2021

COMPUTER SCIENCE — HONOURS

Paper : CC-5

Full Marks : 50

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

Answer **question no.** **1** and **any four** questions from the rest.

1. Answer **any five** questions of the following : 2×5
   (a) Why is data bus bidirectional?
   (b) What is TRAP?
   (c) What are the differences between DDR2 and DDR3 types of RAM modules?
   (d) What is machine cycle?
   (e) What is the function of instruction register?
   (f) What is non-maskable interrupt?
   (g) What is indirect addressing mode?
   (h) Describe briefly asynchronous data transfer.

2. (a) Why does DMA have priority over CPU when both request for a memory transfer?
   (b) Why are the read and write control lines in a DMA controller bidirectional?
   (c) Differentiate between hardwired control unit by clearly stating their merits and demerits. 4+2+4

3. (a) Distinguish between memory mapped I/O and I/O mapped I/O.
   (b) Describe in detail one technique for performing floating-point division in a digital computer. 4+6

4. (a) Justify the usage of cache memory.
   (b) Explain briefly the different address mapping methodologies of cache memory.
   (c) What is virtual memory? 3+5+2

5. (a) What is micro-instruction?
   (b) Discuss different addressing modes found in micro-computers. 3+7

6. (a) Explain Booth's algorithm for 2's complement multiplication.
   (b) What are the differences between burst mode and cycle stealing techniques of data transfer schemes? 6+4

Please Turn Over

7. (a) What are the differences between RISC and CISC processors?

(b) State the briefly its characteristics of RISC. 3+7

8. How many times does the control unit refer to memory when it fetches and executes an indirect addressing mode instruction if the instruction is

(a) a computational type requiring an operand from memory.

(b) A branch type.

(c) What is interrupt? 4+4+2