Bachelor of Computer Application (B.C.A.)

3rd Semester (Batch 2023-26) (CBGS)

COMPUTER ARCHITECTURE

Paper—BCA03001T

Time Allowed—3 Hours] [Maximum Marks—100

Note :—Attempt **FIVE** questions in all, selecting at least **ONE** question from each section. The fifth question may be attempted from any section. All questions carry equal marks.

SECTION—A

1. (a) How information is represented using general registers ? Explain the role of register transfer language.

   (b) Explain the use of logical micro-operations in detail.

2. What is the need of timing signals and instruction cycle ? Explain by taking suitable examples.

SECTION—B

3. Explain the following concepts :

   (a) Types of instruction formats.

   (b) Role of control unit.

4. Discuss the characteristics of the following :

(a) Indirect and relative addressing modes.

(b) Benefits of RISC Architecture.

SECTION—C

5. Write notes on the following :

(a) Memory Hierarchy.

(b) Use of Auxiliary Memory.

6. (a) What is the concept of Virtual Memory ? Explain.

(b) Why associative memory is used for execution ? Explain.

SECTION—D

7. (a) How DMA is used for data transfer ? Explain in detail.

(b) Discuss programmed I/O for data transfer operations.

8. (a) Discuss the role of pipelining and its types.

(b) How MISD and MIMD architectures are organised ? Explain.