Seat No.:		Enrolment No.	Enrolment No	
		GUJARAT TECHNOLOGICAL UNIVERSITY		
		BE - SEMESTER-IV(OLD) • EXAMINATION – WINTER 2016		
Su	bject	Code:140302 Date:24/11/201	Date:24/11/2016	
Su	bject	Name: Physiological Measurement Techniques		
	•	2:30 PM to 05:00 PM Total Marks: 70	0	
Inst	tructio	ons:		
		Attempt all questions.		
		Make suitable assumptions wherever necessary.		
	3.	Figures to the right indicate full marks.		
Q.1	(a)	Explain generation of different biopotentials within the cell.	07	
	(b)	Draw and explain structure and function of the cell.	07	
Q.2	(a) (b)	Explain pressure transducer. Give applications in biomedical engineering. Explain heart conduction system. Explain how ECG is associated with heart	07 07	

sound. OR **(b)** Explain electrode-electrolyte interface. 07 **Q.3** Enlist and explain ECG lead configuration. 07 (a) Explain structure of skeletal muscle. **(b)** 07 OR 0.3 Explain mechanism of respiration. 07 (a) Explain following terms: 1) Endocytosis 2) Exocytosis 07 0.4 Enlist and explain different types of surface electrodes. Give electrical **07** properties of microelectrodes. Write a note on electromagnetic interference and shielding. **07** Write a short note on ground loop interference and input guarding. **07 Q.4** (a) What is synapse? Explain reflex arc. **07 (b) Q.5** Draw and explain structure of neuron. **07** (a) Draw and explain anatomy of eye. **(b) 07** OR Explain 10-20 electrode placement method of EEG also draw the standard EEG Q.5 07 waveforms with their specification. **(b)** Write a short note on polarizable and non-polarizable electrode. 07
