



RAN - 2103000205021005

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B.Sc. (Sem.-V) Examination November - 2023

Physics - PH - 510 - X

Analog and Digital Electronics

[Total Marks: 50

सूचना : / Instructions

(१)

नीचे दशविवेक निशानीवाणी विगतो उत्तरवली पर अवश्य लपववी.
Fill up strictly the details of signs on your answer book

Name of the Examination:

T.Y.B.Sc. (Sem.-V)

Name of the Subject :

Physics - PH - 510 - X Analog and Digital Electronics

Subject Code No.: 2103000205021005

Seat No.:

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Student's Signature

I. Write short answer.

10

1. What symbol is used inside new IEEE rectangular box define an NOR gate?
2. Types of MOSFET.
3. Define encoder and decoder.
4. Define CMRR and slew rate.
5. Define Thyristor and UJT
6. Full Form of CMOS
7. Write application of K-map.
8. Define Parity checker.
9. Define SCR
10. What is an Integrator?

II. A) Write any One of the following questions.

1. For DC analysis draw a differential amplifier with differential input and single ended output. Tell me how you would calculate the tail current, emitter current and the collector voltage. **6**
2. Write short note on AC analysis of differential amplifier. **6**

- B) **Write any one of the following questions.**
1. Write short note on 4 to 1 multiplexer 4
 2. Write short note on 1 to 4 De-multiplexer 4
- III. A) Write any One of the following questions.**
1. Explain in detail digital comparator for Single n- bit. 6
 2. Write short note on current mirror circuit. 6
- B) **Write any One of the following questions.**
1. Explain pair of 1's, Quad of 1's and Octate of 1's in k-map. 4
 2. Write short note on 4 variable K-map. 4
- IV. A) Write any One of the following questions.**
1. Explain Boolean Laws. 6
 2. Using Truth table prove the De-Morgan's First and second Theorem. 6
- B) **Write any One of the following questions.**
1. Explain NOR Gate Using diode. 4
 2. Explain NOT gate Using Transistor 4
- V. A) Write any One of the following questions.**
1. Write short note on Encoder in Digital system. 6
 2. Explain in detail Parity generators and checkers. 6
- B) **Write any One of the following questions.**
1. Explain binary number system 4
 2. Convert Decimal 23.6 to binary number system 4
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