K23U 1946

Reg. No. : .....

Name : .....

II Semester B.C.A. Degree (CBCSS – OBE – Regular/Supplementary/ Improvement) Examination, April 2023
(2019 Admission Onwards)
Core Course
2B02BCA : DIGITAL SYSTEMS

Time : 3 Hours Max. Marks : 40

PART – A

(Short Answer)

Answer **all** questions. **(6×1=6)**

1. If A and B are the inputs of a half adder, the sum is given by _____ , while the carry is given by _____
2. _____ is a digital circuit that is capable of storing only a single bit.
3. The primary memory of a personal computer consists of both_____
4. According to Boolean law : A + 1 = _____
5. A De-multiplexer is a combinational circuit that has _____input line and _____ output lines.
6. BCD stands for _____

PART – B

(Short Essay)

Answer **any 6** questions. **(6×2=12)**

7. Convert $(1973)_{10}$ to the hexadecimal number system.
8. What do you mean by ASCII ?
9. Describe AND and OR gate with Graphic Symbol, Truth Table.

P.T.O.

10. Write a short note on decoder.

11. Briefly explain the master slave arrangement of flip flops.

12. State and prove De Morgan's Law.

13. What is a shift register ?

14. What is EPROM ?

PART – C

(Essay)

Answer **any 4** questions. (4×3=12)

15. Compare multiplexers and demultiplexers.

16. Describe the procedure involved in K-Map technique for reducing boolean expression with a suitable example.

17. Prove that ABC + ABC′ + AB′C + A′BC = AB + AC + BC.

18. How will you calculate 1's complement and 2's complement ? Explain with an example.

19. Write a short note on ripple counter.

20. What do you mean by flash memory ?

PART – D

(Long Essay)

Answer **any two** questions. (2×5=10)

21. Write a note on parity generators/checkers.

22. Explain SOP and POS Minimization with examples.

23. Compare and contrast the construction and working of RS and JK flip flops.

24. What are shift registers ? Draw and explain bidirectional shift registers.
