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| **Model Question Paper-1 with effect from 2019-20 (CBCS Scheme)** | | | | | | | | | | | |
| USN |  |  |  |  |  |  |  |  |  |  |  |
| **Fifth Semester B.E. Degree Examination Bioanalytical Techniques** | | | | | | | | | | | |
| **TIME: 03 Hours** | |  |  |  |  |  |  |  |  |  | **Max. Marks: 100** |
| Note: | 01. Answer any **FIVE** full questions, choosing at least **ONE** question from each **MODULE**. | | | | | | | | | | |

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| **Module – 1** | | | |
| **Q.1** | **(a)** | Discuss on the methodology for the preparation of extracts for biochemical investigations | 10 |
| **(b)** | What is Iso electro focussing ? Explain on the applications of iso electro focussing with respect to proteomics | 10 |
| **OR** | | | |
| **Q.2** | **(a)** | Define Chromatography? Add a note on its principle and applications | 06 |
| **(b)** | State your point of view on Bioaffinity Chromatography | 08 |
| **(c)** | With a neat labelled diagram explain agarose gel electrophoresis | 06 |
| **Module – 2** | | | |
| **Q.3** | **(a)** | Discuss on the working principle, Instrumentation of HPLC | 10 |
| **(b)** | With the schematic representations, Explain the working mode of Ion exchange chromatography | 10 |
| **OR** | | | |
| **Q.4** | **(a)** | Describe the principle, construction and working of Gas Chromatography | 10 |
| **(b)** | Write a note on flow cytometry and its applications | 10 |
| **Module – 3** | | | |
| **Q.5** | **(a)** | What is NMR spectroscopy? Add a note on its applications | 10 |
| **(b)** | Explain in brief the theory and principle of UV-Visible spectroscopy | 10 |
| **OR** | | | |
| **Q.6** | **(a)** | Discuss on the concept of IR spectroscopy and its advantages | 10 |
| **(b)** | How can be a Mass spectroscopy be used for determination of analytes | 10 |
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| **Module – 4** | | | |
| **Q.7** | **(a)** | With a schematic representation explain the protocol of X ray diffraction | 10 |
| **(b)** | What do you mean by Biomolecular mass spectrometry and explain its working mode | 10 |
| **OR** | | | |
| **Q.8** | **(a)** | What are the different methods available to study for determination of crystal structure | 10 |
| **(b)** | What are the role of Neutron diffraction, add a note on its advantages | 10 |
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| **Module – 5** | | | |
| **Q.9** | **(a)** | Discuss on the concept of SEM and its applications | 10 |
| **(b)** | Explain the importance of Confocal microscopy in analytics | 10 |
| **OR** | | | |
| **Q.10** | **(a)** | Draw the comparisions between X-ray photo electron spectroscopy and X-ray diffraction | 10 |
| **(b)** | Elaborate on the studies of DTA-Diffrential Thermal Analyser | 10 |
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| **Table showing the Bloom’s Taxonomy Level, Course Outcome and Programme Outcome** | | | | | | | |
|  | | | | | | | |
| **Question** | | | **Bloom’s Taxonomy**  **Level attached** | | **Course**  **Outcome** | **Programme Outcome** | |
| **Q.1** | (a) | | L2 | | CO1 | PO12 | |
| (b) | | L2 | | CO1 | PO12 | |
|  | |  | |  |  | |
| **Q.2** | (a) | | L1 | | CO1 | PO12 | |
| (b) | | L1 | | CO1 | PO12 | |
| (c) | | L2 | | CO1 | PO12 | |
| **Q.3** | (a) | | L2 | | CO1 | PO10 | |
| (b) | | L2 | | CO1 | PO10 | |
|  | |  | |  |  | |
| **Q.4** | (a) | | L2 | | CO1 | PO10 | |
| (b) | | L1 | | CO1 | PO10 | |
|  | |  | |  |  | |
| **Q.5** | (a) | | L1 | | CO1 | PO10 | |
| (b) | | L2 | | CO1 | PO10 | |
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| **Q.6** | (a) | | L3 | | CO1 | PO10 | |
| (b) | | L1 | | CO1 | PO10 | |
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| **Q.7** | (a) | | L1 | | CO3 | PO9 | |
| (b) | | L1 | | CO2 | PO11 | |
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| **Q.8** | (a) | | L1 | | CO3 | PO9 | |
| (b) | | L2 | | CO2 | PO11 | |
|  | |  | |  |  | |
| **Q.9** | (a) | | L1 | | CO4 | PO8 | |
| (b) | | L1 | | CO4 | PO8 | |
|  | |  | |  |  | |
| **Q.10** | (a) | | L3 | | CO4 | PO8 | |
| (b) | | L2 | | CO4 | PO8 | |
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| **Bloom’s Taxonomy Levels** | | **Lower order thinking skills** | | | | | |
| Remembering  ( knowledge): 𝐿1 | | Understanding Comprehension)  : 𝐿2 | | | Applying (Application):  𝐿3 |
| **Higher order thinking skills** | | | | | |
| Analyzing (Analysis): 𝐿4 | | Valuating (Evaluation): 𝐿5 | | | Creating (Synthesis): 𝐿6 |
|  | | | | | | | |

Related image