

B.Sc. Semester - 2 (CBCS) Examination
March/April - 2023 (OLD COURSE)
FORENSIC SCIENCE (CORE)

Time: 2:30 Hours**Marks: 70****Instructions:**

1. All questions are compulsory.
 2. Figures to the right indicate marks.
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Q.1(A) Answer the following questions. (04)

1. Write any two properties of electromagnetic radiation.
2. Give an example of Mechanical Wave.
3. What is Spectroscopy?
4. Name the types of Quantum Numbers.

Q.1(B) Answer the following question. (Any One) (03)

1. Explain the types of Spectra.
2. Write the parameters of an electromagnetic waves

Q.1(C) Answer the following question. (Any One) (07)

1. (i) What is Wave and its type? (ii) Briefly explain the Quantum number.
2. Explain the term spectroscopy & its principle and define the term Interference; Scattering; Polarization.

Q.2(A) Answer the following questions. (04)

1. Who discovered the X-Rays?
2. Write the full form of EDS.
3. Write the formula for Bragg's Law.
4. What are the condition for target to produce X-Rays?

Q.2(B) Answer the following question. (Any One) (03)

1. Explain the types of X-Ray Techniques.
2. Explain the production of X-Rays with its neat diagram.

Q.2(C) Answer the following question. (Any One) (07)

1. Write a note on Instrumentation of X-Ray Spectroscopy.
2. Explain the working of X-Ray production.

Q.3(A) Answer the following questions. (04)

1. Name any two sources for U.V. Spectroscopy.
2. What is the range of I.R. wavelength?
3. Write the full form of PMT_____.
4. Define: Chromophore.

Q.3(B) Answer the following question. (Any One) (03)

1. Explain the theory of U.V. Spectroscopy.
2. How does LASER light is different from the ordinary light?

- Q.3(C) Answer the following question. (Any One) (07)**
1. Write a note on instrumentation of U.V. Spectroscopy
 2. Explain about the detectors of I.R. Spectroscopy.
- Q.4(A) Answer the following questions. (04)**
1. Write the formula for Buffer Capacity.
 2. What is pH?
 3. What is sedimentation?
 4. Name the types of Centrifugation Techniques.
- Q.4(B) Answer the following question. (Any One) (03)**
1. Write the applications of Buffer Solution?
 2. Explain Differential Centrifugation Technique.
- Q.4(C) Answer the following question. (Any One) (07)**
1. Write a brief note on types of Centrifuges.
 2. (i) What is buffer solution and explain its characteristics
(ii) Explain principle and construction of pH meter.
- Q.5(A) Answer the following questions. (04)**
1. What is protein?
 2. Carbohydrates are composed of _____ , _____ , & oxygen.
 3. What is Transcription?
 4. Write the full form of DNA _____.
- Q.5(B) Answer the following question. (Any One) (03)**
1. Explain: RNA briefly.
 2. Explain the types of protein on basis of their structure.
- Q.5(C) Answer the following question. (Any One) (07)**
1. Write a brief note on Lipids.
 2. What are carbohydrates? & Explain its types in brief.
