

**School of Computing Science and Engineering****Bachelor of Technology in Computer Science and Engineering  
Semester End Examination - Jun 2024****Duration : 180 Minutes  
Max Marks : 100****Sem II - C1UB129T - Chemical and Biological Materials**General Instructions*Answer to the specific question asked**Draw neat, labelled diagrams wherever necessary**Approved data hand books are allowed subject to verification by the Invigilator*

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|-----|---|--------|
| 1)  | What is the recognition element of a biosensor?   | K1(3)  |
| 2)  | Illustrate the role of chemical sensor in fire detection.                                   | K2(4)  |
| 3)  | Explain the features of biosensors.   | K2(6)  |
| 4)  | Explain the hydrophobic nature of ceramic surfaces with respect to biomedical applications. | K3(6)  |
| 5)  | Discuss the salient characteristics of biosensors for various applications.                 | K3(6)  |
| 6)  | Predict the applications of carbon based nanocomposites for various applications.           | K3(9)  |
| 7)  | Explain the role of chemical sensor in mobile devices.                                      | K3(9)  |
| 8)  | Compare the purpose and applications of various biosensors with examples.                   | K4(8)  |
| 9)  | Analyze the use of chemical sensors for (a) fire detection (b) wearable devices             | K4(12) |
| 10) | What are infrared sensors? How are they useful?   | K5(10) |
| 11) | Explain the working of liquid crystals in spatial light modulators.                         | K5(15) |
|     | <b>OR</b>   |        |
|     | Explain the working mechanism of liquid crystal displays.                                   | K5(15) |
| 12) | Describe the functioning of a biosensor with the help of schematic representation.          | K6(12) |
|     | <b>OR</b>   |        |
|     | Predict the future of biofuels.   | K6(12) |