Question Bank (I-Scheme)

Name of subject: Electrical and Electronics Technology **Unit Test: I**
Subject code: 22232 **Course: CH**

Semester :II

Section I

Chapter 1. Electric and Magnetic circuits

2 marks

1.Define power and energy
2.Define: (i) Electromagnetism (ii) Magnetic flux.
3.List the types of induced emf.
4. State Lenz's law.
5. Define reluctance and state its unit.
6. Define: i). mmf ii). leakage factor.
7. Write the equations for self-inductance and mutual inductance.

3 marks

8. State Faraday's first and second law of electromagnetic induction.
9. Draw and explain B-H curve.
10. Compare electric and magnetic circuits. (Any three points)
11.Define: i).flux density ii).permeability iii). Coercive force

Chapter 2:AC circuits

2 marks

12With the help of waveforms and phasor diagrams, show the phase relationshipbetween voltage and current in pure inductive circuit

13Define: (i) Inductive reactance (ii) Impedance.
14. Draw impedance triangle and show the quantities on it.
15. Define power factor and state its formula.

3 marks

16. Draw series R-C circuit. Write its expression for impedance and show it on impedance triangle.
17. An alternating voltage is represented by the expression: $v = 25 \sin (200 \pi t)$ V, Calculate:
i) Amplitude (ii) Time period (iii) RMS value

18. An alternating voltage is represented by the expression: $v = 141.4(\sin 377t)$ .Calculate
(i) Average value (ii) Form factor (iii) Crest factor.

SECTION II

Chapter 4. Electronic components and signals

2 marks

1.Define Active and Passive electronic components.

2.Define: (i) Amplitude (ii) Frequency. iii) Phase iv) Wavelength

3.Draw the symbol of i) Resistor ii) Capacitor iii) Inductor

4. State applications of i) Resistor ii) Capacitor iii) Inductor

5. Identify active and passive components: i) Resistor ii) BJT iii) SCR iii) Inductor iv) FET v) Capacitor

3 marks

6. Compare Active and Passive electronic components.(Any three points)

7. Give Classification of i) Resistor ii) Capacitor iii) Inductor

8. State any three specifications of Resistors.

9.Give colour code of the following resistors:

i) 100 Ω ± 10% ii) 560 KΩ ± 20% iii) 47 KΩ ± 5% (Similar examples)

10. Compare analog and digital ICs.(Any three points)

11. Draw ideal and practical Voltage source and describe it.

12. Draw ideal and practical Current source and describe it.

Chapter 5: Diodes and applications

2 marks

13. Draw the symbol of PN junction diode.

14. Define: i) PIV ii) Ripple factor iii) Efficiency of rectifier iv) Rectifier v) Rectification.

15. Draw VI characteristic of PN junction diode.

16. Define : i) Cut in voltage ii) Barrier potential iii) Breakdown voltage w.r.t. diode.

3 marks

17. Draw and describe working principle of PN junction diode in forward biased condition.

18. Draw and describe working principle of PN junction diode in reverse biased condition.

19. Draw and describe circuit diagram of Half wave rectifier with its input and output waveforms.

20. Draw and describe circuit diagram of full wave rectifier with its input and output waveforms.(Centre tapped/Bridge)

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 15Ω, inductive reactance of 157Ω and capacitive reactance of 31.83Ω. Calculate the current in the circuit and the power factor.

8.Three Impedances each of 10Ωresistance and 5Ωinductive 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 ϕ 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 ,∏ 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 α and β 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 α and β of transistor.

20. Draw and describe transistor as switch.