Roll No											

PRESIDENCY UNIVERSITY
BENGALURU

SET A

SCHOOL OF ENGINEERING
END TERM EXAMINATION – MAY / JUNE 2024

Semester : Semester VI - 2021
Course Code : MEC3068
Course Name : Production and Operations Management
Program : B.Tech.

Date : June 12, 2024
Time : 01.00pm - 04.00pm
Max Marks : 100
Weightage : 50%

Instructions:
(i) Read all questions carefully and answer accordingly.
(ii) Question paper consists of 3 parts.
(iii) Scientific and non-programmable calculator are permitted.
(iv) Do not write any information on the question paper other than Roll Number.

PART A

ANSWER ANY TEN QUESTIONS **10QX2M=20M**

1. What are the 5M's of production management?
(CO1) [Knowledge]

2. Write any four limitations of job shop production.
(CO1) [Knowledge]

3. Mention different types of Production systems.
(CO1) [Knowledge]

4. What is meant by Productivity?
(CO1) [Knowledge]

5. What is Group technology?
(CO2) [Knowledge]

6. What are all the levels in Production Planning and Control?
(CO2) [Knowledge]

7. How will you differentiate product and service?
(CO2) [Knowledge]

8. What do you understood by the term 'Production Scheduling'?
(CO3) [Knowledge]

9. What do you mean by "Production Scheduling"?
(CO3) [Knowledge]

10. What is the purpose of Gantt chart in production settings?
(CO3) [Knowledge]

11. What is Supply Chain Management?
(CO4) [Knowledge]

12. What is the meaning of Poka-Yoke? Mention the purpose of it.

(CO4) [Knowledge]

13. What is the use of Quality Function Deployment (QFD)?

(CO4) [Knowledge]

14. What are all the important flows in a Supply Chain?

(CO4) [Knowledge]

PART B

ANSWER ANY EIGHT QUESTIONS **8QX5M=40M**

15. What is meant by productivity? Explain labor productivity in manufacturing environment.

(CO1) [Comprehension]

16. What in mass production system? Explain with suitable real life example.

(CO1) [Comprehension]

17. Differentiate Production Management and Operations Management.

(CO1) [Comprehension]

18. List various factors influencing facility location.

(CO2) [Comprehension]

19. Distinguish between Production Planning and Production Control

(CO2) [Comprehension]

20. Briefly explain Process layout and Group layout used in manufacturing plant.

(CO2) [Comprehension]

21. What is Gantt Chart? Explain the purpose of it in production scheduling.

(CO3) [Comprehension]

22. Consider the following two machines and six job sequencing problem. Using Johnson's algorithm, obtain the optimal sequence.

Job 'i'	Processing time in Machine A	Processing time in Machine B
1	5	14
2	20	13
3	13	14
4	10	10
5	8	9
6	12	11

23. What are all the objectives of production scheduling? Explain. (CO3) [Comprehension]

(CO3) [Comprehension]

24. With some real life example write about how Push - Pull view of supply chain will help to achieve operational efficiency and responsiveness.

(CO4) [Comprehension]

25. Write about the importance of 'poka-yoke' system in practice.

(CO4) [Comprehension]

26. Draw schematic diagram of supply chain of any manufacturing case and explain.

(CO4) [Comprehension]

PART C

ANSWER ANY FOUR QUESTIONS **10QX4M=40M**

27. Production and operations management is vital for any organization as it manages all the processes of turning an organization's resources into goods and services. In this context, explain the scope for Production and operations management in detail.

(CO1) [Application]

28. Discuss in detail about various factors influencing facility location decision considering your own case example of the company

(CO2) [Application]

29. In a foundry, there are seven shops whose coordinates are summarized in the following table. Find the location of new facility.

S. No	Existing Facilities	Centroid Coordinate
1	Sand plant	10,20
2	Molding shop	30,40
3	Pattern shop	10,120
4	Melting center	10,60
5	Felting shop	30,100
6	Fabrication center	30,140
7	Annealing shop	20,190

(CO2) [Application]

30. The below table gives the processing time (in hours) of seven jobs to be processed on four machines M1,M2,M3 AND M4 in the order M1,M2,M3,M4.Sequence the given jobs using Johnsons method and find the overall processing time.

Job/Machine	**M1**	**M2**	**M3**	**M4**
A	3	1	4	12
B	8	0	5	15
C	11	3	8	10
D	4	7	3	8
E	5	5	1	10
F	10	2	0	13
G	2	5	6	9

(CO3) [Application]

31. Consider a 3 machine and 5 job flow shop scheduling problem and solve by using CDS heuristic.

Job/Machine	M1	M2	M3
J1	16	18	12
J2	14	10	11
J3	13	20	15
J4	19	15	19
J5	15	16	16

(CO3) [Application]

32. For what purpose the tool 'Quality Function Deployment' is used in industries? Consider any case example and do an exercise using QFD and construct the same.

(CO4) [Application]