Code No.: **3B109** | **MR13**

MALLA REDDY ENGINEERING COLLEGE (AUTONOMOUS)

(Affiliated to JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD)
Gundlapochampally (H), Maisammaguda (V), Medchal (M), Medchal-Malkajgiri (Dist), Hyderabad

MBA II SEMESTER SUPPLEMENTARY EXAMINATIONS, DECEMBER-2018

Subject: **Quantitative Analysis for Business Decisions**

Time: 3 hours **Max. Marks: 75**

PART – A

Answer ALL questions of the following **1x25Marks=25 Marks**

1. **Answer the following**
   a. Discuss the requirements for application of Linear Programming and state the assumptions underlying of linear programming. **(12 Marks)**
   b. **From the following data**
      i) Find IBFS by using Vogel's approximation method and
      ii) Find Optimal Solution **(13 Marks)**

		Destination			
		A	B	C	Supply
Source	1	2	7	4	5
	2	3	3	1	8
	3	5	4	7	7
	4	1	6	2	14
		7	9	18	34

PART-B

Answer any FIVE Questions of the following **5x10Marks= 50 Marks**

1. What is the role of operations research in decision-making? Explain the scope and methodology of operations research based on the scientific method analysis. Discuss.

2. A company manufactures 200 motor cycles per day. Depending upon the availability of raw materials and other conditions, the daily production has been varying from 196 motor cycles, whose probability distribution is as given below:

Production per day :	196	197	198	199	200	201	202	203	204
Probability :	0.05	0.09	0.12	0.14	0.2	0.15	0.11	0.08	0.06

The motor cycles are transported in a specially designed three- storeyed lorry that can accommodate only 200 motor cycles.

Using the following random numbers: 82,89,78,24,52,53,61,18,45,04,23,50,77,27,54,10 simulate the process to find out:

a. The average number of motor cycles waiting in the factory?
b. The average number of empty spaces on the lorry?

3. A department has five employees with five jobs to be performed. The time (in hrs.) each man will take to perform each job is given in the effective matrix. How should the Jobs be allocated, one per employee, to minimize the total man-hours?

	I	II	III	IV	V
A	85	75	65	125	75
B	90	78	66	132	78
C	75	66	57	114	69
D	80	72	60	120	72
E	76	64	56	112	68

4. A manufacturing of leather belts makes three types of belts A, B and C which are processed on 3 machines M_1, M_2, and M_3. Belt A requires 2 hrs on machine M_1 and 3 hrs. on machine M_2 and 2 hrs. on machine M_3. Belt B requires 3 hrs on Machine M_1, 2hrs on machine M_2 and 2hrs. on machine M_3. Belt C requires 5 hrs. on machine M_2 and 4 hrs. on machine M_3. There are 8 hrs. of time per day available on machine M_1, 10 hrs. of time available in machine $\mathbf{M_2}$ and 15 hrs. of time per day available on machine $\mathbf{M_3}$. The profit gained from belt A is Rs3 per unit, from belt B is Rs.5 per unit and from belt C is Rs 4 per unit. What should be the daily production of each type of belt so that the profit is maximum.

5. In a bank cheques are cashed at a single teller counter customers arrive at the counter in a poison's manner at an average rate of 30 customers per hour. The teller asks, on an average, a minute and a half to cash a cheque.
The service time has been shown to be exponentially distributed.
(a) Calculate the percentage of time the teller is busy
(b) Calculate the average time a customer is expected to wait.

6. What is queueing problem? Explain queueing system, transient and steady state.

7. Explain the types of simulation. Discuss clearly the various costs that are involved in inventory problems with suitable examples. How they are inter-related?

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MBA II SEMESTER SUPPLEMENTARY EXAMINATIONS, DECEMBER-2018

Subject: **Quantitative Analysis & Decision Making**

Time: 3 hours **Max. Marks: 60**

PART – A

Answer ALL questions of the following 1x20M=**20 Marks**

1. a . A fashion company manufactures four models of shirts. Each shirt is first cut on cutting process in the trimming shop and next sent to the finishing shop where it is stitched, button holed and packed. The number of man–hours of labour required in each shop per hundred shirts is as follows:

Shop	Shirt A	Shirt B	Shirt C	Shirt D
Trimming Shop	1	1	3	40
Finishing Shop	4	9	7	10

Because of limitations in capacity of the plant, no more than 400 man–hours of capacity is expected in Trimming shop and 6000 man – hours in the Finishing shop in the next six months. The contribution from sales for each shirt is as given below: Shirt. A: Rs. 12 /– per shirt, Shirt B: Rs.20 per shirt, Shirt C: Rs. 18/– per shirt and Shirt D: Rs. 40/– per shirt. Assuming that there is no shortage of raw material and market, determine the optimal product mix.

b. A firms produces three types of biscuits A,B, and C. It packs them in assortments of two size I and II. The size I contains 20 biscuits of types A, 50 of types B and 10 of types of C. The size II contains 10 biscuits of type A, 80 of 740 of type of B and 240 of type C. Determine the least number of packets he should buy. Use simplex method and the concept of dual.

