

Student Name: _____	Roll No: _____
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1. How much time is allowed normally in soaking zone for a 10mm thick metal piece while hardening?

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

2. What is the purpose of tempering a steel?

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

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

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

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

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

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

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

6. Which affects the centre of gravity of the object

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

7. What are the various stages of heat treatment?

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

8. 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

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

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

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

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

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

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

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

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

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

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

14. Which is a kind of surface hardening process?

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

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

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

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

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

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

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

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

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

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

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

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

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

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

- A) Silver nitriding            B) Nitriding in Quenching tank

- C) Nitriding in salt-bath      D) Gas nitriding

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

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

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

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

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

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

25. Which process produce equilibrium conditions?

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