



Subject: **MECH**

Duration: **1 Hrs**

Branch: **MECHANICAL** Sem VI

UT-I

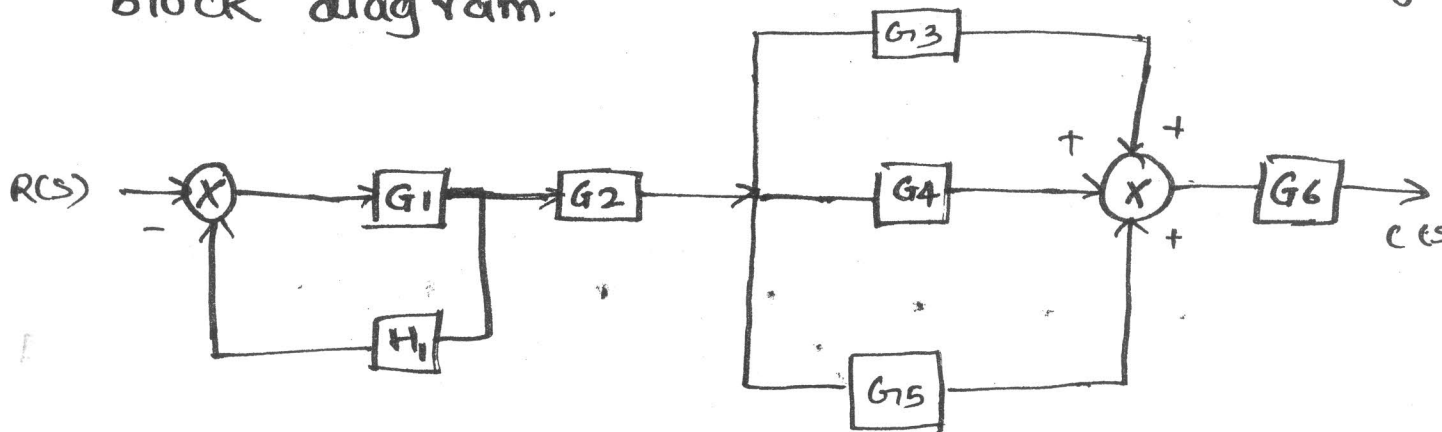
Date: Feb. 14

Marks: **30**

Class: **TE**

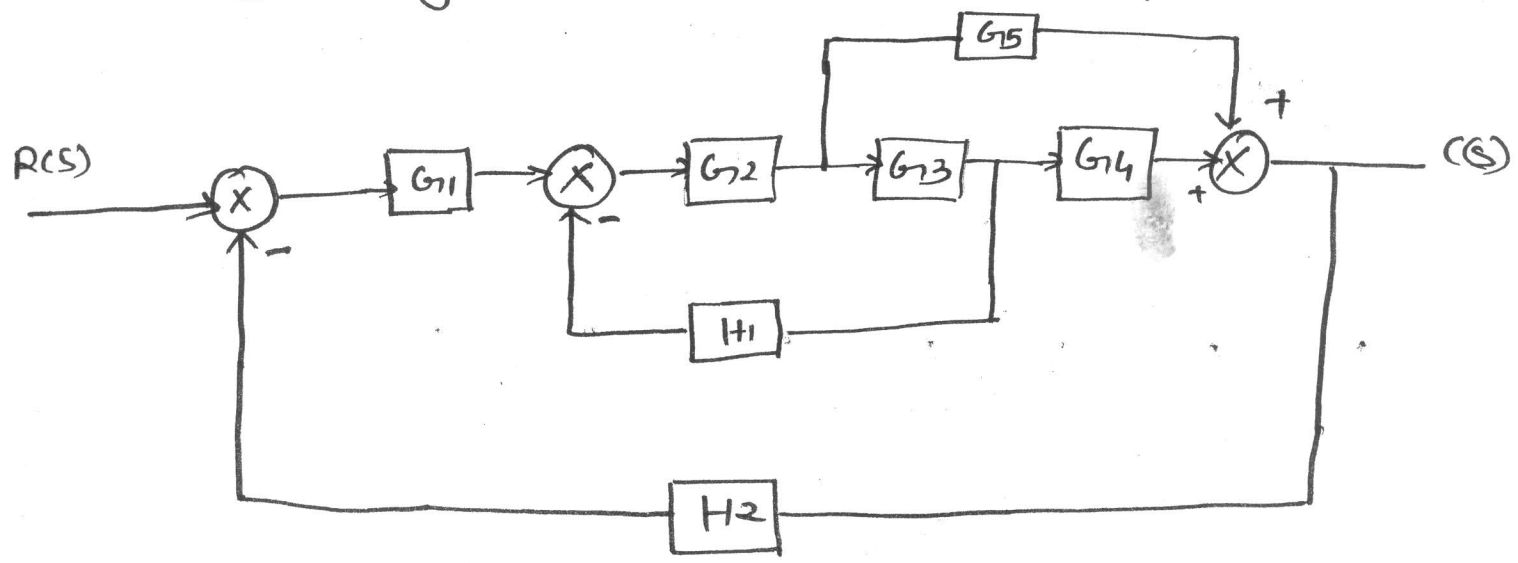
Q. 1. Solve any Two out of Three. (10)

