



MAL-003-001548-N Seat No. _____

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

October / November – 2016

FS-503 : Forensic Physics

Faculty Code : 003

Subject Code : 001548-N

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

[Total Marks : 70

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

1 Give the answer of following questions - one mark : **20**

- (1) Define Glass.
- (2) What is gait pattern?
- (3) What is Indentation ?
- (4) What is Aspect Ratio?
- (5) Over stamping is the method of Obliteration. Is it true?
- (6) Human vocal cord starts from _____ and end to _____.
- (7) Which lens has varying focal length between fixed limit.?
- (8) Which physical characteristic of glass is measured with the help of hot stage Microscope.
- (9) Define Text dependent speaker analysis.
- (10) What is Casting?
- (11) Use of tensilometer in forensic physics Lab.
- (12) SLR stands for _____ in photography.
- (13) The stamped serial number on iron barrel can be restored by which chemical reagent?

- (14) Refractometer works based on the which law?
- (15) Which glass breaks in to small square firagments under sufficient impact?
- (16) The 4-R rule is related with glass. True or false?
- (17) The process by which soil is formed is known as _____
- (18) In forensic speaker recognition for speaker verification the ratio of compare the voice sample is _____
- (19) Define physical properties.
- (20) When a temperature of liquid is raised its refractive index decreases.
True or False?

2 Give the answers of following questions as per instruction :

(a) Write any **three** out of six : **6**

- (1) Write a note on chemical analysis of soil.
- (2) Give the principle of tool mark impression.
- (3) Define voice and speech.
- (4) Describe the human manufacturing of glass in short.
- (5) What is noise treatment for tyre ?
- (6) Mention the only name of types of glass.

(b) Write any **three** out of six : **9**

- (1) Composition and use of sodalime and borosilicate glass.
- (2) Define :
 - Trend design width
 - Track width
 - Wheel base
- (3) Write a note on types of lenses of camera.
- (4) Explain the process "Pedogenesis".
- (5) Give the types of skid marks.
- (6) Difference between intra speaker and inter speaker variation.

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

- (1) Describe the speech production in human beings.
- (2) Explain the density gradient tube method for soil analysis.
- (3) What is soil for forensic scientist? What are its major components and how it is formed?
- (4) If you are forensic scientist and you obtained a soil as an evidence on crime scene which steps you will follow from crime scene to analysis of that soil.
- (5) Write a note on crime scene photography.

3 Give the answers of following questions as per instruction :

(a) Write any **three** out of six : 6

- (1) Define pitch and formant frequency.
- (2) Which information obtained from the impression of foot or shoes at crime scene ?
- (3) Mention the cardinal rules for crime scene photography.
- (4) Give the full form of following, which relates to voice spectrogram.
- (5) (1) FAR
(2) FRR
- (6) What is becke line and becke line concept for immersion method ?

(b) Write any **three** out of six : 9

- (1) Is voice is biometrics or not ? Why?
- (2) Which precautions should be taken while preserving and collecting the soil sample as evidence?
- (3) Write a note on tread wear indicator.
- (4) How one can do editing in the video tape ?
- (5) Give the difference between casting and photography.
- (6) Describe the etching procedure to restore the obliterate marks on object.

- (c) Write any **two** out of five : **10**
- (1) Describe the security features of Indian currency note.
 - (2) Discuss the photographic materials which are used to make photographic film.
 - (3) Explain the types of glass in detailed.
 - (4) Write a note on challenged faced by expert during forensic speaker recognition.
 - (5) Why elemental analysis of glass is necessary? How we can dissolve the glass before elemental analysis? Mention the name of analytical techniques which are used for elemental analysis of glass.
-