



**MCR-003-001548** Seat No. \_\_\_\_\_

**B. Sc. (Forensic Science) (Sem. V) (CBCS) Examination**

May / June - 2018

**FS - 503 : Forensic Physics**

**Faculty Code : 003**

**Subject Code : 001548**

Time :  $2\frac{1}{2}$  Hours]

[Total Marks : 70

- Instructions :** (1) This question paper contains three questions. All are compulsory.  
(2) Draw neat and labelled diagrams wherever necessary.  
(3) Figures to the right indicate marks.

- 1** Give the answers of following questions-one mark each : **20**
- (1) Which glass breaks in to small square fragments under sufficient impact?
  - (2) Define glass.
  - (3) Give the example of physical properties.
  - (4) Give 3-R rule for glass.
  - (5) Which instrumental techniques are used for the measurement of refractive index of glass?
  - (6) The process by which soil is formed is known as \_\_\_\_\_.
  - (7) What is humus?
  - (8) The ultimate value of soil as evidence is dependent on its variation at the crime scene. Is it true?
  - (9) What is gait analysis?
  - (10) What is used as casting materials for foot prints obtained on snow?
  - (11) Types of fiber on the basis of their origin.
  - (12) Full name of "DOTr", which relates to tire?

- (13) Define Tread ware indicator.
- (14) The stamped serial number on iron barrel can be restored by which chemical reagent?
- (15) Which information is obtained from the speech sample?
- (16) What is crime scene photography?
- (17) What is Exposure?
- (18) Instrument used in forensic physics division.
- (19) Human vocal cord starts from \_\_\_\_\_ and ends to \_\_\_\_\_.
- (20) Which lens has varying focal length between fixed limits ?

**2** Give the answers of following questions as per instructions:

(A) Write any **three** out of six :

**6**

- (1) How one can dissolve a glass before elemental analysis of it?
- (2) Mention only the names of types of glass.
- (3) Which spectrophotometric techniques is used for forensic soil analysis?
- (4) What is noise treatment for tire?
- (5) Give the example of scrap marks and identification marks.
- (6) Which methods are used to obliterate the marking made on object?

(B) Write any **three** out of six :

**9**

- (1) Write a note on types of camera.
- (2) Define : (i) Exposure, (ii) Aperture, (iii) Depth of field.
- (3) Challenged faced by the experts during forensic speaker recognition.
- (4) Difference between intra speaker and inter speaker variation.
- (5) Define fundamental and formant frequency and give the value of average fundamental frequency of Men, Women and Children?
- (6) How one can do editing in the video tape?

- (C) Write any **two** out of five : **10**
- (1) Describe density gradient method for soil.
  - (2) Write a note on refractometer.
  - (3) Describe the parameters which are used in gait pattern analysis.
  - (4) Describe different types of tool marks.
  - (5) What is forensic speaker recognition? Mention the types of approach of speaker recognition system and describe spectrographic approach of speaker recognition system.

**3** Give the answers of following questions as per instructions:

- (A) Write any **three** out of six : **6**
- (1) By using which methods we can match the tool marks?
  - (2) Mention the etching solution which is used to restore the marks on cast-iron surface.
  - (3) Define voice and speech.
  - (4) What is the difference between open test and close test analysis in forensic speaker recognition?
  - (5) Give the full form of CCD and CMOs, which relate to photography.
  - (6) Mention the cardinal rules for crime scene photography.

- (B) Write any **three** out of five : **9**
- (1) Which ingredients are added to sodalime glass? And which properties are obtained due to these ingredients ?
  - (2) Describe pedogenesis. Which precautions should be taken while preserving and collecting the soil sample as evidence"?
  - (3) Which types of cases come under the forensic physics division?
  - (4) Forensic examination of seal and counterfeit coins.
  - (5) Write a note on main components of paint.

(C) Write any **two** out of five : **10**

- (1) Describe the POP casting procedure for sunken foot prints and give the difference between photography and casting.
  - (2) List out the different types of glass fractures and write a note on bullet fracture and how can we determine the angle of fire from it.
  - (3) Explain the mechanism of production of frequencies in vocal cord.
  - (4) Explain crime scene photography.
  - (5) Classification of fiber and forensic examination of fiber.
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