

## Physics - 12th Class Physics Chapter 7 Short Questions Preparation

Q1. Why the base current in transistor is very small?

**Ans 1:** Base is very thin so a number of electrons attracted by collector and very few enter into the base. And base current is very small.

Q2. What is OR-GATE?

**Ans 1:** OR-GATE implements the logic of OR operation. It has two or more inputs and a single output. Its output will be zero only when all the inputs are zero.

Q3. Explain why an ordinary Silicon diode does not emit light.

**Ans 1:** Ordinary silicon is opaque to light, so it does not emit visible light. It emits infrared light. To emit light, gallium arsenide or gallium arsenide photodiode are used as semiconductor.

Q4. Define logic system and logic gates.

**Ans 1:** A digital system deals with the quantities or variable which have only two discrete values or state. The electronic circuits which implement the various logic operation are known as logic gates.

Q5. Why the biasing requirement of the junction of a transistor for its normal operation?

**Ans 1:** For the normal operation the base emitter junction of transistor is forward biased and collector base junction is reverse biased.

Q6. Give any two characteristics of operational amplifier.

**Ans 1:** Input Resistance: It is the resistance between the + and - input of the amplifier, whose value is of the order of several mega ohms.  
Output resistance: It is the resistance between the output terminal and ground. Its value is only a few ohms.

Q7. What is meant by rectification?

**Ans 1:** The converting of alternating current signal into pulsating direct current signal is called rectification. The circuit for this purpose is called rectifier circuit.

Q8. Give four applications or uses of photodiode?

**Ans 1:** It is used as

1. Detection of both visible and invisible radiations.
2. Logic circuits
3. Automatic switching
4. Optical communication equipment

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Q9. How is p-n junction formed?

**Ans 1:** A p-n junction is formed when a crystal of germanium or silicon is grown in such a way that its one half is doped with a trivalent impurity and the other half with a pentavalent impurity.

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Q10. Define Open Loop gain of operational amplifier.

**Ans 1:** The ratio of output voltage to voltage difference between non-inverting and inverting inputs, when there is no external connection between the input and output is called open loop gain of operational amplifier.

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