Exam. Code : 107203
Subject Code : 1683

Bachelor of Computer Application (BCA)
3rd Semester (Batch 2020-23)

COMPUTER ARCHITECTURE

Paper—I

Time Allowed—3 Hours] [Maximum Marks—75

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 Register transfer language ? Explain the role of various registers. 8

   (b) Discuss the role of Instruction codes in detail. 7

2. What are major types of Timing Signals ? Explain the instruction cycle by taking suitable examples. 15

SECTION—B

3. Explain the features of the following types of CPU organizations :

   (a) General Register Organization 7.5

   (b) Stack Organization. 7.5

4. Discuss the characteristics of the following control unit design :

   (a) Micro programmed 7.5

   (b) Hardwired. 7.5

SECTION—C

5. Write notes on the following :

   (a) Auxiliary memory 7.5

   (b) Associative memory. 7.5

6. (a) What is the concept of Virtual memory ? Explain. 7.5

   (b) Why Cache memory is needed for execution ? Explain. 7.5

SECTION—D

7. (a) How I/O organization is used for devices ? Explain in detail. 8

   (b) Discuss the benefits of pipelining for data transfer operations. 7

8. (a) What are the benefits of parallel processing ? Explain. 7.5

   (b) How SIMD and MIMD architectures are employed ? Explain. 7.5