

B.Sc. Semester - 2 (CBCS) Examination**March/April- 2018****FORENSIC SCIENCE****(CORE: Forensics, crime and investigative technique)****Time: 2:30 Hours****Marks: 70****Instructions:**

1. All questions are compulsory.
2. Figures to the right indicate marks.

Q – 1 (A) Objective type questions (4)

1. In Raman spectra, the lines to the left of Rayleigh peak and having lower value of wave no. are called as _____.
2. Types of wave
3. Define: Spectroscopy
4. Photoelectric effect explained by which nature of E.M Radiation?

Q – 1 (B) Answer in brief (Any 1 out of 2) (2)

1. Define spectra and give its types.
2. Why the color of sky is Blue? Explain.

Q – 1 (C) Answer in detail (Any 1 out of 2) (3)

1. Describe those effects which explain the particle nature of electromagnetic radiation.
2. Explain scattering.

Q – 1 (D) Write a note on (Any 1 out of 2) (5)

1. Write a note on Quantum Numbers.
2. Explain molecular spectra and molecular energy.

Q – 2 (A) Objective type questions (4)

1. List out the methods of x-ray techniques.
2. Wavelength of X-ray region
3. Who discovered the X-Rays?
4. Bragg's Equation.

Q – 2 (B) Answer in brief (Any 1 out of 2) (2)

1. Full form of EDS and WDS and give the difference between them.
2. Detectors of x-ray spectrometer.

Q – 2 (C) Answer in detail (Any 1 out of 2) (3)

1. Explain monochromator with figure.
2. Explain the Auger effects.

Q – 2 (D) Write a note on (Any 1 out of 2) (5)

1. Explain X-ray diffraction and Bragg's Law
2. Production of X-Rays.

Q – 3 (A) Objective type questions (4)

1. Wavelength of UV visible region.
2. Bolometers used as detector in _____ spectroscopy.
3. Nicrome wire lamp is used as a source in _____.
4. Write the Characteristics of Laser light .

- Q – 3 (B) Answer in brief (Any 1 out of 2) (2)
1. Block diagram of instrumentation of double beam UV-Spectrophotometer.
 2. Full form of LASER and give the example of them.
- Q – 3 (C) Answer in detail (Any 1 out of 2) (3)
1. Source of IR spectrometer.
 2. Why deviation occurs from beer's law in UV-Visible spectroscopy?
- Q – 3 (D) Write a note on (Any 1 out of 2) (5)
1. Detectors of IR Spectrometer.
 2. Explain Helium-Neon Laser.
- Q – 4 (A) Objective type questions (4)
1. What is pH? .
 2. Centrifugation technique works on the basis of _____ principle.
 3. The range of pH of acidic solution is _____.
 4. In pure water at 22° C the concentration of H_3O^+ ions is _____.
- Q – 4 (B) Answer in brief (Any 1 out of 2) (2)
1. What is centrifugation? On which principle it works?
 2. Use of buffer solution.
- Q – 4 (C) Answer in detail (Any 1 out of 2) (3)
1. Write down the importance of buffer solution.
 2. Principle of centrifugation and Write a note on density gradient centrifugation
- Q – 4(D) Write a note on (Any 1 out of 2) (5)
1. Write a note on pH meter.
 2. List out the types of centrifuge technique and explain the differential centrifugation.
- Q – 5 (A) Objective type questions (4)
1. The diameter of helix of DNA is _____ Å and _____ base pairs are present in each turn of helix.
 2. example of polysaccharide.
 3. _____ are the purine base
 4. Types of DNA
- Q – 5 (B) Answer in brief (Any 1 out of 2) (2)
1. What is the difference between nucleoside and nucleotide?
 2. Give some example of source of carbohydrates
- Q – 5 (C) Answer in detail (Any 1 out of 2) (3)
1. Write a note on RNA and its type.
 2. What is central dogma?
- Q – 5 (D) Write a note on (Any 1 out of 2) (5)
1. Draw the structure of amino acid and give the example of it. And discuss the electric charge of proteins and isoelectric point.
 2. Write a note on Lipid
