THIRD SEMESTER (CBCSS—UG) DEGREE EXAMINATION NOVEMBER 2020

Electronics

ELE 3C 05—DIGITAL ELECTRONICS

Time : Two Hours

Maximum : 60 Marks

Section A

Answer at least **eight** *questions.*
Each question carries 3 marks.
All questions can be attended.
Overall Ceiling 24.

1. What do you mean by a bit and byte ?

2. How are negative numbers represented ?

3. What are the universal gates ? Why are they called so ?

4. What is a minterm ?

5. What is a half-adder ?

6. Why is a multiplexer called a data selector ?

7. What are the two types of flip-flops ?

8. What is the other name of asynchronous counter ? Why is that name ?

9. What are shift registers ?

10. What is a PROM ? Is it volatile ?

11. Explain the programming of ROM.

12. What are the two major disadvantages of EEPROM ?

(8 × 3 = 24 marks)

Turn over

Section B

Answer at least **five** *questions.*
Each question carries 5 marks.
All questions can be attended.
Overall Ceiling 25.

13. Discuss octal number system.

14. Prove that $AB + \bar{A}C + BC = AB + \bar{A}C$.

15. Realize a full subtractor.

16. Realize the logic expression using NAND gates only : $F_1 = \sum m\,(1, 3, 5, 8, 11, 12, 14, 15)$.

17. With neat diagrams, explain the working of a serial in, serial out shift register.

18. With neat diagrams, explain the operation of positive edge triggered JK flip-flop.

19. Explain in detail the different types of RAMs.

$(5 \times 5 = 25 \text{ marks})$

Section C

Answer any **one** *question.*
The question carries 11 marks.

20. State and prove Boolean Algebra Laws.

21. Explain in detail a 4 bit asynchronous up counter.

$(1 \times 11 = 11 \text{ marks})$