Paper Code - 3612

B.Sc. B. Ed. Semester-III
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Physics (Theory)

કુલ સમય :– ૬૦ મીનીટ કુલ પ્રશ્નો : ૫૦ વિદ્યાર્થીએ ટીક કરવાના પ્રશ્નો : ૩૫
નોંધ : વિદ્યાર્થીએ માત્ર ૩૫ પ્રશ્નો જ ટીક કરવાના રહેશે. જો વધારે ટીક કરેલ હશે તો પ્રથમ ૩૫ પ્રશ્નો જ ગણતરીમાં લેવામાં આવશે.

1. In which types of crystal there is a grain boundry exist?
   a. single b. poly c. mono d. dye
2. Periodic arrangement of atoms in space is known as_____.
   a. Lattice b. Crystal c. Basis d. System
3. what is the number of atoms per unit cell for primitive unit cell?
   a. 3 b. 2 c. 4 d. 1
4. How many Barvais systems exist in three dimensions?
   a. 5 b. 7 c. 4 d. 6
5. Which of the following rotation symmetry does not exist in two dimensions?
   a. 3-fold b. 4-fold c. 5-fold d. 2-fold
6. Periodic arrangement of points in space is known as _____._____.
   a. Lattice b. Crystal c. Basis d. System
7. Experiment for finding crytical potential was perromed by_____?
   a. Rutherford b. Bohr c. Sommerfeld d. Franck Hertz
8. What is the relation between (r) and (a) in F.C.C. crystal?
   a. $r = \sqrt{2}\,a$ b. $r = \frac{\sqrt{2}}{4}\,a$ c. $r = \frac{\sqrt{3}}{8}\,a$ d. $r = \frac{\pi}{2}$
9. What is the relation between (r) and (a) in B.C.C. crystal?
   a. $r = \frac{\pi}{2}$ b. $r = \sqrt{2}\,a$ c. $r = \frac{\sqrt{3}}{4}\,a$ d. $r = \frac{\sqrt{3}}{8}\,a$
10. What is the corodination number in for S.C.?
    a. 10 b. 8 c. 12 d. 6
11. Millar indices indicate orientation and position of _____ in crystals.
    a. Point b. Line c. Plane d. None of above
12. What is the value of pracking faction of B.C.C. ?
    a. 0.67 b. 0.52 c. 0.74 d. 0.72
13. Inter planner spacing is indicated by_____. ____
    a. p b. r c. d d. l
14. Which structure have highest pracking fraction value?
    a. R.C.C b. S.C. c. B.C.C d. F.C.C.
15. How many types of Bravais lattice exist in three ddimensions?
    a. 5 b. 7 c. 10 d. 14
16. _____remain constant in throttling process.
    a. Gibbs energy b. Entropy c. Internal enrgy d. Enthalpy
17. For isotropic substances the coefficient of linear expansion is _____
    a. $\alpha_1 \neq \alpha_2 \neq \alpha_3$ b. $\alpha_1 = \alpha_2 = \alpha_3$ c. $\alpha_1 = \alpha_2 \neq \alpha_3$ d. $\alpha_1 = \alpha_2$અને$\alpha_3 = \infty$
18. _____remain costant in adiabatic process.
    a. Internal enrgy b. Entropy c. Enthlpy d. Gibbs energy
19. _____is in cryostate.
    a. Nitrogen b. Hydrogen c. Carbon d. Oxygen
20. Inversion yemperature for Joule kelvin coefficient μ = _____
    a. 1 b. ∞ c. 0 d. -1
21. _____remains costant in Maxwell velocity distribution law.
    a. Temperature b. Density c. Volume d. Pressure
22. The study of motion with reference to is called_____.
    a. frame of reference b. reference book c. time dilation d. mechanics
23. _____are postulates of specical theory of relativity.
    a. four b. three c. two d. infinite
24. _____had invented specical theory of relativity.
    a. Einstein b. Newton c. Maxwell d. Lorentz

25. Either hypothesis was proved wrong by_____experiment.
a. Fietz Gerald b. Miclason- Morley c. Galelian d. Hetz
26. Who invented ?
a. Grimaldi b. Fraunhofer c. Fresnel d. none of above
27. In which types of diffreaction spherical wavefront is used?
a. Fraunhofer diffreaction b. Fresnel diffreaction
c. Gibbs diffreaction d. none of above
28. If amplitude of wave will be double then intencity how many times will be?
a. four times b. double c. half d. one fourth
29. Which phynominon does not occure if single slit is used?
a. diffraction b. interference c. polarisation d. none
30. Which of the following is not Galilian transformatin?
a. $x'=x-\nu t$ b. $y'=y$ c. $x'=z$ d. $t'=t-\nu$
31. _____medium is essential for transmition of light.
a. Benzene b. Nitrogen c. Ether d. Plasma
32. Which medium is essential for transmition of light?
a. Benzene b. Nitrogen c. Ether d. Plasma
33. _____scientist has mentioned theat light is electromagnetic wave.
a. Newton b. Maxwell c. Lorentz d. Einstein
34. Medium is required for transmition of_____waves.
a. Light b. Sound c. electromagnetic d. Cosmic
35. There are_____types of relativity.
a. 1 b. 3 c. 2 d. 5
36. Einstein's famous mass enrgy equilibrium equation is_____.
a. $C^2=mE$ b. $E= m^2C$ c. $E=mC^2$ d. $E^2=mC$
37. In $\nu << C$ case Lorentz transformation converted in_____transformation.
a. Newtonian b. Galelian c. Fitz Gerlad d. relativistic
38. Velocity of light c = _____ .
a. $3X10^8$ km/s b. $3X10^6$ km/s c. $3X10^9$ km/s d. $3X10^7$ km/s
39. According to Newtonian mechanics mass, lenght and_____are absolute physical quantities.
a. Energy b. Momentum c. Time d. speed
40. Which of the following relations is true for pressure on both sides of porous plug in throttling process?
a. $P_i = P_f$ b. $P_i > P_f$ c. $P_i < P_f$ d. $P_i \times P_f$
41. In which process Gibbs function remain costant?
a. reversible isothermal b. ireversible isothermal
c. reversible isochoric d. reversible isothermal-isobaric
42. Internal energy is a function of _____.
a. Volume b. Pressure c. Temperarue d. entropy
43. If for reversible isothermal process involving pressure the coefficient of volume expansion (β) is positive then heat will be_____.
a. emitted b. absorbed c. increase in enrgy d. none of above
44. If for reversible adiabatic process involving pressure the internal energy increases then coefficient of volume expansion () is _____.
a. zero b. not sure c. positive d. negative
45. _____equation is used to determine internal energy
a. Tds b. energy c. Maxwell d. Gauss
46. Which gase is become hot when pass through the plug in Joule thomson's porous plug experiment at room temperature?
a. Nitrogen b. hydrogen c. carbon d. oxygen
47. _____is used for liquifying of gas.
a. Interferometer b. counter current heat exchanger c. Techometer d. sonometer
48. _____gas is used for Maxwell velocity distribution law.
a. Ideal b. Real c. Pure d. Hot
49. Constant of Maxwell velocity distribution law a= _____.
a. b/π^2 b. $b/\pi^{1/2}$ c. $b^{1/2}/\pi^{1/2}$ d. b/π^3
50. By which phenominon we obtain spectrum using gratting
a. Interference b. diffraction c. polarisation d. refraction