

**Master's Degree Examination – November 2017**

**I Semester**

**Class : I PG  
Major : BIOCHEMISTRY**

**Time: 3 hours  
Max. Marks: 60**

**17MBCC01 Biophysical Methodology**

**Part A**

**10 x 1/2 = 5**

**Choose the correct answer**

- One of the technique that is often considered a suitable polishing step in a protein purification strategy is
  - ion exchange chromatography
  - hydrophobic interaction chromatography
  - size exclusion chromatography
  - affinity chromatography
- Which of the following separation method is suited for a protein sample with large difference in molecular mass
  - density gradient centrifugation
  - dialysis
  - rate zonal centrifugation
  - salting out process
- Which of the following microscopy techniques relies on the specimen interfering with the wavelength of light to produce a high contrast image without the need for dyes or any damage to the sample?
  - bright field light microscopy
  - Electron microscopy
  - Phase contrast microscopy
  - Fluorescence microscopy
- Radiation that does not change it's direction inside magnetic field is
  - alpha
  - beta
  - gamma
  - x ray
- Which of the following statements about atomic absorption is not true?
  - it requires that element to be measured be brought to a non-ionized ground state
  - it uses a tungsten lamp as a light source
  - it uses a cathode made of the same element being measured
  - it measures the absorption of light
- Which of the following statements regarding IR spectroscopy is wrong?
  - Infrared radiation is higher in energy than UV radiation
  - Infrared spectra record the transmission of IR radiation
  - Molecular vibrations are due to periodic motions of atoms in molecules, and include bond stretching, torsional changes, and bond angle changes
  - Infrared spectra give information about bonding features and functional groups in molecules
- The elastic scattering of light by molecules and particulate matter much smaller than the wavelength of the incident light is
  - Rayleigh scattering
  - Mie scattering
  - Tyndall scattering
  - Raman scattering
- The following combination of fuel and oxidants are commonly used in flame photometer except
  - propane + air
  - hydrogen + air
  - acetylene + air
  - methane + air
- Which of the biosensors use the principle of heat released or absorbed by a reaction
  - amperometric biosensors
  - optical biosensors
  - calorimetric biosensors
  - potentiometric biosensors
- Which of the organic compounds are referred to as nanocapsules
  - liposomes
  - micelles
  - vesicles
  - all the above