- a) Derive the Transfer function of closed loop system.
- b) Comparison between open loop & closed loop control system.
- c) Calculate the transfer function for following block diagram.



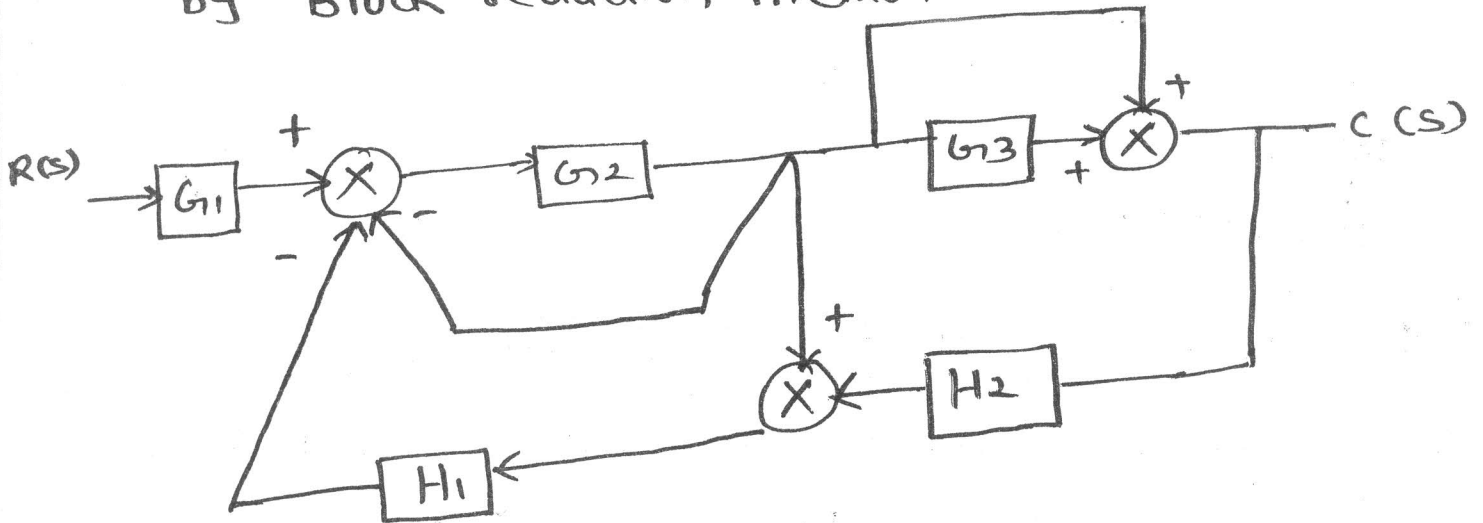
Q. 2. Solve any One out of Two (10)

- a) Find out the transfer of given diagram by using Block reduction method.



10-62

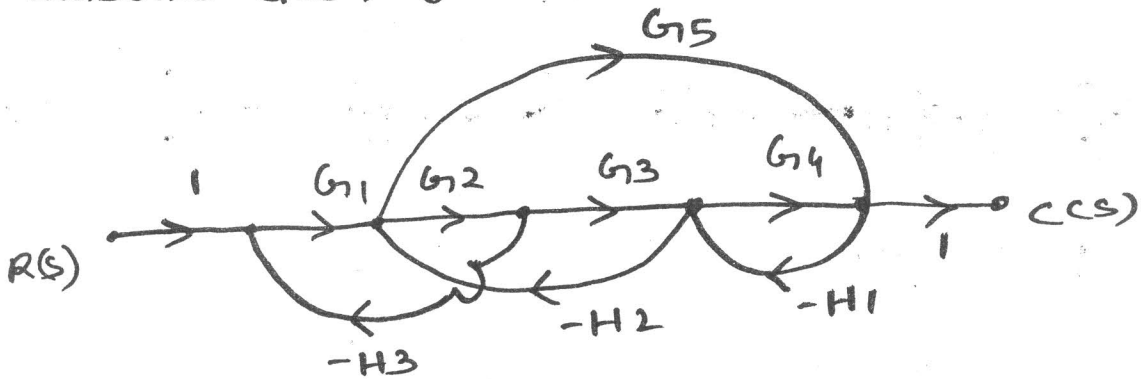
b) Find out the Transfer function of given Diagram by BLOCK reduction method.



