

Student Name: \_\_\_\_\_ Roll No: \_\_\_\_\_

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

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

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

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

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

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

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

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

5. Which process produce equilibrium conditions?

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

6. Which one of the following geometrical shape's centre of gravity lies from its base is  $\frac{1}{3}$  of its height?

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

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

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

8. Which is a kind of surface hardening process?

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

9. What is the purpose of tempering a steel?

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

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

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

11. Which affects the centre of gravity of the object

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

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

- A)  $\frac{4r}{5}$   
B)  $\frac{3r}{8}$   
C)  $\frac{r}{2}$   
D)  $\frac{3r}{4}$

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

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

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

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

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

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

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

- A)  $\frac{h}{2}$   
B)  $\frac{h}{5}$   
C)  $\frac{h}{3}$   
D)  $\frac{h}{4}$

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

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

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

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

**19.** What are the various stages of heat treatment?

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

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

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

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

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

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

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

**23.** What are the various types of heat treatment processes?

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

**24.** What is the process of heat treatment?

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

**25.** What is the centre of gravity of a rectangular body?

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