

Bachelor of Engineering in FTBE Examination 2017(4th year, 2nd semester)**Industrial Management**

Time: 3hours

Answer any five questions.
 Answer should be brief and to the point.
Assume any data if required

Full Marks=100

1. a) Discuss the concept of scientific management as proposed by F.W.Taylor.

b) Distinguish between line & line and staff organization.

c) Explain the following principle of organization:

i) Principles of Authority and responsibility.

(7+7+6=20)

2. a) Explain the following in connection with the Break- Even-Chart with a neat sketch

i) Break- Even point. ii) margin of safety iii) advantages of break –even analysis

b) A factory, producing only one item, which it sales for Rs. 25.00/unit has a fixed cost equal to Rs.1,20, 000 and variable cost Rs.15/unit. Find out:

i) No. of unit to be produced to reach B.E.P.

ii) The profit if 40,000 units are produced and sold

(10+10=20)

3. a) Differentiate between job production & batch production.

b) Describe "Gantt process chart".

c) Five jobs are performed first on machine M1 and then on machine M2. Time in hours taken by each job on each machine in given below:

Machine	A	B	C	D	E
M1	10	3	9	1	5
M2	4	8	7	6	2

(5+5+10=20)

Determine the optimum sequence of jobs and the minimum time elapsed.

[Turn over]

5. a) What is meant by basic “basic feasible solution” to a linear programming problem?

b) A company plans to manufacture and sell two products X & Y. These two products require the use of three different raw materials, A, B & C which are available in limited quantities. The profit per unit of products X & Y is 5 & 6 units of money respectively. The other relevant data are given below:

Raw Material	Units of raw material needed for making one unit of product		Total units of raw material available
	X	Y	
A	2	3	18
B	2	1	12
C	3	3	27

The company wants to determine the product mix that would maximize the total profit. Fractional units are permissible both for products and raw materials. Formulate as a linear programming problem. Determine the capital product mix graphically or by using the simplex method.

c) Suggest suitable location for the plant of following:
Thermal power plant in Kolaghat, West Bengal (4+12+4=20)

6. a) Differentiate between CPM and PERT.

FIG 1 represents the network of a small project.

Three time estimates-optimistic (a), most likely (m) and pessimistic (b) of each activity are incorporated into the network itself. Calculate expected time for each activity and find the

critical path.

(5+15=20)

7. a) List the advantages and disadvantages of sales forecasting.

b) Find the trend by least square method for data as follows:

Year	1975	1976	1977	1978	1979	1980	1981
Demand in 1000 units	95	85	90	82	75	70	65

3

Also estimate the demand for the year 1984.

(8+12=20)

8. Write Short notes on any four.

- Role of motivation to improve productivity,
- Productivity,
- Scheduling,
- Moving-average method,
- Importance of sales forecasting,
- Industrial pollution,
- Process layout & product layout,
- ABC analysis
- Delegation of Authority

(4x5=20)

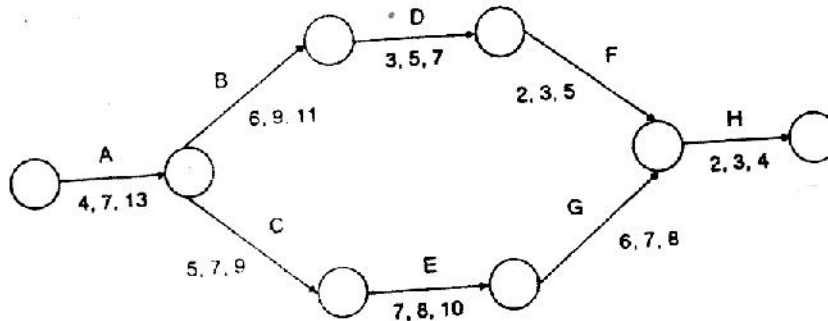


FIG - 1