

B.E.(with Credits)-Regular-Semester 2012-Electronics Engineering Sem V
EN504 - Advanced Microprocessor and Interfacing

P. Pages : 2

Time : Three Hours



GUG/S/18/3764

Max. Marks : 80

- Notes : 1. All questions carry marks as indicated.
2. Assume suitable data wherever necessary.

1. a) Draw and explain internal architecture of 8086. Also explain the importance of instruction queue. **8**
b) Explain the pins of microprocessor 8086. **8**
i) $\overline{\text{BHE}} / \text{S7}$ ii) $\text{MN} / \overline{\text{MX}}$
iii) $\overline{\text{TEST}}$ iv) $\text{DT} / \overline{\text{R}}$

OR

2. a) Explain all the addressing modes of 8086 with one example each. **8**
b) Explain the advantage of segmentation of memory in 8086 microprocessors. **8**
3. a) Write a program to arrange 10 bytes in Ascending order. **8**
b) Explain the stack structure of 8086 in detail. **8**

OR

4. a) Interface 16KB of ROM and 16KB RAM with 8086 in minimum mode. Assume suitable starting address. **8**
b) What is the difference between software & Hardware interrupt? Also explain 'nested interrupt' in brief. **8**
5. a) Draw and explain internal architecture of 8255. Also explain control word format of 8255. **8**
b) Interface 8-bit DAC to 8086 microprocessor and write a program to generate a triangular waveform at the output of DAC. **8**

OR

6. a) Draw the block diagram of Intel 8254 and explain the CWR format. **8**
b) Write an ALP to generate a pulse at every 50 μsec . from counter zero (Co) of 8254. Assume 2MHz input clock and suitable address to write program. **8**
7. a) Explain all ICW's and OCW's of 8259. **8**

- b) Write initializing instruction for 8259 to meet the following specification. **8**
- i) Interrupt vector address = 2090H
 - ii) Address interval is of 8 bytes.
 - iii) Use fully nested mode.

OR

- 8.** a) Draw & explain the block diagram of 8279 PKDC. **8**
- b) Interface 8×8 keyboard matrix & 8 seven segment displays with 8086 μ P using 8279 PKDC. **8**
- 9.** a) Explain the functions of the following signals of 8257. **8**
- i) HRQ
 - ii) MARK
 - iii) AEN
 - iv) HLDA
- b) Discuss the priorities of DMA request inputs of 8257. **8**

OR

- 10.** a) Draw and explain block diagram of 8251 USART. **8**
- b) Interface 8251 USART with 8086 & write a program to transfer 100 bytes in Asynchronous mode. **8**
