

Roll No.

Total No. of Printed Pages: 2

Total No. of Questions : 7

Maximum Marks : 60

Duration (hrs.) : 3 Hrs

Note : Q-1 is compulsory for 20 marks. Solve any four questions from Q-2 to Q-7

Q-1 Case Study:

MAKING HOTPLATES

20 Marks

Group of 10 workers were responsible for assembling hotplates (instruments for heating solutions to a given temperature) for hospital and medical laboratory use. A number of different models of hotplates were being manufactured. Some had a vibrating device so that the solution could be mixed while being heated. Others heated only test tubes. Still others could heat solutions in a variety of different containers. With the appropriate small tools, each worker assembled part of a hotplate. The partially completed hotplate was placed on a moving belt, to be carried from one assembly station to the next. When the hotplate was completed, an inspector would check it over to ensure that it was working properly. Then the last worker would place it in a specially prepared cardboard box for shipping. The assembly line had been carefully balanced by industrial engineers, who had used a time and motion study to break the job down into subassembly tasks, each requiring about three minutes to accomplish. The amount of time calculated for each subassembly had also been "balanced" so that the task performed by each worker was supposed to take almost exactly the same amount of time. The workers were paid a straight hourly rate. However, there were some problems. Morale seemed to be low, and the inspector was finding a relatively high percentage of badly assembled hotplates. Controllable rejects-those "caused" by the operator rather than by faulty materials-were running about 23 percent. After discussing the situation, management decided to try something new. The workers were called together and asked if they would like to build the hotplates individually. The workers decided they would like to try this approach, provided they could go back to the old program if the new one did not work well. After several days of training, each worker began to assemble the entire hotplate. The change was made at about the middle of the year. Productivity climbed quickly. By the end of the year, it had levelled off at about 84 percent higher than during the first half of the year, although no other changes had been made in the department or its personnel. Controllable rejects had dropped from 23 percent to 1 percent during the same period. Absenteeism had dropped from 8 percent to less than 1 percent. The workers had responded positively to the change, and their morale was higher. As one person put it, "Now, it is my hotplate." Eventually, the reject rate dropped so low that the assembly workers themselves did all routine final inspection. The fulltime inspector was transferred to another job in the organization.

**Questions**

1. What changes in the work situation might account for the increase in productivity and the decrease in controllable rejects?
2. What might account for the drop in absenteeism and the increase in morale?
3. What were the major changes in the situation? Which changes were under the control of the manager? Which were controlled by workers?

4. What might happen if the workers went back to the old assembly line method?

(Source: The Modern Manager, by Edgar F. Huse, copyright @ 1979 by West Publishing Company.)

- Q-2 Solve any Two (5x2)
- a) Discuss the importance of Operations management in the business organization
  - b) List the capacity options in aggregate planning.
  - c) Explain the MRP function in brief with its different input and output systems.
- Q-3 Solve any Two (5x2)
- a) Differentiate between Job shop and Continuous production system with suitable examples
  - b) Name five ways that the operations function influences the competitiveness of an organization with suitable examples.
  - c) Why is operations strategy an important key to success?
- Q-4 Briefly explain the terms any Two (5x2)
- a) Project Management
  - b) ERP
  - c) Total Quality Management
- Q-5 Solve any Two (5x2)
- a) What are the objectives of job design?
  - b) What are the different aspects to be considered in product design?
  - c) What are the stages in product life cycle? Explain
- Q-6 Write short notes on any Two (5x2)
- a) Level and Chase approach
  - b) ISO 9000 and ISO 14000
  - c) Waiting Lines
- Q-7 Solve any Two (5x2)
- a) Differentiate between Product and Services
  - b) What is Product Standardisation and Customisation
  - C) What is Vertical integration?