

Duration: 120 Mins

Total Marks: 55

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1. What is the total resistance if two resistances of 4 ohms and 6 ohms are connected in parallel?

- A) 4 B) 2.4
C) 10 D) 5

Answer: B) 2.4

2. Which property of a substance is opposing the flow of electric current?

- A) Voltage B) EMF
C) Current D) Resistance

Answer: D) Resistance

3. What is the density of aluminium?

- A) 3.7 g/cm³ B) 2.7 g/cm³
C) 4.7 g/cm³ D) 5.7 g/cm³

Answer: B) 2.7 g/cm³

4. What is the flow of electrons in any conductor?

- A) Current B) Resistance
C) Voltage D) Power

Answer: A) Current

5. What is the total resistance if three resistances of 3 ohms, 9 ohms and 5 ohms are connected in series?

- A) 11 ohms B) 7 ohm
C) 1/17 ohms D) 17 ohms

Answer: D) 17 ohms

6. What is the power required? $I = 0.455$ Amps $R = 484$ Ohms $P = \underline{\hspace{1cm}}$ Watts

- A) 98.2 watts B) 101.2 watts
C) 100.2 watts D) 99.2 watts

Answer: C) 100.2 watts

7. What is the weight force of a car has a mass of 800 kg?(Take $g = 9.81$ m/sec)

- A) 7848 Newton B) 7748 Newton
C) 7487 Newton D) 7847 Newton

Answer: A) 7848 Newton

8. What is called the ratio between the density of a substances density of water at 4 Degree Centigrade?

- A) Mass B) Density

- C) Specific gravity D) Weight

Answer: C) Specific gravity

9. Which machine converts mechanical energy into electrical energy?

- A) Generator B) Battery
C) Heater D) Iron box

Answer: A) Generator

10. What is the name of furnace to obtained cast iron?

- A) Steel - Rever battery B) Mild steel - Blast furnace
C) Cupola D) Alloy metal - Electric furnace

Answer: C) Cupola

11. Which is the unit of resistance?

- A) Ampere B) Ohm
C) Watt D) Volt

Answer: B) Ohm

12. Which is brittle metal?

- A) Steel B) Cast iron
C) Mild steel D) Alloy steel

Answer: B) Cast iron

13. What is the mass in gram, if a force of 15 dyres acting on a mass m producing an acceleration of 2.5 cm/sec²?

- A) 9 grams B) 8 grams
C) 6 grams D) 7 grams

Answer: C) 6 grams

14. What is the specific gravity of the metal, if the piece of metal weighs 150 grams in air and 125 grams in water?

- A) 15 B) 6
C) 25 D) 10

Answer: B) 6

15. What is the specific gravity of the solid, if density of the solid is 19.5 g/cm³?

- A) 19 B) 19.5
C) 8 D) 18.5

Answer: B) 19.5

16. What is the volume of mercury in cm^3 , if the mass (m) of mercury is 136 grams (g) and density (r) of mercury is 13.6 g/cm^3 ?

- A) 13.6 cm^3 B) 136 cm^3
C) 10.6 cm^3 D) 10.0 cm^3

Answer: D) 10.0 cm^3

17. What is the force with which a body is attracted by the earth towards its centre?

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

Answer: C) Weight

18. Which one of the following properties is the mechanical properties of metal?

- A) Ductility B) Corrosion
C) Structure D) Fusibility

Answer: A) Ductility

19. Which metal contains iron as a major content?

- A) Ferrous metal B) Brass metal
C) Bronze metal D) Zinc

Answer: A) Ferrous metal

20. Which cast iron cannot be welded?

- A) Grey cast iron B) Malleable cast iron
C) White cast iron D) Nodular cast iron

Answer: C) White cast iron

21. Which mechanical property of a metal offers resistance to elastic deformation in a cutting tool?

- A) Toughness B) Hardness
C) Ductility D) Malleability

Answer: B) Hardness

22. Which is mineral insulator

- A) Glass B) Mica
C) Quartz D) Porcelain

Answer: B) Mica

23. What is the name of the metal which do not contain iron?

- A) Ferrous metals B) Non-Insulating metals
C) Non-ferrous metals D) Insulating metals

Answer: C) Non-ferrous metals

24. How much voltage will be required to illuminate a 40 watts fluorescent lamp draws a current of 0.10 amperes?

- A) 405 volts B) 390 volts
C) 400 volts D) 395 volts

Answer: C) 400 volts

25. What is the formula for induced emf?

- A) $BL \sin \theta$ volts B) $B^2 L^2 V \sin \theta$ volts
C) $B^2 L^2 \sin \theta$ volts D) $BLV \sin \theta$ volts

