[33]

SARDAR PATEL UNIVERSITY
BSC (6th SEMESTER EXAMINATION)
ELECTRONICS
US06CELE22
Digital Systems

Date: 16/07/2021   Time: 10:00 A.M. To 12:00 P.M.
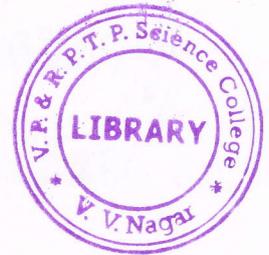Day: Friday   Total marks: - 70

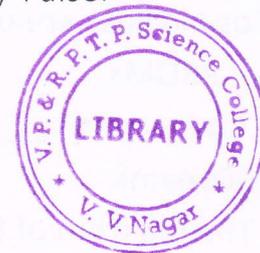Q:1 Multiple Choice Questions.   [10]

(1) In tri – state switch the output is low, high or _____.
   (a) Floating   (b) two   (c) three

(2) Fusible links are used in _____type of memory.
   (a) PROMs   (b) ROMs   (c) EPROMs

(3) CCD is type of _____ memory.
   (a) Dynamic   (b) Static   (c) Both (a) & (b)

(4) The full from of PAL _____.
   (a) Programmable Array Logic
   (b) Programmable And Logic
   (c) Programmable Logic device

(5) D to A is a part of _____converter.
   (a) D/A   (b) A/D   (c) D/D

(6) Magnetic core memory is a_____ memory.
   (a) Volatile   (b) Non Volatile   (c) None of above

(7) Flash type ADC is a _____ Converter.
   (a) Fastest   (b) Slowest   (c) Medium

(8) Op- amp is used as a_____ in successive approximation.
   (a) Inverting amplifier   (b) Comparator   (c) Non – inverting amplifier.

(9) Successive approximation converter is _____ A/D converter.
   (a) Slowest   (b) Medium   (c) Fastest

(10) The full form of EPLD is _____.
   (a) Erasable programmable logic device
   (b) Erasable programming level device
   (c) Electrically programmable logic device

Q:2 State whether the following statements are true or false. [08]

(1) The static RAM can store data as long as power is applied to the chip.
True/false

(2) A storage element is called cell. True/false

(3) An IC ADC 0801 has eight bit output. True/False

(4) Semiconductor memories are faster than magnetic memory. True/False.

(5) PLD is also called Programmable logic sequencer. True/False.

(6) 2^n-1 comparators are required to construct n-bit flash type A/D converter. True/False

(7) A counter type A/D converter uses up – down counter. True/False

(8) In V/F type A/D convertor time is constant. True/ False.

Q:3 Answer any ten questions in brief : [20]

(1) Give an account of ECL RAM

(2) State the difference between static RAM and dynamic RAM.

(3) Give introduction of FPLA.

(4) Draw the basic structure o f PAL circuit.

(5) List the parameters of DAC.

(6) What are the advantage and disadvantage of Flash type A/D converter?

(7) Draw the block diagram of successive approximation A/D converter.

(8) List of specification of A/D converter.

(9) Draw the figure of dynamic memory cell and explain it in brief.

(10) Calculate the number of resistor and comparators required in 3 – bit flash type A/D converter.

(11) Draw the circuit diagram of weighted resistor type DAC.

(12) What do you mean by A/D conversion?

Q:4 Long answer questions (Attempt any four out of eight) [32]

(i) Explain semiconductor RAMs. [08]

[P.T.O]

(2)

(ii)   Explain type of ROM in detail.   [08]

(iii)   Explain various programmable logic devices in detail.   [08]

(iv)   Explain 4 bit R-2R ladder type DAC in detail.   [08]

(v)   Explain magnetic memory in detail.   [08]

(vi)   Explain voltage to frequency type A/D converter with necessary
        diagrams.   [08]

(vii)   Explain Counter type A/D converter.   [08]

(viii) Explain voltage to Time A/D converter with necessary diagrams. [08]

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(3)