

GUJARAT NATIONAL LAW UNIVERSITY
GANDHINAGAR
Course: **Nano Technology and Forensic Chemistry**
Semester- IV (Batch: 2021-26)
End Semester Examination: May 2023

Date: 11th May, 2023

Duration: 2 hours

Max. Marks: 40

Instructions:

- Read the questions properly and write the answers in the given answer book.
- Do not write anything on the question paper.
- The respective marks for each question are indicated in-line.
- Indicate correct question numbers in front of the answer.
- Draw diagrams only with pencil.
- No questions or clarification can be sought during the exam period, answer as it is, giving reason, if any.

- Marks**
- Q.1 On the night of September 28, 2022, a black Toyota Land Cruiser belonging to Mr. A was found to have crashed into the pavement near American Express Bakery at Hill Road, Bandra, Mumbai and also resulting in killing of the person on sight and causing fatal injuries to other four. (5)
- It was the case of Drinking and Driving; the blood samples taken showed that Mr. A drank more than the permissible limit and lost control over his driving which led to the death and injury to innocent lives. Explain the role of Blood Alcohol Concentration in the given case.
- Q.2 Examine the given arson crime scene and explain the chain of custody in the investigation. (5)



- Q.3 A truck bomb exploded in front of the Cherry Blossom Building in Oklahoma City, Oklahoma. The bomb was improvised from ammonium nitrate fertilizer and nitromethane. It was placed in the back of the truck and left to explode. Define various components of IED and explain any two types of associated circuits. (5)
- Q.4 “According to the law of individuality, every evidence sample has unique characteristics that differentiates it from the class of evidence.” Prove the statement for the glass evidence. (5)

- Q.5 A 36-year-old man with an opioid-use disorder was seen in the emergency department of the hospital last week because of an opioid overdose. While attending the treatment he lost his life. (5x2=10)
- a) Explain the postmortem analysis and on-the-spot tests for opioid intoxication.
 - b) Explain the classification of Psychoactive substances.
- Q.6 Describe the concept of the Top-down and Bottom-up approach and explain the classification of nanomaterials based on the dimensions. (10)

OR

Explain any four methods for the synthesizing of nanomaterials based on the Top-down and Bottom-up approach. Explicate two applications of the same.
