

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-IV(New) EXAMINATION – SUMMER 2016

Subject Code:2140306**Date:03/06/2016****Subject Name:Biosensors & Transducers****Time:10:30 AM to 01:00 PM****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

Q.1**Short Questions.****MARKS****14**

- 1 The LVDT is

A Linear variable differential transducer	B Linear variable drift transducer
C Linear variable differential transformer	D Linear variable drift transformer
- 2 Which transducer converts the heat radiation into corresponding current value?

A Quartz resonator	B Pyroelectric transducer
C thermocouple	D fluoroptic transducer
- 3 Thermistors have _____ resistance-temperature characteristics.

A Linear	B Non-linear
C Recursive	D Bilinear
- 4 In capacitive displacement transducer, by reducing the separation distance of movable plates the sensitivity will

A Increase	B Decrease
C No change	D become Zero
- 5 Which type of sensor is used for tissue temperature measurement?

A thermocouple	B fluoroptic transducer
C RTD	D thermistor
- 6 If the transmitted wave frequency is of 8 MHz, then the Doppler shift at the opening of the artery is found in range of

A 500 to 1.2 KHz	B below 100 Hz
C 200 to 500 Hz	D above 3 kHz
- 7 The connection between lead wire and electrode can be insulated by

A Magnesium sulphate	B Polyvinylchloride
C Silver chloride	D boron dioxide
- 8 Ultrasonic waves reflected from moving scatters are shifted in frequency by an amount proportional to the _____ of the scattering objects.

A Density	B Area
C Velocity	D Mass
- 9 PO₂ range for a normal adult human is

A 40-75 mmHg	B 110-120 mmHg
C 150-220 mmHg	D 80-104 mmHg
- 10 Which temperature sensing technique will give greatest accuracy?

A RTD	B Thermistor
C Thermocouple	D Pyroelectric transducer
- 11 Which temperature sensing technique will give greatest sensitivity?

