain about (16M)
   (i) ALOHA (ii) CSMA (ii) CSMA/CD (iv) CSMA/CA

UNIT-III

5. a) Explain the difference between virtual Circuit and Data gram Approach. (6M)
   b) Explain about CIDR. (10M)

(Or)

6. a) Explain about Link State Routing Protocol. (8M)
   b) Explain the following (8M)
   (i) Subnetting (ii) BGP

UNIT-IV

7. a) Explain UDP header format. (8M)
   b) Explain the mechanisms used in Quality of Service. (8M)

(Or)

8. a) Explain TCP Header format. (8M)
   b) Explain Congestion Control of TCP in detail. (8M)

UNIT-V

9. a) Explain Domain Name Space. (8M)
   b) Explain about WWW. (8M)

(Or)

10. a) Explain about SNMP. (8M)
    b) Explain about HTTP. (8M)

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LOYOLA ACADEMY DEGREE & PG COLLEGE, OLD ALWAL

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M.C.A II Semester Mid Examination March - 2018

Subject: Value Education & Personality Development **Exam Time: 2 hrs**

Sub Code: MCA 16201 **Max Marks: 50 M**

Answer any four: **(4*12½M)**

1. What is Value Education. Why is it so important in the character formation of a student.
2. Discuss the various dimensions of human development.
3. Discuss happiness as a goal of life .Explain the prescriptions given by four major Indian religions.
4. What do you prefer Love or Money? Why.
5. Discuss arranged marriages and love marriages? What do you prefer and why?

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LOYOLA ACADEMY DEGREE & PG COLLEGE, OLD ALWAL

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MCA II semester Mid Examination, March - 2018

Subject : Accounting & Financial Management **Exam Time : 2 Hrs**

Subject Code: MCA 16202 **Max. Marks : 50**

I. Answer any four of the following questions:

1. Define Accounting. Explain any 15 basic terms used in Accounting.

2. Journalise the following Transaction

Dec 1.	Started business with cash	50,000
3.	Goods purchased for cash	30,000
3.	Furniture Purchased for Cash	5,000
7.	Sold goods for Cash	10,000
9.	Sold goods to Naresh Kumar	8,000
12.	Goods Purchased from Vinod	5,000
16.	Goods Sold to Anil	6,000
22.	Cash received from Naresh Kumar In full settlement	7,600
25.	Cash paid to Vinod Kumar	1,900
	Discount Allowed	100
28.	Cash paid for purchase of stationery	250
31.	Paid office rent	800
31.	Good Returned to Vinod Kumar	500

3. Jouornalise the following Transactions & Post them in ledger.

March1.	Mr. X started business with cash	80,000
2.	Purchased furniture	20,000
3.	Sold goods for cash	16,000
4.	Sold goods to Shyam on Credit	10,000
5.	Cash received from Shyam in full settlement	9,800
	Discount Allowed	200
6.	Paid Wages	300

4. Journalise the following Transaction and Post them in ledger

June 1.	Mr. Ram started business with cash	1,00,000
2.	Purchased Machinery	25,000
3.	Sold goods for cash	26,000
4.	Purchased goods from Kavitha	15,000
6.	Withdraw cash from Bank	2,000
7.	Dividend Received	800

(P.T.O)

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5. Prepare Final Accounts for the year ended March 2013

Particulars	Debit	Credit
Cash in Hand	2,400	
Purchases	2,40,000	
Opening Stock	70,000	
Debtors	1,00,000	
Plant & Machinery	1,20,000	
Furniture	30,000	
Bills Receivable	40,000	
Rent & Taxes	20,000	
Wages	32,000	
Salaries	37,600	
Capital		2,00,000
Bills payable		44,000
Creditors		48,000
Sales		4,00,000
	6,92,000	6,92,000

Adjustments:-

1. Closing Stock 50,000
2. Outstanding Wages 5,000
3. Provide depreciation on Plant & Machinery at 10% and furniture 5%

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LOYOLA ACADEMY DEGREE & PG COLLEGE, OLD ALWAL

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M.C.A II Semester Mid Examination March - 2018

Subject: Operations Research **Exam Time: 2 hrs**

Sub Code: MCA 16203 **Max Marks: 50 M**

Answer any four of the following: **(4*12½=50M)**

1. a) Solve **(10M)**

$$\begin{aligned} \text{Max} \quad & z = 20x_1+30x_2 \\ \text{STC} \quad & 3x_1+3x_2 \leq 36 \\ & 5x_1+2x_2 \leq 50 \\ & 2x_1 + 6x_2 \leq 60 \\ \text{NNC} \quad & x_1 , x_2 \geq 0 \end{aligned}$$

using graphical method.

b) Write special cases in Graphical method. **(2½M)**

2. a) Solve using dual simplex method **(10M)**

$$\begin{aligned} \text{Min} \quad & z = 2x_1+4x_2 \\ \text{STC} \quad & 2x_1+x_2 \geq 4 \\ & x_1+2x_2 \geq 3 \\ & 2x_1+ 2x_2 \leq 12 \\ \text{NNC} \quad & x_1 , x_2 \geq 0 \end{aligned}$$

b) When and why dual simplex method is used. **(2½M)**

3. a) Define Feasible and optimal solutions **(2½M)**

b) Solve **(10M)**

$$\begin{aligned} \text{Max} \quad & z = 6x_1+8x_2 \\ \text{STC} \quad & 5x_1+10x_2 \leq 60 \\ & 4x_1+4x_2 \leq 40 \\ \text{NNC} \quad & x_1 , x_2 \geq 0 \end{aligned}$$

