**PCTE Group of Institutes**

**Course Module**

**Class : B.Sc. (Biotechnology)**

**Course instructor : Romica Badhan**

**Subject Code : BSBT 118 (0-2)**

**Subject Name: Biochemistry – I Lab**

**Semester : II (2013-2016)**

**Total Practicals : 12**

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**Objectives:** The practical training imparted in this practical course will help the students understand the basic techniques used for the identification and estimation of the biomolecules. The techniques of paper and thin layer chromatography for the separation of carbohydrates and amino acids will be learnt by hand in the biochemistry laboratory. This practical knowledge will be of great help in understanding the biotechnological principles and their applications in different areas of biotechnology.

**Course contents and Experiments schedule**

|  |  |
| --- | --- |
| Experiment  No | Topics of experiment |
| 1 | Qualitative tests for carbohydrates - I |
| 2 | Qualitative tests for carbohydrates - II |
| 3 | Qualitative tests for amino acids - I |
| 4 | Qualitative tests for amino acids - II |
| 5 | Volumetric estimation of glucose in a solution |
| 6 | Acid value of lipids |
| 7 | Iodine number of lipids |
| 8 | Saponification number of lipids |
| 9 | Quantitative estimation of proteins in solution |
| 10 | Separation of sugars by paper chromatography |
| 11 | Preparation of thin layer plates |
|  | Separation of lipids by thin layer chromatography |
| 12 | Separation of amino acids by paper chromatography |
| 13 | Verification of Lambert-Beer law and determination of absorption maxima |

*The student will record the details of practicals in the practical note book and get it checked every time from the instructor after the experiment has been completed.*

**Marks Distribution:**

The subject contains 100 marks; 40 for internal and 60 for external. External marks will be evaluated on the basis of university theory examination. And internal 40 marks will be evaluated by teacher. The distribution of internal marks is as follow:

|  |  |
| --- | --- |
| **Modes of Assessment** | **Score** |
| **Mid semester exam** | **15** |
| **Viva** | **10** |
| **Lab performance** | **10** |
| **Notebook** | **05** |
| **Total** | **40** |

**Books recommended:**

1. Plummer DT (1998) An introduction of practical biochemistry. 3rd ed., Tata Mcgraw Hill Publishers Co. Ltd., New Delhi
2. Bansal DD, Khardori R and Gupta MM (1985) Practical Biochemistry. Standard Publication, Chandigarh.
3. Singh, S.P. (2006) Practical manual of Biochemistry. 6th Edition, CBS publication.