

B.E DEGREE EXAMINATIONS: NOV / DEC 2014

(Regulation 2009)

Fourth Semester

MECHATRONICS ENGINEERING

MCT104: Manufacturing Technology

Time: Three Hours

Maximum Marks: 100

Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

1. The bronze statue was manufactured using which of these processes?
 - a) sand casting
 - b) investment casting
 - c) CNC milling
 - d) Shell casting
2. Which of these metals is commonly die cast?
 - a) titanium
 - b) lead
 - c) steel
 - d) aluminium
3. In rolling the following forces are developed
 - a) Tensile
 - b) Compressive
 - c) Both tensile and compressive
 - d) Shear force
4. Which of the following is different from other press working operations?
 - a) Coining
 - b) Rivetting
 - c) Punching
 - d) Flatterening
5. You can change the speed of the centre lathe by
 - a) Referring to the diagram and altering the positions of the belts and pulleys
 - b) Referring to the diagram and altering the positions of the 3 gearlevers
 - c) Referring to the diagram and altering the position of the gearlever
 - d) Referring to the manual and altering the positions of the belt and pulley
6. Cutting tools are made of
 - a) tungsten carbide
 - b) chromium carbide
 - c) nickel nitride
 - d) none of these

7. A shaper cannot produce
 - a) a horizontal plane surface
 - b) a vertical plane surface
 - c) an inclined vertical surface
 - d) a cylindrical surface
8. In grinding wheels, which of the following abrasives are used?
 - a) Silicon oxide
 - b) Cubic boron nitride.
 - c) Aluminium oxide
 - d) Silicon carbide
9. Which gases are used in gas welding process?
 - a) Oxygen and hydrogen
 - b) Acetylene and oxygen
 - c) Acetylene and LPG
 - d) Helium and oxygen
10. The temperature range in soldering is
 - a) Above 427° C
 - b) Above 327° C
 - c) Up to 427° C
 - d) Up to 327° C

PART B (10 x 2 = 20 Marks)

11. Write the requirements of good pattern.
12. What is the function of core prints?
13. What is impact extrusion?
14. What is skew rolling?
15. List the important parts of speed lathe.
16. Explain the term 'Recess'.
17. Specify any four types of special milling machine.
18. What is cross rail in shaping machine?
19. What are differences between Welding & Brazing?
20. Discuss the oxidizing flame.

PART C (5 x 14 = 70 Marks)

21. a) Explain the types of pattern in detail with neat sketch.
(OR)
b) Discuss briefly about the defects that cause in casting process.
22. a) Explain the rolling mills types with neat sketch.
(OR)
b) Describe the types of sheet metal operations with neat sketch.
23. a) Explain the parts of lathe in detail with neat sketch.
(OR)

b) Explain the drilling tool nomenclature with neat sketch.

24. a) In detail explain the different types of milling operations.

(OR)

b) Write short notes on:

(i) Honing process (8)

(ii) Broaching process (8)

25. a) Explain in detail about the electron beam welding and its advantages.

(OR)

b) Write short notes on:

(i) Friction welding (8)

(ii) Thermit welding (8)
