

Enrollment No.....



Faculty of Science  
End Sem (Even) Examination May-2022  
FS3CO11 Forensic Biology

Programme: B.Sc. (FS) Branch/Specialisation: Forensic Science

**Duration: 3 Hrs.****Maximum Marks: 60**

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d.

- Q.1 i. The percentage of formed element in the blood is- 1  
 (a) 45 % (b) 50 % (c) 55 % (d) 65 %
- ii. Uric acid results from \_\_\_\_ metabolism. 1  
 (a) Protein (b) Carbohydrate  
 (c) Purine (d) Pyrimidine
- iii. The best method for collecting small evidences is to pick it up using- 1  
 (a) Vacuum (b) Tape lift (c) Forceps (d) Gloves
- iv. Locard's exchange principle implies all of the following except: 1  
 (a) Fibers can be transferred from one person's clothing to another.  
 (b) Blood at a crime scene can be used to identify blood type.  
 (c) Hair from pet may be transferred to your clothing.  
 (d) Pollen from plants in your yard may be found on shoes.
- v. When a sample of hair contains certain chemicals, it will absorb some of the light and then reemit light of a different color. This is called- 1  
 (a) Fluorescence (b) Effervescence  
 (c) Incandescence (d) All of these
- vi. The purpose of hair is to- 1  
 (a) Protect the body from an attack  
 (b) Regulate body temperature to keep the body warm by insulation  
 (c) Protect the body from rugged terrain  
 (d) None of these
- vii. Azoospermia means what? 1  
 (a) No sperm in semen  
 (b) No measurable amount of sperm in semen  
 (c) Too much sperm in semen to provide adequate impregnation  
 (d) None of these

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- viii. What are the two types of test used to determine if an evidences sample is actually blood? **1**  
 (a) Presumptive  
 (b) Confirmatory  
 (c) Both presumptive and confirmatory  
 (d) Neither presumptive nor confirmatory
- ix. Which of the following is definite sign of death due to drowning? **1**  
 (a) Absence of sand and mud in mouth and nostrils  
 (b) Presence of diatom in victim  
 (c) Absence of lathery froth in mouth and nostrils  
 (d) Washer man's hands and feet
- x. Forensic Palynology is the study of which of the following? **1**  
 (a) Lip print for forensic purpose  
 (b) Polymer for forensic purpose  
 (c) Bite marks for forensic purpose  
 (d) Pollen grains for forensic purpose
- Q.2 i. Write characteristics of urine. **2**  
 ii. Describe the components of Semen with their structure. **3**  
 iii. Write an essay on the composition of blood? **5**
- OR iv. Discuss on forensic importance of biological evidences. **5**
- Q.3 i. Define different types of searching method involves in searching of biological evidences. **4**  
 ii. Write short note on – Chain of custody. **6**
- OR iii. List the different packaging method for blood, semen, vaginal fluid, urine, vomit and sweat along with their forensic significance. **6**
- Q.4 i. What characteristics make hair a useful forensic tool? **3**  
 ii. Write short note on- Cuticle, Medulla and Cortex. **7**
- OR iii. Explain the hair growth cycle. **7**
- Q.5 i. Describe the principle of an alternative light source or detection of bodily fluids. **4**  
 ii. Why it is important to determine the presences or absences of sperm in evidentiary? **6**

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- OR iii. Discuss the confirmatory and presumptive test of blood sample? **6**
- Q.6 Attempt any two:
- i. Explain the forensic significances of diatoms with well labelled diagram. **5**
- ii. Explain pug marks of various animals. **5**
- iii. Discuss pollen grains evidences in forensic aspect. **5**

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**Marking Scheme**  
**FS3CO11 Forensic Biology**

|     |       |                                                                                                                                                                    |   |
|-----|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| Q.1 | i.    | The percentage of formed element in the blood is-<br>(b) 50 %                                                                                                      | 1 |
|     | ii.   | Uric acid results from ____ metabolism.<br>(c) Purine                                                                                                              | 1 |
|     | iii.  | The best method for collecting small evidences is to pick it up using-<br>(c) Forceps                                                                              | 1 |
|     | iv.   | Locard's exchange principle implies all of the following except:<br>(b) Blood at a crime scene can be used to identify blood type.                                 | 1 |
|     | v.    | When a sample of hair contains certain chemicals, it will absorb some of the light and then reemit light of a different color. This is called-<br>(a) Fluorescence | 1 |
|     | vi.   | The purpose of hair is to-<br>(b) Regulate body temperature to keep the body warm by insulation                                                                    | 1 |
|     | vii.  | Azoospermia means what?<br>(a) No sperm in semen                                                                                                                   | 1 |
|     | viii. | What are the two types of test used to determine if an evidences sample is actually blood?<br>(c) Both presumptive and confirmatory                                | 1 |
|     | ix.   | (b) Presence of diatom in victim                                                                                                                                   | 1 |
|     | x.    | Forensic Palynology is the study of which of the following?<br>(d) Pollen grains for forensic purpose                                                              | 1 |

|     |      |                                                     |         |   |
|-----|------|-----------------------------------------------------|---------|---|
| Q.2 | i.   | Composition                                         | 2 marks | 2 |
|     | ii.  | Composition                                         | 2 marks | 3 |
|     |      | Structure                                           | 1 mark  |   |
|     | iii. | Composition of blood                                |         | 5 |
|     |      | As per explanation                                  |         |   |
| OR  | iv.  | Different biological evidences and their importance |         | 5 |
|     |      | As per explanation                                  |         |   |

|     |      |                            |              |   |
|-----|------|----------------------------|--------------|---|
| Q.3 | i.   | Any four searching methods | (1 mark * 4) | 4 |
|     | ii.  | Chain of custody           | 3 marks      | 6 |
|     |      | Its Importance             | 3 marks      |   |
| OR  | iii. | Packaging of 6 different   | (1 mark * 6) | 6 |

|     |      |                                     |         |   |
|-----|------|-------------------------------------|---------|---|
| Q.4 | i.   | Characteristics make hair           |         | 3 |
|     | ii.  | Structure                           | 3 marks | 7 |
|     |      | Note                                | 4 marks |   |
|     |      | As per explanation                  |         |   |
| OR  | iii. | Different growth stages of hair     |         | 7 |
|     |      | As per explanation                  |         |   |
| Q.5 | i.   | Principle and name of bodily fluids | 2 marks | 4 |
|     |      | On their colour observe under ALS   | 2 marks |   |
|     | ii.  | Structure                           | 2 marks | 6 |
|     |      | Its Importance                      | 4 marks |   |
| OR  | iii. | Confirmatory test                   | 3 marks | 6 |
|     |      | Presumptive test                    | 3 marks |   |
| Q.6 |      | Attempt any two:                    |         |   |
|     | i.   | Diagram                             | 2 marks | 5 |
|     |      | Significances                       | 3 marks |   |
|     | ii.  | Different pug marks                 |         | 5 |
|     |      | As per explanation                  |         |   |
|     | iii. | Structure                           | 2 marks | 5 |
|     |      | Its Importance                      | 3 marks |   |

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