Name:		Roll No.		Subject	Physics
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Q. No. 1 Tick the best option 26

1. A photodiode can turn its current ON and OFF in:
(a) Milli-seconds (b) Mirco-seconds (c) Nano-seconds (d) Mega-seconds
2. The size of base in a transistor is of the order of:
(a) 10^{-4} m (b) 10^{-6} m (c) 10^{-8} m (d) 10^{6} m
3. The phase difference between input voltage and output voltage of the transistor as an amplifier is:
(a) 0° (b) 90° (c) 180° (d) 120°
4. A transistor has a base current of 1 mA and emitter current 100 mA. The current gain of the transistor is:
(a) 1 (b) 99 (c) 100 (d) 101
5. The output voltage of a rectifier is:
(a) Perfectly direct (b) Smooth DC (c) Pulsating DC (d) Alternating
6. The potential barrier in diode stops movement of:
(a) Electrons (b) Holes (c) Photons (d) A & B both
7. In forward biasing a p-n junction ideal, offers:
(a) High resistance (b) Infinite resistance (c) Low resistance (d) Zero resistance
8. In reverse biasing a p-n junction diode the resistance of the order of several:
(a) Milli-ohms (b) Mega-ohms (c) Micro-ohms (d) Few-ohms
9. The number of diodes used in bridge rectifier circuit is:
(a) 3 (b) 2 (c) 1 (d) 4
10. The SI unit of current gain are:
(a) Volts (b) Ampere (c) Ohm (d) No unit
11. Which component of the transistor has highest concentration of impurity?
(a) Base (b) Emitter (c) Collector (d) Resistor
12. The value of barrier potential for silicon at room temperature:
(a) 0.3 V (b) 1.1 V (c) 0.9 V (d) 0.7 V
13. The current due to minority charge carriers in semiconductor is known as:
(a) Conventional current (b) Leakage current (c) Electronic current (d) Alternating current
14. A silicon solar cell with 4000 $(mm)^2$ surface area can deliver a maximum power of …. in full sun:
(a) 6.0 W (b) 1.4 W (c) 0.4 W (d) 0.6 W
15. Which one of the following is not works at reverse biasing?
(a) LEDs (b) Photodiode (c) Zener diode (d) Photovoltaic cell
16. Depletion region carries:
(a) Positive charge (b) Negative charge (c) Ions (d) No charge carriers
17. Special type of semiconductors, which are used for the construction of LEDs:
(a) Si (b) Ge (c) GaAsP (d) Both A & B
18. Which of the following diode is used for detection of light?
(a) Light emitted diode (b) Photodiode (c) Photovoltaic cell (d) All of these
19. The ratio of potential barrier of Ge to Si at room temperature is:
(a) 3:7 (b) 7:3 (c) 1:3 (d) 2:5
20. A diode characteristics curve is plotted between:
(a) Current and time (b) Voltage and time (c) Voltage and current (d) Voltage and resistance
21. Which factor does not affect the conductivity of P-N junction diode?
(a) Doping (b) Voltage (c) Temperature (d) Pressure
22. A circuit which gives smooth D.C is known as:
(a) Modulator (b) Amplifier (c) Rectifier (d) Filter
23. When a P-N junction is reversed biased, the depletion region is:
(a) Widened (b) Narrowed (c) Normal (d) No change
24. Transistor is made from:
(a) Plastic (b) Metals (c) Conductors (d) Dopped semiconductors
25. Number of LEDs required to display all the digits are:
(a) Five (b) Six (c) Seven (d) Eight
26. The color of light emitted by a LED depends on:
(a) Its forward biasing (b) Its reverse biasing
(c) The amount of forward biasing (d) The nature of semi-conductor material used

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Q. No. 2 Write the short answer of these following question **6 x 2 = 12**

1) What is photodiode? Give its applications.
2) How depletion region formed? Define potential barrier?
3) Define current gain of transistor.
4) Define rectification. Draw the circuit diagram and output waveform of full wave rectifier.
5) What is transistor? Give its types and symbols.
6) How electrons flow in n-p-n transistor? Show the motion of electrons by block diagram.

Q. No. 3 Long question **05**

1) How transistor is used as an amplifier?