K17U 1071

Reg. No.: .....

Name : .....

II Semester B.C.A. Degree (CBCSS – Reg./Supple./Imp.)
Examination, May 2017
Core Course
2B02 BCA : DIGITAL SYSTEMS
(2014 Admn. Onwards)

Time : 3 Hours Max. Marks : 40

SECTION – A

1. **One** word answer. (8×0.5=4)
   a) If the input to a NOT gate is A and the output is X then X = _____
   b) The Boolean expression $A\bar{B}(A+\bar{B})$ can be reduced to _____
   c) The NAND gate output will be low if the two inputs are _____
   d) BCD is _____
   e) The decimal equivalent of hexa number 1A53 is _____
   f) When simplified with Boolean Algebra $(x+y)(x+z)$ simplifies to _____
   g) How many select lines will a 16 to 1 multiplexer will have _____
   h) For JK flip-flop with J = 1, K = 0 the output after clock pulse will be _____

SECTION – B

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

2. Define Boolean Algebra.
3. Which are the basic logic gates ?
4. Define a register.
5. What are decade counters ?
6. Give the truth table of S-R and D-flip-flops.

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7. Define parity generator and parity checker.
8. Which are the different types of ROMs ?
9. What are parallel counters ?
10. Convert $(350)_8$ to hexadecimal and $(ABC)_{16}$ to octal.
11. Explain full adders.

SECTION – C

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

12. Explain Asynchronous counters.
13. What is a universal gate ? Give examples.
14. What is a Shift Register ? Which are the various types of Shift Registers ? List out some applications of Shift Register.
15. What are triggering of flip-flops ? Explain edge triggered flip-flops.
16. What is an encoder ? Explain an 8 × 3 encoder.
17. Explain GRAY code and UNICODE.

SECTION – D

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

18. Using a suitable logic diagram explain the working of a 1-to-16 de multiplexer.
19. Simplify the function using K-map $f(w, x, y, z) = \sum(0, 2, 4, 5, 6, 7, 8, 10, 13, 15)$.
20. What are combinational circuits ? Explain different types of combinational circuits with truth table and logic diagram.
21. What are flip-flops ? Explain any three flip-flops with truth table and logic diagram.

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