

## Worksheet: Semiconductor Electronics

Uttar Pradesh State Board · Class 12 · Physics · 5 questions · 11 marks

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Score: \_\_\_\_\_ / 11

**Q1.** In a CE amplifier  $\beta = 100$  and  $I_B = 40 \mu\text{A}$ . Find  $I_C$  and  $I_E$ . [2 marks]

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**Q2.** Identify the gate whose output is 0 only when both inputs are 1. [2 marks]

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**Q3.** Why is the n-p-n transistor more commonly used than p-n-p? [2 marks]

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**Q4.** What is the ripple frequency of a full-wave rectifier with 50 Hz input? [2 marks]

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**Q5.** A Zener regulator has  $V_Z = 5 \text{ V}$ ,  $R = 500 \text{ ohm}$ , input 8-12 V. Find the resistor current range. [3 marks]

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