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8th Batch
CSE
course : Electrical & Electronics Devices
course code : CSE - 425

Ans to the Q No: 01

(a) Ans: The basic electronic devices is below:-

→ Resistors. Resistors are the basic of all electronic components.
→ Capacitor. The capacitor has two terminals.
→ Transistor.
→ Switches.
→ Diodes.
→ Motors.
→ Potentiometer.

(b) The differences Between Electrical & Electronics

Devices: The following are the key differences between the electrical & electronic devices.

1. The electrical devices changes the current into another form of energy like heat, light etc. Whereas the electronic device controls the movement of electrons of performing the operation.

2. The electrical devices use copper and aluminium wires for the flow of electrical current whereas the electronics devices use the semiconductor materials.

3. The electrical devices mainly work on the alternating current whereas the electronics device works on the direct current.

4. The electrical devices mainly work on the alternating high voltages electronics devices work on low voltages.

5. The power consumption of the electrical devices is more as compared to the electronic devices.

6. The electrical devices do not manipulate the data whereas the electronic devices manipulate of the data.

7. The electrical devices do not manipulate the data whereas the electronic devices manipulate of data.

8. The electrical devices directly works on the current due to which it gives the quick responce.

9. The electrical devices is heavy & larger in size & hence requires more space whereas the electronics components are very smaller & placed on the single chip or we can say it requires very less space.

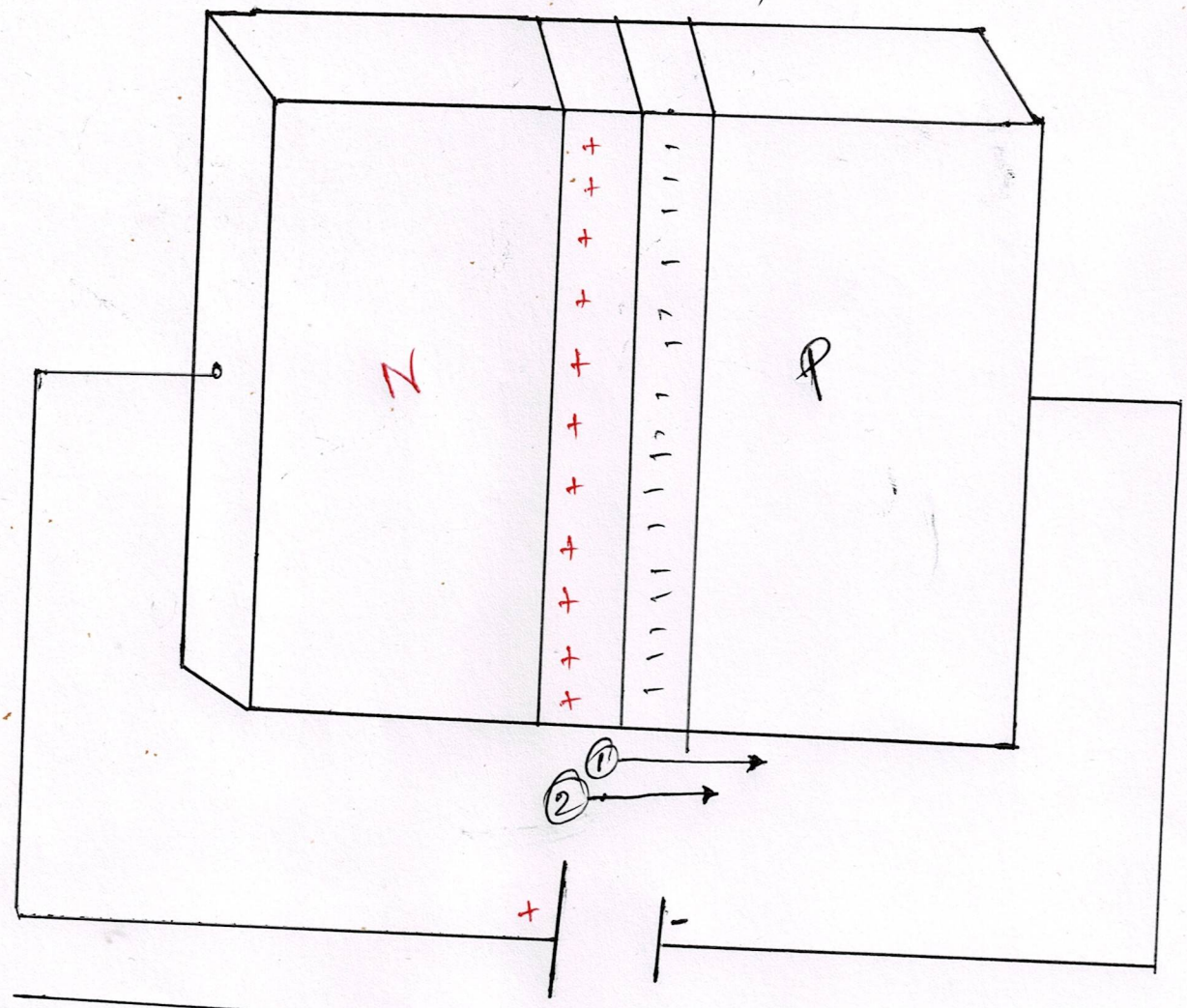
10. The electrical device is more dangerous as compared to the electronic device because in electric devices heavy short circuit occurs because of the fault which is very dangerous for life.

