

## **Question Bank (I-Scheme)**

**Name of subject: Electrical and Electronics Technology Unit Test: II**

**Subject code: 22232 Course: CH**

**Semester :II**

### **Section I**

#### **Chapter 2: AC circuits**

##### **2 marks**

1. Define: (i) Inductive reactance (ii) Impedance.
2. Draw impedance triangle for R-L circuit and state formula for impedance.
3. Define power factor and state its formula.
4. State the relationship between voltage and current for a three phase star connection.
5. State the relationship between voltage and current for a three phase delta connection.

##### **3 marks:**

6. Draw a series R-C circuit and the corresponding voltage and current waveforms. State the formula for impedance.
7. A series R-L-C circuit has a resistance of  $15\Omega$ , inductive reactance of  $157\Omega$  and capacitive reactance of  $31.83\Omega$ . Calculate the current in the circuit and the power factor.
8. Three Impedances each of  $10\Omega$  resistance and  $5\Omega$  inductive reactance in series are connected in Star across a three phase,  $400V, 50Hz$  ac supply. Determine phase current, line current, phase voltage, line voltage.
9. State any three advantages of three phase circuits.

#### **Chapter3 Transformer and single phase induction motor**

##### **2 marks**

10. State the working principle of I  $\phi$  transformer.
11. State the types of single phase induction motors.
- 12 Write emf equation of a transformer.
- 13.State the difference between step up and step down transformer.
14. Define FHP motors.

**3 marks**

15. Define: (i) Efficiency (ii) Voltage regulation of transformer.
16. Compare autotransformer with two winding transformer. (3 points)
17. A 200 kVA, 3300/1240 V, 50 Hz single phase transformer has 80 turns on secondary winding. Calculate: (i) Primary and secondary currents on full load.  
(ii) Maximum value of flux.
18. Why are single phase induction motors not self-starting?
19. Explain the working of an auto transformer and state any one application.

**SECTION II**

**Chapter 5. Diodes and applications**

**2 marks**

1. State need for filters.
2. List types of filters.
3. Draw the symbol of i) Zener diode ii) LED
4. Draw the block diagram of regulated power supply.

**3 marks**

5. Compare Zener diode and LED (Any three points)
6. Draw and describe working of zener diode as voltage regulator.
7. Compare C, L, LC,  $\pi$  filter. (Any three points)
8. Draw and describe working of LC filter with waveforms. (with any rectifier)
9. Draw and describe working of LED.

**Chapter 6: Bipolar Junction Transistors**

**2 marks**

10. List different configurations of transistor.
11. Define  $\alpha$  and  $\beta$  of transistor.
12. Draw circuit diagram for transistor in CE configuration.

13. Draw input characteristic of transistor in CE configuration.
14. State why transistor is called as a bipolar device.
15. List applications of LED.

**3 marks**

16. Draw and describe working of transistor.
17. Draw output characteristic of transistor in CE configuration and show operating regions.
18. Compare CE, CB, and CC configuration(Any three points)
19. Derive relation between  $\alpha$  and  $\beta$  of transistor.
20. Draw and describe transistor as switch.