B.Sc.24132 - Electronics-II: Paper-II (Digital Electronics-II)

P. Pages : 1

Time : Three Hours

0080

GUG/W/16/5603

Max. Marks : 50

Notes : 1. All questions are compulsory and carry equal marks.
2. Draw neat diagrams wherever necessary.
3. Use of log table/calculator is allowed.

Either

1. a) What is shift register?
Draw the diagram of SISO shift register and explain its construction and working.
State the applications of shift register. 10

OR

b) Draw the block diagram of memory device. Explain its operation.
Obtain a 1024x8 bit memory using 256x8 bit memory chip. 10

Either

2. a) Differentiate between ROM and RAM.
Draw the necessary diagram of 8x4 diode matrix ROM and explain.
Explain the MOS RAM cell with suitable diagram. 10

OR

b) Explain the basic concept of CCD.
Differentiate the static and dynamic RAM. 10

Either

3. a) Explain the necessity of A/D and D/A converter.
Describe the following D/A converter parameter:
i) Resolution   ii) Linearity   iii) Speed 10

OR

b) Draw the circuit circuit diagram of 4-bit R-2R ladder type D/A converter using Op-amp and explain its working. Derive the expression for its output voltage.
Find out the output voltage for 5bit R-2R DAC for digital input
i) 10101   ii) 11100   iii) 11111
Given logic '0' =0V and logic '1' =10V. 10

Either

4. a) Explain the construction and working of counter type analog to digital converter with timing diagram.
State its disadvantages. 10

OR

b) Draw the block diagram of digital frequency meter and explain its working.
Explain A/D converter parameter:
i) Resolution   ii) Speed 10

5. a) Give the classification of semiconductor memory. 2½

b) What is flash memory?
State its advantages. 2½

c) Explain the concept of data acquisition system. 2½

d) Draw the block diagram of successive approximation type A/D converter. 2½

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