

# PHYSICS POINT

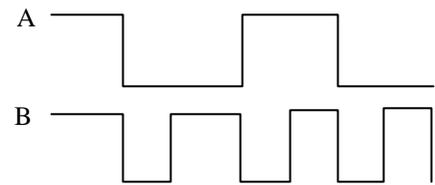
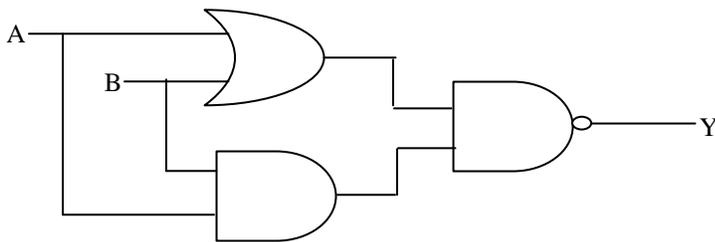


**FOR – XIth , XIIth & Competitive Exam.**

*Work Sheet—[Semiconductor].*

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1. Draw a p-n junction with reverse bias.
2. What is the order of energy gap in a semiconductor?
3. Give the ratio of the number of holes and the number of conduction electrons in an intrinsic semiconductor.
4. In the given diagram, is the diode D forward or reversed biased? 
5. When the voltage drop across a p-n junction diode is increased from 0.65V to 0.70V, the change in the diode current is 5mA. What is the dynamic resistance of the diode?
6. Frequency of input voltage to a half –wave rectifier is 50 Hz. What will be the frequency of the output voltage?
7. Draw the graph showing the variation of current with voltage for a p-n junction diode.
8. The output of an AND gate is connected to both the inputs of NAND gate. Draw the logic circuit of this combination of gates and write its truth table.
9. Derive a relationship between current gain of common base amplifier and current emitter amplifier.
10. Draw a circuit for p-n junction diode in forward bias. Sketch the voltage versus current graph for the same.
11. Distinguish between n-type and p-type semiconductors on the basis of energy band diagram.
12. The output of an OR gate is connected to both the inputs of a NAND gate. Draw the logic circuit of this combination of gates and write its truth table.
13. Draw a circuit diagram to show the biasing of a n-p-n transistor. Explain the transistor action.
14. Define the terms 'potential barrier' and 'depletion region' for a p-n junction diode. State how the thickness of depletion region will change when the p-n junction diode is (i) forward biased. (ii) reverse biased.
15. With the help of labeled circuit diagram, explain the rectification action of a full wave rectifier.
16. With a circuit diagram, briefly explain how a zener diode can be used as a voltage regulator.
17. In the figure below, circuit symbol of a logic gate and two input waveforms 'A' and 'B' are shown. (i) Name the logic gate. (ii) Write its truth table. (iii) Give the output waveform.



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*Work sheet based on C. B. S. E Exam 2013; Prepared By - A.K. Pandey Contact no - 9958655311*