Answer: D) $BLV \sin \theta$ volts

26. What is called mass per unit volume of a substance?

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

Answer: D) Density

27. Which property of metal has its power of returning to its original shape after the applied force is released?

- A) Malleability B) Elasticity
C) Plasticity D) Tenacity

Answer: B) Elasticity

28. Which is very good conductor?

- A) Steel B) Copper
C) Cast iron D) Wrought iron

Answer: B) Copper

29. What is the current flow in the bulb? $P = 550 \text{ watts}$
 $R = 22 \text{ Ohms}$ $I = \text{_____ Amps}$

- A) 5 Amps B) 4 Amps
C) 2 Amps D) 3 Amps

Answer: A) 5 Amps

30. What is the density (r) in g/cm^3 of an iron cube, if it weighs (W) 4.8 kg and volume (V) is 640 cm^3 ?

- A) 6.9 g/cm^3 B) 6.6 g/cm^3
C) 7.5 g/cm^3 D) 7.2 g/cm^3

Answer: C) 7.5 g/cm^3

31. What is termed as the quantity of matter contained in a body?

- A) Density B) Specific gravity
C) Volume D) Mass

Answer: D) Mass

32. What is the other name of low carbon steel?

- A) Mild steel B) Low alloy steel
C) High alloy steel D) High speed steel

Answer: A) Mild steel

33. Which property of a metal possessed by it melts when heat is applied?

- A) Fusibility B) Conductivity
C) Tenacity D) Malleability

Answer: A) Fusibility

34. Which metal is widely used for making casting of machinery parts?

- A) Wrought iron
- B) Malleable cast iron
- C) White cast iron
- D) Grey cast iron

Answer: D) Grey cast iron

35. Which law states that at constant temperature the current passing through a closed circuit is directly proportional to the potential difference and inversely proportional to the resistance?

- A) Lenz's law
- B) Hooke's law
- C) Newton's law
- D) Ohm's law

Answer: D) Ohm's law

36. Which is the unit electrical power?

- A) Volts
- B) Ampere
- C) Watts
- D) Ohms

Answer: C) Watts

37. Which is the example for dynamically induced Emf?

- A) Generator
- B) Motor
- C) Motor bike
- D) Car

Answer: A) Generator

38. What is the mass if the density of a body is 7.6 g/cm^3 and its volume is 25 cm^3 ?

- A) 220 grams
- B) 200 grams
- C) 190 grams
- D) 210 grams

Answer: C) 190 grams

39. Which alloy is used in electric lamp as filament?

- A) Vanadium
- B) Silicon
- C) Tungsten
- D) Cobalt

Answer: C) Tungsten

40. What is the block weight (W) in kg, if volume (V) is 320 cm^3 and density 8.9 g/cm^3 ?

- A) 2.848 kg
- B) 2.948 kg
- C) 2.448 kg
- D) 2.648 kg

Answer: A) 2.848 kg

41. What metals are contained in brass alloy?

- A) Copper and aluminium
- B) Copper and lead
- C) Copper and tin
- D) Copper and zinc

Answer: D) Copper and zinc

42. Which property of material enables the formation of permanent deformation without fracture?

- A) Plasticity
- B) Elasticity
- C) Ductility
- D) Brittleness

Answer: A) Plasticity

43. What does EMF stand for?

- A) Electro Magnetic Force
- B) Electronic Magnetic Force
- C) Electromotive Force
- D) Electro Motive Force

Answer: D) Electro Motive Force

44. What is the carbon percentage in medium carbon steel?

- A) 0.05% to 0.15%
- B) 0.5% to 1.5%
- C) 0.25% to 0.5%
- D) 0.15% to 0.25%

Answer: C) 0.25% to 0.5%

45. Which one is non-metal?

- A) Brass
- B) Iron
- C) Graphite
- D) Mercury

Answer: C) Graphite

46. What is the volume (V) of mercury in cm^3 , if mass (m) of mercury is 1 kg and density (ρ) is 13.6 g/cm^3 ?

- A) 73.53 cm^3
- B) 73.43 cm^3
- C) 73.33 cm^3
- D) 73.23 cm^3

Answer: A) 73.53 cm^3

47. What is the specific gravity of the metal, if it weighs 6.5 kgf in air and 3.5 kgf in water?

- A) 3.166
- B) 6.166
- C) 1.166
- D) 2.166

Answer: D) 2.166

48. Which furnace is used to get pig iron from iron ore?

- A) Mild steel - Rever battery
- B) Blast furnace
- C) Electric furnace
- D) Cupola

Answer: B) Blast furnace

49. Which is same in series connection of resistors in a circuit?

- A) Power
- B) Voltage
- C) Resistance
- D) Current

Answer: D) Current

50. What is the rated power if an adjustable resistor bears the following label $1.5 \text{ k ohms} / 0.08 \text{ A}$?

- A) 9.4 watts
- B) 9.2 watts
- C) 9.8 watts
- D) 9.6 watts

Answer: D) 9.6 watts

51. Which is the example for statically induced emf?

- A) Transformer
- B) Generator
- C) Motor
- D) Refrigerator

Answer: A) Transformer

52. How many hours will take for a 100 watts bulb to consume 1 kWh energy?
 $W = 1 \text{ kWh}$
 $P = 100$

Watts
 t = ____Hours

- A) 10 hours
- B) 24 hours
- C) 12 hours
- D) 18 hours

Answer: A) 10 hours

53. Which metal cannot be forged?

- A) Cast iron
- B) Steel
- C) Mild steel
- D) Alloy steel

Answer: A) Cast iron

54. Which is the unit of current?

- A) Ohm
- B) Volt
- C) Watt
- D) Ampere

Answer: D) Ampere

55. What is the resistance?
 I = 11.5 Amps
 V = 380 Volts
 R = ____Ohms

- A) 13 ohms
- B) 43 ohms
- C) 33 ohms
- D) 23 ohms

Answer: C) 33 ohms
