B.Sc. S.Y. (New CBCS Pattern) Semester - IV

USELT08 - Electronics Paper-II (Interfacing, PPI Devices and Microcontroller)

P. Pages : 2 **GUG/S/23/12007**

Time : Three Hours * 2 0 5 1 * Max. Marks : 50

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

Either:

1. a) Explain: **5+5**
i) Memory mapped I/O scheme.
ii) I/O mapped I/O scheme.

OR

b) What is DMA scheme? **3+7**
Explain the burst mode and cycle stealing mode in DMA data transfer scheme.

Either:

2. a) Draw a block diagram of 8255 PPI and explain the function of each block in it. **5+5**
Write control word format of BSR mode in 8255 PPI.

OR

b) Draw the block diagram of 8253 and explain the function of each block. **6+4**
Draw the structure of control word register of 8253.

Either:

3. a) State difference between microprocessor and microcontroller. **4+6**
Draw architectural block diagram of 8051 microcontroller and explain.

OR

b) Write the features of $8051\mu C$. Explain the structure of program status word. **4+6**

Either:

4. a) What is addressing modes? State and explain any four addressing modes in 8051 microcontroller with suitable example. **2+8**

OR

b) Write a program in ALP to perform. **5+5**
i) Addition of two 8-bit numbers.
ii) Subtraction of two 8-bit numbers.

5. Attempt **any ten** of the followings.

a) What is interfacing? **1**

b) State any one advantages of DMA data transfer scheme. **1**

c) What is synchronous data transfer? **1**

d) Name the ports used in 8255 PPI. **1**

e) State the use of HLDA pin in 8257. **1**

f) How many pins are there in 8257 IC. **1**

g) State the advantages of Microcontroller. **1**

h) What is microcontroller? **1**

i) What is microcontroller directive? **1**

j) State any two bit-manipulation instructions in 8051. **1**

k) What is I/O Port? **1**

l) State the meaning of $R \times D$ and $T \times D$ pins in 8051 microcontroller. **1**

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