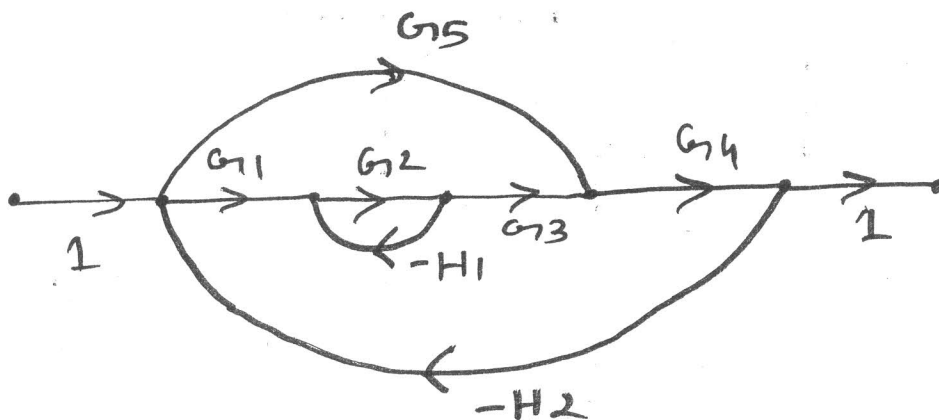
Q.3. Solve any One out of Two.

(16)

a) calculate T.F. for following SFG by using mason's Gain formula.



b) calculate T.F. for following SFG by using mason's Gain formula.





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

School of Engineering & Technology

Subject: ECOM

Date: Feb. 14

Marks: 20

Duration: 1 Hour

Class: VI

UT - I

Branch: ME

Q1. Attempt any 2 of the following.

1. Explain myths and realities about E-Commerce?
2. How E-CRM is used to enhance business?
3. Describe the physical structure of the internet
4. State IT-2000 Act. What are the provisions made in the act related to safety/security.

Q2. Attempt any 1 of the following.

1. Explain advantages of E-Commerce.
2. Explain disadvantages of E-Commerce.

Q3. Attempt any 1 of the following.

1. Differentiate between traditional commerce and E-Commerce.
2. Write note on
 - a. ISP
 - b. General hardware component involves in networking of computers.



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

School of Engineering & Technology

Subject: Hydraulic Machinery

Date: Feb. 14

Marks: 30

Duration: 1hr

Class: TE Sem VI UT-I

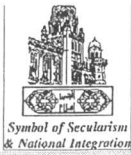
Branch: Mechanical Engg

- Note: - 1) Question number one is compulsory.
2) Solve any two from question number two.

- Q1. a) Classify Hydraulic Turbine. (5x2=10 marks)
b) Explain in detail general layout of a hydro-electric power plant.

- Q2) Solve any two questions. (10x2=20 marks)

- a) A Pelton wheel has a mean bucket speed of 10m/s with a jet of water flowing at the rate of 700lit/sec under a head of 30m. The bucket deflect the jet through an angle of 160° . Calculate the power given by water to the runner and hydraulic efficiency of the turbine. Assume co-efficient of velocity as 0.98.
- b) A Pelton wheel is to be designed for the following specification, shaft power = 11772 kw, head = 380m, speed = 750rpm, overall efficiency = 86%, jet diameter not to exceed one sixth of the wheel diameter. Determine i) wheel diameter ii) Number of jet required iii) diameter of the jet. Take speed ratio $K_u = \phi = 0.45$ and coefficient of velocity $K_v = C_v = 0.985$.
- c) A penstock supplies water from a reservoir to the pelton wheel with a gross head of 500mm. One third of the gross head is loss in friction in the penstock. The rate of flow of water through the nozzle fitted at the end of the jet is 165° . Determine the power given by the waterto the runner and also hydraulic efficiency of the pelton wheel. Take speed ratio = 0.45 and coefficient of velocity =1.



