

NTK/KW/15/7378

Faculty of Engineering & Technology

**Fourth Semester B.E. (Computer Technology) C.B.S.
Examination**

**ADVANCED MICROPROCESSOR AND
INTERFACING**

Time : Three Hours]

[Maximum Marks : 80

INSTRUCTIONS TO CANDIDATES

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1. (a) Draw the internal block diagram of 8086 and explain the predecoded instruction byte queue. 6
- (b) Explain the pins of microprocessor 8086 :
- (i) $\overline{\text{BHE}} / \text{S7}$
 - (ii) $\text{MN} / \overline{\text{MX}}$
 - (iii) $\overline{\text{TEST}}$
 - (iv) $\text{DT} / \overline{\text{R}}$. 8

OR

2. (a) Explain the physical address generation in 8086 with example. 7
- (b) Interface 16 KB of ROM and 16 KB RAM with 8086 in minimum mode. Assume suitable starting addresses. 7
3. (a) Interface 8-bit DAC to 8086 and write a program to generate a triangular waveform at the output of DAC. 7
- (b) Interface 8 LED's with 8086. Write an ALP to ON-OFF LED with a delay. 6

OR

4. (a) Interface 8253 PIT with 8086. Also explain the rate generator mode of 8253 with waveform. 7
- (b) Draw and explain the interfacing of 4×4 matrix keyboard with 8086 with suitable example. 6
5. (a) Explain internal architecture of 8255 PPI. Also give the format of BSR and I/O modes. 7
- (b) Explain the fully nested mode in PIC 8259. What are its disadvantages ? 6

OR

6. (a) Draw and explain block diagram of 8251 USART. 7
- (b) Explain various scan modes of CRT controller 6845. 6
7. (a) Draw and explain the 8086 maximum mode configuration. 7
- (b) Describe the features of NDP 8087. 6

OR

8. (a) Draw and explain 8237 PDMAC. 7
- (b) Write notes on bus arbiter. 6
9. (a) Explain addressing modes of 8051. 5

- (b) Explain SCON, PCON, TCON and IE register of 8051 microcontroller. 8

OR

10. (a) Explain real and protected modes of 80386 with example. 7
(b) Explain paging mechanism of 80386. 6
11. (a) Give functional description of Pentium architecture. 7
(b) Write short note on Special Pentium Registers. 7

OR

12. (a) What is Task State Segment (TSS) ? How it is addressed ? 6
(b) Draw and explain IDT descriptor of Pentium processor. 8