Jan 26

BLDE (DEEMED TO BE UNIVERSITY)

B.Sc. in Forensic Science

[Time: 3 Hours] [Max. Marks: 80]

IV SEMESTER

PAPER - I (Forensic Chemistry)

QP CODE: 8455

Your answer should be specific to the questions asked.
Write Question No. in left side of margin.

Long Questions **10X1 = 10 Marks**

1. What is the role of forensic chemistry in criminal investigations? Explain its applications in arson and explosion cases.

Short Essays: (Any – 8) **5 X 8 = 40 Marks**

2. Explain the process of refining crude petroleum.
3. Write a note on analysis of adulterated petroleum products.
4. Describe the conditions required for a fire to occur.
5. Explain the method used to identify accelerants in fire debris.
6. Describe the procedure for collecting evidence from an explosion site.
7. Write a note on safety measures while investigating arson scenes.
8. Explain the synthesis and properties of nitroglycerin.
9. Discuss the importance of flame tests in forensic chemistry.
10. Write about the role of chromatography in petroleum product analysis.

Short Answers: (Any – 10) **3 X 10 = 30 Marks**

11. Define ignition temperature.
12. Write two differences between low and high explosives.
13. What is flash point?
14. Name two methods used for detection of explosive residues.
15. Define deflagration and detonation.
16. What is the use of gas chromatography in forensic chemistry?
17. Write a note on chemical properties of petrol.
18. Mention two examples of military explosives.
19. What are combustible materials?
20. Define accelerant.
21. What is the significance of residue analysis in arson cases?

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B.Sc. in Forensic Science

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IV SEMESTER
PAPER - II (Forensic Biology)
QP CODE: 8456

Your answer should be specific to the questions asked.
Write Question No. in left side of margin.

Long Questions 10X1 = 10 Marks

1. Define Forensic Biology. Explain its branches and applications in criminal investigation.

Short Essays: (Any – 8) 5 X 8 = 40 Marks

2. Explain the importance of collecting control samples in hair analysis.
3. Describe the biochemical composition of hair and its forensic relevance.
4. Discuss the types of microorganisms commonly found on decomposed bodies.
5. Explain the forensic importance of plant fibers such as cotton, jute, and hemp.
6. Describe the role of pollen and spores in linking suspect and crime scene.
7. Explain the methods used for identification of animal bones and horns.
8. Discuss the concept and uses of pugmark tracking in wildlife forensics.
9. Explain the contribution of insects in detecting concealed or buried bodies.
10. Write a short note on use of DNA analysis in wildlife crime investigation.

Short Answers: (Any – 10) 3 X 10 = 30 Marks

11. Write any three sub-branches of forensic biology.
12. List the layers of the human hair shaft.
13. Define cuticle scale and its importance in hair comparison.
14. What is forensic mycology?
15. Mention two botanical evidences useful in crime investigation.
16. Write any three examples of endangered animals found in India.
17. Mention the role of forensic experts in ivory (tusk) identification.
18. Define wildlife trafficking.
19. Write any two salient features of CITES (Convention on International Trade in Endangered Species).
20. Define maggot succession.
21. Name any three insects commonly found on decomposing bodies.

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[Time: 3 Hours] [Max. Marks: 80]

IV SEMESTER

PAPER - III (Technologic Methods in Forensic Science)

QP CODE: 8457

Your answer should be specific to the questions asked.
Write Question No. in left side of margin.

Long Questions 10X1 = 10 Marks

1. Define spectroscopic techniques. Discuss the different types of spectroscopic methods used in forensic analysis.

Short Essays: (Any – 8) 5 X 8 = 40 Marks

2. Explain the basic principle and procedure of thin layer chromatography (TLC).
3. Describe the applications of gas chromatography in drug and toxin detection.
4. Explain the principle and forensic application of infrared spectroscopy.
5. Discuss the importance of colorimetric analysis in identifying chemical substances.
6. Explain the working principle and application of X-ray fluorescence spectrometry.
7. Write a short note on electrophoresis and its role in DNA or protein separation.
8. Describe the principle and functions of a comparison microscope.
9. Explain the types and significance of photographic evidence in court.
10. Write short notes on infrared and ultraviolet photography in forensic work

Short Answers: (Any – 10) 3 X 10 = 30 Marks

11. What is chromatography? Mention one forensic use.
12. Write any two differences between gas and liquid chromatography.
13. Define absorbance and transmittance.
14. Mention two applications of atomic emission spectroscopy.
15. What is the role of neutron activation analysis in crime investigation?
16. Write any three types of microscopes used in forensic science.
17. Define magnification and resolution.
18. Mention two forensic uses of digital photography.
19. What is meant by 3D crime scene imaging?
20. Write two advantages of using videography at crime scenes.
21. What is the importance of photographic documentation in laboratory work?