

Term End Examination-2014
Ph.D. in Dairy Science and Technology
RDR-008: Advances in Analytical Techniques in Dairy Chemistry

Time: Three Hours

MM: 100

Note: Attempt any five questions. All questions carry equal marks

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| 1 (a) | Give the principle and procedure of 2-D Poly Acrylamide Gel Electrophoresis (PAGE) for characterization of milk proteins with the help of example. | 10 |
| 1 (b) | Differentiate between DTA and DSC techniques and explain their applications. | 10 |
| 2 | Write notes on the following: | |
| (a) | Interpretation of mass spectra in GCMS | 8 |
| (b) | Components of UV-VIS spectrophotometer | 8 |
| (c) | Regions of infra-red spectrum. | 4 |
| 3 (a) | Describe the principles and applications of ELISA in food analysis. | 10 |
| 3 (b) | Discuss the application of ion-exchange chromatography in Dairy Industry. | 10 |
| 4. | Describe the differences between Iso-electric focusing and chromatofocusing. Describe the principles and working of Iso-electric focusing. Highlight the application of these techniques. | 20 |
| 5. | Describe the principle and instrumentation of HPLC in reference to application to milk and milk products. | 20 |
| 6. | Write the principle and instrumentation of CD and its applications in milk protein analysis. | 20 |
| 7 | Describe in brief the following: | 5x4 |
| (a) | The relationship between Specific rotation and ORD. | |
| (b) | Principle of CZE and its instrumentation. | |
| (c) | Preparation of specimen for electron microscopy. | |
| (d) | Protein sequencing. | |