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Code: 9703

1. Which affects the centre of gravity of the object

- A) Weight
C) Density
B) Mass (Correct)
D) Shape

2. What is the name of the point at which all the weight of the body concentrated?

- A) Initial point
C) Centroid
B) Centre of gravity (Correct)
D) Central point

3. Where the centre of gravity of a circle lies?

- A) At its centre (Correct)
C) Any where on its circumference
B) Any where on its radius
D) Any where on its diameter

4. What is the centre of gravity of a right circular cone from its base?

- A) $h/2$
C) $h/4$
B) $h/3$ (Incorrect)
D) $h/5$

5. What is the centre of gravity of a rectangular body?

- A) Longer side of rectangle
C) At the point of intersection of its diagonals (Correct)
B) Shorter side of rectangle
D) At the corners

6. What is the centre of gravity of a solid hemisphere from its base?

- A) $4r/5$
C) $3r/4$
B) $3r/8$ (Correct)
D) $r/2$

7. What is the centre of gravity of a sphere?

- A) At the centre
C) At the diameter
B) On the circumference (Incorrect)
D) At the radius

8. Which state of equilibrium's example is A cone resting on its tip?

- A) Stable
C) Unstable
B) Neutral
D) Horizontal (Incorrect)

9. Which one of the following geometrical shape's centre of gravity lies from its base is $1/3$ of its height?

- A) Square
B) Rhombus

C) Triangle (Correct)

D) Cone

10. Which state of equilibrium's example is, A cone resting on its base?

- A) Un-stable (Incorrect)
C) Stable
B) Neutral
D) Both A and B

11. What is the centre of gravity of a semi circle of diameter 12 cm?

- A) 2.24 cm
C) 3.25 cm
B) 2.54 cm (Correct)
D) 2.75 cm

12. What are the various types of heat treatment processes?

- A) Annealing, Normalising, Hardening and Tempering (Correct)
C) Hardening, Soaking, Painting and Packing
B) Normalising, Heating, Cooling and Painting
D) Tempering, Cooling, Packing and Soiling

13. What is the process of heat treatment?

- A) The process of heating and cooling to change the structure and properties (Correct)
C) The process of cooling to measure the dimensions
B) The process of heating to change the dimensions
D) The process of heating and bending as per our requirement

14. What are the various stages of heat treatment?

- A) Heating, Cooling and Quenching
C) Heating, Soaking and Quenching (Correct)
B) Quenching, Cooling and Heating
D) Soaking, Quenching and Cooling

15. What is the name of the structure formed, if a steel is heated for about 723 Degree C?

- A) Cementite
C) Martensite
B) Austenite (Correct)
D) Ferrite

16. Which heat treatment process is done to refine the grain structure of the steel?

- A) Annealing
C) Hardening
B) Normalising (Correct)
D) Tempering

17. What is the name of heat treatment process done to relieve strain and stress?

- A) Normalising
C) Hardening

- B) Annealing (Correct)**
D) Tempering

- A) Hardening (Correct)**
C) Annealing

- B) Normalising and Tempering
D) Tempering

18. Which process produce equilibrium conditions?

- A) Annealing and Hardening
C) Annealing and Normalising (Correct)
- B) Normalising and Tempering
D) Normalising and Tempering

19. Which process steel is heated in a carbonaceous atmosphere for the penetration of carbon?

- A) Case hardening
C) Carburising (Correct)
- B) Nitriding
D) Induction hardening

20. Which is the suitable nitriding process for all alloyed and unalloyed steels?

- A) Silver nitriding
C) Nitriding in Quenching tank
- B) Nitriding in salt-bath (Correct)**
D) Gas nitriding

21. What is the name of the heat treatment process, where the metal is heated and quenched in water or oil?

22. Which is a kind of surface hardening process?

- A) Cementite
C) Nitriding
- B) Ferrite
D) Tempering (Incorrect)

23. How much time is allowed normally in soaking zone for a 10mm thick metal piece while hardening?

- A) 5 minutes (Correct)**
C) 15 minutes
- B) 10 minutes
D) 20 minutes

24. What is colour of a metal piece when heated to 250 Degree C while doing the tempering process?

- A) Blue
C) Purple
- B) Brown (Correct)**
D) Pale

25. What is the purpose of tempering a steel?

- A) To reduce the brittleness (Correct)**
C) To increase the hardness
- B) To remove the ductility
D) To increase the brittleness