

## QUESTION BANK OF ELECTRONICS PAPER II FOR FIRST UNIT TEST

Fill in the blanks rewrite the sentences.

- Materials with good conductivity are called as \_\_\_\_.
- a). Conductors. b). Insulators.
- Porcelain is a good \_\_\_\_.
- 1. Conductor. 2. Insulator.
- Electrons in an atom are arranged in different \_\_\_\_.
- 1. Orbits. 2. Nucleus
- The outermost orbit of an atom is called \_\_\_\_
- 1. Energy band. 2. Valance band
- An electron can be moved to a \_\_\_\_\_ orbit by giving it some additional energy
- 1. Lower. 2. Higher
- In n-type semiconductors, \_\_\_\_\_ is the majority charge carrier .
- 1. Holes 2. Electrons
- In n type semiconductor, electrons are majority charge carriers but it does not show any negative charge. The reason is  
electrons are stationary electrons neutralize with holes  
Mobility of electrons is extremely small  
atom is electrically neutral
- A small \_\_\_\_\_ impurity is added to germanium to get a p-type semiconductor.
- 1. Trivalent substance 2. Pentavalent substance
- Forward biasing of p-n junction diode offers high resistance.
- a) True b) False.
- On doping germanium metal, with a little amount of indium, what does one get?
- a) Intrinsic semiconductor b) Insulator
- c) n-type semiconductor d) p-type semiconductor
- Which of the following is used as an impurity for p-type semiconductor?  
Boron Bismuth  
Arsenic Phosphorous
- Choose the false statement from the following.
- a) In conductors the valence and conduction band overlap
- b) Substances with an energy gap of the order of 10 eV are insulators
- c) The resistivity of a semiconductor increases with increase in temperature
- d) The conductivity of a semiconductor increases with increase in temperature
- In an \_\_\_\_\_ semiconductor crystal the current flows due to breakage of crystal bonds,
- a) Intrinsic b) Extrinsic
- The energy band gap is maximum in \_\_\_\_\_
- a) Insulators b) Semiconductors
- Which of the following, when added as an impurity, into the silicon, produces n-type semiconductor?

- a) Phosphorous
- b) Aluminum
- c) Magnesium
- d) Sulfur

Answer in one sentence

1. What is the atomic number of Germanium
2. What are donor impurities?
3. What are the majority charge carriers in a N type semiconductor?
4. What is doping ?
5. What is the forbidden energy gap?
6. What are semiconductors ?
7. What is negative temperature coefficient of resistance
8. What is intrinsic semiconductor ?
9. How does current flow in an intrinsic semiconductor?
10. How is a diode forward biased ?
11. What is a hole ?
12. Give an example of an important application of a diode.

Answer in short

1. Write any three postulates of Bohr's atomic model .
2. What are the different types of materials ?
3. Explain semiconductors explain the VI characteristics of a pn junction diode
4. Explain the atomic structure of silicon with necessary diagram .
5. What are energy levels and explain energy level diagram .
6. What is depletion region .
7. Explain P type semiconductor in short
8. What are energy band diagrams?
9. Explain N type semiconductor in short.
10. Explain the working of PN junction diode in reverse bias.

Draw neat diagrams

1. Draw the crystalline structure of N type extrinsic semiconductor.
2. Draw the crystalline structure of P type extrinsic semiconductor.
3. Draw the energy band diagrams of conductors, insulators and semiconductors.
4. Draw the circuit diagram of PN junction diode in forward bias.
5. Draw the crystalline structure of N type semiconductor.