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

Subject: Principles of control system Date: 07-09-2013 Unit Test I.
Marks: 20 Marks Duration: 1 Hr.
Class: V sem. Branch: EXTC.

I. Attempt any four of the following.(3x4=12 Marks)

Q1. What are the advantages of closed loop control system over open loop control system.

Q2. Define and explain the terms; i) Characteristics equation ii) poles

Q3. What are the advantages of signal flow graph.

Q4. Obtain the transfer function of RC network.

Q5. Exlain Impulse response.

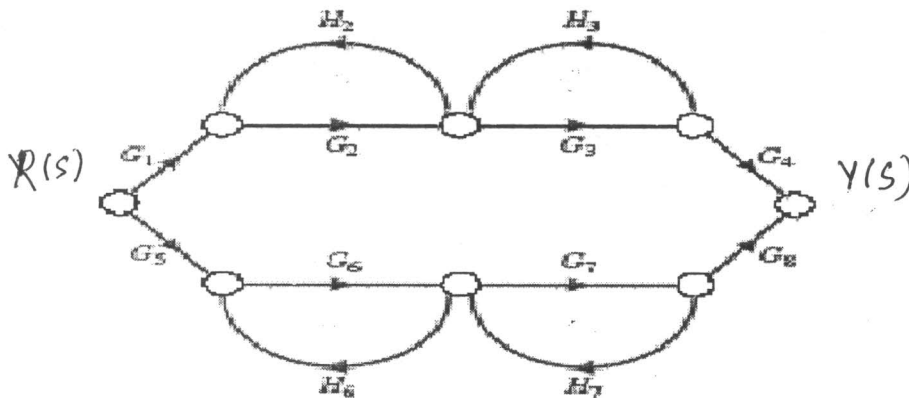Q6. Construct the signal flow graph for following equations.

$X_2 = G_{12}X_1 + G_{32}X_3$, $X_3 = G_{13}X_1 + G_{23}X_2 + G_{33}X_3$ and $X_4 = G_{24}X_2 + G_{34}X_3$

II. Attempt any two of the following.(4x2=8 Marks)

Q1. Obtain the transfer function Y(s)/R(s) by using block diagram reduction technique.
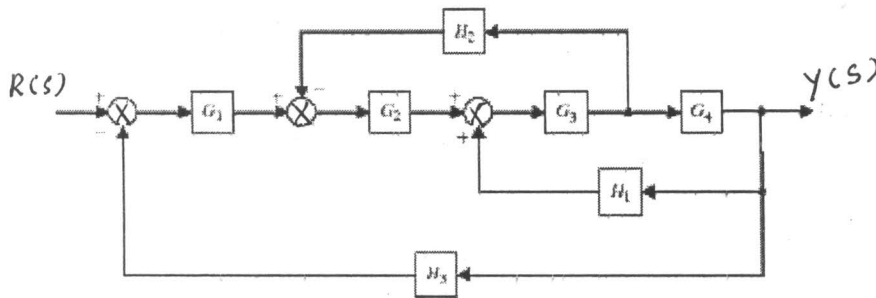
Q2. Obtain the transfer function Y(S)/R(S) by using Mason's gain formula.

Q3. Give different rules for block diagram reduction.

2013-14
(Sem V)

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Subject: MM-I	Date: Sept. 2013
Marks: 30	Duration: 1 Hr/s
Class: T.E Unit Test I	Branch: EXTC

Instructions:

Attempt any THREE of the following questions.

Q.1 With the help of neat diagram explains the architecture of 8085 Micrprocessor.
(10 marks)

Q.2 Explain interrupt structure of 8085 Microprocessor with neat diagram.
(10 Marks)

Q.3 Design a 8085 Microprocessor based system with the following specifications:
EPROM of 8KB using 4KB chips, RAM of 8KB using 4KB chips.   (10Marks)

Q. 4   a) Explain I/O Mapped I/O and Memory Mapped I/O?   (5 Marks)
             b) Explain T-states, Machine cycle and Instruction cycle.   (5 Marks)

Q. 5 Write a program to arrange a set of given number in ascending order.
(10 Marks)

Subject: RFCD	Date: Sept. 2013
Marks: 30	Duration: 1 Hr/s
Class: T.E Unit Test I	Branch: _EXTC

Instructions: Q1 is Compulsory, Attempt any two out of 3 remaining questions

Q1 a) Derive the Expression for Current and Voltage travelling Wave.-   5

   b) A Lossless Co-oxial cable has wavelength of electric and magnetic field of λ-20cm of 960 MHZ. Find the Releative dielectric of insulation.-   5

