16172

3 Hours / 100 Marks   Seat No.

Instructions : (1) *All* questions are *compulsory*.
(2) *Illustrate your answers with neat sketches **wherever** necessary.*
(3) *Figures to the **right** indicate **full** marks.*

Marks

1. Solve **any ten** questions :   **20**

   a) What is a selector ? Draw its fields.

   b) Draw a page table entry.

   c) State rules of privilage in 80386 protected mode.

   d) Draw flag register of 80386 and explain VM and RF flags.

   e) Draw the format of control registers of 80386.

   f) Draw five stages of U and V pipelines.

   g) What is an interrupt ?

   h) State the functions performed by IRET instruction.

   i) What is processor architecture ?

   j) What is meant by superscaler machine ?

   k) What is a predefined or dedicated interrupt ?

   l) State the function of register window in RISC processors.

   m) What is an exception interrupt ?

   n) State two characteristics of cache memory.

   o) What is load and store architecture ?

2. Solve **any two** questions :   **16**

   a) Compare pentium, pentium – 2 and pentium – 3 processors (any four points).

   b) Draw page translation mechanism and explain paging mode of 80386.

   c) Draw the internal architecture of 80386 processor and explain.

3. Solve **any four** questions : — 16

  a) Explain (PVAM) Protected Virtual Addressing Mode of 80386.

  b) Enlist and explain general purpose registers of 80386 processor.

  c) List features of RISC processors (any 8).

  d) State any four differences between .COM and .EXE programs.

  e) Draw paging operation diagram using TLB and explain.

  f) List salient features of pentium-pro (any 8).

4. Solve **any four** questions : — 16

  a) Compare RISC and CISC architectures.

  b) Explain interrupt processing sequence of x86 processors.

  c) Draw code/data descriptor and explain.

  d) List salient features of sun ultra SPARC processor (any 8).

  e) Explain branch prediction unit in pentium processor (with state diagram).

  f) Draw superscalar architecture of pentium processor.

5. Solve **any four** questions : — 16

  a) Draw system descriptor cache register of 80386 microprocessor. Explain.

  b) List floating point exceptions of pentium processor and explain any one.

  c) List BIOS interrupts and explain any two.

  d) Explain design issues of RISC processor.

  e) List salient features of MMX technology.

  f) Draw IVT of x86 processors and explain.

6. Solve **any four** questions : — 16

  a) State advantages of separate code and data cache.

  b) Enlist various file processing functions corresponding to respective file operations.

  c) List disadvantages of RISC processors.

  d) What is hybrid architecture ? Which features of RISC are adopted in CISC processors to make hybrid convergence ? Establish your answer with an example.

  e) Draw the structure of pentium control registers.

  f) Draw interrupt processing priority table. State the features of INT 3 instruction.

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