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K-3536

Second Year B. B. A. (Sem. IV) Examination

September / October – 2012

Production Management

Time : Hours] [Total Marks :

Instrutions :

(1)

નીચે દર્શાવેલ ☛ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fillup strictly the details of ☛ signs on your answer book.

Name of the Examination :

☛ S. Y. B. B. A. (SEM. 4)

Name of the Subject :

☛ PRODUCTION MANAGEMENT

☛ Subject Code No. : 3 5 3 6 ☛ Section No. (1, 2,.....) : Nil

Seat No. :

Student's Signature

(2) Figures to the right indicate full marks allocated to that question.

(3) All questions are compulsory.

1 Answer following questions briefly : **12**

(a) Today is 7th March, 2012. Company wants to sell 5000 pieces of finished product FP 01 in April 2012. Today's stock of FP 01 is 4000 pieces. In the remaining days of March 2012, company will sell 2500 units of FP 01. At present, 1000 units of FP 01 are in Work in Progress (Semi-finished) state. These 1000 pieces will be transferred to Finished Goods ware-house in the third week of March. At the end of April 2012, company wants to keep 2000 pieces of FP 01 as closing inventory. Find out what quantity of FP 01 should be manufactured in April 2012.

(b) Monthly demand for one material is 4800 units. Cost of placing one order is Rs. 2880.00 per order. Price of this material is Rs. 2400 per pack of dozen units. Inventory carrying cost is 20% of price on per unit per year basis. How many orders are needed to be placed if order quantity is EOQ ?

(c) Define activity "Inspection" for material type flow process charts. Give examples of this activity.

(d) Today is 4th February, 2012. We are doing production scheduling at 6.00 PM. Thus, today's day is not available for work. We have to give delivery of each job in morning on date of delivery. Solve following sequencing problem and decide priorities of four jobs using LPT, SPT, LS and CRR rules.

	Job 1	Job 2	Job 3	Job 4
Work remaining in days	16	18	21	18
Delivery date	18.2.12	20.2.12	25.2.12	26.2.12

(e) If normal time fixed after work-measurement is 24 minutes, allowance factor is 20% of shift time, how many cycles should be completed in a shift of 8 hours ?

(f) Give abbreviations and symbols for following Therbligs :

- Avoidable Delay
- Pre-position
- Grasp
- Select.

2 (a) Discuss importance of Production Management in detail. **28**

(b) Define the term : "Plant Lay-out". Discuss Cellular Lay-out, Service lay-out, Hybrid Lay-out and Fixed Position Lay-out.

(c) Discuss various methods of waste reduction.

(d) Explain process of business location selection. What factors shall you consider to decide location of a self financed engineering college ?

OR

2 (i) Define terms "Production" and "Production Management". Discuss interaction of Production Management department with Human Resource Management and with Marketing Management. **28**

(ii) Give two separate definitions of term : "Quality". Write three quality features of a ball pen from customer's angle. Discuss any three methods (techniques) of Quality Control.

(iii) Discuss various techniques of business location selection.

(iv) Discuss various classifications of Material Handling equipments.

3 Explain situation of non-instantaneous, uniform rate supply of material arising because of in-house manufacturing. Derive formula of Economic Run Length Quantity (ERLQ) also known as Economic Lot Quantity (ELQ). **12**

OR

3 Daily demand of one chemical is 2000 kgs. The factory works for total 320 days in a year. Price of this material is Rs. 800.00 per bag of 20 kgs. This material is a cold-storage item and hence inventory carrying cost is 40% of price on per kg, per year basis. Cost of sending inquires to suppliers is Rs. 200.00. After quotations are received, Rs. 200.00 are spent on making comparison statement. After that, the lowest supplier is called for negotiation and Rs. 800.00 are spent behind one negotiation session. Rs. 200.00 are spent on typing and sending the purchase order. As per company's policy, out of every order received, 5 kgs are taken as a sample and are checked by destructive test method. These 5 kgs of material no longer remains useful. Cost of performing one quality check is Rs. 448.00 which is over and above value of 5 kgs of material destroyed in quality check. **12**

How many purchase orders shall be placed in a year if EOQ is ordered ?

The supplier offers following two price benefits :

- If order quantity is more than or equal to 80,000 kgs, price shall be Rs. 38.00 per kg.
- If order quantity is more than or equal to 96,000 kgs price shall be Rs. 37.00 per kg.

Should we accept any of these discount offers or should we stick to original EOQ ? Justify your answer with proper calculations.

4 Explain process of value analysis with appropriate examples. Discuss any two techniques of value analysis. **10**

OR

4 In a semi-automatic manufacturing operation, following activities are observed : **10**

(i) Worker picks up raw material piece from tray – 1 minute

(ii) Worker checks length of raw material piece – 1 minute

(iii) Worker loads raw material piece in machine – 2 minutes

(iv) Worker starts machine – 1 minute

(v) Machine runs automatically with auto stop at the end – 5 minutes

(vi) Worker unloads finished piece – 2 minutes

(vii) Machine throws waste material automatically – 3 minutes

(viii) Worker inspects finished piece – 1 minute

(ix) Worker packs finished piece in the box – 3 minutes

Prepare Man and Machine Chart for that improved situation in which worker's idle time and machine's idle time shall be minimum. Find out cycle time. What shall be % idle time of worker and that of machine ?

OR

4 Annual demand of one material is 1,60,000 kgs per year. Price of this material is Rs. 40.00 per kg. This material is a cold storage item and hence, annual per unit inventory carrying cost is 40% of price. Cost of sending inquires while placing purchase order is Rs. 50.00. Cost of making comparison **10**

statement is Rs. 50.00. Cost of arranging one negotiation session is Rs. 200.00. Cost of typing and sending one order is Rs. 100.00. Out of every order received, 5 kgs are consumed in quality checking which is done by destructive testing method. Test of conducting quality test is Rs. 200.00 which does not include value of 5 kg material used in checking. Find out EOQ.

The supplier offers 5% discount if order quantity is more than or equal to 16,000 kgs. He offers total 7% discount if order quantity is more than or equal to 40,000 kgs. Should we accept any of these two discount offers ? Which offer is better? Justify your answer with proper calculations.

5 Company has hired four hoardings from M/S Shah Publicity. All four hoardings are hired at equal rent. Let us call these hoardings as H1, H2, H3 and H4. These four hoardings are at four different locations. Company wants to do promotion of four products P1, P2, P3 and P4. It is decided not to mix two products on one hoarding. No product shall be promoted on two hoardings and each product shall have only one hoarding. For each combination of hoarding and product, increase in sale shall be different. These sale increase values for each combination of hoarding and product is shown in following table. **10**

	P1	P2	P3	P4
H1	60	100	80	140
H2	20	40	30	60
H3	90	60	70	100
H4	30	60	60	100

(All values are in thousands of rupees)

Find out the best combination of hoardings and products. What shall be total maximum sale increase ?

After some time, a new hoarding H5 is being made available. Doing promotion on H5 can cause increase of 80 thousands for P1, 120 thousands for P2, 60 thousands for P3 and 100 thousands for P4. Should this new hoarding be used for publicity ? Which hoarding shall be discarded ? What shall be total maximum sale increase now ?

OR

5 Answer following questions : **10**

(i) Discuss Bill of Material as the heart of Material Requirement Planning (MRP) system.

(ii) Discuss LS, PCO, CRR, LPT and SPT priority rules with examples.
