Reg. No ..... Name **22U109**

B C A DEGREE END SEMESTER EXAMINATION : OCTOBER 2022

SEMESTER 1 : MOBILE APPLICATIONS AND CLOUD TECHNOLOGY

COURSE : **19U1CRBCA1 : COMPUTER FUNDAMENTALS AND ORGANISATION**

(For Regular - 2022 Admission and Improvement /Supplementary - 2021 Admission)

Time : Three Hours Max. Marks: 75

PART A

Answer All (1 mark each)

1. State null law.
2. What is a computer program?
3. Write an example for register addressing mode.
4. Define johnson counter.
5. What are the two types of Number Systems?
6. Define Gray code.
7. What is a system software?
8. Write a brief note on latches.
9. What is mean by an instruction?
10. Explain Minterms with an example.

(1 x 10 = 10)

PART B

Answer any 8 (2 marks each)

11. Add 595 + 684 using BCD
12. Add 234 + 4567 using excess-3 code
13. Simplify the expression AB+A(B+C)+B(B+C) = B+AC.
14. Differentiate encoder and decoder.
15. Write an example for register indirect addressing mode.
16. Explain any two computer application in the field of multimedia.
17. Differentiate sequential and combinational circuit.
18. Explain the working of an e-mail system.
19. Prove the equation (x+y)(x+z) = x+yz.
20. What is register relative addressing mode? Write the syntax and example.

(2 x 8 = 16)

PART C

Answer any 5 (5 marks each)

21. Draw 2*4 decoder with truth table and enable inputs.
22. Explain about JK flip flops and its working.
23. Write the steps to subtract a larger number from a smaller number using 2's compliment with example.
24. What is indexed addressing mode? Write the syntax and example.

25. Differentiate LAN,WAN and MAN.

26. Steps to convert SOP to its Standard normal form and convert the expressions given below.
    a) F(A,B,C) = A+AB+C
    b) F(X,Y,Z)= XZ+X'Y+Z

27. Prove De morgans theorm using truth table and logical expression.

(5 x 5 = 25)

PART D

Answer any 2 (12 marks each)

28. Explain about encoders and decoders with example.

29. Explain about different types of adders.

30. Describe the applications of computer in the field of healthcare, industry and engineering.

31. Define K-MAP and don't care condition. Simplify using k-map
    a) F(N,X,Y,Z)=∑(0,1,2,3,4,6,7,11,15)
    b) F(X,Y,Z,W)=∑M(1,3,7,11,15) and dc(X,Y,Z,W)=∑M(0,2,5)
    c) F(a,b,c,d)=∑(2,3,6,7,8,10,11,13,14)

(12 x 2 = 24)