SARDAR PATEL UNIVERSITY
BSc (VI Sem.) Examination
Tuesday, 9ᵗʰ April 2013
3 - 6 pm
US06CELE02 – Digital System II

Total Marks: 70

Note: Figures to the right indicate full marks.

Q.1   Multiple choice questions.   [10]
(1)   A storage element is called _____.
       (a) Cell   (b) Device   (c) Disk
(2)   The operational amplifier is used to produce weighted sum of the _____.
       (a) Analog input   (b) Digital input   (c) BCD input
(3)   Retrieving data from the memory is called _____.
       (a) Reading memory   (b) Writing memory   (c) Modifying memory
(4)   In DAC converter analog output= _____.
       (a) K X digital output   (b) Digital X Analog output
       (c) K X digital input
(5)   The ECL RAM has open _____ outputs.
       (a) Base   (b) Emitter   (c) Collector
(6)   A certain 4 bit DAC uses binary weighted resistors. If the MSB resistor is 100 kΩ the LSB resistor will be _____.
       (a) 25 kΩ (b) 800 kΩ (c) 12.5 kΩ
(7)   The another name of peripheral memory is _____.
       (a) Main memory   (b) Magnetic memory   (c) Auxiliary memory
(8)   Resolution= _____.
       (a) Step Size   (b) Full Scale Output   (c) 2^N
(9)   The Dynamic RAM are fabricated using only _____.
       (a) MOS   (b) BJT   (c) NMOS
(10) In voltage to Frequency type ADC, the output Frequency is proportional to _____.
       (a) Digital input   (b) Analog input   (c) both (a) and (b)

Q.2   Answer **Any Ten** in brief.   [20]
(1)   Define main and peripheral memory.
(2)   Give the classification of ROM.
(3)   Give the difference between program and data memory.
(4)   List the types of ROM.
(5)   What are the applications of SRAM?
(6)   State the differences between Static RAM and Dynamic RAM.
(7)   Draw the block diagram of 3 bit flash type ADC converter.
(8)   List the Parameters of DAC.
(9)   A 7 bit DAC has a step size of 50mv. Determine the full scale output voltage and percentage resolution.
(10) Draw the block diagram of modified Flash type A/D converter.

(11) An ADC has a total conversion time of 200 μ sec. What is the highest Frequency that its analog input should be allowed to contain?

(12) Draw the pin configuration of the ADC 0801.

Q.3

(a) Explain RAMs, ROMs and PROMs.   [05]

(b) Explain ROM timing diagram in detail   [05]

OR

Q.3

(a) Explain the role of memory in a Computer System.   [05]

(b) Explain ROM Organisations.   [05]

Q.4

(a) Explain Tristate Switch in detail.   [05]

(b) List all the Static RAMs and explain one of them.   [05]

OR

Q.4 Explain types of ROMs in detail.   [10]

Q.5

(a) Explain R-2R ladder type DAC in detail.   [06]

(b) Explain tracking type ADC converter.   [04]

OR

Q.5

(a) Explain Counter type ADC converter.   [06]

(b) Explain the Parameters of DAC in detail.   [04]

Q.6 Explain Voltage to time A/D converter.   [10]

OR

Q.6 Explain Voltage to Frequency type A/D converter.   [10]

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