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Terminal Examination (2025-26)
Standard - XI

Subject : Computer Science (Paper - II)

Marks : 50

Date : 13.10.2025

Time : 8.30 am to 11.00 am

Q.1 A] Select the correct alternative and rewrite the sentence. (4)

- 1) Inductance is measured in _____.
 - a) seconds
 - b) liters
 - c) Henry
 - d) none of above
- 2) When all inputs are low only then output is low. This is the logic of _____ gate.
 - a) OR gate
 - b) NOT gate
 - c) AND gate
 - d) Ex-OR gate.
- 3) _____ resistaor is used in high current circuit.
 - a) Carbon composition
 - b) Wire wound
 - c) Metal Film
 - d) None of above
- 4) The process of converting AC to DC is known as _____.
 - a) Rectification
 - b) Amplification
 - c) Transformation
 - d) Limitation

B] Answer the following. (Any two) (6)

- 1) Compare between wire wound and carbon composition resistators.
- 2) Explain Half adder with symbol, truth table and circuit diagram.
- 3) Explain the construction of transistor and state its type's.

Q.2 A] Answer the following. (Any two) (6)

- 1) Compare between LED and PhotoDiode
- 2) State and prove De-Morgan's theorems.
- 3) Explain the construction of paper capacitor.

B] Answer the following. (Any One) (4)

- 1) Explain the Logic gates with it's definition, symbol, logic and truth table.
- 2) Write different types of inductors and explain any one.

Q.3 A] Answer the following. (Any two) (6)

- 1) Write differences between Mux and Demux.
- 2) Explain charging and discharging of capacitors.
- 3) Define following terms :
 - a) Propagation delay
 - b) Fan-in/Fan-out

B] Answer the following. (Any One) (4)

- 1) Draw P-N junction diode and explain its working.
- 2) Draw labelled diagram of transformer and explain its working.

Q.4 Answer the following. (Any two) (10)

- 1) What is flip-flop? State different types flip-flops with their symbol and truth table.
- 2) How Inclusive OR gate differs from Exclusive Or gate? Draw its symbol and truth table.
- 3) Explain construction of MICA capacitor with suitable diagram.

Q.5 Answer the following. (Any two) (10)

- 1) Find the total capacitance if two capacitors of 20 μ f and 5 μ f are connected in series and if they are connected in parallel.
- 2) Find the RC time constant if $R = 100\text{km}$ and $C = 100\mu\text{f}$. Write it's definition also.
- 3) A transformer has 100 turns of primary and 5 turns of secondary. Calculate
 - 1] secondary voltage if Primary voltage is 120 volts and;
 - 2] Frequency of secondary if primary voltage is 50Hz.

