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C14–M–506

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BOARD DIPLOMA EXAMINATION, (C–14)

OCT/NOV—2016

DME—FIFTH SEMESTER EXAMINATION

PRODUCTION TECHNOLOGY—III

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

PART—A 3×10=30

Instructions : (1) Answer **all** questions.
(2) Each question carries **three** marks.
(3) Answer should be brief and straight to the point and shall not exceed *five* simple sentences.

1. State the principles of ultrasonic machining.

2. Write any three advantages of laser beam machining.

3. Write the advantages of non-conventional machining processes.

4. What is the purpose of the following additives in manufacturing of plastics?
(a) Pigments
(b) Stabilizer
(c) Catalyst

5. What are the common methods for joining plastics?

6. Calculate the shear force necessary to punch a hole of 10 mm diameter in a plate of 6 mm thick. The shear strength of the plate material is 80 MPa.

7. How are presses classified?

8. What is the function of drill bush?

9. Distinguish between jig and fixture.

10. List out the methods for locating the position of hole.

PART—B

10×5=50

Instructions : (1) Answer *any* **five** questions.

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

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

11. Compare the principles of the following non-conventional machining processes :

(a) EDM

(b) AJM

12. Explain the process of chemical milling. State its advantages, disadvantages and applications.

13. What is the high pressure laminates? Describe with a neat sketch, the processes of making laminated sheets.

14. Explain the method of injection moulding with a sketch.

15. What are the different types of dies? Explain any two with sketches?

16. *(a)* What is meant by clearance? Explain its importance in shearing operations.

(b) Find the pressure required to cut a rectangular blank of size 40 mm × 30 mm from a mild steel sheet of 4 mm thickness. Assume shear strength of mild steel bar 400 N/mm^2.

17. State the fundamental principles on which the design of jigs and fixtures are based.

18. Explain the principle and working of jig-boring machine with a sketch.

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