Bachelor of Science (S.Y.B.Sc.) (Part-II) Fourth Semester

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

P. Pages : 1 **GUG/W/18/1289**

Time : Three Hours * 1 0 0 2 * 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) Explain the concept of shift register. **3+6**
Draw the circuit diagram of 5150 shift register and explain its working. **+1**
Give its application.

OR

b) Draw the block diagram of Semiconductor memory. Explain its read and write operation. **5+5**
Obtain 8 kbyte memory using 2 kbyte Draw a suitable diagram.

2. Either

a) Explain the construction and working of 8x4 diode matrix ROM with Truth table. **6+4**
Differentiate between Bipolar and MOS RAM.

OR

b) Explain the working of dynamic RAM cell with suitable diagram. **5+5**
Explain the construction and working of Charge Couple Device (CCD).

3. Either

a) Explain the need of A/D and D/A converter in digital system. **4+6**
Define following parameters of D/A converter.
i) Range ii) Resolution.
iii) Linearity. iv) Speed.

OR

b) State the limitation of weighted type D to A converter. **4+4**
Explain the construction and working of R-2R ladder D to A converter. **+2**
Derive the expression for its output voltage.

4. Either

a) Explain the construction and working of counter type analog to digital converter, with timing diagram. **7+3**
State its limitations.

OR

b) Draw the block diagram of digital frequency meter. Explain the working of each functional blocks. **4+6**

5. a) Differentiate between volatile and won volatile memory Give its example. **2½ x4**

b) State the advantages and disadvantages of dynamic RAM.

c) Explain the concept of data acquisition system.

d) Draw the circuit diagram of digital clock and explain its principle.

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