

**PSG COLLEGE OF ARTS & SCIENCE**  
(AUTONOMOUS) ) 4 BTCJ(&  
**BSc DEGREE EXAMINATION MAY 2017**  
(Fourth Semester)

Branch- **BIOTECHNOLOGY**

**ANALYTICAL TECHNIQUES**

Time : Three Hours

Maximum : 75 Marks

**SECTION-A (20 Marks)**

Answer **ALL** questions

**ALL** questions carry **EQUAL** marks (10x2 = 20)

- 1 What are buffers?
- 2 Define ion sensitive electrodes.
- 3- What is desalting?
- 4 Explain two different phases in paper chromatography.
- 5 What is de mineraliser?
- 6 List out the characteristics of high quality water.
- 7 Define principle of turbidimetry.
- 8 Explain single and double beam in spectrophotometer.
- 9 Describe half life of radioactive isotopes.
- 10 List out few radioactive isotopes.

**SECTION - B (25 Marks)**

Answer **ALL** Questions

**ALL** Questions Carry **EQUAL** Marks (5x5= 25)

- 11 a What are the buffers used in biological experiments and its uses?  
OR  
b How will you determine the rate of enzyme reaction?
- 12 a Explain the column chromatography with neat sketch.  
OR  
b Write notes on isoelectric focusing.
- 13a How will you extract the solvent for experiments?  
OR  
b Explain the working mechanism of RO for getting quality water.
- 14 a Write notes on flame emission spectroscopy.  
- OR  
b Briefly explain fluorescence spectroscopy.
- 15 a What are the safety methods followed in biological laboratories?  
OR  
b Explain the principles of radioactive detection and counting.

**SECTION - C (30 Marks)**

Answer any **THREE** Questions

**ALL** Questions Carry **EQUAL** Marks (3x10 = 30)

- 16 Give an account on principle and applications of pH meter and conductivity meter.
- 17 Write an essay on immuno electrophoresis and its uses in biological sciences.
- 18 Explain in detail about ultracentrifugation.
- 19 Discuss" on flame photometry with neat sketch.
- 20 Write an essay on Autoradiography.