PART-B

Answer any FIVE Questions of the following **5x8Marks= 40 Marks**

1.a. "Operations Research is a bunch of mathematical techniques to break industrial problems". Critically Comment.

b. A machine tool company conducts a job-training programme at a ratio of one for every ten trainees. The training programme lasts for one month. From past experience, it has been found that out of 10 trainees hired, only seven complete the programme successfully. (The unsuccessful trainees are released). Trained machinists are also needed for machining. The company's requirement for the next three months is as follows:

January: 100 machinists, February: 150 machinists and March: 200 machinists. In addition, the company requires 250 trained machinists by April. There are 130 trained machinists available at the beginning of the year.

Pay roll cost per month is: Each trainee Rs. 400/- per month. Each trained machinist (machining or teaching): Rs. 700/- p.m. Each trained machinist who is idle: Rs.500/- p.m.

(Labour union forbids ousting trained machinists). Build a Linear Programming Problem (L.P.P) for produce the minimum cost hiring and training schedule and meet the company's requirement.

c. Formulate the Linear Programming Problem (L.P.P) and solve the the problem graphically. Old hens can be bought for Rs.2.00 each but young ones costs Rs. 5.00 each. The old hens lay 3 eggs per week and the young ones lay 5 eggs per week. Each egg costs Rs. 0.30. A hen costs Rs.1.00 per week to feed. If the financial constraint is to spend Rs.80.00 per week for hens and the capacity constraint is that total number of hens cannot exceed 20 hens and the objective is to earn a profit more than Rs.6.00 per week, find the optimal combination of hens.

3. a. A company manufactures two products X and Y whose profit contributions are Rs. 10 and Rs. 20 respectively. Product X requires 5 hours on machine I, 3 hours on machine II and 2 hours on machine III. The requirement of product Y is 3 hours on machine I, 6 hours on machine II and 5 hours on machine III. The available capacities for the planning period for machine I, II and III are 30, 36 and 20 hours respectively. Find the optimal product mix using Simplex Method.

b. Draw a comparison between maximization case and minimization case in simplex method.

4. a. Write a note on Unbound Solution and Unrestricted Variables in Linear Programming Problem.

b. Solve the following transportation problem:

Destination

Source	A	B	C	D	E	Supply
W	20	19	14	21	16	40
X	15	20	13	19	16	60
Y	18	15	18	20		70
Z	0	0	0	0	0	50
Demand	30	40	50	40	60	

5.a. A manager has 4 jobs on hand to be assigned to 3 of his clerical staff. Clerical staff differs in efficiency. The efficiency is a measure of time taken by them to do various jobs. The manager wants to assign the duty to his staff, so that the total time taken by the staff should be minimum. The matrix given below shows the time taken by each person to do a particular job. Help the manager in assigning the jobs to the personnel:

Jobs	Men (time taken to do jobs in hours)		
	X	Y	Z
A	10	27	16
B	14	28	7
C	36	21	16
D	19	31	21

b. Is traveling salesman problem is an assignment problem? If yes how? If not what are the differences between assignment problem and traveling salesman problem.

6.a. A branch of a Nationalized bank has only one typist. Since typing work varies in length (number of pages to be typed), the typing rate is randomly distributed approximating a Poisson distribution with a mean service rate of 8 letters per hour. The letter arrives at a rate of 5 per hour during the entire 8hour workday. If the typist is valued at Rs. 1.50 per hour, determine: (a) Equipment utilization, (b) The percent time an arriving letter has to wait, (c) Average system time, and d) Average idle time cost of the typewriter per day.

b. A repairman is to be hired to repair machines, which break down at an average rate of 3 per hour. The breakdown follows Poisson distribution. Non - productive time of a machine is considered to cost Rs. 16/- per hour. Two repairmen have been interviewed. One is slow but cheap while the other is fast but expensive. The slow worker charges Rs. 8/- per hour and the services breakdown machines at the rate of 4 per hour. The fast repairman demands Rs. 10/- per hour and services at an average rate of 6 per hour. Which repairman is to be hired?

