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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 powder 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]

