

4241

BOARD DIPLOMA EXAMINATION, (C-14)  
MARCH/APRIL—2021  
DECE - THIRD SEMESTER EXAMINATION  
DIGITAL ELECTRONICS

Time : 3 hours ]

[ Total Marks : 80

**PART—A**

4×5=20

- Instructions :** (1) Answer *any five* questions.  
(2) Each question carries **four** marks.  
(3) Answers should be brief and straight to the point and shall not exceed five simple sentences.

1. Convert the binary number 11001 into decimal.
2. Perform the following binary additions :  
(a) 10011+10100  
(b) 11100+01011
3. Draw the symbol of EX-OR gate along with its truth table.
4. Define propagation delay and noise margin of a digital IC.
5. Draw the logic diagram of full adder.
6. Compare serial adder with parallel adder.
7. State the need for clear input.

8. Draw the symbols of D and T flip-flops.
9. List the four types of registers.
10. Define modulus of a counter.

### **PART—B**

15×4=60

**Instructions :** (1) Answer *any* **four** questions.

(2) Each question carries **fifteen** marks.

(3) Answers should be comprehensive and criterion for valuation is the content but not the length of the answer.

11. Explain the NAND and NOR gates with truth table.
12. Explain the use of weighted and un-weighted codes.
13. Explain the working of open collector TTL NAND gate with circuit diagram.
14. Explain the working of parallel adder circuit.
15. Explain the working of decimal to BCD encoder circuit.
16. Explain the JK flip-flop circuit.
17. Explain the working of 4-bit shift right register.
18. Explain the working of 4-bit asynchronous decade counter.

★ ★ ★