

18. Explain in detail on Encoders and Decoders.
  19. Draw the circuit diagram for JK Flip Flop and explain it.
  20. With neat diagram explain Counter type A/D converter.
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**S.No. 3367**

**16 SCCEL 3**

(For candidates admitted from 2016–2021 Batch)

**B.Sc. DEGREE EXAMINATION, NOVEMBER 2023.**

**Part III — Electronics — Major**

**DIGITAL ELECTRONICS**

**Time : Three hours**

**Maximum : 75 marks**

**SECTION A — (10 × 2 = 20)**

**Answer ALL the questions.**

1. Mention the types of error detecting codes.
2. Convert (1101011.11) binary into decimal number.
3. Mention any three laws in Boolean algebra.
4. Construct AND gate using NOR gate.
5. Write the truth table for Full adder.
6. Draw the circuit diagram for  $1 \times 4$  demultiplexer.
7. Define Ripple counter.
8. What is meant by race around condition in JK flip-flop?

9. What is meant by Resistive divider network?

10. Mention the applications of A/D converter.

SECTION B — ( $5 \times 5 = 25$ )

Answer ALL questions, choosing either (a) or (b).

11. (a) Write short notes on weighted and non-weighted codes.

Or

(b) Find 2s complement of following numbers :

(i) 11110011

(ii) 11110001

(iii) 1101011

12. (a) Mention the laws of Boolean algebra and explain it.

Or

(b) Discuss in brief on three variable K-map.

13. (a) Draw the circuit for parity generator / checker and explain it

Or

(b) Illustrate in brief on binary to gray code and gray to binary converter.

14. (a) Draw logic diagram and truth table for SR Flip Flop and explain it.

Or

(b) Illustrate in brief on UP – Down Counter.

15. (a) With neat diagram explain binary ladder network.

Or

(b) Explain Dual slope type A/D converter with an example.

SECTION C — ( $3 \times 10 = 30$ )

Answer any THREE questions.

16. Discuss in detail on number system.

17. Simplify the following expression using Boolean algebra

(a)  $AB(BC + AC)$

(b)  $(A + B)(A + C)$