Seat No.:	Enrolment No.

**Subject Code: X51901** 

## GUJARAT TECHNOLOGICAL UNIVERSITY PDDC-SEMESTER V-• EXAMINATION – SUMMER - 2016

Date: 22/11/2016

Time	e:10:30 AM to 1:00 PM nctions:  1. Attempt all questions. 2. Make suitable assumptions wherever necessary.	
(a)		07
<b>(b)</b>	Distinguish between brakes and dynamometer.	07
(a) (b)	Governor to find the height of the governor neglecting weight of the arms.	07 07
<b>(b)</b>	OR What is a function of dynamometer? List out the different types of dynamometers. Explain any one with neat sketch.	07
(a) (b)	How do the effects of gyroscopic couple and of centrifugal force make the rider of a two-wheeler tilt on one side? Derive a relation for the angle of heel. Explain Klien's construction method.	07 07
(a)	OR  Define the following terms in context with governor: (i) Sensitiveness (ii) Stability (iii) Isochronism(iv) Hunting (v) Effort (vi) Power (vii) Coefficient of insensitiveness	07 07
	speed.	07 07
		07 07
(a) (b)	Explain self locking and self energized brakes.  Draw and explain the turning moment diagram of a 4-stroke single cylinder engine.	07 07
(a)	<b>OR</b> Define the flywheel and state its importance. What are the functions of a flywheel?	07
<b>(b)</b>	Explain Bloch's Synthesis Method for synthesizing a 4 bar mechanism.	07
	(a) (b)	Instructions:  1. Attempt all questions. 2. Make suitable assumptions wherever necessary. 3. Figures to the right indicate full marks.  (a) Describe the working of a band and block brake with the help of a neat sketch.  (b) Distinguish between brakes and dynamometer.  (a) Define Governor and give its classification. Derive the expression for Watt Governor to find the height of the governor neglecting weight of the arms.  (b) Explain Dynamically equivalent system.  OR  (b) What is a function of dynamometer? List out the different types of dynamometers. Explain any one with neat sketch.  (a) How do the effects of gyroscopic couple and of centrifugal force make the rider of a two-wheeler tilt on one side? Derive a relation for the angle of heel.  (b) Explain Klien's construction method.  OR  (a) Define the following terms in context with governor: (i) Sensitiveness (ii) Stability (iii)Isochronism(iv) Hunting (v) Effort (vi) Power (vii) Coefficient of insensitiveness (b) Explain synthesis of function generation.  (a) Explain the coefficient of fluctuation of energy and coefficient of fluctuation of speed.  (b) Explain the terms: Function generation, path generation and motion generation.  OR  (a) State: D'Alembert's principle.  (b) Differentiate between Flywheel and Governor.  OR  (a) Explain self locking and self energized brakes.  (b) Draw and explain the turning moment diagram of a 4-stroke single cylinder engine.  OR  (a) Define the flywheel and state its importance. What are the functions of a flywheel?

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