

A

Reg. No. :

--	--	--	--	--	--	--	--	--	--

Question Paper Code: 99719

B.E./B.Tech. DEGREE EXAMINATION, NOV 2023

Professional Elective

Mechanical Engineering

19UME919 PRODUCTION PLANNING AND CONTROL

(Regulations 2019)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. Which of the following are characteristics of B.E.P? CO1-U
(a) There is no loss and no profit to the firm (b) Total revenue is equal to total cost.
(c) Contribution is equal to fixed cost. (d) All of the above.
2. Given selling price is Rs 10 per unit, variable cost is Rs.6 per unit and CO1-U
fixed cost is Rs 5,000. What is break-even point?
(a) 500 units (b) 1,000 units (c) 1,250 units (d) None of the above
3. A milk powder tin is being weighed as it is filled is an example of CO1-U
(a) Operation cum transportation (b) Operation cum inspection
(c) Transportation cum inspection (d) None of the above
4. In process charts, the symbol used for storage is CO1-U
(a) Circle (b) Square (c) Arrow (d) Triangle
5. Centralized and decentralized are the types of CO1-U
(a) Routing (b) Dispatching (c) Scheduling (d) Follow up
6. The price paid by the buyer is CO1-U
(a) Cost value (b) Use value (c) Esteem value (d) Exchange value
7. Gantt chart is mostly used for CO1-U
(a) Routing (b) Scheduling (c) Follow up (d) Inspection and quality control

8. Loading may be defined as CO1-U
- (a) Sending the raw material to the machine
 - (b) Sending the finished material to the store
 - (c) Assign the work to the facilities
 - (d) Uploading a software in machine control panel
9. Buffer stock' is the level of stock CO1-U
- (a) Half of the actual stock
 - (b) At which the ordering process should start
 - (c) Minimum stock level below which actual stock should not fall
 - (d) Maximum stock in inventory
10. The time period between placing an order its receipt in stock is known as CO1-U
- (a) Lead time
 - (b) Carrying time
 - (c) Carrying time
 - (d) Over time

PART – B (5 x 2= 10Marks)

11. State the objectives of production planning CO1-U
12. Define synthetic data CO1-U
13. What is meant by machine balancing? CO1-U
14. List the various inputs required for MRP. CO1-U
15. Define the terms inventory and inventory control. CO1-U

PART – C (5 x 16= 80Marks)

16. (a) The following data relate to a company working at 100% capacity level in manufacturing business. Fixed Overheads = Rs. 30,000/- Variable Overheads = Rs.50,000/-, Direct wages = 40,000/- Direct materials = 1,00,000/-; Sales = 2,50,000/-. Mark the values in the break-even chart and determine BEP from the chart. Verify the result by calculations. CO3- App (16)
- Or
- (b) The following are given for a car manufacturing company estimated output = 80,000 units, Fixed cost = Rs. 4,00,000, Variable cost = Rs. 10 per unit, selling price = Rs 20/units. Find out the break-even point analytically and graphically. CO3 -App (16)
17. (a) Apply the Work sampling procedure for bolt nut manufacturing and list out its Limitations. CO3-App (16)

Or

- (b) An operation consists of 5 elements. Observed time for each element in 4 cycles are tabulated here. In this element 3 is machine element, fatigue allowance is 15%, contingency allowance is 2%. Rating factor is 1.25. Estimate the standard time of each element and entire operation. Also calculate the

CO3- App (16)

Element No	Cycle Time (min)			
	1	3.5	3.4	3.5
2	5.2	5.1	5.0	5.3
3	1.3	1.4	1.3	1.4
4	3.9	3.8	3.	3.8
5	4.8	4.7	4.9	4.75

production rate in 8 hours shift.

18. (a) What is value analysis? Describe the basic steps involved in the value analysis.

CO3- App (16)

Or

- (b) Explain the steps involved in Process planning and list out the factors affecting Process planning.

CO3 -App (16)

19. (a) Develop the master production schedule and bill of materials for manufacturing a Car within a 3 month time horizon.

CO1-U (16)

Or

- (b) Organize the dispatching functions for an automobile enterprise.

CO1-U (16)

20. (a) Classify the types of inventories and explain about the purpose of holding stack.

CO1-U (16)

Or

- (b) Explain ABC analysis? Explain its significance in the inventory control with a suitable example.

CO1-U (16)

