

S.F

Reg. No.

--	--	--	--	--	--	--	--	--	--



BCACACN 101

First Semester B.C.A. Degree Examination, April/May 2022
(NEP – 2020)
(2021-2022 Batch Onwards)
FUNDAMENTALS OF COMPUTERS
(DSCC)

Time : 2 Hours

Max. Marks : 60

Note : Answer **any six** questions from Part – A and **one full** question from **each** Unit in Part – B.

PART – A

1. a) What is Microcomputer ? (6×2=12)
- b) Differentiate RAM and ROM.
- c) List any 4 symbols used in flow charts along with their purpose.
- d) Define compiler.
- e) Convert the following Decimal numbers to Binary numbers :
 - i) 123
 - ii) 94.
- f) Find 1's and 2's complement of $10010.101_{(2)}$.
- g) Write the Truth Table and Logic symbol of the AND gate.
- h) Prove $x + x'y = x + y$.

PART – B

UNIT – I

2. a) Explain any 4 characteristics of computers.
- b) Draw the block diagram of a computer system and explain its components.
- c) List any 2 applications of computers in different fields. (4+6+2)
3. a) Explain briefly the characteristics of second generation computers.
- b) Differentiate CRT and LCD monitors.
- c) Write note on Digital camera. (5+4+3)

P.T.O.



UNIT – II

4. a) Write an algorithm to display maximum of three numbers.
b) What is system utility ? Explain any two functions of system utility.
c) Write a note on Word Processor. **(4+5+3)**
5. a) Briefly explain different phases of the program development cycle.
b) Explain the advantages and limitations of Assembly language.
c) Write a note on Pseudo code. **(5+4+3)**

UNIT – III

6. a) State and prove DeMorgan's theorems for two variables.
b) Perform $4945_{(10)} - 7046_{(10)}$ using 9's and 10's complement method. **(6+6)**
7. a) Perform $(11001)_2 - (10110)_2$ using 1's and 2's complement method.
b) Perform following conversion $(BAD.6)_{16} = ()_{10} = ()_2$.
c) Write a Venn diagram for $x(y + z) = xy + xz$. **(4+4+4)**

UNIT – IV

8. a) Implement the Boolean function $F = x'y'z + yz'$ with basic gates and write truth table.
b) Simplify the Boolean function $F(A,B,C) = \Sigma (0,1,2, 4, 5, 6) + d \Sigma (3,7)$ using K-map. **(6+6)**
9. a) Simplify the Boolean function $F(A, B, C, D) = \Sigma (0,1, 2, 3, 5, 7, 8, 10, 13, 15)$ using K-map and draw logic diagram for minimized expression.
b) Express the Boolean function $F(A, B, C) = A' B + AC$ as a sum of minterms and product of maxterms. **(6+6)**