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K19U 2463

Reg. No. : .....

Name : .....

III Semester B.Sc. Degree (CBCSS-Reg./Sup./Imp.)

Examination, November - 2019

(2014 Admn. Onwards)

GENERAL COURSE IN COMPUTER SCIENCE

3A12CSC : DIGITAL ELECTRONICS

Time : 3 Hours

Max. Marks : 40

**SECTION-A**

1. **One** word answer. (8×0.5=4)
- If a signal passing through a gate is inhibited by sending a LOW into one of the inputs and the output is HIGH, the gate is a(n):
  - What does the direct line on the clock input of a J-K flip-flop mean?
  - What type of register would have a complete binary number shifted in one bit at a time and have all the stored bits shifted out one at a time?
  - A logic circuit that provides a HIGH output if one input or the other input, but not both, is HIGH, is a(n).
  - What is one disadvantage of an *S-R* flip flop?
  - How many flip-flops are required to construct a decade counter?
  - The module-10 johnson counter requires \_\_\_\_\_ number of flip-flops.
  - D flip-flop is a circuit having \_\_\_\_\_ NAND gates.

**SECTION-B**Write short notes on any **Seven** of the following questions (7×2=14)

- Convert 0.1010 into decimal.
- Draw the logic symbol and truth table of NAND gate
- What are the applications of octal number system?
- Define Minterm and Maxterm?

P.T.O.



6. What are the limitations of K-Map?
7. What are the uses of comparators?
8. State any 2 rules of Boolean algebra
9. Draw the truth table of SR flip flops?
10. What are parity checkers?
11. What is shift register?

### SECTION-C

Write short notes on any **Four** of the following questions. **(4×3=12)**

12. Explain decimal to octal conversion with an example.
13. Simplify the Boolean expression  $A'BC + A(BC)' + (ABC)' + A(B)'C + ABC$
14. Define Pair, Quad and Octet
15. Explain BCD to 7-segment decoders.
16. Explain the working of D flip-flop.
17. Write notes on ripple counters

### SECTION-D

Write short notes on any **Two** of the following questions. **(2×5=10)**

18. Explain Demorgan's theorem with the help of an example.
19. Difference between Combinational and Sequential Circuits.
20. Explain up/down synchronous counters.
21. Discuss ring counter with a diagram.