1. In the Hall Effect, the electric field is in x direction and the velocity is in y direction. What is the direction of the magnetic field? *

- B. Y
- A. X
- (●) C. Z
- D. XY plane

2. What is the conductivity when the Hall Effect coefficient is 5 and mobility is 5cm2 /s. *

- B. 10 S/m
- D. 0.01 S/m
- A. 100 S/m
- (●) C. 0.0001S/m

3. Hall Coefficient Rh is equal to ratio of hall voltage multiply by width to ------ *

- (●) C. Electric field and magnetic field
- D. Current density
- B. Electric field and length
- A. Magnetic field and length

4. Electric field E in Hall effect is equals to ---------- *

- C. Hall voltage + semiconductor thickness
- B. Hallvoltage / semiconductor thickness
- D. Hall voltage – semiconductor thickness
- A. Hall voltage x semiconductor thickness

5. If metal or semiconductor carrying current is placed in a magnetic field perpendicular to current, an electric field is induced in direction perpendicular to both current and magnetic field. This phenomena is known as --------- *

- B. Toxicity
- A. Chemical effect
- D. Blister
- C. Hall effect

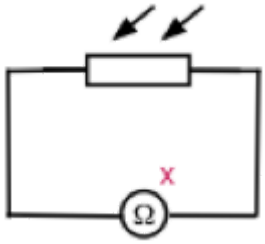
6. Light dependent resistor is---- *

- D. Photo acoustic
- C. Photo emissive device
- B. Photo voltaic device
- A. Photo resistive device

7. LDR is made up of ----- *

- B. Low resistance semiconductor
- C. High resistance metal
- D. High resistance semiconductor
- A. Low resistance metal

8. The diagram shows the apparatus used for measuring the resistance of an LDR at different levels of brightness. What device is placed at X? *



- A. Ammeter
- D. Thermometer
- B. Voltmeter
- C. Ohmmeter

9. A device whose resistance changes with the amount of light shining on it is known as---- *

- B. A diode
- C. An electromagnet
- D. A LED
- A. An LDR

10. In a light-dependent resistor the resistance decreases as the light intensity -----. *

- D. nearly zero
- A. Decreases
- C. Constant
- B. Increases

11. The current flowing through an insulating medium is called *

- A. Conduction
- C. Radiation
- D. Susceptibility
- B. Convection

12. What is the value of kT at room temperature? *

- B. 0.25eV
- C. 25eV
- D. 0.0025eV
- A. 0.0256eV

13. The band gap for semiconductor is *

- (●) A. 2k (2.303loge R/(1/T))
- ( ) C. 2k (2.303loge RT/ T)
- ( ) D. 2 (2.303loge RT/ 1/T)
- ( ) 0

14. The resistance of a conductor increases with an increase in ..... *

- ( ) C. Cooling rate
- (●) B. Temperature
- ( ) A. Pressure
- ( ) D. resistance

15. Apparatus used to determine the bandgap in Post Office Box method *

- ( ) B. Voltmeter & Daniel cell
- (●) C. Thermometer & Galvanometer
- ( ) D. High resistance & Daniel cell
- ( ) A. Ammeter & High resistance

16. The value of Boltzmann constant k = _____ *

- ( ) B. 1.380649×10+23 J·K−1.
- (●) A. 1.380649×10−23 J·K−1.
- ( ) D. 1.380649×10+23 eV
- ( ) C. 1.380649×10−23 eV.

17. In four probe method, the effect of temperature on _____ is measured. *

- ○ B. Voltage
- ○ D. Flow of electrons
- ◉ C. Resistance
- ○ A. Current

18. _____ is used to measure the temperature, in four probe method. *

- ◉ C. Thermometer
- ○ B. Thermocouple
- ○ A. Thermistor
- ○ D. Potentiometer

19. The size of the semiconductor used to measure the band gap by four probe method is _____ *

- ○ A. m
- ○ D. nm
- ◉ C. mm
- ○ B. cm

20. The aim of four probe method is, to measure _____ of the semiconductor. *

- [x] D. Bandgap
- [ ] B. Temperature
- [ ] C. Conductivity
- [ ] A. Resistance

21. The voltage of a single solar cell is *

- [x] A. 0.5 V
- [ ] D. 5 W.
- [ ] C. 1.1 V
- [ ] B. 1 V

22. Which of the following material is used in solar cells? *

- [ ] A. Barium
- [x] B. Silicon
- [ ] C. Silver
- [ ] D. Selenium

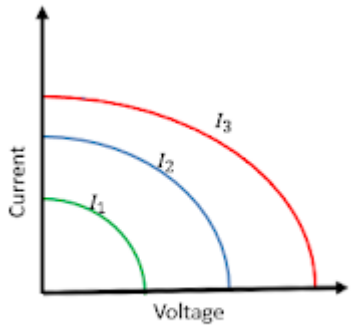
23. The output of a solar cell is of the order of *

- B. 0.5 W
- D. 5 W
- A. 0.1 W
- C. 1 W

24. Photovoltaic' cells are also termed as *

- C. Volta cell
- B. Battery cell
- A. Solar cell
- D. Rechargeable cell

25. In the below given photocell characteristics, I_1,I_2,I_3 are intensities for 3 different illumination of light. Which of the following is true ? *



- A. I_1>I_2>I_3
- B. I_1=I_2= I_3
- C. I_1<I_2<I_3
- D. I_2>I_1>I_3

26. Reading corresponding Illumination characteristics of a photo cell is given below. The value of A is _____. *

Distance between the photocell and light source(cm)	Voltage in the Voltmeter(V)
20	0.16
30	0.11
11	A
40	0.09

