

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
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