

Reg. No. :

T 3368

B.E./B.Tech. DEGREE EXAMINATION, APRIL/MAY 2008.

Fourth Semester

Mechatronics Engineering

MH 1251 — MANUFACTURING TECHNOLOGY

(Regulation 2004)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What do you mean by the term, 'shift' in casting?
2. State any four desirable properties of moulding sand.
3. Justify your answer : Clearance is provided in the punch for the piercing operation.
4. Distinguish between direct and indirect extrusion.
5. A 100 mm diameter brass bar of 250 mm length is to be turned to a diameter of 99.75 mm. Determine the cutting time assuming an allowance of 6.25 mm. Take cutting speed = 150 m/min, feed = 0.25 mm/rev.
6. What is the difference between a live centre and dead centre? When these terms are used in the context of work holding in a lathe?
7. What is truing in reference to grinding wheel?
8. What is the difference between internal 'broaching' and external broaching'?
9. Distinguish between brazing and soldering.
10. What is arc time mean?

PART B — (5 × 16 = 80 marks)

11. (a) (i) Enumerate with a neat sketch various parts of a cupola. (8)
(ii) Explain various steps involved in core making process. (8)

Or

- (b) (i) Describe with a neat sketch hot chamber die casting process. (8)
(ii) Explain the procedure for making castings by investment casting process. (8)
12. (a) (i) Classify the various rolling mills. Sketch and explain the principle of each rolling mill. (8)
(ii) Enumerate the various forging operations carried out in a smithy stop. (8)

Or

- (b) (i) Explain with a neat sketch the method of producing collapsible tubes. (8)
(ii) Distinguish between wire drawing and tube drawing with sketches. (8)
13. (a) (i) Explain the general principle with a schematic diagram, the working and commonly performed operations in a centre lathe. (12)
(ii) What are left hand flute and right hand flute reamers? (4)

Or

- (b) (i) Sketch and explain various parts of a radial drilling machine. (8)
(ii) Sketch a solid tap and enumerate its nomenclature. (8)
14. (a) (i) Describe with a neat sketch the constructional features of horizontal knee type milling machine. (8)
(ii) What are the different feed mechanisms used in a shaper? Explain any one of them. (8)

Or

- (b) (i) Describe with a neat sketch the kinematics of gear shaper. (8)
(ii) Explain with a neat sketch honing process. (8)

15. (a) (i) Describe the sequence of steps in the cycle of resistance spot welding operation. (8)
- (ii) Enumerate the ultrasonic welding process. State its applications. (8)

Or

- (b) (i) Describe with a neat sketch thermist welding process. (8)
- (ii) Explain the procedure used for welding components by Electron beam welding. (8)
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