School of Biomedical Science

B.Tech Biotechnology
Semester End Examination - Jul 2024

Duration : 180 Minutes
Max Marks : 100

Sem II - G2UC101B - BEE01T1005 Introduction to Digital System - 1

General Instructions
Answer to the specific question asked
Draw neat, labelled diagrams wherever necessary
Approved data hand books are allowed subject to verification by the Invigilator

1)	Differentiate Signed Binary number and Unsigned Binary number.	K1(2)
2)	Explain Binary Full adder circuit.	K2(4)
3)	Construt 3 to 8 line decoder with necessary diagram.	K2(6)
4)	Design a Gray-to-Binary code converter.	K3(9)
5)	Discuss a combinational circuits to convert binary coded decimal number into an excess-3 code	K3(9)
6)	Design a T flip-flop using JK flip-flop.	K5(10)
7)	Design a combinational circuit that converts a 4-bit binary number number to 4-bit gray code.	K4(12)
8)	Minimize the following boolean function-F(A, B, C, D) = $\Sigma m(1,3,5,7,8,9,12,13) + \Sigma d(14,15)$. Write the procedure to expand an SOP expression into stanadard SOP form.	K5(15)
9)	Minimize the following boolean function-F(A, B, C, D) = $\Sigma m(1, 2,3,5,7,8,9) + \Sigma d(12,14)$. Write the procedure to expand an POS expression into stanadard POS form.	K5(15)
10)	Obtain the minimal SOP expression for $\Sigma m(2,3,5,7,9,11,12,13,14,15)$ and implement it in NAND logic.	K6(18)