[233] Seat No: _____ No. of printed pages :02

SARDAR PATEL UNIVERSITY
Course (V - Semester) Examination
Code No. : US05CELE22 Paper Title - Digital Systems
Date : 24-11-2021 Wednesday Time : 3 pm to 5 pm

Note : ----------

Total marks 70.

Q.1 Choose correct answer **[10]**

(1) All modern computer are _____ type.
(a) Program (b) Data
(c) Backup Data (d) None of these

(2) MBM (Magnetic bubble memory) is _____ memory.
(a) Inductive (b) Semi Conductor
(c) Magnetic (d) None of these

(3) The schmitt trigger has upper threshold point (UTP) & _____.
(a) Middle threshold point (b) Lower threshold point
(c) Zero threshold point (d) None of these

(4) MODEM is also known as _____.
(a) DCE (b) DTE
(c) UART (d) None of these

(5) In Tristate switch _____ transistors are used.
(a) One (b) Two
(c) Three (d) None of these

(6) The carry generate function means _____.
(a) A+B (b) A/B
(c) A=B (d) None of these

(7) Registers are made of _____.
(a) Capacitor (b) Inductor
(c) Flip-Flops (d) None of these

(8) A serial in - serial out shiftS register can also work as _____shift register.
(a) Parallel in Parallel out (b) Serial in Parallel out
(c) Parallel in Serial out (d) None of these

(9) In Johnson counter _____ feedback is used.
(a) Positive (b) Inverse
(c) No Feedback (d) None of these

(10) In Parallel in - Parallel out register _____ clock pulse is required to load it.
(a) 1 (b) 2
(c) 3 (d) None of these

(P.T.O.)

Q.2 A. Filling the Blanks [4]

1) Full form of ROM is _____.
2) In 4Bt Serial in Serial out shift registers _____ clock pulse are required to store 4 input bits.
3) The _____ is contraction of modulation & de-modulation.
4) In 4 stage look ahead carry adder AND & _____ logic is used.

B. State true or false [4]

1) Bell 103 is a full duplex modem
2) In asynchronous 300 bps operations in modern no timing information is sent.
3) In Bidirectional register AND-OR logic is used.
4) XNOR is a basic comparator.

Q.3 Short answer type questions (any ten) [20]

1) Explain FSK.
2) What is use of universal shift register.
3) Draw the Block diagram of digital data transmission using modem.
4) Draw a circuit of 3 stage ring counter.
5) Draw a circuit of 3 stage Johnson Counter.
6) What is difference in BJT & MOSFET memories.
7) Draw a figure of 3Bit serial in serial out shift register.
8) Draw a figure of 3Bit parallel in parallel out shift register.
9) Explain main & peripheral memory of computer.
10) Explain MBM in brief.
11) Draw the logic diagram of primitive buffer register.
11) Draw the pin diagram of 7485 4-bit comparator IC.

Q.3 Answer any four out of eight

1) Explain Two's complement addition & substraction. [8]
2) Explain serial adder in detail. [8]
3) Explain controlled buffer register in detail. [8]
4) List different types of data transmission in registers & explain all drawing diagram. [8]
5) Give an account of Tristate switch. [8]
6) Explain look ahead carry adder in detail. [8]
7) Explain ROM timing diagram in detail. [8]
8) Explain writing & reading of data in micro computer system. [8]