

**325653(25)**

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**B. E. (Sixth Semester) Examination,**

**Nov.-Dec. 2015**

**(New Scheme)**

**(EEE Branch)**

**ADVANCED MICROPROCESSORS & PERIPHERALS**

*Time Allowed : Three hours*

*Maximum Marks : 80*

*Minimum Pass Marks : 28*

*Note : Attempt all questions. Part (a) from each question is compulsory. Attempt any two parts from parts (b), (c) and (d) of each question.*

**Unit-I**

1. (a) Explain the function of REP prefix with suitable example.

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(b) Explain the pipelined architecture of 8086 micro-processor. How it is implemented in 8086?  
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(c) Explain the following instructions :

(i) XCHG

(ii) XLAT

(iii) LOOP

(iv) LOCK

(v) JCXZ

(vi) TEST

(vii) LAHF

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(d) Explain function of following pins :

(i)  $\overline{\text{DEN}}$

(ii)  $\overline{\text{BHE}}$  &  $A_0$

(iii)  $\overline{\text{RQ}}/\overline{\text{GT}}$

(iv)  $QS_0$  &  $QS_1$

(v)  $S_3$  &  $S_4$

(vi)  $\text{DT}/\overline{\text{R}}$

(vii)  $\text{MN}/\overline{\text{MX}}$

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### Unit-II

2. (a) What are the different pins available in maximum mode of 8086? CSVTUonline.com 2

(b) Draw the interfacing diagram in maximum mode and discuss the read and write cycle. 7

(c) Design an interface between 8086 microprocessor and following memory chips : 7

(i) EPROM 16 K × 8 2 Nos.

(ii) RAM 32 K × 8 1 No.

(iii) RAM 16 K × 8 1 No.

(d) Explain the interrupt structure of 8086 in detail with interrupt vector table. CSVTUonline.com 7

### Unit-III

3. (a) What is the main difference between 8259 and 8259A. 2

(b) Explain the internal architecture of 8257 DMA controller in detail. Why DMA controller data transfer are faster. 7

- (c) Explain the following terms in relation to 8259A. 7
- EOI CSVTUonline.com
  - Automatic Rotation
  - Automatic EOI
  - Specific Rotation
  - Specially fully nested mode
- (d) Interface DAC 0808 with 8086 using 8255 ports. Draw the schematic & write ALP to generate triangular wave of frequency 500 Hz. 8086 system operates at 8 MHz. The amplitude of triangular wave should be +5 V. 7

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## Unit-IV

4. (a) Write down the features of 8087. 2
- (b) Explain the architecture of 8087 in detail. 7
- (c) Discuss communication between IOP 8089 and CPU 8086. 7
- (d) Write MASM program to implement following formula : 7

$$F_0 = \frac{1}{2\pi\sqrt{LC}}$$

## Unit-V

5. (a) What is the difference between interrupts and exceptions? CSVTUonline.com 2
- (b) Compare 80386 and 80486 microprocessors. 7
- (c) Explain the CISC and RISC processor in detail. 7
- (d) Discuss the architecture of 80386 and explain the function of each unit. 7

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