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IE8693 PRODUCTION PLANNING AND CONTROL

IMPORTANT QUESTIONS AND QUESTION BANK

UNIT-I INTRODUCTION

2-Marks

1. Define production planning and control.
2. Give the objectives of PPC.
3. what are the functions of dispatching?
4. What are the three phases of production planning and control?
5. What is the production system?
6. Classify the types of production system?
7. What are the objectives of product analysis?
8. List the various factors that influence the product design.
9. What is standardization and mention the benefits of standardization?
10. What is simplification?
11. What is meant by routing and scheduling?
12. What are the 4M's in planning?
13. State the aims and advantages of standardization.
14. What do you understand by break even analysis?
15. Define break Even point.
16. Write the significance of BEP.
17. List out the managerial uses of break-even analysis.
18. How are the plant layouts related to type of production system?
19. Differentiate between product design and product development.
20. List out the assumption in Breakeven analysis.

13-Marks

1. Discuss in detail about the answers marketing analysis give for the proposed product?
2. Compare production planning and production control with a neat block diagram.
3. Explain the phases of production planning and control.
4. Compare between various types of productions.
5. 1.List out the limitation of breakeven analysis.
   2.Enumerate the margin of safety and angel of incidence.
6. With the help of simple flow diagram explain various function of production planning and control.
7. 1.Enumerate job shop and batch production systems.
   2. Enumerate mass and continuous production systems.

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8. Annual fixed costs at a small textile shop are Rs. 50,000 and variable costs are estimated at 50% of the Rs. 40/ unit selling price. a) Find the BEP. b) What profit (or loss) would result from a volume of 3250 units.

9. Explain the procedural steps in product steps in product design and product development.

10. 1.Explain the functional and operational aspects of products design.
    2.Explain the durability, dependability and aesthetics aspects of product design.

11. The fixed cost of the year 2000-01 are Rs. 600000 variable cost per unit is Rs. 40. Each unit sells at Rs. 160, determine 1) breakeven point in terms of physical units and in terms of rupees 2) If a sales volume of 5500 units has been expected, then what will the profit earned 3) If a profit target of Rs. 120000 has been budgeted compute the number of units to be sold .4) If the company sells 6500 units calculate the margin of safety and profit.

12. Madison industries has the following data on cost at two volumes of production for a product that sell for Rs. 50 a) construct a two number, break even chart. b) compute the variable cost, the contribution and the BEP c) using the contribution from d) estimate the profit at a volume of 8000 units

Units	Labour	Material	Overhead	Other FC	Total
6000	Rs.60000	Rs.36000	Rs.54000	Rs.80000	Rs.230000
10000	Rs.100000	Rs.60000	Rs.60000	Rs. 80000	Rs. 300000

13. The annual fixed cost of a product are known to be Rs.3 lakhs and the annual net profit Rs. 60,000, the average monthly sale being 1000 units. A new design is contemplated involving the expenditure for preparation amounting to Rs. 1,20,000 to be returned in two years. It is expected that with new production methods the P/V ratio may be increased by 5 percent what should the annual sales figure for the new design be
    1.So that the same net profit will be realized.
    2.so that in addition to this profit a yield of 10% on the capital invested will be obtained?

14. Write about economics of a new design for a product.

15. You own a factory which manufactures steel furniture as and when you receive orders. Describe the steps you would follow in planning and control the production.

UNIT-II WORK STUDY

<u>2-Marks</u>

1. What is method study? State three different levels in method study.
2. List the objectives of motion study.
3. What is motion study.?
4. Explain the various techniques of method study.

5. Explain predetermined motion time studies.
6. Distinguish motion and memo motion studies.
7. State about critical analysis.
8. List the objectives of work study.
9. What are Therbligs?
10. Name the few charts used in motion studies.
11. What is meant by ergonomics?
12. How idle time affects productivity?
13. How rest pauses improve productivity?
14. State above predetermined time studies (PDTS).
15. Distinguish motion studies and predetermined motion studies (PDMS).
16. State how ergonomics affects the productivity.
17. What is work measurement?
18. Define work sampling.
19. Write about time study.
20. Why allowance have to be added to observed time?

