PG – 745

I Semester M.Com. (FA)/MFA Examination, January/February 2018
(CBCS)
Paper – 1.5 : Q.T. FOR ACCOUNTING AND FINANCE

Time : 3 Hours Max. Marks : 70

Instruction : *Answer **all** Sections.*

SECTION – A

1. Answer **any seven** sub questions : **(7×2=14)**
   a) What is a constraint ?
   b) Define capital budgeting.
   c) What is sensitivity analysis ?
   d) Differentiate between mutual exclusive and mutually independent events.
   e) What is a EOQ ?
   f) What is free float ?
   g) What is a Laplace criterion ?
   h) What is the difference between NPV and IRR ?
   i) What is duality in simplex problems ?
   j) What is pessimistic time ?

SECTION – B

Answer **any four** questions of the following : **(4×5=20)**

2. A company produces two types of hats. Each hat of the first type requires twice as much labour time as the second type. If all hats are of the second type only, the company can produce a total of 500 hats a day. The market limits daily sales of the first and second types to 150 and 250 hats. Assuming that the profits per hat are Rs. 8 per type A and Rs. 15 for type B, formulate the problem as a linear programming model.
3. Explain ABC approach for inventory management.
4. State and explain Bayes Theorem.

P.T.O.

5. A die is rolled and a coin is tossed. Find the probability that the die shows an odd number and the coin shows a head.

6. The average life of a particular car battery is 4 years 4 months with a standard deviation of 8 months. The manufacturer guarantees to replace any battery that does not last 3 years. If the life these batteries are normally distributed what percentage of batteries could the manufacturer expect to replace ?

7. Discuss the need for risk analysis in capital budgeting.

SECTION – C

Answer **any three** questions. **Each** question carries **twelve** marks : **(3×12=36)**

8. Solve the LPP using penalty method

   Min $Z = 12X_1 + 20\ X_2$

   Subjected to constraints

   $6X_1 + 8X_2 \geq 100$

   $7X_1 + 12X_2 \geq 120$

   $X_1, X_2 \geq 0$

9. Discuss the procedure for drawing network using Fulkerson rule.

10. Your company is considering whether it should tender for two contracts MS1 and MS2 on offer from a government department for the supply of certain components, The company has three options.

    Tender for MS1 only

    Tender for MS2 only

    Tender for both

    If the tenders are to be submitted by the company will incur additional costs. The cost of tendering for contract MS1 only cost Rs. 50,000/-. The component supply cost if the tender is successful is Rs. 18,000/-. The cost of tendering for MS2 only is Rs. 14,000/-. The component supply cost if the tender is successful would be Rs. 12,000/-. The cost of tendering both is Rs. 55,000/-. The component supply cost if the tender is successful would be Rs. 24,000/-. Probability of getting tender is as shown below :

Option	Possible Prices	Probability of getting
MS1 Only	1,30,000 1,15,000	0.20 0.85
MS2 Only	70,000 65,000	0.15 0.80
Both	1,90,000 1,40,000	0.05 0.65

What do you suggest and why ?

11. Discuss the application of quantitative techniques in business management.

12. Draw a network for the below project and identify the total time required to complete the project. Also calculate the earliest start, finish, latest start, finish and different floats

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

PG – 591

I Semester M.Com. (F & A)/M.F.A. Degree Examination, January 2017
(CBCS)
Paper – 1.5 : QUANTITATIVE TECHNIQUES FOR ACCOUNTING AND FINANCE

Time : 3 Hours Max. Marks : 70

SECTION – A

1. Answer **any seven** of the following sub-questions in about **3-4** lines **each**. **Each** sub-questions carries **two** marks : **(7×2=14)**

   a) State the meaning of quantitative techniques.

   b) State the assumptions of linear programming.

   c) Distinguish between sequences and series.

   d) What do you mean by conditional probability ?

   e) State the meaning of Geometric Progression.

   f) What is Expected Value ?

   g) What do you mean by Optimistic Time under PERT ?

   h) What is decision making under Risk ?

   i) Define sensitivity analysis.

   j) What is holding costs ?

   k) What do you mean by model with one price break ?

SECTION – B

Answer **any four** of the following questions. **Each** question carries **five** marks : **(4×5=20)**

2. How useful are the Quantitative Techniques in decision-making ?

3. Briefly explain the Properties of Normal Distribution.

P.T.O.

4. Chandru Bag Company produces two types of school bags : deluxe and ordinary. If the company is producing only ordinary bags, it can make a total of 200 ordinary bags a day. Deluxe bag requires twice as much labour and time as an ordinary type. The demand for deluxe bag and ordinary bag are 75 and 100 bags per day respectively. The deluxe bag yields a profit of Rs. 12.00 per bag and ordinary bag yields a profit of Rs. 7.00 per bag. Formulate the problem as LP model.

5. Differentiate between PERT and CPM in Network Analysis.

6. A committee of 8 teachers is to be formed out of 6 science, 8 arts teachers and a physical instructor. In how many ways the committee can be formed if :

   a) Any teacher can be included in the committee

   b) There should be 3 science and 4 arts teachers on the committee such that :

      i) Any science teacher and any arts teacher can be included

      ii) One particular science teacher must be on the committee

      iii) Three particular arts teachers must not be on the committee.

