S.Y.B.Sc.(Part-II)(With Credits)-Regular-Semester 2012 Sem IV

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

P. Pages : 2 **GUG/W/17/5603**

Time : Three Hours * 0 4 5 6 * 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.

1. Either

a) What is shift register ? **1+**
What is the necessity of shift register ? **3+**
Draw the diagram of 4-bit SISO shift register and explain its construction and working. **6**

OR

b) What is memory ? Give the classification of semiconductor memories. **6+**
Obtain 8 kbyte memory using 1 kbyte. **4**
Draw suitable diagram.

2. Either

a) What is Read only memory ? Draw necessary diagram of 8 x 4 diode matrix ROM and explain its working. Explain the need and function of an on-chip decoding in a memory. **5+ 5**

OR

b) Explain the MOS RAM. State its advantages. **5+**
Explain the construction and working of charge couple device (CCD). **5**

3. Either

a) Explain the following D/A converter parameter - **6+**
i) Range **4**
ii) Resolution
iii) Linearity
In 4-bit weighted D/A converter, find the analog output for digital input 1011, 0111 and 1111. (Given logic '1' = +8V and logic '0' = 0V)

OR

b) Draw the circuit diagram of 4 bit R-2R ladder D/A converter and explain its working **10**
Derive the expression for its output voltage. State its advantages.

4. Either

a) Explain the construction and working of counter type analog to digital converter with timing diagram. **6+ 4**
Explain the following A/D converter parameter :
i) Resolution ii) Speed

OR

b) Draw the block diagram of a single slope A/D converter and give importance of each block in brief. State the drawbacks associated with a single slope A/D converter. **10**

5. a) Explain the working of 4-bit controlled buffer register. **2½**

b) Differentiate between static and dynamic RAM. **2½**

c) State the disadvantages of weighted type D/A converter. **2½**

d) Draw the block diagram of digital clock. **2½**

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