

BBA 3<sup>rd</sup> sem.

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2010

## PRODUCTION AND OPERATIONS MANAGEMENT

Paper : 3-4

Full Marks : 80

Time : Three hours

*The figures in the margin indicate full marks  
for the questions.*

1. Fill in the blanks : 1×5=5
- (a) The volume of output in continuous or flow production is generally \_\_\_\_\_ . 1
- (b) Functional layout is also called \_\_\_\_\_ layout. 1
- (c) \_\_\_\_\_ study is concerned with the establishment of time standards for performing a job in case of a qualified worker. 1

Contd.

(d) \_\_\_\_\_ refers to the stock of raw materials, parts and finished products held by a business firm. 1

(e) Statistical Quality Control takes care of variation due to \_\_\_\_\_ causes. 1

2. State whether the following are true *or* false :  
1×5=5

(a) Volume is an important factor to be considered in production planning. 1

(b) The means of improving ways and means of doing work is called method study. 1

(c) Being sensitive to the external supply market situation is not an essential function of purchasing in an organisation. 1

(d) Cost of capital is a part of Inventory Carrying Cost in Inventory Control. 1

(e) Monitoring supplier's quality assurance is one of the three broad areas in manufacturing where quality control can be applied. 1

3. Answer the following :  
2×5=10

(a) Define intermittent production. 2

(b) State *two* suitable conditions for applicability of product layout. 2

(c) Define Production Control. 2

(d) What is standardisation ? 2

(e) Define quality control. 2

Answer the following : (*any five*)  
4×5=20

(a) Explain briefly the main characteristics of batch production. 4

(b) Differentiate between process layout and product layout. 4

(c) What are the elements of Production Control ? 4

(d) Explain the advantages of Method Study. 4

(e) Explain briefly the various characteristics for rating of vendors. 4

(f) State the advantages of Inventory Control. 4

(g) State the benefits of Quality Control. 4

5. Answer the following : (any five)  $8 \times 5 = 40$

(a) Distinguish between Operations Management and Production Management. Explain the elements of production system.  $4+4$

(b) Explain the factors to be considered for setting up a hotel.  $8$

(c) A firm purchases a particular material once a year. The total quantity of material purchased is 2400 units in a year. It is found that the inventory holding cost is Rs. 72 per unit per year and the ordering cost is Rs. 2400 per order. Calculate the economic order quantity and the optimum number of orders to be placed in a year.  $8$

(d) In a manufacturing process, eight samples each of size five are drawn at regular intervals. The sample mean and their ranges are given below :  $4+4$

Sample No. : 1 2 3 4 5 6 7 8

Mean : 70 60 57 64 58 82 85 33

Range : 45 48 62 48 36 81 78 42

Calculate the control limits in respect of X-chart and R-chart. Comment on the state of control. Charts need not be drawn. [ You are given  $A_2 = 0.58$ ,  $D_3 = 0$ ,  $D_4 = 2.115$  ]

(e) In a steel factory, a direct time study was done on a particular operation. The cycle time for this operation are shown below. It was noticed that worker rating (as stated by an analyst) was 80 percent and the allowance fraction was 0.15. Determine the standard time.  $8$

CYCLE TIME (MINUTES)	NUMBER OF TIMES OBSERVED
25	1
29	2
30	2
31	1

(f) Explain the objectives of purchasing. State the importance of purchasing research.  $5+3$

(g) (i) What is Codification ? What is the basis for codification ?  
 (ii) Explain the characteristics of a good coding system.  $4+4$