Set-01

Symbol of Secularism & National Integration

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

Subject: Control System-I (CS-I) | **Date: 20/02/2014**
Marks: 30 | **Duration: 1-Hr/s**
Class: TE Sem VI (UT-I) | **Branch: Electrical Engineering**

Instructions: 1) All Questions **compulsory**.
2) **Figures** to the **right** indicate **full** marks.
3) Assume the **data** if it is **necessary.**

Q .1) Solve any **two** out of **three.** **10 M**

A) Compare open loop and close loop system with two examples of each.
B) Explain in detail, the various block reduction rule.
C) Draw the generalized closed loop control system. Explain various terms related to it.

Q .2) Solve any **one** out of **two.** **10 M**

A) Using the block diagram reduction technique determine the overall transfer function. Also state the advantages of block diagram reduction. (Figure 2.1)

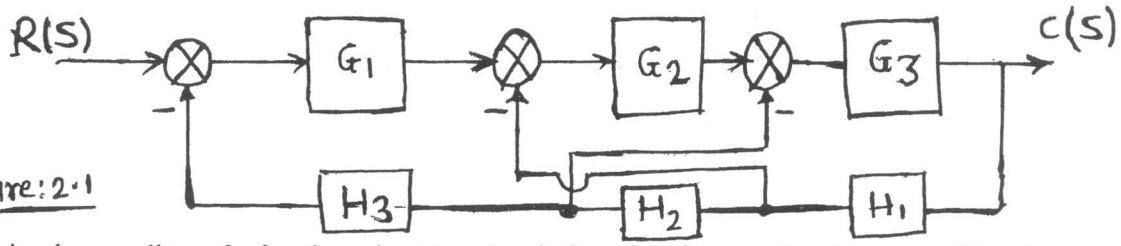

Figure: 2·1

B) Determine the overall transfer function using Mason's gain formula. Also state the advantages of signal flow graph. (Figure 2.2)

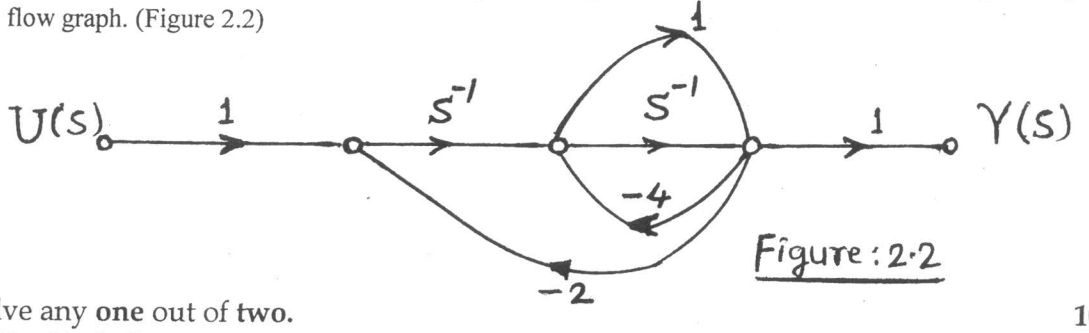

Figure: 2·2

Q .3) Solve any **one** out of **two.** **10 M**

A) Use block diagram shown in **figure 2.1**, draw its signal flow graph and determine the overall transfer function using Mason's gain formula.
B) Draw the equivalent mechanical system of the given system. Hence write the set of equilibrium equations for it. Obtain electrical analogous circuits using- (i) F-V Analogy & (ii) F-I Analogy. (Figure 3·1)

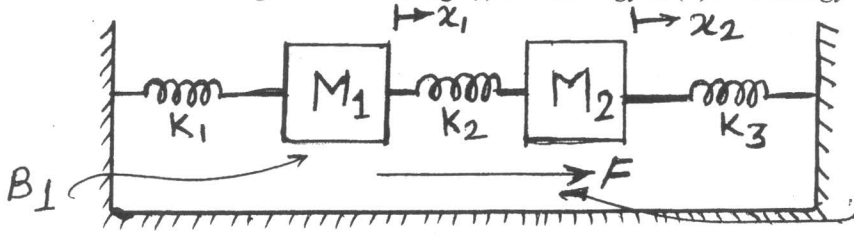

Figure: 3·1

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Subject: SS
Marks: 30
Class: T.E Sem VI (UT-I)

Date: 21/02/14
Duration: 1hr
Branch: ELECTRICAL

Q.1 SOLVE ANY TWO OUT OF THREE (EACH 5 MARKS)

a) Test whether the system is Linear/Nonliner, Time variant/In variant, Causal/Non causal.

$y(t) = t.x(t)$

$y(t) = x(t^2)$

b) Determine whether the following signals are Energy or Power signals.

$x(n) = \left(\frac{1}{4}\right)^n u(n)$

$x(t) = e^{-2t}\, u(t)$

c) Determine Even and odd parts of the signal.

