ST. LAWRENCE HIGH SCHOOL

A JESUIT CHRISTIAN MINORITY INSTITUTION

WORK SHEET: 49

Subject : PHYSICS

Date : 30.01. 2021

CLASS : XII

Chapter-Semiconductors and Electronics **Topic:** Zener diode, LED, Photo diode, solar cell

Multiple choice questions : **1 X 15 = 15**

1. Zener diode can be used as a
   (a) voltage regulator (b) current regulator (c) voltage gainer (d) current gainer

2. When the input voltage increases, resistance of the Zener diode
   (a) increases (b) decreases (c) remains same (d) becomes zero.

3. In a zener diode, by fluctuating the input voltage we get
   (a) constant output voltage (b) varying output voltage (c) varying out put current
   (d) zero output current

4. Opto electronic, junction diode runs when
   (a) light is incident on it (b) battery is connected to its ends
   (c) resistance is connected to it (d) heat energy is supplied to it.

5. In opto electronic junction device charge carriers are generated by
   (a) electrons (b) photons (c) protons (d) neutrons

6. Photo-diode is
   (a) a reverse biased special p-n junction diode having transparent window
   (b) a forward biased diode (c) a reverse biased diode (d) a simple semi conductor diode

7. Dark current in photo diode is
   (a) zener current (b) saturated current (c) steady current (d) varying current

8. LED is a special heavily doped p-n junction diode which emits spontaneous radiation when it is
   (a) forward biased (b) reverse biased (c) no bias (d) both (a) and (b)

9. LED converts
(a) light energy into electrical energy (b) electrical energy into light energy
(c) electrical energy into kinetic energy (d) kinetic energy into a light energy

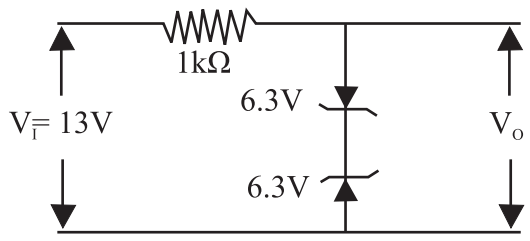
10 Knee voltage of LEDS is
(a) higher than that of Si diode (b) lower than that of Si diode
(c) zero (d) neither higher nor lower than that of Si diode

11. Solar cell converts
(a) electrical energy into solar energy (b) solar energy into electrical energy
(c) solar energy into kinetic energy (d) kinetic energy into electrical energy

12. In solar cell
(a) electric current increases with the increase in the intensity of sunlight
(b) electric current decreases with the increase in the intensity of sunlight
(c) electric current increases without sunlight
(d) battery is used

13. A Zener diode connected across a source voltage 12V such that 6V drops across it. The power drawn by Zener diode is 2.4 mw, then what is the maximum value of series resistance connected in the circuit ?
(a) 5kΩ (b) 15 kΩ (c) 12 kΩ (d) 6kΩ

14. The output voltage (V_o) of the circuit shown in the given figure is.
(a) Zero (b) 5.7V
(c) 6.9V (d) 12.6V



15. A LED has a voltage drop of 2V across it and a current of 10 mA passes when it operates with a 6V battery through a limiting resistor R, The value of R is:
(a) 40kΩ (b) 4kΩ (c) 200Ω (d)400Ω