



84-03

ANJUMAN-I-ISLAM'S
KALSEKAR TECHNICAL CAMPUS, NEW PANVEL
School of Engineering & Technology

Subject: DIGITAL ELECTRONICS

Date: Sep 13

Marks: 20

Duration: 1 Hr/s

Class: SECOND YEAR (Sem III) Unit Test I

Branch: EXTC (2013-14)

Instructions: --

Q.1 Attempt any FOUR out of SIX.

12 Marks

1. Convert the following binary numbers to their decimal equivalent.

- a) 10010111 b) 10111.0110 c) 101111.11

2. Convert the following decimal numbers to their binary equivalents.

- a) (83) b) 79.515 c) 109.125

3) Represent the following decimal numbers in 1's complement representation using 8-bits.

- a) (-67) b) 102 c) (-88)

4) Represent NOT and OR gate using NOR gate.

5) Performs the following operations by using 1's complement method.

- a) 42 - 22 b) 20 - 42

6) Simplify the following Boolean equations

- a) $Y(A, B, C) = ABC + \overline{A}B + A\overline{B}C$
b) $Y(A, B, C, D) = \overline{A}\overline{B}C\overline{D} + \overline{A}B\overline{C}D$

Q.2 Attempt any one of the following.

8 Marks

1. Given the Boolean function is

$$Y(A, B, C, D, E) = \sum m(0, 1, 5, 6, 9, 13, 14, 17, 21, 22, 25, 29)$$

2. Simplify the following Boolean function using Quine - McCluskey method.

$$Y(A, B, C, D) = \sum m(1, 3, 5, 10, 11, 12, 13, 14, 15)$$



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Subject: Analogue Electronics-1

Date: Sep 9, 13

Marks: 20

Duration: 1 Hr/s

Class: SE (Sem III)

Branch: EXTC (2013-14)

Instructions:

Unit Test - I

Q.1 Solve any four

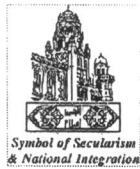
(4x3=12Marks)

1. What is clipper? Give its types. Explain diode shunt clipper.
2. What is clamper? Explain working of diode series clamper with neat circuit diagram.
3. What is D-MOSFET? Give its construction and working.
4. Draw the small signal model of a diode.
5. Explain the effect of temperature on diode characteristics.
6. Explain construction & operation of varactor diode.

Q.2 Solve any two.

(2x4=8Marks)

1. Write the PN Junction diode current equation & explain the terms.
2. Explain the construction & working of JFET with its characteristics.
3. Explain MOS capacitor in E- MOSFET.



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Subject: CTL.

Unit Test I

Date: Sept. 13

Marks: 20

Duration: 1 Hr

Class: SE EXTC (Sem III)

Branch: EXTC (2013-14)

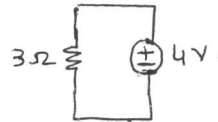
Instructions: ALL QUESTIONS ARE COMPULSARY.

Q1)

1.1) SOURCE TRANSFORMATION.

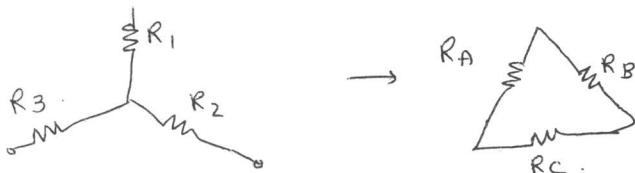
--- 2 MKS.

- a) 6 A, 3Ω
- b) $4/3$ A, 3Ω
- c) 12 A, 3Ω
- d) NONE.



1.2) * TO Δ CONVERSION.

--- 2 MKS.

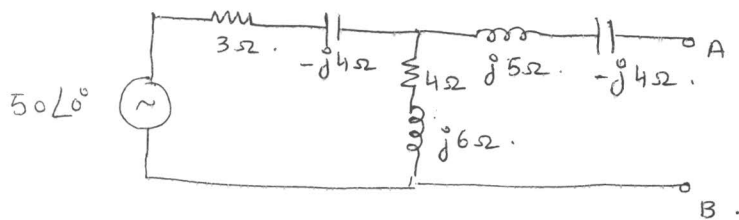


- $R_A = ?$
- $R_B = ?$
- $R_C = ?$

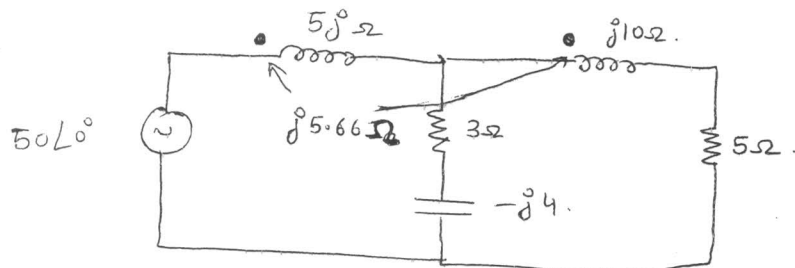
Q2)

OBTAIN THEVENIN'S EQUIVALENT ACROSS A & B.

--- 8 MKS.



Q3)



--- 8 MKS.

FIND VOLTAGE ACROSS 5Ω RESISTOR USING MESH ANALYSIS.



ANJUMAN-I-ISLAM'S
KALSEKAR TECHNICAL CAMPUS, NEW PANVEL
School of Engineering & Technology
UNIT TEST-I

Subject: Electronic instruments & measurement

Marks: 20

Class: S.E (sem III)

Date: /09/2013

Duration: 01 Hrs

Branch: EXTC (2013-14)

Instructions: Assume suitable data if required.

Question no.01 is compulsory.

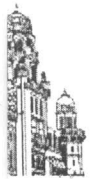
Q.1 Solve the following questions-----(4x3 = 12 Marks)

- a. Define systematic error & gross error, how it can be minimized.
- b. State the characteristics of instruments and explain the concept of accuracy & precision.
- c. Explain piezoelectric transducer.
- d. Draw & explain RTD.

Q.2 Attempt any two -----(2x4 = 08 Marks)

- a. Sketch the Multi channel DAS & explain it.
- b. Explain L.V.D.T for pressure measurement.
- c. Draw & explain Eddy current sensor.

4



ANJUMAN ISLAMIS

KTC KALSEKAR TECHNICAL CAMPUS

OVATIVE TEACHING EXUBERANT LEARNING

Unit Test I

Date – /9/2013

Branch –EXTC /ELECT

Sem-III

Sub- Applied Maths III

Q. 1 Attempt any 2 questions out of 3. (8)

A) If $F(z)$ and $\overline{F(z)}$ are both Analytic functions, prove that $F(z)$ is a Constant function .

B) Find Laplace Transform of $F(t)$.

$$F(t) = \int_0^t e^{-t} t \sin 2t dt$$

C) Evaluate the Integral using Laplace Transforms.

$$\int_0^{\infty} e^{-4t} \left\{ \frac{\cos 2t - \cos 3t}{t} \right\} dt$$

Q.2 Attempt any 2 questions out of 3. (12)

A) Find Bilinear Transformation which maps the points 1, i, -1 of Z plane to points 0, 1, ∞ of W plane. Also prove that under this transformation the unit circle in W plane is mapped onto Y axis in Z plane.

B) Find the Analytic function $F(z) = u + iv$ if

$$u + v = \frac{2 \sin 2x}{e^{2y} + e^{-2y} - 2 \cos 2x}$$

C) Find Inverse Laplace Transform using partial fractions.

$$\frac{5s^2 + 8s - 1}{(s + 3)(s^2 + 1)}$$