UNIT 4

16 Mark

Descriptive Questions:

1. **Describe the construction, working principle, and VI characteristics of a diode. Discuss its applications in electronic circuits.**
2. **Explain the working principle of a Zener diode and its application in voltage regulation. Provide circuit diagrams to illustrate its use.**
3. **Discuss the construction, working, and applications of Bipolar Junction Transistors (BJTs). How do their characteristics differ from MOSFETs?**
4. **Describe the working principle and applications of half-wave and full-wave rectifiers. Compare their efficiencies and ripple factors.**
5. **Explain the concept of voltage regulation using Zener diodes and voltage regulator ICs. Discuss their importance in power supply circuits.**
6. **Discuss the working principle of a UPS. How does it protect electronic equipment from power interruptions and fluctuations?**
7. **Describe the construction and VI characteristics of a MOSFET. Explain its operation and applications in electronic circuits.**
8. **Explain the importance of rectifiers in power supply circuits. Discuss the differences between half-wave, full-wave, and bridge rectifiers in terms of performance and applications.**