



UNIT TEST-II

(2013-14)

Subject: E.M.I

Class: S.E.EXTC (SEM-III)

Marks:20

Time:01Hr

Date: /10/2013

Test-II

Q.1 Attempt following(6X2=12)

- What is the role of time base generator in CRO.
- State different modes of operation of DSO.
- Explain operating principle of Q-Meter.
- Define total harmonic distortion factor.
- What are the applications of spectrum analyzer.
- Explain one application of Lissajous pattern.

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

- Draw & explain Wheatstone bridge for unknown resistance measurement.
- Explain the block diagram of CRO.
- Describe fundamental suppression Harmonic distortion analyzer (THD).



(2013-14)

ANJUMAN-I-ISLAM'S
KALSEKAR TECHNICAL CAMPUS, NEW PANVEL

School of Engineering & Technology

Subject: Analoge electronics-1

Date: 04.12

Marks: 20

Duration: 1 Hr/s

Class: SE (TII)

Branch: EXTC

Instructions:

Test - II

Q.1 Solve any four.

(4x3M=12Marks)

1. What is the need of biasing of a transistor?
2. What is meant by Q-point?
3. What is thermal runaway? How it can be avoided?
4. Define stability factor. What is its significance?
5. Draw hybrid Π -model (High frequency model) for a BJT.
6. State Miller's theorem.

Q.2 Any two.

(4x2=8Marks)

1. Explain graphical determination of h-parameters.
 2. Design a fixed bias circuit using silicon transistor having $h_{fe} = 100$, $V_{cc} = 12V$ and dc bias conditions are $V_{CE} = 6V$, $I_c = 3mA$, $V_{BE} = 0.7V$.
 3. Find the voltage gain (A_v) by using exact analysis of CE amplifier.
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(2013-14)

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

Subject: DIGITAL ELECTRONICS

Date: Oct 13

Marks: 20

Duration: 1 Hr/s

Class: SECOND YEAR (II) Test - II

Branch: EXTC

Instructions: --

Q.1 Attempt any FOUR out of FIVE.

12 Marks

1. Convert J-K flip-flop to J-K flip-flop.
2. Implement Full Adder using 3:8 Decoder circuit.
- 3) Implement the following Boolean function using Multiplexer.
$$F(A, B, C, D) = \sum m(0, 2, 3, 5, 7, 9, 12, 13, 15)$$
- 4) Draw the circuit diagram of J-K flip-flop using NAND Gate.
- 5) What is Glitch and Explain with suitable example?

Q.2 Attempt any one of the following.

8 Marks

1. Design mod-5 synchronous counter using J-K flip-flop.
2. Design a sequence detector circuit to detect 1101 non-overlapping sequence.

Applied Mathematics III

(2013-14)

Q. 1 Solve any two problems.

(08)

i) Find the Fourier series for $f(x) = 1 - x^2$ in $[-1, 1]$

ii) Find Half range sine series for $f(x) = x^2$ in $[0, \pi]$

iii) Find the angle between two surfaces $x^2 + y^2 + a z^2 = 6$ and $z = 4 - y^2 + b x y$ at point $(1, 1, -2)$.

iv) If $\vec{F} = (x + 2y + az) \mathbf{i} + (bx - 3y - z) \mathbf{j} + (4x + cy + 2z) \mathbf{k}$

Prove that F is solenoidal and find a, b, c if F is Irrotational.

Q. 2 Solve any two problems.

(12)

i) Find the directional derivative of $\phi = xyz$ at point $(2, 1, -1)$ in the direction of normal to the surface $x^2 y + y^2 x + z^2 y = 3$ at $(1, 1, 1)$

ii) Find the Fourier Series for $f(x) = \frac{1}{4} (\pi - x)^2$ in $[0, \pi]$

iii) Find the Fourier Series for $f(x) = 2x - x^2$ in $[0, 3]$