Q2. a) A Coaxial Cable of Characteristic impedance Zo=75 ohms is terminated with a load impedance of Z1=60+j30 ohms .Find input Impedance of Line at f=1GHz and d=50cm - 5

b) Explain Chip Resistor and Inductor with Neat Diagram   5

Q3. Explain what is Skin depth? Calculate the skin depth for copper at 1.2GHz?
Also find the resistance of an 8 cm.Wire with diameter of 1.5mm? σcu = 64.516e6(s/m)   10

Q4. Plot the following Impedance points on the smith chart? Zo = 50ohms   10
23 +j 42 ohms, 12 -j 109ohms,72 +j 42.ohms and115-j 22ohms . Calculate their equivalent admittance using smith chart?
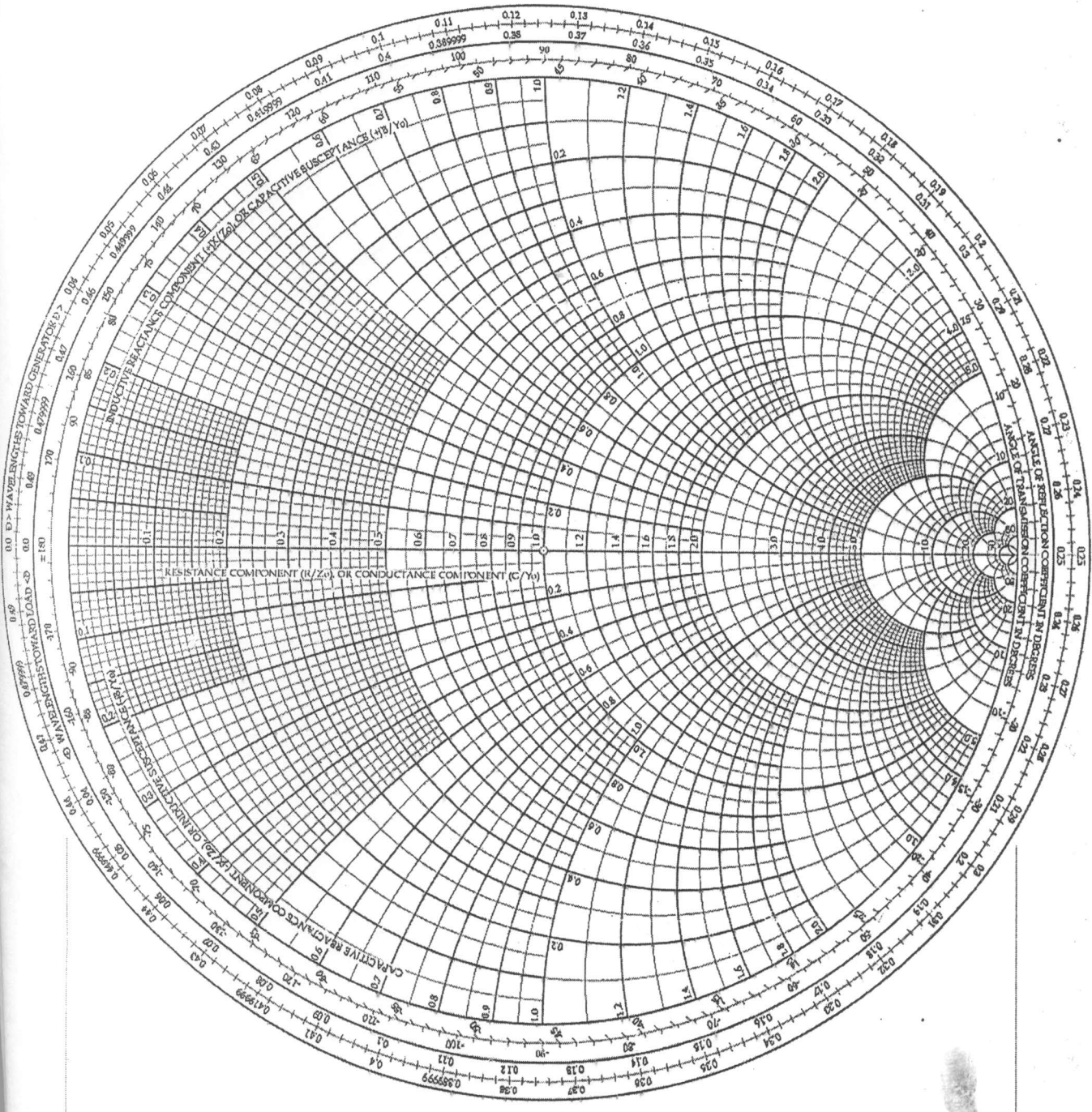
IMPEDANCE SMITH CHART
Introduction to RF Circuit Design