(c) Below describe the reverse bias:

1. The external voltage across the semiconductor diode is in such a way that the n-side is connected to the positive terminal battery.
2. And p-side connected to the negative terminal, then the semiconducto diode is reverse bias.
3. The external voltage is the same as that of the barrier potential.
4. Reverse bias refers to the application of external voltage across a semiconductor diode so that the positive terminal of the battery is linked to the n-side & the negative terminal is attached to the p-side of diode.
5. The entire voltage barrier adds up when an external voltage is placed across the diode because the direction of the external voltage coincides with the direction of the barrier potential.

# Reverse BIAS OF THE P-N JUNCTION

no current flow




① Battary induced electric field | ② Built in electric field.

Below describes the forward bias.

(1) A semiconductor diode is a p-n junction diode.

(2) It is a two terminal device that conducts current only in one direction.

(3) The external voltage across the semiconductor diode is such a way that the p side is connected to the positive terminal of battery.

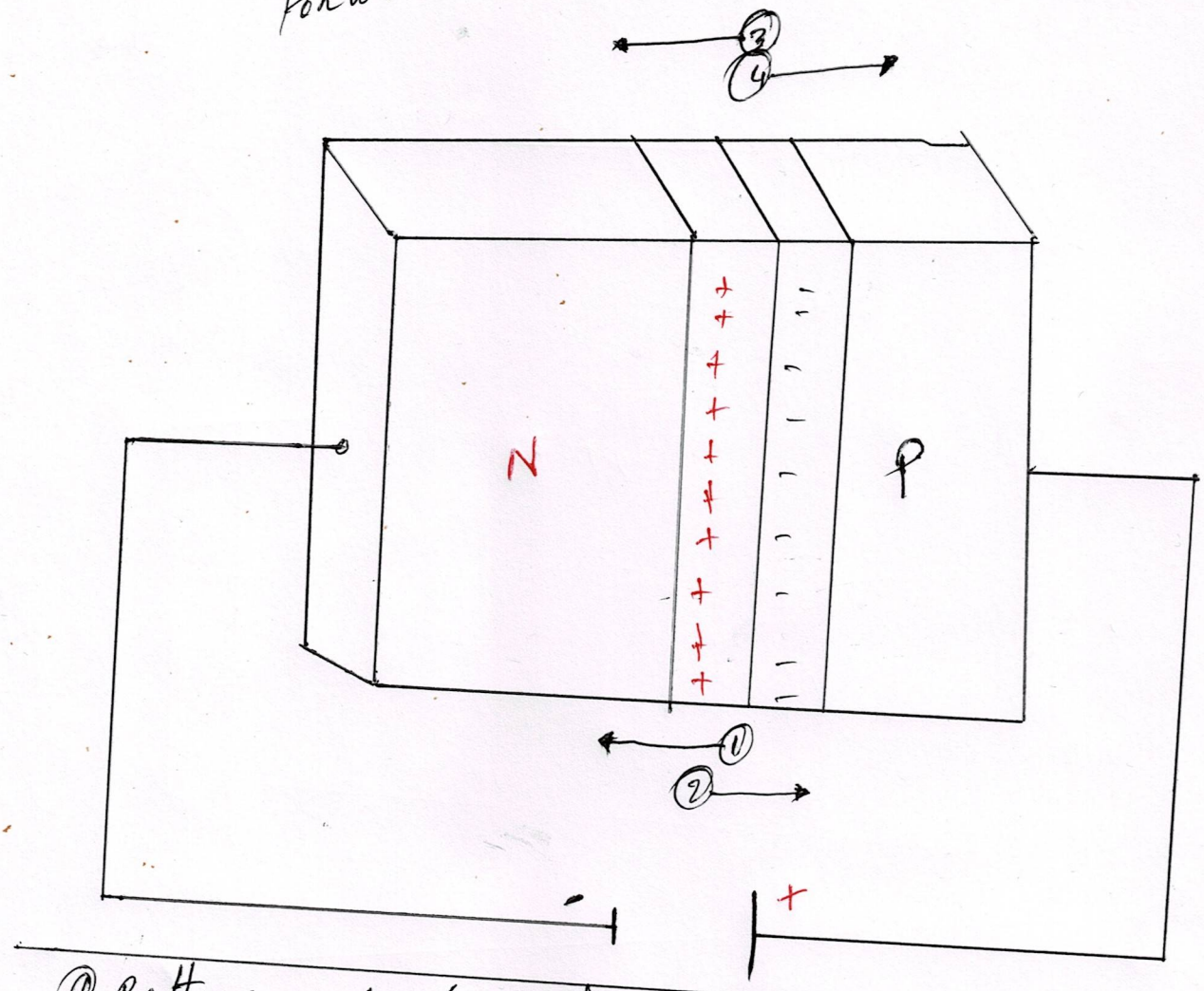
(4) And n side connected to the negative terminal, then the semiconductor diode is forward bias.

