



K18U 1884

Reg. No. :

Name :

III Semester B.Sc. Degree (CBCSS – Reg./Sup./Imp.)
Examination, November 2018
(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)
- a) If a 3-input NOR gate has eight input possibilities, how many of those possibilities will result in a HIGH output ?
 - b) A logic circuit that provides a HIGH output for both inputs HIGH or both inputs LOW is a(n).
 - c) The format used to present the logic output for the various combinations of logic inputs to a gate is called a(n).
 - d) With four J-K flip-flops wired as an asynchronous counter, the first output change of divider #4 indicates a count of how many input clock pulses ?
 - e) How many flip-flops are required to construct a decade counter ?
 - f) A synchronous decade counter requires _____ Number of flip-flops.
 - g) A flip-flop has _____ stable stages.
 - h) The characteristic of J-K flip-flop is similar to _____ flip-flop.

SECTION – B

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

- 2. Convert $8B3F_{16}$ to binary.
- 3. Draw the logic symbol and truth table of NOR gate.
- 4. What is don't care condition ?

P.T.O.



5. Why hexadecimal number system is called as alphanumeric number system ?
6. What is a half adder ?
7. What are flip-flops ?
8. What are parity generators ?
9. What is the application of a counter ?
10. What are sequential logic circuits ?
11. What are shift registers ?

SECTION – C

Write short notes on **any four** of the following questions :

(4×3=12)

12. What is 8421 code ? Mention its application.
13. What is Sum-Of-Products (SOP) form ?
14. What are the advantages and disadvantages of K-Maps ?
15. What are the universal properties of NAND gates ?
16. Explain edge triggered flip-flops with an example.
17. What are serial in – parallel out shift registers ?

SECTION – D

Write short notes on **any two** of the following questions :

(2×5=10)

18. Discuss the operations on basic logic gates.
 19. Differentiate multiplexers and demultiplexers.
 20. Explain Master Slave flip-flop with circuit diagram.
 21. Discuss Johnson's Counter with diagram.
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