P.V.G.'s

Muktangan English School & Jr. College, Pune - 9

Annual Examination (2024-25)

STD XI

Subject : Computer Science (Paper II) Marks - 50
Date : 04.04.2025 Time : - 8.30 - 11.30 am

Q1. A) Select the correct alternative and rewrite the sentences (4)

1) To inter connect the PC with telephone line _____ is necessary.

a) scanner b) Controler

c) modem d) printer

2) _____ is a voilatile memory.

a) RAM b) PROM

c) ROM d) ESQARE PROM

3) When all inputs are low only then output is low this is the logic of _____ gate.

a) OR gate b) AND gate

c) NOT gate d) EX OR gate.

4) CMOS family is a _____ family.

a) bipolar b) unipolar

c) n polar d) none of the above

B) Anwer the following (Any two) (6)

1) Explain charging and discharging of a capacitor.

2) Explain half adder with it's true table.

3) Explain the uses of modem.

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

1) State and prove D-Morgan's theorem.

2) State different types of semiconductor memory and explain any two.

3) What is Flip-Flop? State different types with their symbols and truth table.

B) Answer the following (Any one) (4)

1) Explain the construction of paper capacitor.

2) Define a) propogation delay

b) fan-in / fan-out

Q3. A) Answer the following (Any two) **(6)**

1) Explain the construction of transistor and state it's types.

2) Explain the basic gates with defination symbol and truth table.

3) Write the difference between MUX and DEMUX.

B) Answer the following (Any one) **(4)**

1) State different types of system bus and explain any two.

2) Write the advantages and disadvantages of flopy disk.

Q4. A) Answer the following (Any two) **(6)**

1) Explain the types of capacitor and explain any one of them in detail.

2) Explain the difference between volatile and non volatile memories. Give one example.

3) Define RC time constant.

B) Answer the following (Any one) **(4)**

1. Explain the concept of SMPS along with it's advantages and disadvantages.

2. Draw logic diagram of J-K flip flop and explain it along it's truth table.

Q5. A) Answer the following (Any two) **(10)**

1) Find RC time constant. If R= 100 KΩ and C = 100 μf

2) A transformer has turns ratio of 5:1 and if secondary voltage is 40 V/50 Hz. Find the primary voltage and frequency of supply.

3) Find the value of carbon resistors by using colour code method.

   a) Brown, Black, Orange, Silver.

   b) Green, Black, Yellow, Silver.

OR

Q5. A) Answer the following (Any two) **(10)**

1. Find the equivalent capacitance if three capacitors each of 12 μf are connected in series and if they are connected in parallel.

2. In a transistor circuit if emitter current is 10 mA and base current is 2mA find collector current, α and β.

3. Compare TTL with CMOS family.

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