

Roll number:

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -3 EXAMINATION- 2023

B.Tech-VIII Semester (CSE/IT/ECE/CE/BI)

COURSE CODE (CREDITS): 21B1WPH831

MAX. MARKS: 35

COURSE NAME: Biosensors

COURSE INSTRUCTOR: Dr. Ragini Raj Singh

MAX. TIME: 2 Hours

Note: All questions are compulsory. Marks are indicated against each question in square brackets.

Q. 1. No measurement can ever be made with 100% accuracy. It is important to find that actual accuracy and different types of errors can be occurred in measuring instruments. Errors may arise from different sources. How Errors can be classified? [CO: 1; Marks: 4]

Q.2. We have discussed the importance of the calibration of the measurement systems in this view discuss the Primary, secondary, direct and indirect methods of calibration. [CO: 2; Marks: 4]

Q.3 As per our discussions, we are aware of the active and passive types of transducers. What are resistive transducers, discuss its principle of operation, advantages and disadvantages. [CO: 3; Marks: 4]

Q.4. Thermistors are active or passive type of transducers. Discuss its types, advantages and disadvantages. [CO: 3, 4; Marks: 4]

Q.5. Discuss: [CO: 4; Marks: 3]

Biopotential Electrodes
Electrodes-Electrolyte interface
Half cell potential

Q.6. Explain resting potential and active potential in term of biological cells; also draw the appropriate diagrams to illustrate your answer. [CO: 5; Marks: 4]

Q.7. What are primary and secondary reference electrodes, discuss their functioning in detail with the help of diagrams? [CO: 5; Marks: 4]

Q.8. What are chemo-receptors with biosensors perspective, also discuss its types? [CO: 5; Marks: 4]

Q.9. Explain about the two important types of image sensors. [CO: 5; Marks: 4]