7.a. Consider a M/s XYZ company, which is developing its annual plans in terms of three objectives: (1) Increased profits, (2) Increased market share and (3) increased sales. M/S XYZ has formulated three different strategies for achieving the stated objectives. The table below gives relative weightage of objectives and scores project the strategy. Find the optimal strategy that yields maximum weighted or composite utility.

Measure of Performance Three Objectives	ROI (Profit)	% Increase (Market Share)	%Increase (Sales Growth)
Weights	0.2	0.5	0.3
Strategy			
S1	7	4	9
S2	3	6	7
S3	5	5	10

b. Mr. Sinha has to decide whether or not to drill a well on his farm. In his village, only 40% of the wells drilled were successful at 200 feet of depth. Some of the farmers who did not get water at 200 feet drilled further up to 250 feet but only 20% struck water at 250 feet. Cost of drillings is Rs. 50/- per foot. Mr. Sinha estimated that he would pay Rs. 18000/- during a 5-year period in the present value terms, if he continues to buy water from the neighbour rather than go for the well which would have life of 5 years. Mr. Sinha has three decisions to make: (a) Should he drill up to 200 feet? (b) If no water is found at 200 feet, should he drill up to 250 feet? (c) Should he continue to buy water from his neighbour? Draw up an appropriate decision tree and determine its optimal decision.

8. a. Describe the different types of costs involved in a queuing system? In what areas of management can queuing theory be applied successfully? Give Examples.

b. Explain the difference between expected opportunity loss and expected value of perfect information.

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MBA II SEMESTER SUPPLEMENTARY EXAMINATIONS, JANUARY-2019

Subject: **Production and Operations Management**

Time: 3 hours **Max. Marks: 60**

PART – A

Answer ALL questions of the following **1x20Mark=20 Marks**

Q1. Answer the following case study

Sheena had worked for the same Fortune 500 Company for most 15 years. Although the company had gone through some tough times, things were starting to turn around. Customer orders were up, and quality and productivity had improved dramatically from what they had been
only a few years earlier due company wide quality improvement program. So, it comes as a real shock to Sheena and about 400 of her co-workers when they were suddenly terminated following
the new CEO's decision to downsize the company.

After recovering from the initial shock, Sheena tried to find employment elsewhere. Despite her efforts, after eight months of searching she was no closer to finding a job than the day she started. Her funds were being depleted and she was getting more discouraged. There was one bright spot, though: She was able to bring in a little money by mowing lawns for her neighbors. She got involved quite by chance when she heard one neighbor remark that now that his children were on their own, nobody was around to cut the grass. Almost jokingly, Sheena asked him how much he'd be willing to pay. Soon Sheena was mowing the lawns of five neighbors. Other neighbors wanted her to work on their lawns, but she didn't feel that she could spare any more
time from her job search.

However, as the rejection letters began to pile up, Sheena knew she had to make an important decision in her life. On a rainy Tuesday morning, she decided to go into business for herself taking care of neighborhood lawns. She was relieved to give up the stress of job hunting, and she was excited about the prospects of being her own boss. But she was also fearful of being completely on her own. Nevertheless, Sheena was determined to make a go of it. At first, business was a little slow, but once people realized Sheena was available, many asked her to take care of their lawns. Some people were simply glad to turn - the work over to her; others switched from professional lawn care services. By the end of her first year in business, Sheena knew she could earn a living this way. She also performed other services such as fertilizing lawns, weeding gardens, and trimming shrubbery. Business became so good that Sheena hired two part-time workers to assist her and, even then, she believed she could expand further if she wanted to.

Questions

1. In what ways are Sheena's customers most likely to judge the quality of her lawn care services?

2. Sheena is the operations manager of her business. Among her responsibilities are forecasting, inventory management, scheduling, quality assurance, and maintenance

PART-B

Answer any FIVE Questions of the following **5x8Marks= 40 Marks**

1. Define production management, any four objectives of production management and brief on different types of production systems.

2. What is product design, state the steps in the product design along with essential inputs required and brief on the product design tools?

3. Explain different operations strategies in case of location choice for existing organization, for the new organization and state the layout design procedure.

4. Discuss the operations planning and scheduling systems and make a note on job ship scheduling.

5. Provide a detailed note on components of integrated material management and elaborate the importance of ABC analysis, XYZ analysis and VED analysis in inventory control.

6. Define the product layout and process layout, distinguish between the product and process layout and compare the advantages and disadvantages.