RADIALLY SCALED PARAMETERS

Subj.: RFCD
Clem: T.E. (Sem Ⅷ)

Date : Sept. 13
Branch: EXTC

(2)

IMPEDANCE SMITH CHART
Introduction to RF Circuit Design

Unit Test Ⅰ

RADIALLY SCALED PARAMETERS
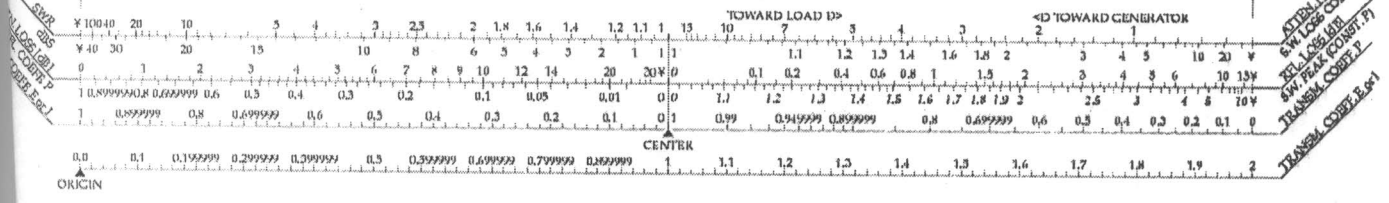
TOWARD LOAD D>   <D TOWARD GENERATOR

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ORIGIN

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Subject: Random signal analysis	Date: Sept. 2013
Marks: 30	Duration: 1 Hr/s
Class: TEET Unit Test I	Branch: EXTC

Instructions: Q.1 is compulsory

Q.1   Attempt any two.   (2x5=10 Marks)
(a) State and prove Baye's theorem.
(b) Explain with suitable example continuous, discrete and mixed type of random variable.
(c) Explain the concept of conditional probability and its properties.

Q.2 Solve any one.   (10 Marks)

(A) A certain test for a particular cancer is known to be 95% accurate. A person submits to the test and results are positive. Suppose that the person comes from a population of one lakh, where 2000 people suffer from that disease. What is the probability that the person under test has that particular cancer?

(B) Solve the following.   (10 Marks)

(I)   State axiomatic definition of probability (62)
(II)   Give properties of distribution function. (04)
(IV) Define probability density function. State and prove any two properties of pdf. (04)

Q.4   If A and B are any two events then prove that   (10 Marks)
$$P(A \cup B) = P(A) + P(B) - P(A \cap B)$$

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Subject: SIGNAL & SYSYTEM.	Date: Sept. 2013
Marks: 30	Duration: 1 Hr
Class: TE EXTC Unit Test I	Branch: EXTC

Instructions: Q1 IS COMPULSARY & Q2 , Q3 AND Q4 ATTEMPT ANY TWO.

Q1) a) Relationship between laplace transform and fourier transform . ------5mks

b) Relationship between Z- transform and fourier transform . ------5mks

Q2) Determine energy and power signals ------10mks

$$x(n) = \left(\tfrac{1}{2}\right)^n \mu(n).$$

Q3) Determine whether systems is   ------10mks

$$y(t) = x(t+10) + x^2(t).$$

1. static or dynamic .
2. linear or non-linear.
3. shift variant or shift in-variant.
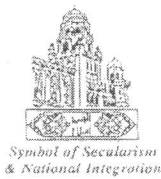4. causal or non-causal.
5. stable or nonstable.

Q4) Plot the following sequence ------10mks

$$\text{rect}(t) = \begin{cases} 1 & \text{for } |t| \leq \tfrac{1}{2} \\ 0 & \text{for } |t| > \tfrac{1}{2}. \end{cases}$$

POLT   i) $\text{rect}(t)$.

ii) $3\,\text{rect}\left(\dfrac{t+1}{4}\right)$.

iii) $-4\,\text{rect}(-t)$.

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Subject: Environmental Studies   Marks: 20
Date: 07/09/2013   Duration: 1hr(2.30 to 3.30)
Div : ET/CO/ELEC(SEM-V)   Unit Test : 1

N.B. (1) Q No. **1 is Compulsory**
   (2) Attempt **any ONE** question from **Q No. 2 & 3**

1. Answer any three: [4 * 3]

 (a) Write a short essay on Bhopal gas tragedy.

 (b) What are the sources of E-pollution & its effects?

 (c) What do you mean by ecological succession? Elaborate with an example.

 (d) 'The automobile is one of the worst inventions by humankind.' Comment.

2. Explain how every source of energy has its limits.   [8]

3. (a) What is the impact of deforestation on the environment? Give a case study wherein the
    local people have succesfully agitated against deforestation.   [5]

 (b) What is meant by eutrophication of lakes?   [3]