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SEAT No. \_\_\_\_\_

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**SARDARPATEL UNIVERSITY V.V.NAGAR**

T.YB.Sc. Sem-V EXAMINATION

SUB. CODE:-US05CELE02

Digital Systems

DATE:-13/11/2019, Wednesday TIME:-10:00 am to 01:00 pm

MARKS-70

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

1. Registers are made up of \_\_\_\_\_  
 (A) Flip-Flops (C) Resistors  
 (B) Capacitor (D) None of these
2. In controlled buffer register \_\_\_\_\_ is control input.  
 (A) LOAD (C) Serial Input  
 (B) CLR (D) None of these
3. Carry generate function CG = \_\_\_\_\_  
 (A)  $A \cdot B$  (C)  $A + B$   
 (B)  $A - B$  (D) None of these
4. Low speed modem uses \_\_\_\_\_ modulation.  
 (A) FSK (C) AM  
 (B) AM-FM (D) None of these
5. In bidirectional register data can be shifted from left to right and right to \_\_\_\_\_  
 (A) Left (C) Right  
 (B) Up (D) None of these
6. PAL means \_\_\_\_\_  
 (A) Programmable Array Logic (C) Program Access Memory  
 (B) Programmable Alternate Loop (D) None of these
7. An IC 74LS83 is a \_\_\_\_\_ bit parallel adder.  
 (A) Four (C) One  
 (B) Three (D) None of these
8. The carry propagate function mean \_\_\_\_\_  
 (A)  $A+B$  (C)  $A - B$   
 (B)  $A \cdot B$  (D) None of these
9. \_\_\_\_\_ is a basic comparator.  
 (A) X-NOR (C) AND  
 (B) XOR (D) None of these
10. The Schmitt Trigger has U.T.P. & \_\_\_\_\_  
 (A) LTP (C) Zero-Pt  
 (B) MTP (D) None of these

**Q-2 Short answer type question. (any ten)****[20]**

1. Draw the logic diagram of 4-Bit Parallel-in-Parallel-out simple shift register using J & K Flip Flops.
2. What do you mean by bidirectional register? Explain in brief.
3. Draw the logic symbol of an IC 74LS83 and label each pin.
4. Draw the logic diagram of 4 bit serial-in-parallel-out simple shift register using D-Flip Flops.
5. Draw the logic diagram of 4 bit serial-in-serial-out shift right register.
6. List different outputs of TriState Switch.
7. What is Programmable Logic Device?
8. Draw a neat logic diagram of Full Adder Circuit that produces CG & CP Functions.
9. Draw a neat block diagram of Serial Adder and explain it in short.
10. Explain FSK Drawing Diagram.
11. Draw the block diagram of digital data transmission using MODEM.
12. Draw the figure of asynchronous data format and why it is known as Asynchronous?

①

(P.T.O)

Q.3 List different types of data transmission in shift register and explain its working in detail drawing diagram. [10]

OR

Q.3 Draw the circuit of 4-bit Serial In Serial Out Shift Register and explain its working also draw necessary wave forms and circuit. [10]

Q.4 Give an account of 4-bit Bidirectional register and explain its working in detail. [10]

OR

Q.4 Explain Tri-state switch in detail. [10]

Q.5 Draw the circuit of 4-bit look ahead carry adder. [10]

OR

Q.5 Give an account of comparator. [10]

Q.6 Give an account of CMOS-TO-TTL interfacing & Explain in brief TTL-TO-CMOS interfacing. [10]

OR

Q.6 Give an account of Schmitt Trigger as an Interface Circuit. [10]

