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Annual Examination (2025-26)
Standard - XI

Subject : Computer Science (Paper - II)

Marks : 50

Date : 02.04.2026

Time : 8.30 am to 11.30 am

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

1. A doped semiconductor is known as _____ semiconductor.
 - a) Intrinsic
 - b) Extrinsic
 - c) Both
 - d) None of these
2. Which of the following circuits can be used as decoder?
 - a) MUX
 - b) Encoder
 - c) DEMUX
 - d) None of these
3. _____ bus is unidirectional.
 - a) Address
 - b) Data
 - c) Control
 - d) None of these
4. To interconnect a PC with telephone line, _____ is necessary.
 - a) Scanner
 - b) Printer
 - c) Controller
 - d) Modem

B) Answer any two of the following. (6)

1. Write a note on Harddisk Drive.
2. State different types of system Bus and explain any two.
3. Explain Half Adder with its Truth Table and its circuits diagram.

Q.2 A) Answer any two of the following. (6)

1. Explain Basic Gates with definition, symbol and Truth table.
2. Compare between TTL with CMOS family.
3. What is Demultiplexer? Design a 1:4 DEMUX using gates and explain its working with Truth Table.

B) Answer any one of the following. (4)

1. State and prove DeMorgan's Theorems.
2. Differentiate between LED and Photo - diode.

Q.3 A) Answer any two of the following. (6)

1. What is capacitor? Explain charging and Discharging of capacitor with suitable diagram.
2. Differentiate between Multiplexer and Demultiplexer.
3. What is Flip-flop? state its different types with their symbols and Truth Tables.

B) Answer any one of the following. (4)

1. Explain CPU properties in short.
2. Explain how Transistor is used as switch.

Q.4 A) Answer any two of the following. (6)

1. List any four input and output devices of computer and state their use.
2. Write a short note on SMPS.
3. Define following Terms.
 - a) Propagation Delay
 - b) Figure of Merit
 - c) Power of Dissipation

B) Answer any one of the following. (4)

1. With neat diagram, explain how will you use IC 7446 as BCD to 7 - segment Decoder to drive 7 - segment Display.
2. Explain different types of Non- Volatile memories.

Q.5 A) Answer any two of the following. (10)

1. Find the total capacitance if two capacitors of $20\ \mu\text{f}$ and $5\ \mu\text{f}$ are connected in series and if they are connected in parallel.
2. In a transistor circuit $I_C = 12\text{mA}$, $I_B = 6\text{mA}$. Find I_E , α and β
3. Find the RC Time constant. If $R = 100\ \text{K}\Omega$ and $C = 100\ \mu\text{f}$

OR

B) Answer any two of the following.

(10)

1. Find the value of carbon resistors by using colour code method.
 - a) White, Brown, Brown, Gold
 - b) Red, Violet, Red, Gold
 - c) Yellow, Violet, Yellow, Silver
 - d) Green, Black, Yellow, Silver
 - e) Red, Red, Gold, Gold
2. A power transformer has 100 turns of primary and 5 turns of secondary. Calculate
 - a) Secondary voltage if primary voltage is 120V and
 - b) Frequency of secondary if primary voltage is 50HZ.
3. Explain Universal gates with their truth table, definition, symbol and Boolean equation.



