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C09-EC–305

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BOARD DIPLOMA EXAMINATION, (C-09)

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. Define propagation delay and noise margin of a digital IC.

4. List the applications of Multiplexers.

5. Draw the logic diagram of full adder.

6. Define modulus of a counter.

7. State the need for clear input.

8. List the four types of registers.

9. State the need for A/D converter.

10. Distinguish between ROM and RAM.

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 working of open collector TTL NAND gate with circuit diagram.

13. Explain the working of parallel adder circuit.

14. Explain the working of decimal to BCD encoder circuit.

15. Explain the working of 4-bit shift right register.

16. Explain the working of 4-bit asynchronous decade counter.

17. Explain the basic principle of working of diode ROM.

18. Explain A/D conversion using successive approximation method.

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