DCFS – 303

Third Semester B.Sc. Degree Examination, April/May 2023

(NEP Scheme)

CRIMINOLOGY AND FORENSIC SCIENCE

Technological Methods in Forensic Science

Time : 2½ Hours Max. Marks : 60

PART – A

Answer **any 6** questions. **Each** question carries **1** mark. **(1×6=6)**

1. What is the mobile phase and stationary phase made of in TLC ?
2. What is reflection ?
3. Expand ELISA.
4. Write any two uses of agarose gel.
5. Write the uses of NAA.
6. What type of micro is used for dynamic behaviour exhibited in living-cell imaging ?
7. What is Stahl's triangle ?

PART – B

Answer **any 6** questions. **Each** question carries **2** marks. **(2×6=12)**

8. Explain the Beer-Lambertz law.
9. Write the uses of magnifying glass.
10. Define colorimeter spectrometer.
11. Write a forensic application of stereo microscopy.
12. Define diffraction.
13. Define electrophoresis.
14. Write any four uses of colorimeter.
15. Explain chromatography.

P.T.O.

PART – C

Answer **any 3** questions. **Each** question carries **4** marks. **(4×3=12)**

16. Explain the sample preparation in chromatography.

17. Write working principle of sodium dodecyl-sulfate polyacrylamide gel electrophoresis.

18. Write a forensic application X-ray spectrometer.

19. Write the forensic application of gas chromatography.

PART – D

Answer **any 5** questions. **Each** question carries **6** marks. **(6×5=30)**

20. Explain the working principle of compound microscope.

21. Write the forensic application of :
    i) Fluorescence microscope
    ii) Comparison microscope.

22. Write about the working principle of HPLC chromatography.

23. Write the uses of :
    i) Paper chromatography
    ii) Column chromatography.

24. Explain electron microscopy.

25. Explain the working principle of IR spectroscopy.

26. Write the forensic application of :
    i) Handheld spectrometer
    ii) AAS.

27. Write the working principle of UV-vis spectrometer.

DCFS – 301

Third Semester B.Sc. Degree Examination, April/May 2023
(NEP)
CRIMINOLOGY AND FORENSIC SCIENCE
Forensic Dermatoglyphics

Time : 2½ Hours

Max. Marks : 60

PART – A

Answer **any 6** questions. **Each** question carries **1** mark. **(1×6=6)**

1. Define Plastic prints.
2. What are the different layers of epidermis ?
3. Name the development methods used in porous surface.
4. Define Poroscopy.
5. What are the different types of fingerprints ?
6. Define creases.
7. Expand AFIS.

PART – B

Answer **any 6** questions. **Each** question carries **2** marks. **(2×6=12)**

8. Explain Ninhydrin and Iodine fuming method.
9. Explain fingerprint characters.
10. Explain the significance of lip print.
11. Define ridge counting and ridge tracing.
12. Define plain arch and tented arch.
13. Enlist various types of chemical method for the development of latent prints.

P.T.O.

14. Define central pocket and plain whorl.

15. Explain the significance of earprint.

PART – C

Answer **any 3** questions. **Each** question carries **4** marks. **(4×3=12)**

16. What is AFIS ?

17. Explain the collection of footprints.

18. Explain Purkinje classification.

19. Explain the fundamental principles of fingerprinting.

PART – D

Answer **any 5** questions. **Each** question carries **6** marks. **(6×5=30)**

20. Outline the history of fingerprinting.

21. Explain Suzuki and Tsuchihashi classification system.

22. Explain the formation of ridges.

23. Explain AFIS.

24. Explain Dr. Henry Faulds' syllabic system.

25. Explain chemical methods for the development of latent prints.

26. Explain electrostatic lifting of latent footprints.

DCFS – 302

III Semester B.Sc. Degree Examination, April/May 2023
(NEP Scheme)
CRIMINOLOGY AND FORENSIC SCIENCE
Advanced Forensic Chemistry

Time : 2½ Hours Max. Marks : 60

PART – A

Answer **any 6** questions. **Each** question carries **1** mark. **(1×6=6)**

1. Define Adulteration.
2. Define trap case.
3. Expand BIS.
4. Define Arson.
5. What is deflagration ?
6. What is IED ?
7. Define Widmark's equation.
8. Define alcohol.

PART – B

Answer **any 6** questions. **Each** question carries **2** marks. **(2×6=12)**

9. What is thin layer chromatography ?
10. Define forensic chemistry and type of cases involved in forensic chemistry.
11. What are the characteristic features of point of origin ?
12. Explain passive headspace extraction.
13. What is detonation ?
14. What are the characteristics of IED ?
15. Define Breath analyzer.
16. Define country made liquors.

P.T.O.

PART – C

Answer **any 3** questions. **Each** question carries **4** marks. **(4×3=12)**

17. Explain about the adulteration of paint.

18. Explain the forensic examination of petroleum products.

19. Explain the process of explosion.

20. Explain alcoholic beverages and stages of alcohol intoxication.

PART – D

Answer **any 5** questions. **Each** question carries **6** marks. **(6×5=30)**

21. Explain cement and its analysis of adulteration.

22. Explain Adulteration of oil.

23. Explain Arson scene investigation.

24. Explain the basic aspects of explosives.

25. Explain the analysis and comparison of petroleum products as forensic exhibits.

26. Explain the identification and chemical analysis of methanol, ethanol, aldehyde, ester and chloral hydrate.

27. Explain Improvised Explosive Devices.

DCFS – 302

Third Semester B.Sc. Degree Examination, February/March 2024
(NEP) (Freshers and Repeaters)
CRIMINOLOGY AND FORENSIC SCIENCE
Advanced Forensic Chemistry

Time : 2½ Hours | Max. Marks : 60

Instructions : *1) Part – **A** : Answer **any 6** questions.*
*2) Part – **B** : Answer **any 6** questions.*
*3) Part – **C** : Answer **any 3** questions.*
*4) Part – **D** : Answer **any 5** questions.*

PART – A

Answer **any 6** questions. **Each** question carries **1** mark. **(1×6=6)**

1. Define detective dyes.
2. Define cosmetics.
3. Define country made liquors.
4. Define hydroxyl value.
5. Expand IED.
6. Define detonation.
7. Define blood alcohol concentration.
8. Define forensic chemistry.

PART – B

Answer **any 6** questions. **Each** question carries **2** marks. **(2×6=12)**

9. Explain methanol poisoning.
10. Give any 2 uses of petroleum products.
11. Explain density test of petrol.

P.T.O.

12. Explain chemistry of phenolphthalein.
13. Define alcoholic beverages.
14. Define Gas chromatography.
15. Explain blood alcohol concentration.
16. Explain breath analyser.

PART – C

Answer **any 3** questions. **Each** question carries **4** marks. **(4×3=12)**

17. Explain methanol poisoning and its causes.
18. Explain the analysis of gold, oil and sugar.
19. Explain Petroleum Act.
20. Explain the collection and preservation of arson residues.
21. Explain the analysis of furfural components, ethanol and aldehyde.

PART – D

Answer **any 5** questions. **Each** question carries **6** marks. **(6×5=30)**

22. Explain evaluation and reconstruction of sequence of events.
23. Explain process of explosion with classification of explosives.
24. Explain alcohol impaired driving (Breath analyzer, BAC, Widmarks equation).
25. Explain the analysis of petroleum products.
26. Explain head space chromatography and collection and preservation of fire residues.
27. Explain the types and analysis of adulteration of cement.
28. Explain Excise Act, and Drugs and Cosmetics Act and arson scene investigation.

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