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SARDAR PATEL UNIVERSITY

B.Sc.(ELECTRONICS) SEMESTER-5th
EXAMINATION -2013
Digital System

SUB CODE: US05CELE02
DAY: FRIDAY

DATE: 15/11/2013
TIME: 10:30 AM TO 1:30 PM
TOTAL MARKS: 70

Q-1 Choose Correct Answer

[10]

- (1) Register are made of _____
(A) Flip-flop (B) Resistor (C) Diode (D) None of these.
- (2) Loading of a register means _____ or Resetting Flip-Flop.
(A) Setting (B) Re-setting (C) Erasing (D) None of these..
- (3) Bidirectional register use _____ logic.
(A) AND-OR (B) OR-OR (C) AND-NOT (D) None of this
- (4) Universal Shift Register uses _____ logic.
(A) AND-OR (B) OR-NOT (C) AND-OR-NOT (D) None of these
- (5) Carry generate Function $CG =$ _____
(A) $A \cdot B$ (B) $A+B$ (C) A / B (D) None of these
- (6) _____ gate is a basic comparator.
(A) X-NOR (B) X-OR (C) AND (D) None of these
- (7) The Schmitt Trigger operates with _____ threshold points.
(A) One (B) Two (C) Three (D) Four
- (8) MODEMS are classified as _____
(A) DCE (B) Only DAC (C) Only ADC (D) None of these
- (9) Carry propagate function $CP =$ _____
(A) $A \cdot B$ (B) $A+B$ (C) A / B (D) None of these
- (10) In a Ring Counter data is _____.
(A) Circulated (B) Steady (C) Added (D) None of these

[20]

Q-2 Answer the Questions. (Any Ten, each two marks)

- (1) Draw the logic diagram of 4-bit parallel-in, parallel-out simple shift register.
- (2) Draw the logic diagram of 4-bit serial in, parallel-out shift register.
- (3) Draw the diagram of UART as interfacing device and explain in brief.
- (4) Explain Johnson Counter in brief.
- (5) Draw the logic symbol of 74LS83 and label it.
- (6) Draw the Pin Diagram of 7485, 4-Bit Comparator and label it.
- (7) Explain FSK Drawing Figure.
- (8) Explain Asynchronous and Synchronous Operation.
- (9) Draw the Logic Diagram of 4-bit Buffer Register.
- (10) Draw the ANSI Logic Symbol of 74HC164.
- (11) Draw the Logic Diagram of 4-bit Serial-in, Serial-out Shift Register.
- (12) Draw the Block Diagram of Digital Data System using Modem and explain it.

Q-3 List different types of Data Transmission in Shift Register and explain each of them drawing diagram. [10]

OR

Q-3 Give an account of Controlled Buffer Register. [10]

Q-4 Draw a neat diagram of Universal Shift Register and explain it. [10]

OR

Q-4 (a) Give an account of Bidirectional Shift Register. [7]

(b) List applications of Shift Register and explain any one in brief. [3]

Q-5 Give an account of Comparator. [10]

OR

Q-5 Give an account of Look-Ahead Carry Adder Drawing Diagram. [10]

Q-6 (a) Give an account of Schmitt Trigger as an interface circuit. [7]

(b) Explain Low Speed Modem Operation. [3]

OR

Q-6 Give an account of CMOS-To-TTL Interfacing and TTL-To-CMOS Interfacing. [10]