Seat No.:	Enrolment No.

## GUJARAT TECHNOLOGICAL UNIVERSITY BE - SEMESTER-VII(OLD) • EXAMINATION – WINTER 2016

Subject Code: 170301 Subject Name: Biomechanics Time: 10:30 AM to 01:00 PM Instructions:			
		0:30 AM to 01:00 PM Total Marks: 70	
	1. 2. 3.		
Q.1	(a)	Discuss the mechanical events in cardiac cycle and its correlation with electrical events.	07
	<b>(b)</b>	Draw and explain the GAIT postures during human walking	07
Q.2	(a)	What is Biomechanics? Explain three classes of levers with two anatomical examples of each.	07
	<b>(b)</b>	Enlist the materials that can be used as insulators. Explain the process of heat transfer through heat insulator.	07
	<b>4</b>	OR	٥.
	<b>(b)</b>	Draw and explain electrical model of blood flow mechanics	07
Q.3	(a) (b)	Write a short note on material properties of Tendons and Ligaments.  Draw and explain the GRF acting along the ankle during human running.  OR	07 07
Q.3	(a) (b)	Write a note on structural and material properties of bone Define Buoyancy of fluid & what is its importance in fluid mechanics?	07 07
Q.4	(a) (b)	Explain the mechanism of control of body temperature.  Explain the different characteristics of UHMWPE  OR	07 07
Q.4	(a) (b)	Enlist and explain the different techniques of Motion analysis Define friction. Describe Solid and Fluid friction with appropriate diagrams.	07 07
Q.5	(a)	Briefly explain axial, flexural, torsional load sharing by total hip prosthesis and femur.	07
	<b>(b)</b>	Explain the transport phenomenon for artificial kidney. <b>OR</b>	07
Q.5	(a) (b)	Explain the control of body pressure by baroreceptors.  What is the fundamental principle of displacement of mass? Give an example of mass transfer.	07 07

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