

F 3227

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Reg. No.....

Name.....



B.TECH. DEGREE EXAMINATION, NOVEMBER 2014

Eighth Semester

Branch : Mechanical Engineering/Automobile Engineering

AU 010 802/ME 010 802—OPERATIONS MANAGEMENT (AU/ME)

(New Scheme—2010 Admissions—Supplementary)

Time : Three Hours

Maximum : 100 Marks

Part A

Answer all questions.

Each question carries 3 marks.

1. List the type of forecasting in decision-making.
2. What is MPS ?
3. Distinguish between single machine scheduling and flow shop scheduling.
4. Briefly explain Bath tub curve.
5. Describe Lean Manufacturing.

(5 × 3 = 15 marks)

Part B

Answer all questions.

Each question carries 5 marks.

6. Briefly explain the measures of forecast accuracy
7. Differentiate between MRP I and MRP II.
8. Write short note on priority rules used in job shop scheduling problem.
9. What are Failure Modes, Effects and Criticality Analysis ?
10. What are the drivers of supply chain ?

(5 × 5 = 25 marks)

Turn over



Part C

Answer all questions.

Each question carries 12 marks.

11. The sales for the domestic water pumps manufactured by Ajit Manufacturing company is given. Forecast the demand for the pumps for the next three years using least square method.

Year	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Sales	30,000	33,000	37,000	39,000	42,000	46,000	48,000	50,000	55,000	58,000

Or

12. A firm believes that its annual profit depends on its expenditures for research. The information for the preceding six years is given below. Estimate the profit when the expenditure is 6 units.

Year	1	2	3	4	5	6	7
Expenditures for research	2	3	5	4	11	5	6
Annual Profit (Y)	20	25	34	30	40	31	?

13. Explain the *three* major input of MRP process.

Or

14. What do you mean by aggregate planning? List and explain various pure strategies and mixed strategies.
15. Use graphical method to minimize the time needed to process the following jobs on the machines shown (ie. For each machine, find the job which should be scheduled first). Also calculate the total time elapsed to complete the jobs.

Job 1	Sequence	A	B	C	D	E
	Time (Hrs.)	3	4	2	6	2
Job 2	Sequence	B	C	A	D	E
	Time (Hrs.)	5	4	3	2	6

Or

16. Consider the following 2 machine 5 jobs flow shop scheduling problem using Johnson's algorithm. Obtain the optimal sequence which will minimize the make span.

Job	Processing Time	
	Machine 1	Machine 2
1	7	8
2	1	4
3	15	12
4	8	5
5	11	6



17. Explain the following equipment maintenance techniques :—

- Preventive maintenance.
- Corrective maintenance.
- Maintenance prevention.
- Breakdown maintenance.

Or

18. What is reliability? What are the ways of improving reliability of a system? Explain with suitable example.
19. What are the objectives of SCM? Explain any *one* supply chain model.

Or

20. What is FMS? Explain in detail about equipments used in FMS. Discuss the aims of FMS.

(5 × 12 = 60 marks)