

1. Which casting process involves the use of a rotating mold to create cylindrical parts?

- a) Die casting
- b) Centrifugal casting
- c) Shell molding
- d) Lost wax molding

Answer: b) Centrifugal casting

Explanation: Centrifugal casting utilizes centrifugal force to distribute molten metal into a rotating mold, typically producing cylindrical parts such as pipes and tubes.

2. What type of sand is commonly used in foundry cores due to its ability to withstand high temperatures?

- a) Green sand
- b) Dry sand
- c) Shell sand
- d) Chromite sand

Answer: c) Shell sand

Explanation: Shell sand, also known as resin-coated sand, is commonly used in foundry core making due to its high thermal stability and ability to produce intricate shapes.

3. Which gating system design is commonly used to feed molten metal into the mold cavity?

- a) Sprue
- b) Runner
- c) Riser

d) Ingate

Answer: a) Sprue

Explanation: A sprue is the main channel through which molten metal enters the mold cavity from the pouring cup or ladle.

4. What is the purpose of a riser in casting?

- a) To feed molten metal into the mold
- b) To provide support for the core
- c) To remove excess gases from the mold
- d) To prevent shrinkage defects in the casting

Answer: d) To prevent shrinkage defects in the casting

Explanation: Risers, also known as feeders, are reservoirs of molten metal that supply additional material to compensate for shrinkage as the casting solidifies.

5. Which casting process involves the use of a mold made of wax or similar material that is melted away to leave a cavity?

- a) Die casting
- b) Centrifugal casting
- c) Shell molding
- d) Lost wax molding

Answer: d) Lost wax molding

Explanation: Lost wax molding, also known as investment casting, creates complex metal parts by pouring molten metal into a mold created by melting away a pattern made of wax or

similar material.

6. What type of welding involves the use of a flame to generate heat for joining metal pieces?

- a) Gas welding
- b) Electric arc welding
- c) TIG welding
- d) MIG welding

Answer: a) Gas welding

Explanation: Gas welding utilizes a flame produced by burning a fuel gas, such as acetylene, mixed with oxygen to generate the heat required for welding.

7. Which welding process uses a consumable electrode and a shielding gas to protect the weld pool from atmospheric contamination?

- a) TIG welding
- b) MIG welding
- c) Gas welding
- d) Flux-cored arc welding

Answer: b) MIG welding

Explanation: MIG welding, or Gas Metal Arc Welding (GMAW), uses a continuously fed consumable electrode and a shielding gas to protect the weld area from atmospheric contamination.

8. What is the purpose of flux in welding?

- a) To provide strength to the welded joint
- b) To clean the metal surface
- c) To shield the weld pool from atmospheric contamination
- d) To regulate the temperature of the welding arc

Answer: b) To clean the metal surface

Explanation: Flux removes oxides, dirt, and other impurities from the metal surface during welding, ensuring better weld quality and penetration.

9. Which welding defect occurs when the weld metal fails to properly fuse with the base metal?

- a) Porosity
- b) Lack of penetration
- c) Cracking
- d) Undercut

Answer: b) Lack of penetration

Explanation: Lack of penetration occurs when the weld metal does not adequately penetrate the base metal, resulting in a weak joint.

10. What is the primary purpose of a pattern in the casting process?

- a) To create the mold cavity
- b) To support the core
- c) To regulate the cooling rate of the casting
- d) To provide channels for molten metal flow

Answer: a) To create the mold cavity

Explanation: A pattern is used to create the mold cavity in casting by imparting its shape to the sand or other molding material.

11. Which forging operation involves shaping metal between two dies that move horizontally toward each other?

- a) Drop forging
- b) Press forging
- c) Upsetting
- d) Swaging

Answer: a) Drop forging

Explanation: Drop forging involves shaping metal between two dies that move horizontally toward each other, typically with one die stationary and the other moving.

12. In press working, what process involves cutting metal sheets or plates into desired shapes?

- a) Shearing
- b) Bending
- c) Coining
- d) Drawing

Answer: a) Shearing

Explanation: Shearing is the process in press working that involves cutting metal sheets or plates into desired shapes using a shearing action.

13. Which rolling operation involves reducing the thickness of a metal slab or plate by compressing it between rotating rolls?

- a) Hot rolling
- b) Cold rolling
- c) Ring rolling
- d) Profile rolling

Answer: a) Hot rolling

Explanation: Hot rolling involves reducing the thickness of a metal slab or plate by compressing it between rotating rolls while the metal is heated above its recrystallization temperature.

14. What is the primary function of a lathe machine in metal machining?

- a) Drilling
- b) Milling
- c) Turning
- d) Grinding

Answer: c) Turning

Explanation: The primary function of a lathe machine is to perform turning operations, which involve rotating a workpiece against a cutting tool to remove material and create cylindrical shapes.

15. Which machining process involves removing material from a workpiece using a rotating multipoint cutting tool?

- a) Drilling
- b) Grinding
- c) Milling
- d) Boring

Answer: c) Milling

Explanation: Milling is a machining process that involves removing material from a workpiece using a rotating multipoint cutting tool called a milling cutter.

16. What is the function of a shaper machine in metal machining?

- a) To perform turning operations
- b) To perform milling operations
- c) To produce flat surfaces by linearly reciprocating the cutting tool
- d) To perform drilling operations

Answer: c) To produce flat surfaces by linearly reciprocating the cutting tool

Explanation: A shaper machine is used to produce flat surfaces on a workpiece by linearly reciprocating a single-point cutting tool against the workpiece.

17. In welding, what term describes the process of joining two metal pieces by melting and fusing them together?

- a) Soldering
- b) Brazing
- c) Welding
- d) Fusing

Answer: c) Welding

Explanation: Welding is the process of joining two or more metal pieces together by melting and fusing them, typically using heat and/or pressure.

18. Which welding method uses a consumable electrode and a flux coating to protect the weld pool from atmospheric contamination?

- a) TIG welding
- b) MIG welding
- c) Stick welding
- d) Gas welding

Answer: c) Stick welding

Explanation: Stick welding, also known as Shielded Metal Arc Welding (SMAW), uses a consumable electrode coated with flux to protect the weld pool from atmospheric contamination.

19. What type of defect occurs in welding when the weld metal solidifies with voids or gas pockets trapped within it?

- a) Cracking
- b) Undercutting
- c) Porosity
- d) Incomplete fusion

Answer: c) Porosity

Explanation: Porosity is a welding defect characterized by the presence of voids or gas pockets trapped within the solidified weld metal.



20. Which forging operation involves compressing metal between flat or shaped dies to reduce its cross-sectional area?

- a) Upsetting
- b) Swaging
- c) Extrusion
- d) Coining

Answer: a) Upsetting

Explanation: Upsetting is a forging operation that involves compressing metal between flat or shaped dies to reduce its cross-sectional area and increase its length.

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