13-Marks

1. Discus in detail about the objectives of method study.
2. Construct a multiply activity chart for threading of bolt in the production shop of a factory?
3. What is flow diagram? Construct a flow diagram for gear manufacturing plant.
4. 1.Write short notes on the symbols used in process chart with neat diagram.
   2.What are effective and ineffective Therbligs? Explain with neat diagram.
5. What are the requirements of work sampling?
6. Elucidate the critical analysis in method study.
7. Explain about work measurement in detail with suitable example.
8. Distinguish between cumulative timing and fly back timing.
9. Explain the procedural steps involved in conducting method study with suitable example?
10. Discuss various recording techniques used in method study.
11. Describe in detail about production study followed in production industry.
12. Write short notes on:
    1)Micro motion.
    2)Memo motion studies.
13. Explain the types of allowances used I calculating normal time along with a neat sketch.
14. Explain in detail about predetermined time and motion studies.
15. Discuss the techniques to reduce work content and various concepts of work content.

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UNIT-III PRODUCT PLANNING AND PROCESS PLANNING

2-Marks

1. What is product planning?
2. What is the purpose of feasibility study in relation to product planning?
3. List the activities of advanced product planning.
4. List the information that can be obtained from the system operation concept.
5. What are the various steps in process planning?
6. What is value analysis?
7. Differentiate primary and secondary functions with respect to value analysis.
8. Mention at least six uses of value analysis.
9. What are the types of value?
10. What is meant by process planning?
11. Differentiate between process planning and product planning.
12. Draw a simple stock control model with and without buffer stock.
13. List the factors affecting the selection of batch size.
14. What are the criteria for the selection of batch size?
15. List the information that can be obtained from the system maintenance concept.
16. What is the information required for machine loading?
17. Define line balancing.
18. What is meant by machine loading?
19. If the cycle time of the product is 3 min. determine the machine output per hour.
20. Distinguish between value analysis and value engineering.

13-Marks

1. 1.What is meant by product planning? Explain in detail the various steps involved in the product planning process?
   2.Explain the various phases of value engineering?
2. What is value analysis? Describe the basic steps involved in the value analysis?
3. Explain how the stock control of batch production is performed by following consideration
   1.Without buffer stock.
   2.With buffer stock.
4. 1.What do you mean by minimum-cost batch size? Also derive an expression for it.
   2.what is meant by machine loading? Also enumerate the various methods to the cycle time to a minimum.
5. Explain the importance of process planning with reference to production control. Discuss the activities involved in process planning.
6. What do you mean by machine balancing? Also explain the effect of balancing on number of machines required with an illustration.
7. Explain the analysis of process capabilities in a multi-product system.

8. Summarize the pre-requisite information needed for process planning with steps involved in process planning?
9. Write short notes on quantity determination in batch production.
10. Explain the procedure for capacity planning of single and multi-stage system.
11. Explain the steps involved in the standard procedure for process planning method.
12. 1.Discuss value analysis and value engineering.
    2.Explain how production quantity in batch production is determined.
13. With a suitable example create a process planning sheet and route sheet.
14. Classify CAPP and explain each type in detail with flow chart.
15. Explain the phrase Extending the original product information with suitable example.

UNIT-IV PRODUCTION SCHEDULING

2-Marks

1. What are the key functions of the production scheduling and control?
2. What are the rules for priority sequencing?
3. Explain the various recording methods for progressing purpose.
4. Name the various MRP output reports.
5. What are the functions of expending?
6. List some of the commonly used forms in dispatching.
7. Illustrate the purpose of operation program chart.
8. Any six benefits of implementing MRP system.
9. Compare aggregate planning and master scheduling.
10. Interpret the data required for production scheduling.
11. show the purpose of a) work load chart and b) Scheduling chart.
12. Define MRP and various required for MRP.
13. Any six benefits of implementing MRP system.
14. What is the purpose of the master production schedule?
15. Explain the function of dispatching.
16. What are the steps in Johnson's algorithm for solving sequencing problems of many numbers of jobs and 4 machines?
17. Difference between master scheduling and EBQ scheduling.
18. Define scheduling. What are the objectives of scheduling?
19. Give the uses of Gantt charts and objective charts.
20. Define about line-of-balance and its uses?

13-Marks

1. Detail about the process flow involved in mater scheduling.

2. What is perpetual scheduling? Brief the steps in making perpetual schedule.

3. Describe priority sequencing? Detail about any six priority rules used foe job sequencing.

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4. A manufacturing facility has five jobs to be scheduled on a machine their sequence of arrival, processing time, and due-date are given in the table below.

Job (in sequence of arrival)	Processing time (Days)	Due date (i.e., days from now)
A	7	8
B	4	3
C	5	7
D	2	9
E		

schedule the jobs using 1) FCFS, 2) SPT,3) due date,4) LCFS, and 5) STR rules Also compare the results using the performance measures of total completion time, average completion time and average lateness.