7. **Brief on the following**
   a. Discuss the standardization procedure and its application
   b. State the meaning of obsolete surplus and store accounting

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MBA II SEMESTER SUPPLEMENTARY EXAMINATIONS, JANUARY-2019

Subject: **Financial Management**

Time: 3 hours **Max. Marks: 60**

PART – A

Answer ALL questions of the following **5x4Mark=20 Marks**

1. Functions of Finance Manager
2. What do mean by discounting of cash flows
3. What is Optimum Capital Structure?
4. What do you understand by Bond Dividend?
5. What is Cash Management?

PART-B

Answer ALL questions of the following **5x 8 Marks= 40Marks**

1. What do you mean by wealth maximization and profit maximization? Which one do you suggest? Why?

2. A Company has to select one of the following two projects. Cash flow is

Year	0	1	2	3	4
Project X	11,000	6,000	2,000	1,000	5,000
Project Y	10,000	1,000	1,000	2,000	10,000

Calculate (a) payback period (b) ARR, (c) NPV at 10 percent (d) PI at 15 Percent (e) IRR. Suggest the best alternative on the above basis

3. What basic principles will you advocate in the matter of deciding on a proper constitution of capital structure for a firm?

4. A company needs Rs 12,00,000 for the installations of new factors which would yield an annual EBIT of Rs. 2,40,000. The company has the objective of maximizing the EPS. It is considering the possibility of issuing equity share of Rs. 10/- each, plus raising adjust of Rs 2,00,000, Rs 6,00,000, Rs 10,00,000. The current market price of share is Rs 40/- which is expected to drop to Rs 25/- per share if the market borrowings were to exceed Rs 7,50,000. Cost of borrowings is as follows:

Upto Rs 2,50,000 at 10%
Between Rs 2,50,001 to Rs 6,50,000 at 14%
Between Rs 6,50,000 to Rs 10,00,000 at 16%

Assume tax rate of 50%, Calculate EPS and Share which would be worth an objective of management

5. Management of Cash flows plays a very important role in Cash Management "Discus

6. a. What is cost of capital? Explain the importance of cost of capital in capital budgeting decisions

b. Define credit Policy ? what is an optimum Credit Policy ?

7. a. Explain time value money? Explain with example

b. What is Leverage? Explain its significance.

8. Answer any **ONE**

a. "Relevance vs Irrelevance theories of dividend". Explain

b. **Cost** sheet of XYZ Company provides the following particulars

Particulars	**Amount per unit (Rs.)**
Raw Materials	80
Direct Labour	30
Overhead	60
Total cost	170
Profit	30
Selling Price	200

The following further particulars are available:

a) Raw Material in stock - on average one month:

b) Materials are in process – on average of half a month

c) Finished Goods in stock – on average of one month

d) Credit allowed by suppliers – one month

e) Credit allowed to Debtors is two months

f) Average time-lag in payment of wages is 1½ weeks and is one month in overhead expenses

g) One fourth of the output is sold against cash

h) Cash in hand and at Bank is expected to be Rs 3,65,000/-

You are required to prepare a statement showing the working capital needed to finance a level of activity of 1,04,000 units of production.

You may assume that production is carried on evenly throughout the year and wages and overheads accrue similarly (WIP at 50% completion stage)

Code No.: **7B118**

MR17

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MBA II SEMESTER SUPPLEMENTARY EXAMINATIONS, JANUARY-2019

Subject: **BUSINESS ENVIRONMENT**

Time: 3 hours **Max. Marks: 60**

PART – A

Answer ALL questions of the following **5x4Mark=20 Marks**

1. Give a brief note on outcomes of Industrial Policy of India.
2. What is the meaning of the term 'Fiscal Policy'?
3. Write a brief note on RBI.
4. Give a note on agriculture sector in India's trade policy.
5. Give a brief note on the guidelines of the present EXIM policy

PART-B

Answer ALL questions of the following **5x8Marks= 40 Marks**

1. What are the salient features of Industrial policy of 1991?

(OR)

2. Critically evaluate the industrial licensing policy of India.
3. Evaluate the recent fiscal policy of Government of India.

(OR)

4. Discuss about the on-going banking reforms and outline the impact of demonetization.
5. Explain the structure of money markets in India.

(OR)

6. Discuss in detail the functions of Reserve Bank of India.
7. What are the various methods of payment for settlement of international trade?

(OR)

8. Elaborate on bilateral and multilateral trade agreements.
9. What are the characteristics of India's EXIM policy?

(OR)

10. What corrections do you suggest to set-right dis-equilibrium in BoP?