Code : 051402

B.Tech. 4th Semester Exam., 2015

COMPUTER ARCHITECTURE

Time : 3 hours

Full Marks : 70

Instructions :

(i) *All questions carry equal marks.*

(ii) *There are* **NINE** *questions in this paper.*

(iii) *Attempt* **FIVE** *questions in all.*

(iv) *Question No.* **1** *is compulsory.*

1. Answer the following questions (any *seven*) :

   (a) What is the difference between Programmed I/O and Interrupt-driven I/O?

   (b) Explain different types of interrupts.

   (c) Define program counter.

   (d) Describe the phases in an instruction cycle.

   (e) What do you mean by direct memory access?

   (f) What is the difference between hardwired control and microprogrammed control?

   (g) What is the importance of cache memory in a computer?

   (h) Briefly explain subroutine call and return.

   (i) What do you mean by array processors? How are they different from scalar processors?

2. Explain in detail the different addressing modes.

3. Explain in detail the hierarchical memory structure with a neat and labelled diagram.

4. What is swapping and how is it useful in memory management?

5. How does a DMA controller work? Explain with an example.

6. Define paging in memory management and write its advantages.

7. Explain in detail daisy-chain priority interrupt.

8. Explain in detail the three mapping procedures related to cache memory.

9. Explain in detail the handshake protocol of asynchronous data transfer.

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