K21U 3647

II Semester B.C.A. Degree (CBCSS – Supple.) Examination, April 2021
(2014 – 2018 Admission)
Core Course
2B02BCA : DIGITAL SYSTEMS

Time : 3 Hours

Max. Marks : 40

SECTION – A

1. **One** word answer. (8×0.5=4)

   a) Digital waveform carries

   b) _____ and _____ are the special gates.

   c) _____ select one of multiple data inputs and produce a single output.

   d) SOP stands

   e) _____ is a Non-weighted code.

   f) A _____ display decoder is used to convert a BCD into a 7-segment code.

   g) _____ is the modified version of SR flip-flop.

   h) _____ is called 1 bit register.

SECTION – B

Write short notes on **any seven** of the following questions. (7×2=14)

2. Explain about digital waveforms.

3. What is min term ?

4. Write the rules of binary addition with write one example.

5. What is flip-flop ?

6. Explain SIPO.

7. What are the types of counters ?

8. Write a short note on binary number system.

9. Convert the following into binary to decimal system.

   A) 101011_2

   B) 10.1011_2

10. What is a gray code ?

11. Draw the circuit and truth table of SR Latch.

SECTION – C

Answer **any four** of the following questions. (4×3=12)

12. What are the universal gates ?

13. Write a note on XNOR gate.

14. What are combinational circuits ?

15. Perform BCD addition (48 + 68 = 116).

16. What is EXCESS-3 Code and write Excess-3 code of 1 ?

17. What is counter ?

SECTION – D

Write an essay on **any two** of the following questions. (2×5=10)

18. Explain basic gates with figure and truth table.

19. Convert the following Boolean expression into standard SOP form :

   $A\overline{B}C + \overline{A}B + AB\overline{C}D$.

20. What is flip-flop ? Explain JK flip flop.

21. What is shift register ? Draw and explain the diagram of serial in parallel out shift register.