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**UNIVERSITY**

(Karunya Institute of Technology & Sciences)

(Declared as Deemed-to-be University under Sec.3 of the UGC Act, 1956)

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

**End Semester Examination – Nov/Dec - 2016**

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|  |  | **Semester :** | **2016-17 ODD** |
| **Code :** | **12BI205/12BT206** | **Duration :** | **3 hrs** |
| **Sub. Name :** | **Instrumental Methods of Analysis** | **Max. marks :** | **100** |

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| **Q. No.** | **Questions** | **Marks** |
| **PART-A(10X1=10 MARKS)** | | |
| 1. | Define pH | (1) |
| 2. | Write Henderson – Hasselbalch equation | (1) |
| 3. | Write Beer Lamberts law | (1) |
| 4. | Who invented spectrophotometer? | (1) |
| 5. | Expand AAS | (1) |
| 6. | Give one example of radioactive isotope | (1) |
| 7. | Expand HPLC | (1) |
| 8. | Who invented GM counter? | (1) |
| 9. | What is thermogravimetry? | (1) |
| 10. | Write the applications of DSC | (1) |

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| **PART B(5 X 3= 15 MARKS)** | | |
| 11 | Give a brief account on importance of Glass electrode in pH meter | (3) |
| 12 | State the applications of colorimetry | (3) |
| 13 | Write the principle of IR spectroscopy | (3) |
| 14 | Give a brief account on different types of Radioactive decay | (3) |
| 15 | Write the working principle of DTA | (3) |

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| **PART C(5 X 15= 75 MARKS)** | | | |
| 16. |  | Explain in detail about importance of buffering system of blood and importance of pH. | (15) |
| (OR) | | | |
| 17. |  | Describe in detail the working principle and application of pH meter | (15) |
| 18. |  | With a neat diagram explain the instrumentation and working principle of UV-visible spectrophotometer | (15) |
| (OR) | | | |
| 19. |  | Give a detailed account on working principle and applications of Raman Spectroscopy | (15) |
| 20. |  | Write in detail about the Instrumentation, working principle of HPLC and its applications in the  field of biotechnology | (15) |
| (OR) | | | |
| 21. |  | Explain in detail about instrumentation, working principle and applications of atomic  absorption spectrophotometer | (15) |
| 22. |  | Explain in detail about scintillation counters in detection of radioactive isotopes in samples. | (15) |
| (OR) | | | |
| 23. |  | Write in detail the principle and protocol of autoradiography | (15) |
| 24. |  | With a neat diagram write in detail about differential scanning calorimeter (DSC) | (15) |
| (OR) | | | |
| 25. |  | Give a detailed account on differential thermal analysis (DTA) in determination of thermal stability of polymers. | (15) |

ALL THE BEST