7. "When it becomes difficult to use an optimization technique for solving a problem one has to resort to simulations". Discuss.

SECTION – C

Answer **any three** of the following. **Each** question carries **twelve** marks : **(3×12=36)**

8. "Operations research advocates a system approach and is concerned with optimization". Discuss.

9. Solve the following LPP by Graphical Method :

   Minimize $Z = 18x_1 + 12x_2$

   Subject to constraints,

   $$2x_1 + 4x_2 \leq 60$$
   $$3x_1 + x_2 \geq 30$$
   $$8x_1 + 4x_2 \geq 120$$

   Where, $x_1, x_2 \geq 0$.

10. A project schedule has the following characteristics :

Activity	Name	Time (days)	Activity	Name	Time (days)
1 – 2	A	4	5 – 6	G	4
1 – 3	B	1	5 – 7	H	8
2 – 4	C	1	6 – 8	I	1
3 – 4	D	1	7 – 8	J	2
3 – 5	E	6	8 – 10	K	5
4 – 9	F	5	9 – 10	L	7

i) Construct PERT network.

ii) Find the critical path.

11. Kalyani Limited manufactures Electric bulbs. The Mean life of Electric Bulbs manufactured by a firm is 1200 hrs. The Standard Deviation is 200 hrs :

a) What is the percentage of bulbs which are expected to fuse before 1400 hours of service ?

b) In a lot 10,000 bulbs, how many bulbs are expected to have life of 1050 hours or more.

c) What is the percentage of bulbs which are expected to fuse before 1600 hours of service ?

12. Write a short notes on the following :

a) Risk analysis in Capital Budgeting

b) Decision making under conflict

c) Inventory Models.

PG – 769

I Semester M.F.A. Examination, January 2015
(CBCS)
FINANCE & ACCOUNTING
Paper – 1.5 : Quantitative Techniques for Accounting and Finance

Time : 3 Hours Max. Marks : 70

SECTION – A

1. Answer **any seven** questions. **Each** question carries **two** marks. **(7×2=14)**
   a) Define Probability.
   b) What do you mean by Sample Space ?
   c) Write a short note on internal rate of return.
   d) What is compound interest ?
   e) Expand PERT and CPM.
   f) Define Random experiment.
   g) Define cycling Error.
   h) Define Risk.
   i) What is EOQ ?
   j) Define capital budgeting.
   k) Write a short note on Simulation.

SECTION – B

Answer **any four** questions. **Each** question carries **five** marks. **(4×5=20)**

2. Explain the different approaches of calculating the probability of an event.
3. A lot of 10 electronic components are known to include 3 defective parts. If a 4 sample of components is selected at random from the lot,
   i) What is the probability that this sample does not contain more than one defective ?
   ii) What is the probability that this sample will include atleast one defective ?

P.T.O.

4. Calculate the present value of the cash inflow at a discount factor of 20%.

Year	0	1	2	3	4	5
Cash inflow	1,00,000	30,000	45,000	60,000	75,000	90,000

5. A sample of 100 dry battery cells tested to find the length of life produced the following results : Mean = 12 hours, S.D. = 3 hours

   Assuming the data to be normally distributed, what percentage of battery cells are expected to have life :

   i) More than 15 hours.

   ii) Less than 6 hours.

   iii) Between 10 and 14 hours ?

6. Define inventory turnover and discuss its importance in inventory control.

7. Explain relevance of time value of money in investment decision.

SECTION – C

Answer **any three** questions. **Each** question carries **twelve** marks. **(3×12=36)**

8. Write a note on Managerial Applications.

9. ABC Co. is manufacturing two products X and Y. The production is limited to 80 units of product X and 60 units of product Y due to the limited supply of raw material. Production of each of these products requires 5 units and 6 units of electronic components respectively. The electronic components are supplied by another manufacturer and his process i.e., the labour hour's amount to 160 man-days. The production of 1 unit of product X requires 1 man day of labourand 1 unit of product Y requires 2 man days of labour. Each unit of these products is sold in the market at the profit of Rs. 50 and Rs. 80 respectively. Determine how many units of each product the company should produce to maximize the profit.

10. Explain the procedure involved in simplex method to solve the linear programming problem.

11. Draw the network for the following project and compute the earliest and latest time for all the activities and also find the critical path.

Activity	(1, 2)	(2, 3)	(2, 4)	(3, 5)	(3, 6)
Duration	2	3	5	4	1
Activity	(4, 6)	(4, 7)	(5, 8)	(6, 8)	(7, 8)
Duration	6	2	8	7	4

12. A manufacturing company purchases 24000 pieces of a component from a subcontract at Rs. 500 per piece and uses them in its assembly department, at a steady rate. The cost of placing an order and following it up is Rs. 2,500. The estimated stock holding cost is approximately 1% of the average stock held. The company is at present placing orders which vary between orders placed once in every two months (i.e., six orders p.a.) to one order per annum. Which policy would you recommend and why ?