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

School of Engineering & Technology

Subject: M.V

Date: Feb. 14

Marks: 20

Duration: 1 Hour

Class: VI

sem VI

UT-I

Branch: ME

Q1. Attempt ALL.

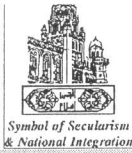
(2 x 4 = 8)

- Define balancing and write its practical needs, by giving examples.
- How to balance the unbalanced rotating masses. Write the number of ways.
- Differentiate between static and dynamic balancing.
- Write the conditions for static and dynamic balancing.

Q2. Attempt any ONE.

(1x12 = 12)

- A shaft carries four masses A, B, C and D in parallel planes perpendicular to axis of shaft. The masses B and C are 36 kg and 25 kg respectively having radii 150 mm each, while masses A and D having radii 200 mm each. The angle between B and C is 100° , and that between B and A is 190° . The plane containing A and B are 250 mm apart and between B and C are 500 mm apart. If the shaft is to be in completely dynamic balance, find masses A and D, distance between C and D and angle of mass D. Solve both by analytically and graphically.
- A shaft is supported in bearing 1.8 m apart and projects 0.45 m beyond each end. The shaft carries 3 pulleys one at each end, and one in middle. The end pulleys weigh 48 kg and 20 kg respectively and the centre of gravity are 15 mm and 12.5 mm respectively. The central pulley weighs 56 kg and its radii 15 mm. If the pulleys are so arranged to give static as well as dynamic balance. Determine angular positions of the pulleys, dynamic forces produced on bearings when shaft rotates at 400 rpm.



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

School of Engineering & Technology

Subject: Internal Combustion Engines

Date: 22/02/2014

Marks: 20

Duration: 1 hour

Class: T.E.

Sem VI

UT-I

Branch: Mechanical

Q1: Attempt any two of the following.

- a) Differentiate between two stroke and four stroke engines. (05)
- b) Compare SI and CI engines on the basis of (05)
 - i) Compression Ratio
 - ii) Thermal Efficiency
 - iii) Fuel Economy
 - iv) Speed
 - v) Weight
- c) Write a short note on 'Scavenging in Two Stroke Engines'. (05)

Q2: Attempt any two of the following.

- a) What is difference in air standard cycle and fuel air cycle? Explain the significance of fuel air cycle. (05)
- b) Explain 'exhaust blow down loss' and 'pumping loss'. (05)
- c) Explain the effect of variable specific heat on performance of engine. (05)



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

School of Engineering & Technology

Subject: Machine Design-I

Date: 22-02-2014

Marks: 20

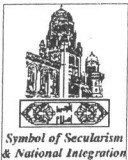
Duration: 1½ Hrs

Class: TE-ME (SEM - VI) UT-I

Branch: Mechanical Engineering

- Instructions: 1. All questions are compulsory.
2. Use of Design Data book is permitted.
3. Use suitable data, wherever necessary.
4. Draw neat & labelled diagram, wherever necessary.

- Q. 1. Attempt Any Three (12)
- Explain general machine design procedure in detail.
 - Write a note on "Preferred Series numbers"
 - What is factor of safety & what are the factors affecting its selection.
 - Write a note on turn buckle. Give its advantages & applications.
- Q. 2. Attempt Any One (08)
- Design socket & spigot cotter joint to transmit reversible load of 60 KN. Select suitable material for various parts.
 - A knuckle joint is required to transmit a reversible load of 25 KN. Select suitable material for various parts & design the joint.



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

School of Engineering & Technology

Subject: Machine Design-I

Date: 22-02-2014

Marks: 20

Duration: 1½ Hrs

Class: TE-ME (SEM - VI)

Branch: Mechanical Engineering

- Instructions: 1. All questions are compulsory.
2. Use of Design Data book is permitted.
3. Use suitable data, wherever necessary.
4. Draw neat & labelled diagram, wherever necessary.

- Q. 1. Attempt Any Three (12)
- Explain general machine design procedure in detail.
 - Write a note on "Preferred Series numbers"
 - What is factor of safety & what are the factors affecting its selection.
 - Write a note on turn buckle. Give its advantages & applications.
- Q. 2. Attempt Any One (08)
- Design socket & spigot cotter joint to transmit reversible load of 60 KN. Select suitable material for various parts.
 - A knuckle joint is required to transmit a reversible load of 25 KN. Select suitable material for various parts & design the joint.