

**1903000203020092**  
**EXAMINATION DECEMBER 2024**  
**BACHELOR OF SCIENCE ( NON-NEP ) (THIRD SEMESTER)**  
**ELECTRONICS PAPER - IV**  
**ADVANCE DIGITAL ELECTRONICS & CIRCUIT DESIGN**

[Time: As Per Schedule]

[Max. Marks: 50 ]

**Instructions:**

1. Fill up strictly the following details on your answer book
  - a. Name of the Examination: **BACHELOR OF SCIENCE (ELECTRONICS) (THIRD SEMESTER)**
  - b. Name of the Subject: **ELECTRONICS PAPER – IV ADVANCE DIGITAL ELECTRONICS & CIRCUIT DESIGN**
  - c. Subject Code No: **1903000203020092**
2. Sketch neat and labelled diagram wherever necessary.
3. Figures to the right indicate full marks of the question.
4. All questions are compulsory.

Seat No:

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Student's Signature

**Q.1 Answer in short: 08**

- (a) What are don't care conditions?
- (b) What is ROM?
- (c) Define DeMorgan's Theorem.
- (d) What is an encoder?

**Q.2 (a) What do you understand by level, positive edge and negative edge triggering of flip-flop? 08**

(b) Draw the logic symbol of a clocked R-S flip-flop with the truth table. **06**

**OR**

(a) Explain the operation of Universal shift register. **08**

(b) Write the application of shift register. **06**

**Q.3 (a) Draw the Mod-12 counter and explain its working with help of clock diagram. 08**

(b) What is the difference between synchronous and asynchronous counter. **06**

**OR**

(a) Draw the K-map and write the resulting minimum SOP expression. **08**

$$f(A, B, C, D) = \sum m(0,2,3,5,6,7,8,9) + d(10,11,12,13,14,15)$$

(b) Explain: DRAM

**06**

**Q.4 Write short note on (Any TWO)**

**14**

(a) Classification of memory.

(b) JK master slave flip flop

(c) Semiconductor memories

(d) T-Flip-flop

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