

END TERM EXAMINATION

FIRST SEMESTER [BCA] DECEMBER 2024

Paper Code: BCA-105

Subject: Fundamentals of Computers and IT

Time: 3 Hours

Maximum Marks: 60

Note: Attempt five questions in all including Q. No.1 which is compulsory. Select one question from each unit.

- Q1 Answer **all** the following:- (4x5=20)
- (a) Differentiate between RAM and ROM.
 - (b) Discuss the different types of computer languages.
 - (c) Convert the hexadecimal 1A to its binary equivalent.
 - (d) Discuss the functionalities of Linker and Loader in computer programming.
 - (e) Find the 2's complement of the number $(10110100)_2$.

UNIT-I

- Q2
- (a) Discuss the major components of a digital computer and their roles in the system. (5)
 - (b) Explain the different classification of computers including Micro, Mini, Mainframe and Supercomputers. (5)
- Q3
- (a) Describe the components of a computer's memory hierarchy. Provide examples of Primary and Secondary memory. (5)
 - (b) Explain the evolution of computers from the First Generation to the Fifth Generation. (5)

UNIT-II

- Q4
- (a) Describe the concept of Assemblers, Compilers and Interpreters. (5)
 - (b) Define and explain the Booting sequence in DOS. (5)
- Q5
- (a) Explain the fundamental concepts of operating system and its types. (5)
 - (b) What is DOS? List and explain DOS commands with example. (5)

UNIT-III

- Q6
- (a) Discuss Positional and Non-Positional number system. Provide examples of Binary, Decimal, Octal and Hexadecimal number system. (5)
 - (b) Subtract $(110100)_2$ from $(1011010)_2$ using 1's complement method. (5)
- Q7
- (a) Explain binary arithmetic operations including addition, subtraction, multiplication and division with examples. (5)
 - (b) Perform binary subtraction using 2's complement method for $(110100)_2 - (10110)_2$. (5)

UNIT-IV

- Q8
- (a) Explain communication system and its components with the help of a block diagram. (5)
 - (b) What is data transmission? Discuss the data transmission modes. (5)
- Q9
- (a) Discuss the elements and types of computer network, including LAN, MAN and WAN. (5)
 - (b) Explain the different types of network topologies and their characteristics. (5)

P-1/1

