

**F 6647**

(Pages : 3)

Reg. No.....

Name.....

**B.TECH. DEGREE EXAMINATION, NOVEMBER 2017.**

**Eighth Semester**

Branch : Mechanical/Automobile Engineering

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

(New Scheme—2010 Admission onwards)

(Supplementary)

Maximum : 100 Marks

Time : Three Hours

**Part A**

*Answer all questions.*

*Each question carries 3 marks.*

1. Explain different types of decisions with example.
2. Describe MRP-II
3. What is the use of Gantt chart ?
4. What is the need of replacement ?
5. Explain process view of supply chain.

(5 × 3 = 15 marks)

**Part B**

*Answer all questions.*

*Each question carries 5 marks.*

6. What are the characteristics of a good forecast ?
7. Explain the objectives of aggregate planning.
8. Explain Johnson's algorithm.
9. Write short notes on bath-tub curve of failure.
10. Describe the major elements and features of FMS.

(5 × 5 = 25 marks)

**Turn over**

## Part C

Answer all questions.

Each question carries 12 marks.

11. Write short notes on the following :

- (i) Moving Average method.
- (ii) Delphi Method.
- (iii) Measures of forecast accuracy.
- (iv) Regression Analysis.

Or

12. Compute the adjusted exponential forecast for the first week of June for a firm with the following data. Assume the forecast for the first week of April as 700 and corresponding initial trend as zero.

Let  $\alpha = 0.15$  and  $\beta = 0.25$

Week	Month							
	April				May			
	1	2	3	4	1	2	3	4
Demand	675	625	575	675	650	650	725	740

13. Illustrate and explain how aggregate planning and Master production schedule are related.

Or

14. Explain Materials Requirement planning.

15. Consider the following two machine and 6 job flow shop problem. Obtain the optimal schedules and the corresponding makespan. Also find out the idle time of each machine.

Job	1	2	3	4	5	6
Machine I	5	10	8	9	6	12
Machine II	7	8	13	7	11	10

Or

16. Explain 'α' job 'n' machine processing problem with a suitable example.

17. Discuss the structure and role of a maintenance organisation in a large industrial undertaking.

Or

18. (i) Define Reliability. Derive an expression for reliability interm of hazard rate.

(5 marks)

(ii) Explain briefly the failure modes effects and critically analysis procedure in maintenance planning.

(7 marks)

19. Write short notes on :

(i) Just in time manufacturing.

(4 marks)

(ii) Lean Manufacturing.

(4 marks)

(iii) ERP.

(4 marks)

Or

20. Explain supply chain management concepts and list its benefits.

[5 × 12 = 60 marks]

**F 6669**

(Pages : 3)

Reg. No.....

Name.....

**B.TECH. DEGREE EXAMINATION, NOVEMBER 2017**

**Eighth Semester**

Branch : Mechanical Engineering

**ME 010 803—PRODUCTION ENGINEERING (ME)**

(New Scheme—2010 Admission onwards—Supplementary)

Time : Three Hours

Maximum : 100 Marks

**Part A**

*Answer all questions.*

*Each question carries 3 marks.*

1. What do you understand by "Tool signature" ?
2. List out different types of materials used for "Tools".
3. What is sintering ?
4. Write the properties and application of Alumina.
5. What is meant by electro chemical machining ?

(5 × 3 = 15 marks)

**Part B**

*Answer all questions.*

*Each question carries 5 marks.*

6. Differentiate oblique and orthogonal cutting.
7. Explain flank and crater wear on tool.
8. What is "MRF" ?
9. Write notes on FRP and its application.
10. Explain with figure abrasive water jet machining.

(5 × 5 = 25 marks)

Turn over

## Part C

Answer all questions.  
Each full question carries 12 marks.

11. Explain the theory behind chip formation and different types of chips.

Or

12. In an orthogonal turning operation :

Cutting speed	= 80 m/minute
Cutting force	= 20 kg
Feed force	= 8 kg
Back rake angle	= 15
Feed	= 0.2 mm/rev
Chip thickness	= 0.4 mm

Determine the following :

- Shear angle.
- Work done in shear.
- Shear strain.

13. Explain tool wear mechanism :

- Adhesion.
- Abrasion.
- Diffusion.
- Fatigue.

(3 + 3 + 3 + 3 = 12 marks)

Or

14. Explain classification and functions of cutting fluids.

15. Explain various production techniques used for powder in powder metallurgy.

Or

16. Explain Magneto rheological and nano-finishing process.

17. Explain the mechanical properties and application of various ceramic materials.

Or

18. Explain what is composite materials. How fibre length, orientation and concentration affect fibre reinforced composites ?

19. Explain with neat figure EDM and EBM.

(6 + 6 = 12 marks)

Or

20. Explain :

- Stereo-lithography.
- Laser welding.
- LIGA process.

(4 + 4 + 4 = 12 marks)

[5 × 12 = 60 marks]