Elements of Electronics

Unit Test-I Question Bank

EOE-K Scheme (312309)

UNIT 1. Electronics Components and Signal (12M)

2 M Questions

1. Define Active components. Give its example.
2. Define passive components. Give its example.
3. Give applications of electronics.
4. Define Resistance. Draw its symbol and state its unit.
5. State the applications of resistor.
6. Define Capacitance. Draw its symbol and state its unit.
7. State the specification of capacitor and inductor.
8. Define Inductor. Draw its symbol and state its unit.
9. State the applications of Inductor.

4 M Questions

1. Compare between Active and passive components.
2. Determine the value of resistance with following color code: i) Brown Black Black Silver ii) Red Red Orange Gold
3. Define time domain and frequency domain.
4. Define amplitude, frequency, phase, wavelength of signal. 5. Define voltage source and current source.
6. Describe the concept of practical current and voltage source.

UNIT 2. Semiconductor Diodes (16M)

2 M Questions

1. Draw the symbol of LED, Photo Diode, Zener Diode, and PN Junction Diode.
2. List specification of zener diode.
3. Define LED. Draw its symbol.
4. Give the advantages of OLED.
5. Define Rectifier. State the need for rectification.
6. State the need of filter .
7. Define filter. State types of filter.
8. Explain Advantages and disadvantages of RC Differentiator.
9. Define the term clipper circuit. State types of clipper
10. Define the term clamper circuit. State types of clamper
11. Write application of clipper

4 M Questions

1. Explain working principle of zener diode.
2. Draw and explain the V-I characteristics of a zener diode.
3. Compare between Avalanche breakdown and zener breakdown.
4. Draw and describe working principle of LED.
5. Explain working principle of photodiode with proper diagram.
6. Explain working principle of OLEDs.
7. Draw the Circuit diagram and Explain the working of Full wave Center tapped rectifier
8. With the help of waveform explain the working of bridge type full wave rectifier.

9. Define following parameter of rectifier
   i) Ripple factor
   ii) Efficiency
   iii) peak inverse voltage
   iv) Transformer utilization factor.

10. Draw the pin diagram of Rectifier IC KBU 808 and state its application. 11. Draw and explain circuit of capacitor filter with bridge rectifier. Draw input output waveform.

12.Explain L-type filter with neat diagram and waveform.

13.Explain LC-type filter with neat diagram

14. Explain with neat diagram working of RC Differentiator.

15. Explain with neat diagram working of RC Integrator.

16. Compare between Clipper and Clamper.

UNIT 3. Semiconductor Transistors (16M)

2 M Questions

1. Define unipolar and bipolar devices.
2. Define Transistor. Draw symbol of PNP and NPN transistor. 3. Why BJT is called as current operating devices?
4. State advantages and disadvantages of transistor.
5. What is the need of biasing a transistor? List the type of biasing. 6. List different configuration of BJT.
7. Define α and β of the transistor.
8. State applications of transistor as a switch.
9. Give the classification of FET

4 M Questions

1. Compare between NPN and PNP Transistor.
2. Explain the Working principle of PNP transistor.
3. Explain the Working principle of NPN transistor.
4. Draw and describe the regions of transistor.
5. Draw the circuit diagram of CE (common Emitter) configuration and draw its input and output characteristics.
6. Draw the circuit diagram of CB (common base) configuration and draw its input and output characteristics.
7. Draw the circuit diagram of CC (common collector) configuration and draw its input and output characteristics.
8. Compare between CE,CB,CC.
9. Derive the relation between α and β.
10. Describe the working of the transistor as a switch with circuit diagram. 11. Why do we need a power amplifier?
12.Explain with a neat diagram of Class AB Amplifier.
13.Draw and describe working principle of n-channel JFET. 14. State the difference between FET and BJT.
15.Compare between BJT, JFET and MOSFET.