4. a) Write the algorithm of Simplex method. **(2½M)**

b) Solve **(10M)**

$$\begin{aligned} \text{Min} \quad & z = 2x_1+x_2 \\ \text{STC} \quad & 5x_1+10x_2 \leq 50 \\ & x_1+x_2 \geq 1 \\ & x_1 \leq 4 \\ \text{NNC} \quad & x_1 , x_2 \geq 0 \end{aligned}$$

5. a) Define Transportation problem with examples. **(2½M)**

b) Write the generalized format of transportation problem in detail and write different types of TP. **(6+4M)**

(P.T.O)

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6. Solve the given Transportation problem and find the optimal solution.

	W_1	W_2	W_3	
O_1	4	8	8	76
O_2	16	24	16	82
O_3	8	16	24	77
	72	102	41	

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LOYOLA ACADEMY DEGREE & PG COLLEGE, OLD ALWAL

(An Autonomous and Affiliated to Osmania University)

MCA II semester Mid Examination, March - 2018

Subject : C++ & Data Structures **Exam Time : 2 Hrs**

Subject Code: MCA 16204 **Max. Marks : 50**

Answer any four of the following:

1. (a) What is Operator Overloading? Explain with syntax .List the operators which cannot be overloaded.
   (b) Write a program to overload the following operators for a rational number object <, <=, >, >=, ==, !=, and ++, - - (post increment and post decrement). (5+7½)

2. (a) What are class templates? Explain in detail with syntax.
   (b) Write a program to carry out scalar multiplication of a vector using class template. (5+7½)

3. (a) Explain function templates with syntax.
   (b) Write a program to find maximum, and minimum in a given list of elements using function templates. (5+7½)

4. (a) Discuss different forms of new operator. Write a program to carry out linear search by creating an array dynamically.
   (b) Write about inline functions. (8+4½)

5. Write in detail about constructors and destructors. Demonstrate with the help of a program. Discuss constructor overloading. (12½)

6. (a) Write a program to carry out mathematical operations on two complex numbers.
   (b) What is recursion? Write a program to compute factorial of a given number using recursion. (8+4½)

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LOYOLA ACADEMY DEGREE & PG COLLEGE, OLD ALWAL

(An Autonomous and Affiliated to Osmania University)

MCA II semester Mid Examination, March - 2018

Subject : Operating Systems

Subject Code: MCA 16205

Exam Time : 2 Hrs

Max. Marks : 50

Answer any four of the following:

1. (a) Write about process control Block? Explain its structures? **(5M)**
   (b) Discuss how inter process communications is implemented. **(7½M)**

2. (a) What is scheduling criteria? **(2½M)**
   (b) Explain about FCFS, RR, priority with following example.
   Consider the following set of processes, with length of CPU'S given in milli seconds and calculate the average weighting time for FCFS, priority and RR(t = 2) **(10M)**

Process	B.T	Priority
P_1	10	3
P_2	1	1
P_3	2	3
P_4	1	4
P_5	5	2

3. (a) Write about Multi threading and different multi threading models. **(10M)**
   (b) Write about Thread Scheduling? **(2½M)**

4. Write about Contigious Memory Allocations? **(12½M)**

5. Write about paging with hardware support? **(12½M)**

6. Explain about page replacement algorithms with following reference string
   1,2,3,4,1,2,5,1,2,3,4,5,? **(12½M)**

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LOYOLA ACADEMY DEGREE & PG COLLEGE, OLD ALWAL

(An Autonomous and Affiliated to Osmania University)

MCA II semester Mid Examination, March - 2018

Subject : Computer Networks

Subject Code: MCA 16206

Exam Time : 2 Hrs

Max. Marks : 50

Answer any four:

1. (a) Define Computer Networks. Explain its characteristics and components. (05M)
   (b) Explain the various categories of Topology along with their advantages and disadvantages. (07½M)

2. (a) Explain the ISO-OSI model in detail. (07½M)
   (b) Compare OSI and TCP/IP (05M)

3. (a) Define Line Coding and its characteristics. (05M)
   (b) List out the various line coding schemes and apply it for the following data. (07½M)
   0 1 0 0 1 1 1 0

4. Explain flow control and error control in detail.(Any two) (12½M)

5. (a) Explain about different types of errors. (05M)
   (b) i) Find Even Parity and Odd Parity: 0 1 1 0 1 0 1 1 . (07½M)
   ii) Two Dimensional Parity: 1 0 0 1 1 0 0 1 , 0 1 1 0 1 1 1 1
   iii) Given a bit sequence 1 0 1 0 0 1 1 1 1 0 and a divisor of 1 0 1 1 . Find CRC and heck your answer.
   iv) Find the check sum of 1 0 1 0 1 0 0 1
   0 0 1 1 1 0 0 1
   v) Construct a Hamming Code for the data 1 0 0 1 1 0 1.

6. Explain HDLC frame format in detail. (12½M)

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