



FUNDAMENTALS OF ELECTRICAL AND ELECTRONICS ENGINEERING

SUBJECT ASSIGNMENT



CHAPTER – 1 OVERVIEW OF ELECTRIC COMPONENTS AND SIGNALS

2 MARKS QUESTIONS

1. Give application of Diode.
2. Give application of Transistor.
3. What are active Components?
4. Write Examples of active components.
5. What are passive Components?
6. Write Examples of passive components.
7. Define SCR and give applications of it.

3 MARKS QUESTIONS

1. Give compression between periodical and non-periodical signals.
2. Explain pulse Signal and Triangular Signal.
3. Draw and explain ideal and practical current source.
4. Draw and explain ideal and practical voltage source.

4-MARKS QUESTIONS

1. Explain Voltage controlled current source (VCCS) and Current controlled voltage source (CCVS).
2. Explain any two Passive components.

CHAPTER-2 INTRODUCTION TO SEMICONDUCTOR COMPONENTS

2 MARKS QUESTIONS

1. Draw the symbol of NPN and PNP transistor.
2. Define forward bias with diagram.
3. Define reverse bias with diagram.
4. What is knee voltage? Give its value for Ge and Si.
5. Give example of Trivalent Impurities.
6. Give example of Pentavalent Impurities.



3 MARKS QUESTIONS

1. Explain V-I characteristics of PN junction diode.
2. State and explain classification of transistor.
3. Explain the construction of NPN transistor.
4. Explain the construction of PNP transistor.

CHAPTER-3 OVERVIEW OF DIGITAL ELECTRONICS

2 MARKS QUESTIONS

1. State the number system.
2. $(11010101)_2 = (?)_{10}$
3. $(CB5.732)_{16} = (?)_2$
4. Prove that: $A (A + B) = A$
5. Define combinational circuit.
6. Write 2's Complement of number: 1010110, 1101
7. Find the 2's complement of $(11010101)_2$.

3 MARKS QUESTIONS

1. Explain basic Logic GATES in detail.
2. $(DEFFA.CCA)_{16} = (?)_2 = (?)_8$
3. Explain Commutative Property, Distributive Property, and Absorption Property with example.
4. Explain Multiplexer with diagram.
5. Explain Demultiplexer with diagram.

4 MARKS QUESTIONS

1. Explain half adder with logic circuit.
2. Explain half subtractor with logic circuit.
3. Explain universal gates.
4. Explain De-Morgan's theorems for two variables.

CHAPTER – 4 ELECTRIC CIRCUIT

2 MARKS QUESTIONS

1. Define the terms 1) electric current 2) Potential difference.
2. State law of energy conversion.
3. Define the terms 1) Inductor 2) Capacitor.
4. Define the terms 1) E.M.F 2) Resistance.



3 MARKS QUESTIONS

1. Draw and explain flow chart of energy transformation in thermal power plant and nuclear power plant.
2. Give comparisons between A.C and D.C forms of electricity.
3. Give difference between E.M.F and Potential Difference.
4. Give comparisons between 1-phase and 3-phase supply.

4-MARKS QUESTIONS

1. State and explain ohm's law with its limitation.
2. State and explain factors affecting the value of electrical resistor.
3. Derive the equation of equivalent resistance when "n" number of resistors are connected in series.
4. Derive the equation of equivalent resistance when "n" number of resistors are connected in parallel.

CHAPTER-5 MAGNETIC CIRCUIT

2 MARKS QUESTIONS

1. Draw the magnetic circuit and define magnetic flux.
2. Define the terms 1) M.M.F 2) Reluctance.
3. Define permeability of a magnetic material.
4. Define 1) Magnetic field strength 2) Permeance.
5. Define the terms 1) Cycle 2) Frequency.
6. Define the terms 1) Time period 2) Amplitude.
7. Define average value of a.c quantity.
8. Define R.M.S value of a.c quantity.
9. State Lenz's law.

3 MARKS QUESTIONS

1. State and explain Fleming's right-hand rule.
2. State and explain Fleming's left-hand rule.
3. Explain statically induced emf.
4. Explain dynamically induced emf.

4 MARKS QUESTIONS

1. State and explain Faraday's law of electromagnetic induction.
2. Draw and explain Hysteresis loop (B-H Curve).



3. Give comparison between electric and Magnetic circuit.

CHAPTER-6 TRANSFORMER AND MACHINES

2 MARKS QUESTIONS

1. Define transformer.
2. State the types of transformers.
3. Give working principle of Induction motor.
4. Give working principle of d.c motor.

3 MARKS QUESTONS

1. Explain working principle of a 1-phase transformer.
2. Draw and explain core type transformer.
3. Draw and explain shell type transformer.
4. Explain turns ration of a 1-phase transformer.

4 MARKS QUESTIONS

1. Derive e.m.f equation of a 1-phase transformer.
2. Write short note on “Auto-transformer”.
3. Draw the construction of D.C Motor and explain any three parts of it.