MCA / PGDCA 2ND SEMESTER EXAMINATION 2013

PAPER : V

(COMPUTER ORGANIZATION AND ARCHITECTURE)

Time : 3 Hrs. Full Marks: 80

1. Answer any five from the folowing questions : 2×5 = 10

   (a) What is MICR?

   (b) What is hit video?

   (c) What is basic task executed by a CPU?

   (d) What is the functions of a memory management unit (MMu)?

   (e) What are the two types of array processor?

   (f) What is a memory address map?

   (g) What is a shift register?

2. Answer any three from the following questions : 4×3=12

   (a) Give three examples of I/O interrupt. What is USB flash drives?

(b) What are arithmatic micro- operations? Mention them.

(c) What is virtual address space and physical address space?

(d) Why Direct Memory Access(DMA) is important? What are the three possible ways of organizing the DMA module?

(e) What is a Cache memory? How is the Performance of Cache memory measured?

3. Answer any three from the following : $6\times3 = 18$

(a) What is interrupt? Discuss the concept and types of interrupt.

(b) An Address space is specified by 24-bits and Corresponding memory space by 16-bits.

(i) How many words are there in address space?

(ii) How many words are there in memory space?

(c) The following transfer statements specify a memory, explain the memory operation in each case:

(i) $R_2 \leftarrow M\,[AR]$

(ii) $M[AR] \leftarrow R_3$

(iii) $R5 \leftarrow M\,[R_5]$

(d) Discuss the Instruction Execution Cycles.

(e) Draw a timing diagram for a six stages pipeline showing how it would process eight task.

4. Answer any four from the following questions : $10\times4 = 40$

(a) Explain the various types of data transfer schemes available for programmed I/O and DMA transfer.

(b) What is the need of mapping techniques? Discuss the different mapping techniques used for cache memory.

(c) What do you mean by addressing mode? Discuss about the different types addressing modes.

(d) What do you mean by pipelining? Enumerate the salient featuers of pipe line architecture.Discuss the pipeline hazards.

(e) Give Flynn's Classification of parellel computer architecture. Also discuss each class in brief.

(f) Write short notes on any two -

(i) Types of Primary memory

(ii) DMA

(iii) Instruction format

(iv) Registers found inside CPU

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