

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -3 EXAMINATION- 2025

B.Tech-I Semester (BT/BI)

COURSE CODE (CREDITS): 25B11EC112 (4)

MAX. MARKS: 35

COURSE NAME: : BASIC ELECTRONICS FOR LIFE SCIENCES

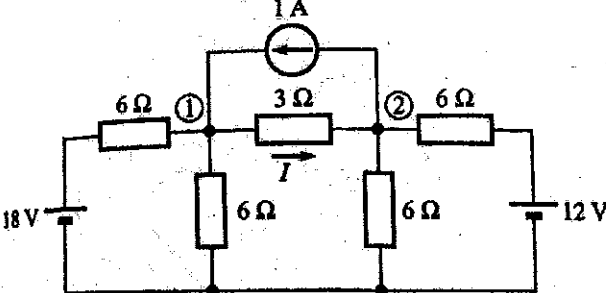
COURSE INSTRUCTORS: Er. Munish Sood

MAX. TIME: 2 Hours

Note: (a) All questions are compulsory.

(b) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems

(c) Scientific calculators are allowed.

Q.No	Question	CO	Marks
Q1	a) Perform 2's complement subtraction of the signed binary numbers: $10001000 - 11100010$ b) Convert $B2F8_{16} = ()_{10}$ c) Convert $7526_8 = ()_2$ d) Add the following BCD numbers: $1001+1001$ e) Convert the following Binary number to Gray Code: $1110 = ?$	4	5
Q2	a) Covert the decimal number $32480_{10} = 11111011100000_2$ to a single-precision floating-point binary number. b) Perform the following binary operations: $10111 + 01101$ and $1001 - 0111$	4	3+2=5
Q3	a) Apply DeMorgan's Theorm $(A + B)\overline{CD} + E + \overline{F}$ b) Simplify the following Boolean expression $\overline{AB} + \overline{AC} + \overline{A}BC$	4	5
Q4	Simplify the following Boolean expression using Karnaugh map: $\overline{B}\overline{C} + \overline{A}\overline{B} + \overline{A}B\overline{C} + \overline{A}\overline{B}\overline{C}\overline{D} + \overline{A}\overline{B}\overline{C}D + \overline{A}\overline{B}CD$	4	5
Q5	Find the current I in the circuit using nodal voltage analysis. 	1	5

Q6	Implement AND and NOT logic gates using diodes.	3	5
Q7	What is a transducer? Explain working of a semiconductor strain gauge and what are its advantages?	2	2+3=5

JUIT TEST-3 EXAMINATION- Dec-2025