(5) In a p-n junction diode the width of the depletion region decreases in forwarding bias.

o. P-7.

(7)

# Forward Bias of the p-n junction




① Battery induced electric

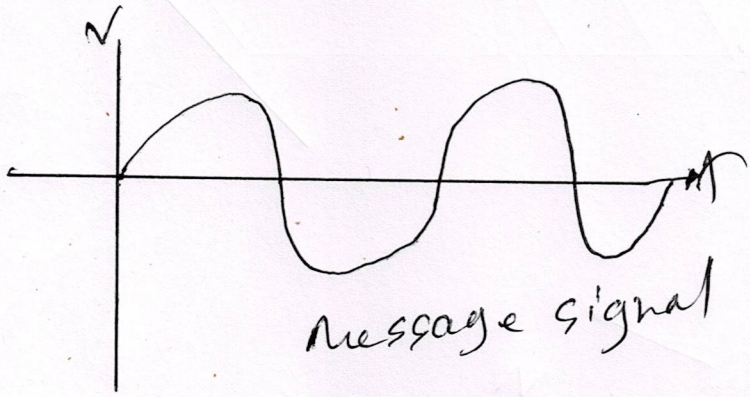
② conventional current

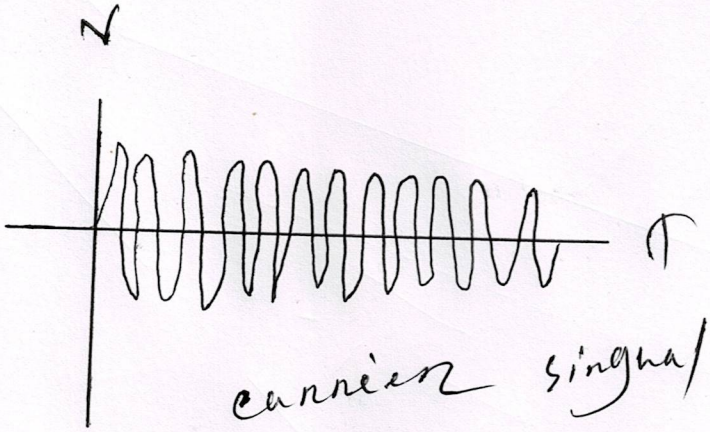
③ Built in electric field

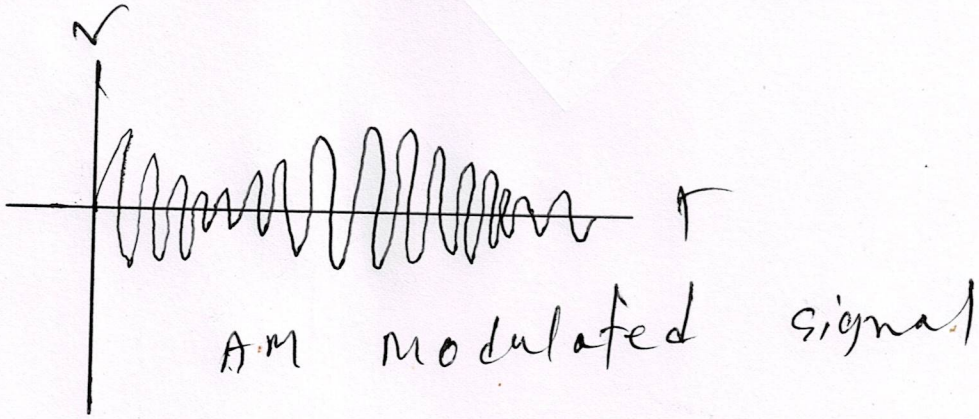
④ Electron current

Ans: No: 02

(a) AM Transmitter:

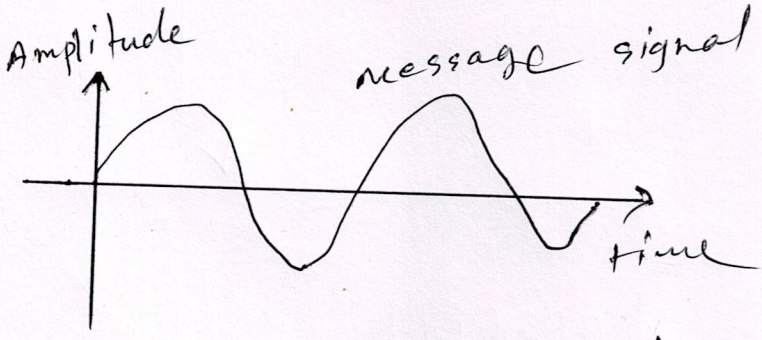


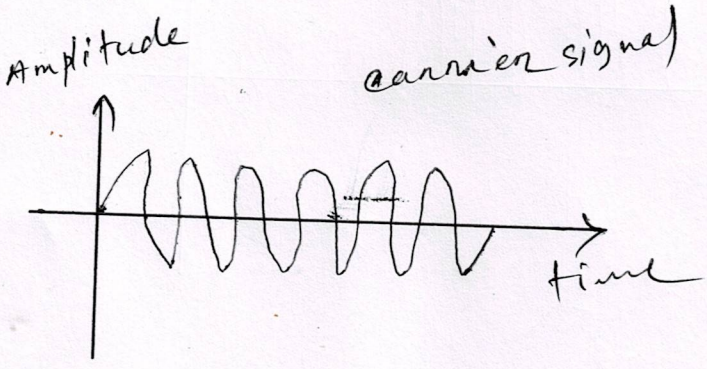



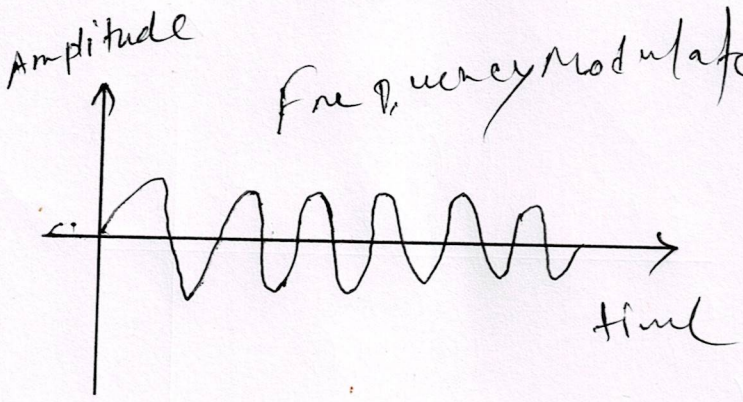




AM (Amplitude Modulation) is a type of analogue modulation where the information of the message signal is stored in the amplitude of the carrier signal. The frequency range of AM is 535 to 1605 KHz which is less as compared to other modulation techniques.

(b) FM Transmitter: Frequency Modulation or FM is a method of encoding information on one carrier wave by changing the wave carrier frequency. Frequency Modulation technology is used in the fields of computing, telecommunications and signal processing.




FM Modulated signal