

**M.Sc. Life Sciences SEMESTER –I EXAMINATION**

**November-2017**

**Instrumentation in Biological Sciences Paper-III**

**Paper code: 2746**

**Time: -2:30 Hours**

**Total Marks:- 70**

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- Instructions: (i) Attempt all questions  
(ii) Each question carries equal marks
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**Q 1. Explain:**

- (a) Transmission electron microscope
- (b) Optical pathway of epifluorescence microscope

**OR**

**Q 1. Write on:**

- (a) Preparative centrifugation
- (b) Reference electrode of a pH meter

**Q 2. Explain :**

- (a) Methods used for histological block preparation
- (b) Dehydration of tissue and alcoholic grade series

**OR**

**Q 2. Discuss :**

- (a) Culture hoods used in cell culturing
- (b) Batch cultures in microbial culturing

**Q 3. Explain principle and main components of high performance liquid chromatography system. State applications of HPLC.**

**OR**

**Q 3. Write on :**

- (a) Agarose gel electrophoresis
- (b) Thin layer chromatography

**Q 4. Explain design and principle of a colorimeter.**

**OR**

**Q 4. Write on:**

- (a) Double beam spectrophotometer
- (b) Principle and applications of photometry

**Q 5. Explain principle and components of AAS.**

**OR**

**Q 5. Explain in brief :**

- (a) Turbidimetry
- (b) ESI MS