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Code: 1967

1. Which affects the centre of gravity of the object

- A) Weight
C) Density (Incorrect)
- B) Mass
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
D) Central point (Incorrect)

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

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

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

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

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

- A) Longer side of rectangle
B) Shorter side of rectangle
- C) At the point of intersection of its diagonals (Correct)
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 (Incorrect)
C) Unstable
- B) Neutral
D) Horizontal

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 (Incorrect)

14. What are the various stages of heat treatment?

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

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
D) Ferrite (Incorrect)

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

18. Which process produce equilibrium conditions?

- A) Annealing and Hardening (Incorrect)
C) **Annealing and Normalising**
- 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 (Incorrect)
C) **Carburising**
- 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 (Incorrect)
- B) Nitriding in salt-bath**
D) Gas nitriding

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

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

22. Which is a kind of surface hardening process?

- A) Cementite
C) **Nitriding (Correct)**
- B) Ferrite
D) Tempering

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 (Incorrect)
C) Purple
- B) Brown**
D) Pale

25. What is the purpose of tempering a steel?

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