

M.Sc.(FS) Semester - 4 (CBCS) Examination
April/May-2022 (NEW COURSE)
Advanced Forensic Chemistry (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)** Write short note on neutron activation analysis **4 Marks**
- Q.1 (b)** Answer any two question out of three. **10 Marks**
- (1) What are the different methods of detection of Radioactivity
 - (2) Write a note on Radioactivity and its applications
 - (3) Define with suitable examples ,Nuclear Forensics and Nuclear Explosive Devices
- Q.2 (a)** Give a note on Classification of Chemical Warfare Agents. **4 Marks**
- Q.2 (b)** Answer any two question out of three. **10 Marks**
- (1) Write a note on nerve agents, mention its types and its harmful effects.
 - (2) What are biosensors, mention its principles and applications in Forensic Science
 - (3) What are Riot Control agents. Give a note on it.
- Q.3 (a)** Write a note on types of organophosphate pesticides and its mechanism of action **4 Marks**
- Q.3 (b)** Answer any two question out of three. **10 Marks**
- (1) What do you understand by BOD and COD, give explanation in brief.
 - (2) What are the various factors responsible for air pollution
 - (3) Describe any one method to detect fertilizer by instrumental method
- Q.4 (a)** Mention any one technique and its principle for analysis of Heavy metals in Forensic Samples **4 Marks**
- Q.4 (b)** Answer any two question out of three. **10 Marks**
- (1) Write short note on non-destructive technique can be used to test purity of gold.
 - (2) Describe the extraction techniques which can be used for the digestion of metals
 - (3) What is an alloy. Mention any one technique with principle for the analysis of alloys.
- Q.5 (a)** Write a short note on inorganic and organic dyes **4 Marks**
- Q.5 (b)** Answer any two question out of three. **10 Marks**
- (1) What is the difference between dye and a pigment
 - (2) If two colors are same, which instrument can be used to differentiate the dye present in them? Write a note on it.
 - (3) Explain in which cases Phenolphthalein is received in the Forensic Science Laboratory and give a note on its examination by TLC
