15116

3 Hours / 100 Marks   Seat No.

Instructions – (1) All Questions are *Compulsory*.

(2) Answer each next main Question on a new page.

(3) Illustrate your answers with neat sketches wherever necessary.

(4) Figures to the right indicate full marks.

(5) Assume suitable data, if necessary.

(6) Use of Non-programmable Electronic Pocket Calculator is permissible.

(7) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. a) **Attempt any THREE of the following:**   **12**

(i) With the neat diagram describe how physical address is generated in protected mode in 80386 microprocessor.

(ii) List any four salient features of pentium processor.

(iii) List and describe any four features of RISC processor.

(iv) Differentiate between .COM and .EXE programs. (any four points)

b) **Attempt any ONE of the following:**   **6**

(i) Describe the fields in control registers in 80386 microprocessor with the help of neat diagram.

(ii) With the help of neat diagram, describe the interrupt vector table entries.

Marks

2. Attempt any TWO of the following: **16**

  a) With the help of neat diagram describe the functions of internal blocks of Pentium System Architecture.

  b) List any four file handling functions of INT 21H. Describe the functions with their syntax and usages.

  c) Draw the format of flag register of Intel 80386 microprocessor and describe any four salient flags of 80386 microprocessor.

3. Attempt any FOUR of the following: **16**

  a) Describe the general purpose registers and their functions in pentium processor with neat diagram.

  b) List and describe any four design issues of RISC processor.

  c) State and describe the significance of separate code and data cache in pentium processor.

  d) With the neat diagram, describe the selector fields in 80386 microprocessor.

  e) Write the stepwise procedure, that an interrupt handler must follow while servicing an interrupt.

4. a) Attempt any THREE of the following: **12**

    (i) Describe the DOS-BIOS interface with the help of neat diagram.

    (ii) Describe pipelining concept in RISC processor.

    (iii) Draw the pipeline stages of floating point unit. Also write the names of stages in pipelining in pentium processor.

    (iv) What is the purpose of MMX architecture designing? Write any four main features of this technology to fulfil its goals.

Marks

b) **Attempt any <u>ONE</u> of the following:**   **6**

  (i)   List any three specific processor extension interface signals of 80386. Also describe the functions of these signals.

  (ii)   What do you understand by superscalar execution in pentium processor? Describe with neat diagram.

5.   **Attempt any <u>TWO</u> of the following:**   **16**

a) Describe any four floating point exceptions in pentium processor.

b) With the neat diagram, describe the use of debug registers in 80386 microprocessor.

c) List any eight features of SUN Ultra SPARC.

6.   **Attempt any <u>FOUR</u> of the following:**   **16**

a) Compare real mode and protected mode of 80386 (any four points).

b) What is RISC processor? How does it differ from CISC processor?

c) Write any four practical performance issues in pipeline systems.

d) Write any four features of pentium II processor.

e) Describe the structure of MS-DOS with the help of neat diagram.

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