PRESIDENCY COLLEGE
(AUTONOMOUS)
AFFILIATED TO BENGALURU CITY UNIVERSITY, APPROVED BY AICTE, DELHI & RECOGNISED BY THE GOVT. OF KARNATAKA
RE-ACCREDITED BY NAAC WITH 'A+' GRADE
GAIN MORE KNOWLEDGE REACH GREATER HEIGHTS

Department of Computer Applications

II Semester BCA

Computer Architecture Assignment

Submission Date- 20/4/2022

Note: Answer all the Questions
Write neatly and draw the diagrams using pencil and scale.
Answers should be written in bluebook.

10X5=50

1. Convert the following into given Number Systems:
   a) $(1010.011)_2$ to decimal
   b) $(4632)_8$ to Binary
   c) $(327)_{16}$ to Octal
   d) $(512.625)_{10}$ to Hexadecimal
   e) $(101101011)_2$ to Octal
2. What is Logic Gate? Explain any four Logic gates in detail.
3. Simplify the following Boolean Expressions using K-map:
   1. Y(A,B,C)= A'B'C' + A'BC' +AB'C' +ABC'
   2. F(W,X,Y,Z)=$\sum$m(4,5,7,13)+d(6,15)
4. What is Half Adder? Explain with a neat diagram.
5. What is Toggling? Explain JK Flip Flop with neat diagram, Characteristic table
6. Draw RS Flip Flop with neat diagram, Characteristic table.
7. What is Multiplexer? Explain with diagram 4X1 multiplexer.
8. Write the steps for 1's complement Subtraction. Demonstrate with the example.
9. What is Counter? With a neat diagram explain 4 bit synchronous binary counter.
10. What is decoder? Explain 3X8 decoder with neat diagram.

Rubrics for Assessment

Evaluation Component	Excellent (5)	Very Good (4)	Good (3)	Average (2)
Concept	Logic Explanation Logical Expression	Logic Explanation	Logic Logical expression	Logic
Problem solving skills	Method Steps Mapping	Method and Mapping	Method and Steps	Steps
Diagram and labelling	Use of pencil and scale	Use of pen and scale	Free hand drawing	Sample graphical representation
Solution	Accurate Solution-100%	Approximate Solution-90%	Approximate Solution -80%	Approximate Solution-50-60%
Applications	Five Applications	Four Applications	Three Applications	Two Applications