TED (15/19) - 2211
(REVISION-2015/19)

N21-02858

Reg.No……
Signature…….

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANGEMENT/ COMMERCIAL PRACTICE - NOVEMBER 2021

BASIC INSTRUMENTATION ENGINEERING

(Maximum Marks:75) (Time: 2¼ hours)

PART - A

Marks

I. Answer ***any three*** questions in one or two sentences. Each question carries 2 marks.

1. Name the units of Power, Frequency, Charge and Current.
2. What is doping?
3. What is permeability?
4. Define Faraday's Law of Electromagnetic induction.
5. What is Peak Inverse Voltage? (3 x 2 = 6)

PART - B

II Answer ***any four*** of the following questions. Each question carries 6 marks.

1. Describe Open loop and Closed loop systems.
2. Differentiate passive and active components.
3. Illustrate the working of Half Wave Rectifier.
4. Draw the structures of N-channel and P-channel JFET.
5. Define α, β and γ gain factors.
6. State the following theorem
   (i) Maximum power transfer theorem (ii) Reciprocity Theorem
7. Explain Gross error, Systematic error and Random error. (4 x 6 = 24)

PART – C

(Answer ***any of the three units*** from the following. Each full question carries 15 marks.)

UNIT - I

III (a) Describe the generalized instrumentation system. (8)

(b) Illustrate the dynamic characteristics of instruments. (7)

OR

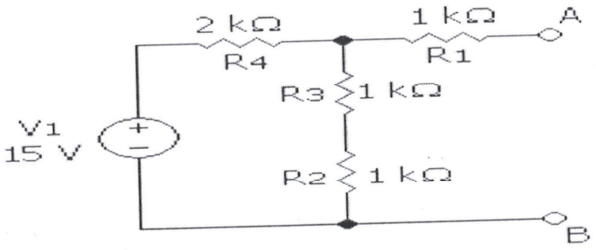
IV (a) Explain static characteristics of instruments. . (9)

(b) Describe Indicating and Recording instruments. (6)

UNIT – II

V (a) State Norton's Theorem and Write the procedure for finding the Norton's Equivalent circuit . (8)

(b) Determine V_{TH} and R_{TH} (7)



OR

VI (a) Compare magnetic and Electric Circuit. (8)

(b) State Superposition theorem. Describe the steps to apply superposition theorem. (7)

UNIT – III

VII (a) Describe forward characteristics of P-N junction diode. (8)

(b) Describe extrinsic semiconductor. (7)

OR

VIII (a) Illustrate Common Base configuration (8)

(b) Explain the working of NPN transistor. (7)

UNIT – IV

IX (a) Describe the working of Zener diode voltage regulator. (7)

(b) Explain the basic structure of MOSFET. (8)

OR

X (a) Illustrate the operation of bridge rectifier (7)

(b) Describe the characteristics of FET (8)

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