

Register No.:

**1679**

**October 2025**

**Time – Two hours**  
**(Maximum Marks 60)**

- N.B.**
1. Answer all questions under Part-A. Each question carries 1 mark.
  2. Answer any 5 questions under Part-B. Each question carries 2 marks.
  3. Answer any 3 questions under Part-C. Each question carries 10 marks.

**PART – A**

1. The most used material for patterns in sand casting is
  - a) Wax
  - b) Metal
  - c) Plastic
  - d) Wood
2. The function of a core in moulding is to
  - a) Provide internal cavities
  - b) Provide external shape
  - c) Support the mould box
  - d) Increase cooling rate
3. The casting process best suited for hollow cylindrical parts is
  - a) Die casting
  - b) Centrifugal casting
  - c) Continuous casting
  - d) Sand casting

4. The process of removing gates, risers, and excess metal is called
  - a) Ramming
  - b) Pouring
  - c) Fettling
  - d) Moulding
5. The flux covering on electrodes in arc welding mainly provides
  - a) Mechanical strength
  - b) Electrical insulation
  - c) Cooling effect
  - d) Arc stability
6. The reducing (carburizing) flame in gas welding is used for
  - a) Stainless steel and carbon steel
  - b) Aluminum and nickel
  - c) Cutting
  - d) Cast iron
7. Heat in resistance welding is produced due to
  - a) Electrical resistance
  - b) Chemical reaction
  - c) Gas flame
  - d) Mechanical pressure
8. Slag inclusion defects can be avoided by
  - a) Using smaller electrodes
  - b) Cleaning each weld pass properly
  - c) Applying more current and voltage
  - d) Using less flux

9. The forging operation that increases length and reduces cross-section is
- a) Bending
  - b) Upsetting
  - c) Piercing
  - d) Drawing out
10. Press forging ensures better accuracy than hammer forging because
- a) It applies slow continuous pressure on the work
  - b) It strikes repeated high speed blows on metal
  - c) It heats the work uniformly in small furnaces
  - d) It allows rolling action between two shaped die
11. The operation in which a desired shape is completely cut from the sheet is called
- a) Piercing
  - b) Blanking
  - c) Notching
  - d) Trimming
12. A hydraulic press is preferred for deep drawing because \_\_\_\_\_
- a) It consumes less power in shearing
  - b) It provides steady pressure during stroke
  - c) It avoids spring back during bending
  - d) It works at higher speed than mechanical press
13. Purpose of sizing is
- a) Powder production and powder flow
  - b) Improve dimensional accuracy
  - c) Mixing particles
  - d) Increase powder flow

14. The product obtained after compaction but before sintering is called
- a) Finished part
  - b) Sintered part
  - c) Porous product
  - d) Green compact
15. What effect does the normalizing process have on the grain structure of a material?
- a) It refines the grain structure
  - b) It coarsens the grain structure
  - c) It eliminates grain boundaries
  - d) It causes no change in the grain structure
16. Pearlite is a mixture of
- a) Iron and carbon
  - b) Austenite and ferrite
  - c) Ferrite and cementite
  - d) Graphite and carbide
17. The power tool used to tighten or loosen nuts and bolts quickly is
- a) Circular saw
  - b) Impact wrench
  - c) Jigsaw
  - d) Chainsaw
18. A mandrel is primarily used for
- a) External turning
  - b) Internal grinding
  - c) Holding hollow workpieces
  - d) Supporting centers

19. For grinding or drilling operations requiring firm grip and precision, use
- a) V-block
  - b) Magnetic chuck
  - c) Drill sleeve
  - d) Collet chuck
20. For assembling screws with high torque in production, select
- a) Electric screwdriver
  - b) Impact wrench
  - c) Hand drill
  - d) Hammer drill

**PART – B**

21. List the cleaning methods of casting.
22. What are the essential qualities of core?
23. Differentiate between soldering and brazing.
24. Mention any two welding defects with their causes.
25. Differentiate hot forging and cold forging.
26. What is the principle of extrusion?
27. What is sintering?
28. What is the use of an arbor?

### PART – C

29. Explain the CO<sub>2</sub> process of core making with sketch and state its advantages.
30. Explain the Metal Inert Gas (MIG) Welding with a neat sketch.
31. Explain a simple progressive die set with a neat sketch.
32. State the various methods of manufacturing metal powders and explain any one method in detail.
33. Describe electric screw driver with a sketch. State its applications.

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