

B.E. DEGREE EXAMINATIONS: MAY / JUNE 2011

Second Semester

MECHANICAL ENGINEERING

MEC103: Manufacturing Technology I

Time: Three hours

Maximum Marks: 100

Answer ALL Questions

PART A (10x1 = 10 Marks)

1. Which type of patterns are generally applied to circular work, like rings, wheels, rims, etc
A) Segmental B) Split Pattern C) Loose piece pattern D) Gated Pattern
2. What is the type of cracks having ragged edges due to tensile stresses during solidification?
A) Honey Combing B) Swell C) Shrinks D) Hot tears
3. In which welding process liquid metal is poured?
A) Thermit welding B) Submerged arc C) Resistance Welding D) TIG
4. For welding steel by MIG process, the gas used is
A) Pure argon gas B) CO₂ C) argon-oxygen mixture D) nitrogen
5. Explosive forming is the process of forming a sheet metal to required shape in die by
A) Tensile force B) Impact force C) Centrifugal force D) Compressive force
6. The process which takes place below recrystallization temperature is known as
A) Hot working process B) cold working process C) casting D) Grinding
7. Which type of operation is carried out for small quantities of components?
A) Trimming B) Nibbling C) Metal Spinning D) Coining
8. When a compressive stress is applied to sheet metal it causes?
A) Spring Back B) Wrinkling C) Elongation D) Grain Size

9. A Lathe bed is generally made of

- A) Cast iron B) cast steel C)Mild steel D) Wrought iron

10. Which of the following is a lathe accessories?

- A) Head stock B) Compound Rest C) lathe carrier of dogs D) tool post

PART B (10 x 2 = 20 Marks)

11. What are the factors for selecting the pattern material?

12. Give the types of test carried out in core sand testing.

13. List some filler material compositions of welding rod.

14. Explain friction welding.

15. What are the effects of cold working processes?

16. Explain the embossing in drawing processes.

17. Define notching.

18. What is the perforating process in sheet metal process?

19. Explain the tool room lathe.

20. Explain the taper turning operation in lathe.

PART C (5 x14 =70 Marks)

21. a) Explain in detail about the defects and causes of casting.

(OR)

b) Briefly explain the centrifugal casting and its advantages.

22. a) (i) What are the different types of flames used in welding process? (10)

(ii) Write down the advantages of brazing. (4)

(OR)

b) Explain the principle and operation of plasma arc welding with neat sketch.

23. a) Discuss the classification of Rolling Mills.

(OR)

b) Explain the forging tools in detail with neat sketch.

24. a) In detail explain the characteristics of metal during sheet metal forming process.

(OR)

b) (i) Briefly explain the metal spinning operation with neat sketch. (7)

(ii) Explain Progressive die operation. (7)

25. a) Using neat sketches, describe the various operations that can be carried on lathe machines.

(OR)

b) Name the different types of the lathes available in machine shop explain in detail.
