53 (IT 301) COAR

2014

COMPUTER ORGANIZATION & ARCHITECTURE

Paper : IT 301

Full Marks : 100

Pass Marks : 30

Time : Three hours

The figures in the margin indicate full marks for the questions.

*Answer **any five** questions.*

1. *(a)* Explain the characteristics of RISC Architecture. 10

   (b) What is the significance of addressing mode ? Explain Register, Register Indirect, Relative and Indirect addressing mode with examples. 2+8=10

2. What is pipelining ? What are the pipelining hazards ? Explain *any two* techniques to handle those hazards with example. 2+6+12=20

3. *(a)* What is the role of PC and SP registers in CPU ? Draw the flow chart of Booth's Multiplication algorithm. 4+6=10

(b) What is cache memory ? Explain the concept of locality of reference. If cache access time is 100*ns*, main memory access time is 1000*ns*, hit ratio is 0·9, what will be the average access time ? 2+4+4=10

4. *(a)* Explain with a diagram DMA transfer in a computer system. 10

(b) What is an Interrupt ? Explain Daisy Chain Priority Interrupt. 2+8=10

5. *(a)* Convert the hexadecimal number F3A7C2 to binary and octal. 2+2=4

(b) Perform the subtractions with the following unsigned decimal numbers by taking the IO's complement of the subtrahend 3

5250 — 1321

(c) What is the difference between a fixed point and a floating point number ? Represent –17 in ANSI floating point representation. 4+3=7

(d) What is an error detection code ? Explain *any one* error detection code with example. 2+4=6

6. Write short notes on : ***(any two)*** 10×2=20

(a) Virtual Memory

(b) Microprogrammed Control

(c) Auxiliary Memory

(d) ASCII.