5. Write a short note on following:
   1.Aggregate run-out method of batch scheduling.
   2.Line-of-balance method.
6. Explain the concept, inputs, characteristics, working, outputs and benefits raised by the dispatcher.
7. Describe progression and its types?
8. What are the functions of progression?
9. Explain in detail about Gannt charts with examples.
10. Describe the various chart used in LOB.
11. Two jobs j1 and j2 are to be processed on five machines M1, M2, M3, M4 and M5. The processing time and job sequence are as follows:
   JOB1:

Machine sequence	M1	M2	M3	M4	M5
Process time(min)	2	5	6	6	7

   JOB 2:

Machine sequence	M3	M1	M4	M5	M2
Process time(min)	5	6	4	3	7

12. Four different jobs are to be done on 4 different machines. The matrix below gives the cost (in rupees) of producing each job (i) on each one of the machines (j). how should the job be assigned to the machine so that the total cost is minimum.

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Jobs	Machines			
	M1	M2	M3	M4
J1	5	7	11	6
J2	8	5	9	6
J3	4	7	10	7
J4	10	4	8	3

13. Examine six jobs that are processed on two machines A and B, the jobs is processed in sequence so that B should follow A. determine the optimal order in which the jobs should be sequenced. Also draw Gantt chart.

Job	1	2	3	4	5	6
Processing time in M/c A(hrs)	3	5	4	7	1	3
Processing time in M/c B(hrs)	2	6	2	1	4	7

14. Write the function of dispatching? explain in detail about various document raised by the dispatcher.

15. There are five types of jobs needs to go through two machines centers named A and B. find the optimum sequence of jobs using Johnson's rule.

Job	Machines centers A in hrs	Machines centers B in hr
A	3.2	4.2
B	4.7	1.5
C	2.2	5.0
D	5.8	4.0
E	3.1	2.8

UNIT-V INVENTORY CONTROL AND RECENT TRENDS IN PPC

2-Marks

1. what are the terms inventory and inventory control?
2. What are the different types of inventories?
3. Give at least four reasons for keeping inventory.
4. Describe the following term (a) lead time (b) re-order point.
5. When do you use ABC analysis?
6. What are the "seven wastes" that becomes the target of elimination in JIT process?

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7. Difference between pull system and push system.
8. Explain P system and Q system.
9. Compare one bin system in P model with two bins in Q model.
10. What is the difference between anticipation and fluctuation inventories?
11. Show any four objectives of inventory control.
12. Select any six-inventory control techniques.
13. Define ERP? Show any four ERP packages that are widely used in India.
14. Compare excess stock and stock out situations.
15. Difference between independent and dependent demand.
16. What is the cost that are included in procurement cost and inventory carrying cost?
17. Define fixed order quality model?
18. Give the uses of Kanban in production control system?
19. Explain about 1) MRP 2) EOQ 3) JIT.
20. Contrast lot size inventories with transportation inventories.

13- Marks

1. Explain in detail about different types of cost in inventory system.

2. Why factories carry inventory in detail?

3. What is EOQ? Derive the expression for EOQ when the demand of the item is uniform, the production rate is infinite and no stocks-outs are allowed.

4. 1.Explain inventory? How inventories can be categorized in different ways.

   2.show the cost associated with procuring and holding inventories.

5. 1.What are the terms: lead time, stock out, buffer stock, inventory carrying cost?

   2.difference between in-process inventory, safety stock inventory and seasonal inventory.

6. Detail about the fixed-order quantity inventory model? Also list the merits, demerits and sustainability of this model.

7. Explain about fixed-period quantity inventory model? Also compare and contrast P-system with Q-system.

8. Detail about selective control of inventory and explain the various types?

9. Define ABC analysis? Explain its significance in the inventory control with suitable example.

10. 1.Explain in detail about two card Kanban system.

    2.compare contrast a pull production system and push production system.

11. Explain the important modules in ERP software.

12. Explain the methodology adopted in implementing ERP.

13. Discuss the recent trends in production planning and control of manufacturing industries.

14. Determine the minimum-cost batch size of production? Explain in detail about graph?

15. Perform ABC analysis on the following sample of items in an inventory.

Item	Annual consumption(units)	Price/units (in Rs)
A	5950	5
B	21250	4
C	1000	8.75
D	2087	5
E	27600	2.50
F	28000	0.50
G	36000	0.25
H	911	4.10
I	300	2.90
J	29450	0.30
K	11500	8.15
L	3934	5