



B.E DEGREE EXAMINATIONS: DEC 2014

(Regulation 2013)

Third Semester

MECHANICAL ENGINEERING

U13MET305:Manufacturing Technology I

Time: Three Hours

Maximum Marks: 100

Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

1. A wire used to make a series of holes to permit gases to escape while the molten metal is being poured is known as
 - a) Draw spike
 - b) Swab
 - c) Gate
 - d) Vent rod
2. _____core is used to form the hole or recess in the casting which is not in line with the parting line
3. The blast of arc forces the molten metal out of the pool forming a small depression in the parent metal known as
 - a) Arc length
 - b) Arc crater
 - c) Arc globule
 - d) Arc depression
4. A carburizing flame is one where there is excess of _____
5. The capability of the _____process is limited to the production of component with uniform cross section throughout its entire length
 - a) Extrusion process
 - b) Drawing process
 - c) Rolling process
 - d) Forging process
6. A _____mill has two working rolls of smaller diameter and four or more back-up rolls of larger diameter
7. The sheet metal operation of continuous cutting along the contour, which may be a straight line or an irregular profile is known as
 - a) Nibbling
 - b) Notching
 - c) Planishing
 - d) Hollowing

8. In the cutting operation by which metal pieces are cut from the edge of a sheet____
9. Discontinuous chips are formed under the following machining condition.
 - a) Brittle materials at high cutting speeds
 - b) Ductile materials at low cutting speeds
 - c) Hard material at high cutting speeds
 - d) Brittle materials at low cutting speeds
10. In thread cutting (metric thread), the value of included angle of the cutting tool_____

PART B (10 x 2 = 20 Marks)

(Not more than 40 words)

11. State the purpose of core prints in the mould.
12. What is mean by slush casting?
13. Express the applications of TIG welding process.
14. Define the term polarity.
15. List out any six forgeable materials.
16. Distinguish between rod drawing and wire drawing.
17. What is mean by Magnetic pulse forming?
18. Define the principle of sheet metal cutting.
19. Define Machinability.
20. Write the important characteristics of cutting tool materials.

PART C (5 x 14 = 70 Marks)

(Not more than 400 words)

Q.No. 21 is Compulsory

21. Describe continuous casting process and discuss the important metallurgical features of the billets produced by these methods.
22. a) (i) Discuss briefly the various types of patterns used in foundry shop. (10)
(ii) Give common materials used for pattern making. (4)

(OR)

b) How will you obtain neutral, oxidizing and reducing flames using welding torch in gas welding?
23. a) (i) Explain in briefly the various safety precautions associated with the forging (10) shop.
(ii) Why heat treatment is necessary for forging? (4)

(OR)

b) With a neat sketch explain the working principle of hydraulic and mechanical presses.

24. a) Draw and explain the different types of shearing operations in the sheet metal.

(OR)

b) Explain the working principle of explosive forming with a neat sketch.

25. a) Draw and explain the Apron mechanisms in the centre lathe.

(OR)

b) Explain in detail the working principle of multi spindle automatic lathe with a neat sketch.
