

**GUJARAT NATIONAL LAW UNIVERSITY
GANDHINAGAR**
Course: Nano Technology and Forensic Chemistry
Semester- IV (Batch: 2020-25)

End Semester Online Examination: May 2022

Date: 13th May, 2022

Duration: 8 hours

Max. Marks: 40

Instructions:

- The respective marks for each question are indicated in-line.
- Indicate correct question numbers in front of the answer.
- No questions or clarification can be sought during the exam period, answer as it is, giving reason, if any.
- Diagram/s shall be made with a pencil only.
- Word Limit: 10 Marks: 800-850 words, 6 Marks: 600-650 words, 5 Marks: 500-550 words, 4 Marks: 400-450 words.

Marks

- Q.1 Two suspicious-looking devices which appeared to be old & unused crude bombs, were found on Feb 13, 2022 during the excavation work undertaken to lay the Metro line outside the Delhi NCR. The suspicious-looking devices were first spotted by some workers who had alerted a police constable. A dog squad, a unit of the Bomb Detection and Disposal Squad, and a team of police officials were rushed to the spot. (10)
- The devices were diffused by the Bomb Detection and Disposal Squad Team and were sent to the Forensic Science Laboratory for examination. Draw an explanation supporting the argument that the suspicious-looking device is an IED. What is explosives train? Mention the steps to secure the scene. If the diffusion had not been possible within the stipulated time duration then how it could have been transported to a safe place?
- Q.2 Make a list of some properties of those things that we would like on a macro scale. List the effect of doing this on a nano scale. For example if a non-stick frying pans are useful, it would be also nice to have clothes with non sticking sweat. (6+4 =10)
- a) From the reference given in the text pick one area of your interest, find the references in research library and cite the details regarding the innovation and patentable aspect in that sector.
 - b) Suggest the classification of nanomaterial's based on the dimensions.
- Q.3 **Read the case and answer the below questions:** (10+5 =20)
- The police stated that a brother murdered his sister over "minor domestic issues". The deceased, 24 was identified as Seema while the accused has been identified as Vinamra. Upon inquiry by the police, Vinamra confessed that both of them were drug addicts. The police said that they were alone at home when the argument broke out between them over some domestic issues. The police had also recovered some psychoactive substances and broken bottles of alcohol from the crime scene.

- a) Draw an opinion proving toxicity from Barbiturates in the given case with a focus on Postmortem finding.
- b) Evaluate Blood Alcohol Concentration from the viscera and suggest its role in investigation.
- c) Evaluate the glass trace evidence and suggest its role in investigation.
