



WEST BENGAL STATE UNIVERSITY
B.Sc. Honours/Programme 2nd Semester Examination, 2021

ELSHGEC02T/ELSGCOR02T-ELECTRONICS (GE2/DSC2)

Time Allotted: 2 Hours

Full Marks: 40

*The figures in the margin indicate full marks.
Candidates should answer in their own words and adhere to the word limit as practicable.*

GROUP-A

1. Answer any **five** questions from the following: 2×5 = 10
- (a) Define CMRR of an OP-AMP.
 - (b) Define input offset voltage and current of an OP-AMP.
 - (c) Convert the fractional decimal number 6.75 to binary.
 - (d) Convert binary 11111110010 to hexadecimal.
 - (e) State De-Morgan's theorem.
 - (f) Differentiate D and T Flip Flop.
 - (g) Classify flip-flop as synchronous or asynchronous.
 - (h) Differentiate between asynchronous sequential circuits and synchronous sequential circuits.

GROUP-B

- Answer any six questions from the following** 5×6 = 30
2. Draw the circuit diagram of Integrator using OPAMP and calculate its transfer gain. 5
3. State four characteristics of an ideal OPAMP. What is the significance of unity gain buffer? 2+3
4. Explain full adder with proper logic circuit diagram. 5
5. Implement the following Boolean function using NAND gate only: 5
- $$Y(A, B, C) = \sum m(0, 1, 3, 5)$$

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| 6. | Draw a logic diagram of RS Flip-Flop with NAND gate. | 5 |
| 7. | Design and explain MOD 10 counter. | 5 |
| 8. | Perform the subtraction using 2's complement method: 01000 – 01001. | 5 |
| 9. | Write a short note on Weighted-Resistor D/A Converter. | 5 |

N.B. : *Students have to complete submission of their Answer Scripts through E-mail / Whatsapp to their own respective colleges on the same day / date of examination within 1 hour after end of exam. University / College authorities will not be held responsible for wrong submission (at in proper address). Students are strongly advised not to submit multiple copies of the same answer script.*

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