

B.E. (M.E.) Part III 6<sup>th</sup> Semester Examination, 2012  
*Engineering*  
Industrial Management  
(ME-603)

Time: 3 hours

Full Marks: 70

Use separate answerscript for each half.  
Answer six questions, taking three from each half.  
The questions are of equal value.

1. Explain the principle function of Management. Would you attach different level of importance of three functions at various level of management. What is meant by the 'Management Process'?
2. What is planning? What are the steps involved in it, explain. Write the purposes of planning & explain. Discuss the classification of planning premises.
3. Explain differences between 'Method Study' and 'Work Measurement'. Name the various recording technique used in method study. Explain the flow process chart "Material Type", ~~making~~ making cast iron gear.
4. Describe the basic procedure of Work Measurement. State and explain in brief the steps involved in time study. How would you select an operator for a time study of an operator?
5. Write short note on (any four):-
  - a) Production planning and control
  - b) Rating
  - c) System approach to management
  - d) Selection of method study
  - e) Quality assurance.

**SECOND HALF**  
**Answer three questions.**  
**Questions are of equal value**

6. (a) Enumerate briefly Fixed position lay out and Group lay out.  
 (b) There are three location sites and five relevant factors like transportation cost per week, labour cost per week, finishing material supply, maintenance facilities, and community attitude. The costs are in rupees whereas for last three factors, points are assigned on 0 – 100 scale. The data are given below:

Sl. No.	Factors	Potential Location Sites		
		S1	S2	S3
1	Transportation cost per week (Rs.) F1	800	640	500
2	Labour cost per week (Rs.) F2	1180	1020	1240
3	Finishing material supply F3	30	80	70
4	Maintenance facilities F4	60	20	30
5	Community attitude F5	50	80	70

The location analyst has pre- established weights for various factors. This includes a standard of 1.0 for each Rs. 10 a week of economic advantage. Other weights applicable are 2.0 on finishing material supply, 0.5 on maintenance facilities and 2.5 on community attitude. Also the organization prescribes a minimum score of 30 for maintenance facilities. Select a suitable site based on the above given data.

7. (a) Discuss importance and scope of Break- Even analysis.  
 (b) The following are the present costs and output data of a manufacturer:

Product	Price per unit (Rs.)	Variable cost per unit (Rs. )	% of sales
Ceiling Fans	360	240	50
Exhaust Fans	600	360	30
Industrial Fans	800	480	20

Total fixed cost per year = Rs. 1,50,000 and volume of sales last year = Rs. 5,00,000  
 The manufacturer is considering whether to drop Industrial Fans and replace it with Heat-Exchangers. If this drop- add decision is taken, the cost and output data is as follows:

Product	Price per unit (Rs.)	Variable cost per unit (Rs.)	% of sales
Ceiling Fans	360	240	50
Exhaust Fans	600	360	20
Heat Exchangers	850	450	30

Is the proposed change worth undertaken?

8. (a) Briefly explain basic types of maintenance.

(b) Describe the reasons for replacement of equipment.

9. An existing piece of equipment has market value of Rs. 10,000; maintenance cost is Rs. 1,000 per year and has a life of 10 years and no salvage value. The interest rate is 10%. The proposed equipment has an installed cost of Rs. 100,000, maintenance cost of Rs. 800 per year, a life of 50 years and salvage value of Rs. 15,000. On the basis of Total Life Average method, suggest whether proposed equipment should be purchased or not.

10. (a) Enumerate the strategy for Entrepreneurship development in India.

(b) The diameters of ten samples (each sample having eight shafts) were checked and the results found as follows:

Sample No.	1	2	3	4	5	6	7	8	9	10
X bar (mm)	9.0	9.1	9.5	10	9.0	8.9	8.8	9.3	8.6	8.7
R (mm)	1	2	2	1.5	2	1	1.5	2	1	2

$A_2 = 0.37$ ,  $D_3 = 0.14$ ,  $D_4 = 1.86$ . Draw X bar – R chart and interpret the result.