A–1102

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BCA–01

Bachelor of Computer Application (BCA)

(Computer Fundamentals and Introduction to Digital Logic)

1st Semester Examination, 2024 (June)

Time : 2:00 Hrs. Max. Marks : 70

Note* :–** This paper is of Seventy (70) marks divided into Two (02) Sections 'A' and 'B'. Attempt the questions contained in these Sections according to the detailed instructions given therein. ***Candidates should limit their answers to the questions on the given answer sheet. No additional (B) answer sheet will be issued.

Section–A

(Long Answer Type Questions) 2×19=38

***Note* :–** Section 'A' contains Five (05) Long-answer type questions of Nineteen (19) marks each. Learners are required to answer any *two* (02) questions only.

1. What is Computer ? Explain the block diagram of computer.

2. Define and describe DeMorgan's Theorem.

3. What is Logic Gate ? Explain the different type of logic gate with their graphical symbol and Truth table.

4. What is the difference between half adder and full adder ? Explain the block diagram of full adder.

5. Explain RS-flip flop and JK-flip-flop.

Section–B

(Short Answer Type Questions) 4×8=32

***Note* :–** Section 'B' contains Eight (08) Short-answer type questions of Eight (08) marks each. Learners are required to answer any *four* (04) questions only.

1. (i) Convert (75) 10 to its binary equivalent.

   (ii) Find decimal equivalent of octal number $(153)_8$.

2. What is sequential circuit ? How it differ from combinational circuit ?

3. What is CPU ? Explain the major components of a CPU.

4. Explain the difference between primary memory and secondary memory.

5. Describe Ex OR and Ex-NOR gates with their truth table and symbols.

6. Explain the evolution of computers.

7. What are the applications of computer ? Explain.

8. Write a short notes on the following :

   (i) Flip-flops

   (ii) Asynchronous counter and Synchronous Counter

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