Reg.No. \_\_\_\_\_\_\_\_\_\_\_\_

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**End Semester Examination – Nov/Dec – 2018**

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| **Code :** | **14BI2002** | **Duration :** | **3hrs** |
| **Sub. Name :** | **INSTRUMENTAL METHODS OF ANALYSIS** | **Max. marks :** | **100** |

**ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)**

|  |  |  |  |  |
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| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. |  | Define Buffer. Explain in detail the types of buffers and its importance in extraction of biomolecules. | CO2 | 20 |
| (OR) | | | | |
| 2. | a. | Outline the principle, instrumentation and working principle of pH meter with a neat diagram. | CO2 | 18 |
| b. | Give any two applications of pH meter in pharmaceutical industries. | CO2 | 2 |
|  |  |  |  |  |
| 3. |  | Elaborate the principle and instrumentation of spectrophotometer with a neat diagram and state its application. | CO1 | 20 |
| (OR) | | | | |
| 4. |  | Explain in detail the principle, instrumentation and application of Raman spectroscopy. | CO1 | 20 |
|  |  |  |  |  |
| 5. |  | Give a detailed account on separation and purification of metabolites using Ion exchange chromatography with a neat diagram. | CO1 | 20 |
| (OR) | | | | |
| 6. | a. | Define electrophoresis? | CO1 | 3 |
| b. | Explain in detail the instrumentation and working protocol of Agarose gel electrophoresis with emphasis on DNA characterization. | CO1 | 17 |
|  |  |  |  |  |
| 7. |  | Explain the principle and instrumentation of Geiger Muller Counter in detection of radioactive isotope molecules. | CO3 | 20 |
| (OR) | | | | |
| 8. |  | Elaborate on radioactive decay and detection of radioactive isotopes using Scintillation counter with a neat diagram. | CO3 | 20 |
|  | |  |  |  |
|  | | **Compulsory**: |  |  |
| 9. |  | Outline the principle of thermogravimetry and determination of thermal stability of the compounds using DTA. | CO3 | 20 |