RS

W'05 : 3 FN : IC 402 (1411)

ENGINEERING MANAGEMENT

Time : Three hours

Maximum marks : 100

Answer FIVE *questions, taking* ANY TWO *from* **Group A,** ANY TWO *from* **Group B** *and* ALL *from* **Group C.**

All parts of a question (a, b, etc) should be answered at one place.

Answer should be brief and to-the-point and be supplemented with neat sketches. Unnecessary long answers may result in loss of marks.

Any missing data or wrong data may be assumed suitably giving proper justification.

Figures on the right-hand side margin indicate full marks.

Group A

1. (*a*) Define management. What are the objectives of management? 6

   (*b*) Consider yourself a manager of a firm that has recently identified the need of a new consumer product in the market. Identify the different steps that you would undertake so as to successfully develop the product. 8

   (*c*) What do you mean by scientific management? Will you prescribe it for today's organisations? If not, why? 6

2. (*a*) Compare and contrast between a line organization and a matrix organisation. Also identify the kind of firms where such organizational structures would be most suitable. 8

(*b*) What are the considerations in the design of an organizational structure for a company? Discuss them. 6

(*c*) What do you mean by participative management? Bring out its advantages and disadvantages. 6

3. (*a*) Why is it necessary to store an item in inventory? What are the objectives of an inventory control system? 8

(*b*) The annual demand of a product is 24,000 units. The buying cost per order is Rs. 100 and the estimated cost of carrying one unit in stock for a month is 2%. The normal price of the product is Rs. 10 per unit. However, the supplier offers a discount of 7·5% for an order of at least 3000 units and a discount of 12·5% if an order is for at least 5000 units.

Find the most economic purchase quantity per year. 12

4. Write short notes on: 5×4

(*i*) Systems Management

(*ii*) Collective Bargaining

(*iii*) Human Resource Skill Development

(*iv*) Strategies for Effective Maintenance.

Group B

5. (*a*) Describe the following important components of a balance sheet giving suitable examples: (*i*) Current Assets, (*ii*) Fixed Assets, (*iii*) Current Liabilities, (*iv*) Fixed Liabilities. 8

(*b*) How are inventories considered in a balance sheet—assets or liabilities? Discuss why. 6

(*c*) Show a representative Profit and Loss Statement of a company of your choice. Use hypothetical figures. 6

6. (*a*) Give at least two definitions of quality in the context of a product. Which definition would you prefer and why? 6

(*b*) What are the objectives of quality control? 4

(*c*) Explain, in brief, the X-bar and R charts used for quality control. 6

(*d*) What is acceptance sampling? 4

7. The data for a simple construction project are as given below:

Activity	*Immediate Processor(s)*	*Time* (Days)		*Direct Cost* (Rs.)	
		Normal	*Crash*	*Normal*	*Crash*
A	—	4	3	60	90
B	—	6	4	150	250
C	—	2	1	38	60
D	*A*	5	3	150	250
E	*C*	2	2	100	100
F	*A*	7	5	115	175
G	*D, B, E*	4	2	100	240

Indirect costs are Rs. 40 per day.

(*a*) Draw an arrow diagram for the project. 3

(*b*) Find all the paths in the project along with their normal and crash times. 3

(*c*) Find the crashing costs for each activity on a per day basis. 4

(*d*) Determine the project duration that will return the minimum total project cost by appropriately crashing the project. 10

8. (*a*) What are the different types of information systems ? Identify each of them with an appropriate level of management. 8

(*b*) What are the characteristics of e-business applications ? Discuss them with reference to an e-business application of your choice. 6

(*c*) What do you mean by enterprise resource planning (ERP) ? What are its component subsystems ? 6

Group C

9. Answer the following questions very briefly : 2 × 10

(*i*) Name five important functions of management.

(*ii*) Why is line organization not suitable for today's organizations ?

(*iii*) What are some considerations in making site selection decisions in locating a plant ?

(*iv*) How will you estimate carrying or holding costs of storing an item in inventory ?

(*v*) What inputs will you use in preparing master production schedule for a MRP system ?

(*vi*) What is Inventory Turnover Ratio ?

(*vii*) What is a *p*-chart used for quality control ?

(*viii*) What is the largest path in a project network diagram ? What is its significance ?

(*ix*) Give a definition of information.

(*x*) Name some popular Enterprise Resource Planning (ERP) Software.