

Duration: 60 Mins

Total Marks: 25

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

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

Answer: B) Unstable

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

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

Answer: A) Stable

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

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

Answer: B) At the centre

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

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

Answer: D) Austenite

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

- A) Square B) Triangle
C) Rhombus D) Cone

Answer: B) Triangle

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

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

Answer: A) At the point of intersection of its diagonals

7. What is the process of heat treatment?

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

Answer: C) The process of heating and cooling to change the structure and properties

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

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

Answer: D) Annealing

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

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

Answer: D) Annealing, Normalising, Hardening and Tempering

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

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

Answer: A) Carburising

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

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

Answer: C) At its centre

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

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

Answer: B) Nitriding in salt-bath

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

- A) Pale B) Brown
C) Blue D) Purple

Answer: B) Brown

14. Which affects the centre of gravity of the object

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

Answer: A) Mass

15. Which heat treatment process is done to refine the grain

structure of the steel?

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

Answer: B) Normalising

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

- A) 15 minutes
- B) 5 minutes
- C) 10 minutes
- D) 20 minutes

Answer: B) 5 minutes

17. Which process produce equilibrium conditions?

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

Answer: A) Annealing and Normalising

18. What is the purpose of tempering a steel?

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

Answer: C) To reduce the brittleness

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

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

Answer: D) $h/4$

20. What are the various stages of heat treatment?

- A) Heating, Cooling and Quenching
- B) Heating, Soaking and Quenching

- C) Quenching, Cooling and Heating
- D) Soaking, Quenching and Cooling

Answer: B) Heating, Soaking and Quenching

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

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

Answer: D) Hardening

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

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

Answer: D) $3r/8$

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

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

Answer: A) Centre of gravity

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

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

Answer: B) 2.54 cm

25. Which is a kind of surface hardening process?

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

Answer: C) Nitriding