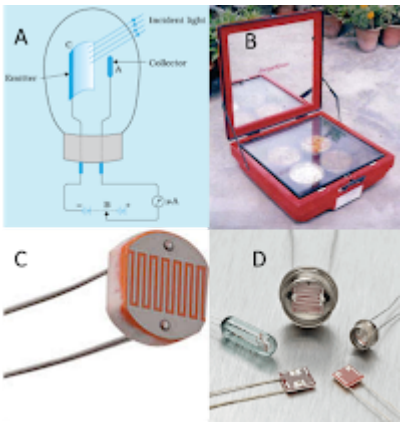
- (●) C. 0.20 V
- ( ) B. 0.09 V
- ( ) A. 0.11 V
- ( ) D. 0.08 V

27. Reading corresponding Illumination characteristics of a photo cell is given below. The value of B is _____. *

Distance between the photocell and light source(cm)	Voltage in the Voltmeter(V)
24	0.16
35	0.11
B	0.33
40	0.09

- ( ) D. 50 cm
- ( ) C. 45 cm
- (●) B. 15 cm
- ( ) A. 25 Cm

28. Which in the following figure is not a Photocell ? *



- C. C and D
- A. B
- D. A
- B. C

29. The unit of radius of the dark ring represented in terms of *

- B. Centimetre
- D. Farad
- A. Henry
- C. Ohm

30. In the particle size experiment as the distance (D) increases the radius of the dark ring *

- C. Constant
- A. Increases
- D. First decreases and then increases
- B. Decreases

31. The reduction in amplitude and intensity of a signal as it guided through an optical fiber is called .... *

- [ ] C. Power
- [ ] B. Numerical aperture
- [ ] D. Intensity
- [x] A. Attenuation

32. An ..... is a thin flexible transparent medium of cylindrical or rectangular shape usually made of glass or plastic through which light can be propagated . *

- [x] D. Optical Fiber
- [ ] A. Antenna
- [ ] B. Cladding
- [ ] C. Transmission line

33. The unit of attenuation is : *

- [ ] B. Bel
- [ ] C. OWU
- [x] A. Decibel
- [ ] D. No unit

34. The attenuation ,if the output power is same as that of input power is : *

- (●) B. 0
- ( ) D. -1
- ( ) A. 1
- ( ) C. Infinity

35. The main reason why electrons can tunnel through a PN junction is that *

- ( ) B. They have high energy
- ( ) A. Barrier potential is very low
- ( ) C. Impurity level is low
- (●) D. Depletion layer is extremely thin

36. Forward biasing of P-N junction: *

- ( ) A. Increases its resistance
- ( ) C. Shorts the junction
- ( ) D. Increases potential difference
- (●) B. Decreases its resistance

37. When PN junction is in forward bias, by increasing the battery voltage *

- (●) B. Current through P-N junction increases
- ( ) D. None of the above happens
- ( ) A. Circuit resistance increases
- ( ) C. Current through P-N junction decreases

38. In a PN junction when the applied voltage overcomes the ..... potential, the diode current is large, which is known as ..... *

- B.Reverse, reverse bias
- A.Depletion, negative bias
- C.Resistance, reverse bias
- D.Barrier, forward bias

39. Calculate Fill factor using the data: Pmax=15 W, Voc=18 V, Isc=4 A. *

- B. 0.59
- C. 0.20
- D. 0.98
- A. 0.65

40. The solar or photo voltaic cell converts energy from *

- D. Thermal into electrical
- C. Solar radiation into thermal
- B. Solar radiation into electrical
- A. Chemical to electrical

41. Photovoltaic cells can operate when the incident photons have *

- [ ] D. Frequencies below visible light
- [ ] C. Microwave frequencies
- [ ] B. Infra-red frequencies
- [x] A. Frequencies above visible light

42.When a PN junction is reverse biased *

- [x] C. Holes and electrons tend to move away from the junction
- [ ] B. The barrier tends to break down
- [ ] A. Holes and electrons tend to concentrate towards the junction
- [ ] D. None of these

43. X-rays are ..... by atoms when they strike the surface of a crystal *

- [ ] A. Completely scattered
- [ ] B. Partially reflected
- [ ] C. Completely reflected
- [x] D. Partially diffracted

44. Why the X-rays are used to determine the crystal structures *

- [ ] D. The wavelength of x-rays is smaller than the distance of inter atomic spac
- [x] A. The wavelength of x-rays is equal to the distance of inter atomic spacing
- [ ] B. The wavelength of x-rays is not equal to the distance of inter atomic spacing
- [ ] C. The wavelength of x-rays is higher than the distance of inter atomic spacing

45. When x-ray beams diffracted by two different layers are in phase, ... occurs and the diffraction pattern shows a peak *

- ○ D. completely plane polarization
- ◉ C. constructive interference
- ○ B. total internal reflection
- ○ A. destructive interference

46. What kind of diffraction pattern do the amorphous materials show up? *

- ○ C. no peaks
- ○ B. medium peaks
- ○ D. very sharp peaksu
- ◉ A. sharp peaks

47. One that is based on forward biased PN junction is *

- ◉ A. LED
- ○ B. Photo diode
- ○ D. Photo electric effect
- ○ C. Photo voltaic cell

48. Which of the following statement is not true about photo cell? *

- B. No power cables are needed
- C. Do not produce polluting waste
- (●) D. They work at night
- A. No fuel is needed

49. For a good quality of optical Fiber the desirable numerical aperture is : *

- C. Zero
- D. Infinity
- A. Low
- (●) B. High

50. As PN junction is Forward biased *

- (●) C. The barrier tends to breakdown
- B. The depletion region decreases
- D. The terminals get opposite
- A. Holes as well as electrons tend to drift away from the junction.

Submit