

F 3245

(Pages : 2)

Reg. No.....

Name.....

B.TECH. DEGREE EXAMINATION, NOVEMBER 2014

Eighth Semester

Branch : Mechanical Engineering

ME 010 803—PRODUCTION ENGINEERING (ME)

(New Scheme—2010 Admissions—Supplementary)

Time : Three Hours

Maximum : 100 Marks

Part A

Answer all questions.

Each question carries 3 marks.

1. State Schmid's law.
2. Write short note on CBN tools.
3. Write disadvantages of P/M technique.
4. List out the properties of ceramics materials.
5. Write short note on laser welding.

(5 × 3 = 15 marks)

Part B

Answer all questions.

Each question carries 5 marks.

6. Name and briefly discuss the principal elements of metal machining.
7. Write short note on economic of machining.
8. What is the advantage of fine power over coarse power in P/M ?
9. What do you mean by fibre reinforced composites ?
10. Write short note on water jet machining.

(5 × 5 = 25 marks)

Part C

Answer all questions.

Each full question carries 12 marks.

11. Explain merchant's circle and its analysis. Also state its assumptions.

Or

Turn over

12. Sketch and explain the two methods of metal machining. Discuss the various types of chips produced during metal machining. (6 + 6 = 12 marks)
13. Explain in detail tool wear mechanism. Explain tool wear criterion. (6 + 6 = 12 marks)
- Or
14. Explain thermal aspects of machining. Explain factors affecting the cutting temperature. Discuss the various methods of measuring temperature at the cutting zone. (4 + 4 + 4 = 12 marks)
15. Explain in detail mechanism of sintering in P/M.
- Or
16. Explain various steps in power metallurgy process.
17. Discuss various ceramic structures and its properties.
- Or
18. Explain :
- (a) Metal-matrix composites (MMC).
- (b) Ceramic-matrix composites (CMC). (6 + 6 = 12 marks)
19. With a neat sketch, explain the working of USM. Give the advantage, disadvantage and product application of USM. (6 + 2 + 2 + 2 = 12 marks)
- Or
20. With a neat sketch, explain the working of LBM. Give the advantage, disadvantage and product application of LBM. (6 + 2 + 2 + 2 = 12 marks)
- [5 × 12 = 60 marks]

F 3309

(Pages : 2)

Reg. No.....

Name.....

B.TECH. DEGREE EXAMINATION, NOVEMBER 2014

Eighth Semester

Branch : Mechanical Engineering/Production Engineering

ME 010 805 G01 / PE 010 805 G01—INDUSTRIAL SAFETY (Elective IV) (ME, PE)

(New Scheme—2010 Admission—Supplementary)

Time : Three Hours

Maximum : 100 Marks

Part A

Answer all questions.

Each question carries 3 marks.

1. Explain the need and functions of Safety Committees.
2. Write a short note on Cost of accidents.
3. What is safety audit ? Give its importance.
4. What are different types of industrial hazards ?
5. Explain about fire prevention activities.

(5 × 3 = 15 marks)

Part B

Answer all questions.

Each question carries 5 marks.

6. Write a note on safety policy. How are safety and productivity related ?
7. How can types of accidents be categorized according to the causes of events in industry ?
8. Discuss the importance of plant safety inspection.
9. List and explain the hazards that are possible due to improper house-keeping in industries.
10. What are the preventive measures of fire hazards ?

(5 × 5 = 25 marks)

Part C

Answer all questions.

Each question carries 12 marks.

11. Define safety committee. Also explain the advantages and types of safety committee.

Or

12. What is the importance of safety education and training ? What are the various training methods ?

Turn over

13. Discuss the nature and causes of accidents in industries. Discuss how accidents are reported, investigated and analyzed in an industry. How does it help in prevention of future accidents in that industry ?

Or

14. What is the importance of safety education and training ? What are the various training methods ?

15. Describe : (i) Safety sampling technique (ii) Safety Survey (iii) Safety audit.

Or

16. Describe the role of management, supervisors, workmen, unions, and government in safety.

17. Explain the various types of industrial hazards ? How are check lists useful in identifying industrial hazards.

Or

18. Discuss the functional units and activities of occupational health and hygiene in industries.

19. Explain the fire prevention activities and personal fire protective equipments and their need.

Or

20. Describe the contributing factors towards industrial fires. What are fire detection methods ?

(5 × 12 = 60 marks)

F 3532

(Pages : 3)

Reg. No.....

Name.....

B.TECH. DEGREE EXAMINATION, NOVEMBER 2014

Eighth Semester

Branch : Mechanical Engineering

PRODUCTION PLANNING AND CONTROL (M)

(Old Scheme—Prior to 2010 Admissions)

[Supplementary/Mercy Chance]

Time : Three Hours

Maximum : 100 Marks

Part A

Answer all questions.

Each question carries 4 marks.

1. Why production planning and control is needed ?
2. Write a note on sales forecasting.
3. Explain objectives of production planning.
4. Explain procedures of routing.
5. Explain how scheduling and type of process are related.
6. Explain Johnson's rule of scheduling.
7. What is the role of IT in material management ?
8. Explain inventory activities.
9. Explain master scheduling.
10. Explain rules of dispatching.

(10 × 4 = 40 marks)

Part B

Answer all questions.

Each question carries 12 marks.

11. (a) Explain the functions and problems of product planning and control.

Or

Turn over

- (b) Compute a linear trend line for the following data and check if it is more accurate than exponential smoothing and adjusted exponential smoothing forecasts. Take $\alpha = 0.5$ and $\beta = 0.35$.

Period	1	2	3	4	5	6	7	8	9	10	11	12
Demand	35	38	41	34	44	51	43	44	50	58	52	51

12. (a) Explain capacity planning process planning and material requirements planning.

Or

- (b) Explain principle and procedure of production control.

13. (a) Find the optimal sequence and the corresponding make span for the following 3 machine and 5 job problem :

Job	Machine 1	Machine 2	Machine 3
1	10	12	14
2	12	10	20
3	16	6	12
4	12	8	18
5	20	10	8

Or

- (b) Explain the solution to sequencing n jobs through two machines and three machines.

14. (a) Explain components of supply chain management.

Or

- (b) What is ERP ? Explain its role in production management and control.

15. (a) Explain the objectives of loading and scheduling. Explain some scheduling methods.

Or

- (b) Use CPM to the following sequence of activities. Draw the network diagram and find shortest time needed to complete the work.

Activity	Duration	Predecessors
A	7	—
B	8	—
C	4	—
D	9	A, B
E	10	C
F	5	D
G	7	F
H	8	D, E
I	8	D
J	4	H
K	3	I, J
L	1	J
M	8	L
N	9	K, M

(5 × 12 = 60 marks)