$x(t) = e^t$

$x(n) = \{4, 2, 4, 2, 4, 4, 2\}$ (↑ at 4)

Q.2 SOLVE ANY ONE OUT OF TWO (10 MARKS)

a) Determine Periodicity of the following signals.

$X(t) = 5 \cos 4\pi t + 3 \sin 8\pi t$

$x(n) = \sin\left(\frac{6\pi}{7} n + 1\right)$

b) Plot the signal with respect to time.

$x(t) = u(t) - r(t-1) + 2r(t-2) - r(t-3) + u(t-4) - 2u(t-5)$

Q.3 SOLVE ANY ONE OUT OF TWO (10 MARKS)

a) Perform Convolution operation in time domain.

$X_1(t) = e^{-4t}$, $X_2(t) = u(t-4)$

b) Perform Convolution operation in discrete domain.

$x(k) = \{ 1,1,2 \}$ $h(k) = \{ 2,2,1 \}$

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Subject: Protection and Switchgear Engg **Date: / 02 / 2014**
Marks: 30 **Duration: 1-Hr/s**
Class: TE Sem VI (UT-I) **Branch: Electrical Engineering**

Q .1) Solve any two out of three. 10 M

A) Definition of transient recovery voltage, rate of rise of recovery (TRV). 5 M
B) Arc voltage and current waveform in an A.C. circuit. 5 M
C) Initiation of arc in a.c. circuit. 5 M

Q .2) Solve any one out of two. 10 M

A) Explain Current chopping phenomenon in details and Derive its Expression.

OR

B) Explain Construction & working of Air circuit breaker (ACB). 10 M

Q .3) Solve any one out of two. 10 M

A) a) Explain Modes of arc control devices Arc control devices. **10 M**
b) Draw and Explain HRC fuse in details.

OR

B) Explain Circuit breaker's making capacity & breaking capacity, short circuit testing. 10M

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ANJUMAN-I-ISLAM'S
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Subject: PROJECT MANAGEMENT **Date:** Feb. 14

Marks: 20 **Duration: 1 Hr/s**

Class: TE Sem VI UT-I **Branch: TE ELECTRICAL**

Q1) Solve any 2 out of 3 each for 5 marks

A) Explain project planning and steps involved in planning.

B) Explain project cycle.

C) What is the role of a project manager

Q2) solve any 2 out of 3 each for 5 marks

D) What are the aspects of a project

E) What is bar chart? Explain.

F) Write a note on project risk analysis.

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School of Engineering & Technology

Subject:	EM-III	Date:	21/02/14
Marks:	30	Duration:	1 HR
Class:	TY	Branch:	ELECTRICAL

Sem VI (UT-I)

Q.1 Solve any two. 5*2=10

1. Derive emf equation of alternator.
2. A 10 pole 50 Hz 3 phase synchronous machine has 4 slot/ph/pole. Each slot has 12 Conductors. Winding is chorded by one slot. Find KP & KD.
3. Explain excitation system for alternator.

Q.2 Solve any one. 10 marks

1. Explain armature reaction of alternator for resistive, inductive and capacitive load.
2. a) A 3 ph syn generator produces an open ckt line voltage of 6928v when the exciting Current is 50A. The ac terminals are then short ckted and the three line current are Found to be 800A. Calculate syn reactance per phase and terminal voltage if 12ohm Resistance are connected in star across terminals
   b) What are the advantages of rotating field alternator?

Q.1 Solve any one. 10 marks

1. Derive expression for distribution factor & pitch factor for 3phase ac winding. What is Effect of harmonics on these factors?
2. A 3 phase 1500kva 50 Hz, star connected alternator has resistance between each pair of Terminals as measure by dc are 0.16ohm. A field current of 70A produces short circuit current equal to full load current of 376A in each line. The same current produces an emf of 700v on open ckt. Determine the syn reactance & full load regulation at 0.8 pf lagging.

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ANJUMAN-I-ISLAM'S
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Subject: MPMC **Date: 22-2-14**
Marks: 30 **Duration: 1 hr**
Class: T.E. **Branch: Electrical**

Sem VI (UT-I)

Q 1. SOLVE ANY TWO OUT OF THREE 10 MARKS

1) Explain width of instruction and also draw pin diagram of 8085.

2) Explain Hardware interrupts in 8085.

3) Explain Addressing Modes in 8085 with one example.

Q 2. SOLVE ANY ONE OUT OF TWO 10 MARKS

1) Explain Architecture of 8085.

2) Explain data transfer instruction and branch instruction.

Q 3. SOLVE ANY ONE OUT OF TWO 10 MARKS

1) Explain timing diagram for op-code fetching ,memory read ,memory write, I/O read and I/O write.

2) Write a program for addition of two 8 bit numbers and also Explain system bus in detail.

**********BEST OF LUCK**********