

2023

COMPUTER SCIENCE — GENERAL

Paper : GE/CC-3

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 :

2×5

- (a) Write down any two characteristics of RISC architecture.
- (b) State the role of accumulator.
- (c) An 8 bit register contains the binary value 10111101. What is the register value after an arithmetic shift right?
- (d) What is BUS Arbitration?
- (e) Write down the functionality of addressing modes.
- (f) What is the function of cache memory?

2. (a) What do you mean by Instruction set completeness?

- (b) Evaluate the following arithmetic expression : $X = (P - Q + R) / S * T$ using zero address instruction format. 5+5

3. (a) Explain the concept of Direct Memory access with suitable illustration.

- (b) State the differences between direct and indirect addressing mode. 5+5

4. (a) A computer employs RAM chips of 256×8 and ROM chips of 1024×8 . The computer system needs 2K bytes of RAM, 4K bytes of ROM. How many number of RAM and ROM chips are needed?

- (b) Consider a direct mapped cache of size 32 KB with block size 512 Bytes. The size of main memory is 16 MB. Find the number of bits in tag and line number.

- (c) What is virtual memory? 3+5+2

5. (a) Explain different types of cache write policies.

- (b) Write down the significances of Priority Interrupt.
- (c) Describe the functions of system bus. 5+2+3

Please Turn Over

6. (a) Write short note on memory hierarchy with appropriate illustrations.
(b) Define prefix, postfix and infix instruction with example. 5+5
7. (a) Highlight the main differences between Hardwired control and Microprogrammed control unit.
(b) Differentiate between direct and indirect addressing. 5+5
8. (a) Illustrate the functions of associative memory.
(b) Write down the characteristics of USB and PCI. 5+5
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