C20-M–406

7459

BOARD DIPLOMA EXAMINATION, (C-20)

MAY—2023

DME - FOURTH SEMESTER EXAMINATION

PRODUCTION TECHNOLOGY—II

Time : 3 Hours] [*Total Marks* : 80

PART—A 3×10=30

Instructions : (1) Answer **all** questions.

(2) Each question carries **three** marks.

(3) Answers should be brief and straight to the point and shall not exceed five simple sentences.

1. Explain the working principle of milling machine.

2. What is indexing? State the principle of direct indexing.

3. Write the various gear finishing operations.

4. What are the various methods of gear manufacturing?

5. What is bonding material? Mention any two commonly used bonding materials in grinding wheel.

6. Write any three advantages of centre-less grinding.

7. Differentiate between jig and fixtures.

8. What are the applications of jig boring machine?

9. State the advantages of modern machining processes.

10. State the principle of ultrasonic machining.

PART—B

8×5=40

Instructions : (1) Answer **all** questions.

(2) Each question carries **eight** marks.

(3) Answers should be comprehensive and criterion for valuation is the content but not the length of the answer.

11. *(a)* Discuss briefly various work holding devices used on milling machines.

(OR)

(b) Draw the diagram of horizontal milling machine and explain the function of each part.

12. *(a)* Describe bear hob and explain the operation of gear hobbing machine.

(OR)

(b) Explain any four methods of heat treatment of gears.

13. *(a)* What are the different types of wheel maintenance methods? Explain them in brief.

(OR)

(b) List out various methods of grinding and explain cylindrical grinding machine with a neat sketch.

14. *(a)* Explain the working principle of cross-rail type jig boring machine with a neat sketch.

(OR)

(b) Explain the following clamps with diagrams :

(i) Strap clamp

(ii) Screw clamp

15. *(a)* Explain electrical discharge machining with a neat sketch and state its applications.

(OR)

(b) Describe the process of chemical machining with a neat sketch.

PART—C

10×1=10

Instructions : (1) Answer the following question.

(2) The question carries **ten** marks.

(3) Answer should be comprehensive and the criterion for valuation is the content but not the length of the answer.

16. List out different types of milling cutters and explain any three with neat sketches. Among them, which cutters can be used in vertical milling machine?

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