

STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI-86  
(For candidates admitted during the academic year 2015-16)

SUBJECT CODE: 15CH/PI/IF24

B.Sc. DEGREE EXAMINATION, APRIL 2019  
BRANCH IV- CHEMISTRY  
SECOND SEMESTER  
REG.NO .....

COURSE : INDEPENDENT ELECTIVE  
PAPER : INTRODUCTION TO FORENSIC SCIENCE  
TIME : 30 MINUTES

MAX.MARKS: 30  
(30x1=30)

SECTION - A

ANSWER ON THE QUESTION PAPER ITSELF:

Answer all the questions:

I Choose the correct answer the following

1. TNT is an example for -----explosive  
a. water b. military c. nuclear d. aerosol
2. pH of blood is  
a. 6 b. 7 c. 7.4 d. 8.2
3. The detective dye used is  
a) Phenolphthalein b) Bromocresol c) Thymolblue d) Malachite green
4. Forensic odontology concentrates on which body part?  
a. Skull b. torso c. teeth d. feet
5. Most common fingerprint pattern is  
a. Whorls b. Loops c. Composite d. Arches
6. Which statement about forensic chemists is false?  
a. Forensic chemists usually work on small quantities of material.  
b. Forensic chemists work alone to solve crime  
c. A forensic chemist may be employed by a government agency or private enterprise.  
d. Forensic chemists use a wide variety of analytical techniques
7. The majority of forensic chemists work in  
a. Police stations b. Hospitals c. courts d. labs
8. Arson is -----fire  
a. accidental b. intentional c. sabotage d. none of the above
9. Forensic scientists are obligated to combine scientific skills with a sworn duty to the public good. Therefore, forensic science is often called:  
a) Law science b) Public science c) Forensics d) Law
10. The primary duty of a forensic expert in a court of law is  
a) Explain scientific procedures b) Explain scientific evidence. C) Give testimony  
d) To tell the truth

**II Fill in the blank**

11. A study of relationships between organisms and their environment is -----
12. Cut and paste is a type of -----
13. The antidote for lead poisoning is -----.
14. IR rays are used in forensic science to study -----.
15. Paternity of an offender to a crime is matched with -----.

**III State whether the following statements are true or false.**

16. Forensic scientists do not need to know anything about the rules of law since that is an area reserved only for students of the law (attorneys, judges, congress, etc.)
17. Finger print of twins is identical.
18. Because scientific opinions involve interpretations of and inferences from scientific data they are not subject to challenge in court
19. Blood grouping help in the identity of a person who have committed the crime.
20. Speed detection devices are commonly used in our country.

**IV Match the following**

- |                                 |                    |
|---------------------------------|--------------------|
| 21. DNA profiling               | Poison             |
| 22. IED                         | Firearm residues   |
| 23. Neutron activation Analysis | forged currency    |
| 24. Antidote                    | DNA fingerprinting |
| 25. UV rays                     | Road side bombs    |

**V Answer in a line or two**

26. Define Forensic Holography
27. Give the antidote for Lead poisoning
28. List the primary duties of a forensic expert in a court of law
29. Mention the applications of IR rays in crime detection
30. Neutron radiography.

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5x 6=30

SECTION – B

Answer any five questions

1. What are the functions of forensic Laboratory?
2. Imagine that you have been asked to determine whether a signature on a check is authentic or a forgery. What steps would you take in doing this? What aspects would you examine?
3. What is physical evidence? How are they classified?
4. How are explosives classified? Give suitable examples
5. Give the forensic significance of body fluids such as saliva, semen and sweat?
6. How are fire scenes different than regular crime scenes for investigators?
7. What is a questioned document? Describe at least one example of something that might be a questioned document.

SECTION – C

2x20=40

Answer any two questions

8. a) From the following list choose one analysis technique and list salient features of this technique in crime investigation- gas chromatography, UV-Visible spectroscopy, IR spectroscopy, Mass spectrometry and Atomic Absorption Spectrometry  
b) Describe four security features that help prevent currency forging and explain how they are expected to prevent forgery (10+10)
9. a) Write short notes on DNA profiling. Discuss its application as physical evidence to detect crime  
b) What is trace evidence? How do glass, soil and paint act as trace evidence? Explain in detail (10+10)
10. a) Discuss the organization of a Forensic Science laboratory  
b) Discuss how the introduction of forensic science has changed the process of a criminal investigation (10+10)

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