Metallurgy

1. For Body Centered Cubic (BCC) structures Average Number of atoms per unit cell are

A) 3 B) 2 C) 4 D) 6

2. Recovery process in cold worked metals can be studied by

A) Young's Modulus B) Hardness C) Fracture Toughness D) Resistivity

3. Ductile Brittle Transition temperature for steels depends on

A) Grain Size B) Strain Rate C) Tensile strength D) Shear Modulus

4. The Total Energy absorbed by the material prior to its fracture is known as

A) Resilience B) Toughness C) Stiffness D) Ductility

5. In Brinell Hardness Test P/D^2 value for hard material is

A) 25 B) 30 C) 28 D) 24

6. Which NDT method is used to detect Centre defect in a component

A) Dye Penetrant B) Magnaflux C) Fluorescent Penetrant D) Ultrasonic Testing

7. As per Hume Rothery's rules of solid solubility the difference in atomic size factor of solute & solvent should be

A) Less than 15% B) More than 15% c) Equal D) None of this

8. For a protective oxide film the Pilling & Bedworth ratio(PBR) should be

A) 1 B) <1 C) >1 D) 0

9. Which of the following thermocouple can measure highest temperature?

A) Iridium – Rhodium B) Iron – Constantan C) Chromel – Alumel D) Platinum – Rhodium

10. Which Etching Reagent is used for Stainless Steel microscopic examination

Nital B) Picral C) Murakami's Agent D) Vilella's Agent

11. The Curie Temperature for α Ferrite is

A) 770^0C B) 768^0C C) 910^0C D) 900^0C

12. Eutectoid transformation in steel takes place at .8% C & 723^0C, the transformation product is

A) α Ferrite & Fe_3C B) Austenite & Fe_3C C) α Ferrite & Pearlite D) Martensite & Bainite

13. Hypo eutectoid steel contain Carbon from

A) 0.008 to 0.8 % B) 0.8% C) 0.8 to 2% D)>2%

14. Which of this steel can be easily continuously casted

A) Rimmed Steel B) Killed Steel C) Wrought Steel D) Semi killed Steel

15. AISI in Steel Specification stands as

A) Automotive Iron & Steel Institute B) American Iron & Steel Institute

C) Autonomous Institute for Science Industry D) All India Science Institute

16. As per ASTM grain size of steel is given by

A) $N= 2^{n-1}$ B)$N=2^{2n-1}$ C)$N=2^{n-2}$ D)None of the this

17. In Annealing Heat Treatment after heating the steel to required temperature usually cooled in

A) Furnace B) Air C) Water D) Oil

18. The outcome of Hardening Heat Treatment shall consists of

A) Ferrite formation B) Pearlite formation C) Martensite formation D) None of these

19. Which Heat Treatment is carried out after Martensite formation for relieving the stresses

A) Annealing B) Normalizing C) Tempering D) Ausforming

20. Which is the Graphitizing element

A) V B) W C) Ni D) Cr

21. Which of this metal is used for Nuclear Energy?

A) Platinum B) Chromium C) Plutonium D) Iridium

22. Which type of stainless steel is used for making Razor Blade?

A) Group A B) Group B C) Group C D) Precipitation Hardenable S.S.

23. Which of this element is Ferrite Stabilizer?

A) Cu B) W C) Ni D) Co

24. Why the cylinder block of a two wheeler is manufactured from Gray Cast Iron

A) Good Castability B) Good Ductility

C) Good Damping Capacity D) High Corrosion Resistance

25. Which Alloying Element is added in Gray Cast Iron liquid bath to produce SG or Nodular Cast Iron?

A) Magnesium B) Tin C) Nickel D) Zinc

26. What is meant by Ni Hard?

A) Alloy Gray Cast Iron B) Alloy White Cast Iron

C) Alloy S.G. Cast Iron D) Alloy Malleable Cast Iron

27. Brasses are the alloys of

A) Copper & Tin B) Copper & Aluminum C) Copper & Zinc D) Copper& Nickel

28. Self Lubricating Bearings are manufactured by

A) Casting B) Rolling C) Powder Metallurgy D) Drawing

29. Which of this is common resistance welding process?

A) Seam Welding B) Induction welding

C) Atomic Hydrogen Welding D) Thermit Welding

30. As the Carbon Equivalent increases Weldability

A) Increases B) Decreases C) Remain Same D) None of these

31. Which is the Hardest Known Material?

A) Steel B) Diamond C) White Cast Iron D) Tungsten Carbide

32. Which is the Hot Working Process

A) Spinning B) Stamping C) Bending D) Shearing

33. In which test material is subjected to repetitive or fluctuating Stress

A) Creep Test B) Fatigue Test C) Tensile Test D) Compression Test

34. The costly Alloy Steel can be produced in

A) Electric Arc Furnace B) Cupola Furnace C) Blast Furnace D) Crucible Furnace

35. Jominy End Quench Test is carried out to determine

A) Hardness B) Harden ability C) Ductility D) Tensile Strength

36. Which is the Microscopic Examination?

A) Sulphur Printing B) Flow Line Observation C) Observing Microstructure D) None of these

37. Sulphur is added in free cutting steel for

A) Improving Machinability B) Improving Ductility

C) Improving Toughness D) Reducing Tensile Strength

38. Age(Precipitation) Hardening means

A) Increase in hardness with time B) Increase in strength with time

C) Decrease in hardness with time D) Decrease in strength with time

39. Cold Working of metal increases

A) Tensile Strength B) Hardness C) Yield Strength D) All of the Above

40. Seamless Tube can be produced by

A) Two High Rolling Mill B) Piercing Mill

C) Ring Rolling combined with stretch forming D) Steam Hammer Forging