



**MAY-003-1014024** Seat No. \_\_\_\_\_

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

March / April - 2018

**FS - 401 : Basic Concepts & Principles of  
Physical, Chemical & Biological Analysis  
Technique - II**

**Faculty Code : 003**

**Subject Code : 1014024**

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

[Total Marks : 70

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

- 1 (A) Objective type questions : 4
- (1) \_\_\_\_\_ breaks the steady light from the source in to intermittent or pulsating light in AAS.
- (2) In thermal gravimetry to obtain the temperature above 1750°C, the material of furnace is \_\_\_\_\_.
- (3) \_\_\_\_\_ is used as reference material in NMR.
- (4) What is the full form of PMT?
- (B) Answer in brief : (Any **One** out of Two) 2
- (1) Types of AAS with labeled block diagram.
- (2) Give the Forensic application of thermal methods.
- (C) Answer in detail : (Any **One** out of Two) 3
- (1) Source and detector of atomic absorption spectrometer
- (2) Describe instrumentation of DTA.

- (D) Write a note on : (Any **One** out of Two) **5**
- (1) Describe Nebulization and Atomization process in AAS.
  - (2) Instrumentation of NMR
- 2** (A) Objective type questions : **4**
- (1) Full form of ELISA
  - (2) Define immune system.
  - (3) Define paratope.
  - (4) Factors controlling the Immunochemical methods.
- (B) Answer in brief : (Any **One** out of Two) **2**
- (1) Define antigen and antibody
  - (2) Explain immunoprecipitation.
- (C) Answer in detail : (Any **One** out of Two) **3**
- (1) Explain the characteristic features and role of antigen antibody reaction.
  - (2) Explain Immunolectrophoretic and immunofixation.
- (D) Write a note on : (Any **One** out of Two) **5**
- (1) Explain RIA.
  - (2) Explain Immunolectrophoretic and immunofixation
- 3** (A) Objective type questions : **4**
- (1) Density of petrol at 15° C is \_\_\_\_\_
  - (2) Which dye is used for coloring Motor- Gasoline (petrol)?
  - (3) The color of phenolphthalein after ionization is \_\_\_\_\_.
  - (4) The smoke point of typical standard kerosene is \_\_\_\_\_.

- (B) Answer in brief : (Any **One** out of Two) **2**
- (1) Define fire tetrahedron and triangle.
  - (2) Describe any two chemical tests for the analysis of sodium ions.
- (C) Answer in detail : (Any **One** out of Two) **3**
- (1) Describe distillation process for kerosene.
  - (2) Instrumental methods used for the analysis of fire residue.
- (D) Write a note on : (Any **One** out of Two) **5**
- (1) Arson crime scene management : describe.
  - (2) Describe the thin layer chromatographic methods for detection of oil soluble dyes of kerosene.
- 4 (A) Objective type questions : **4**
- (1) Define admitted writing.
  - (2) How many optical security codes on the cover page of passport?
  - (3) Methods of document tampering.
  - (4) Full form of ATM.
- (B) Answer in brief : (Any **One** out of Two) **2**
- (1) Types of alteration of document.
  - (2) Difference between Rupay card and Visa card
- (C) Answer in detail : (Any **One** out of Two) **3**
- (1) Manufacturing process of debit and credit card.
  - (2) Types of passport.
- (D) Write a note on : (Any **One** out of Two) **5**
- (1) Describe security features of Indian currency notes.
  - (2) Describe examination of counterfeit coins.

- 5 (A) Objective type questions : 4
- (1) What is digital evidence?
  - (2) What is the full form of NPCI?
  - (3) What is AEPS?
  - (4) Name any 2 E-Wallets.
- (B) Answer in brief : (Any **One** out of Two) 2
- (1) Enlist branches of Digital Forensics.
  - (2) Define Cyber Crime as per IT Act 2000.
- (C) Answer in detail : (Any **One** out of Two) 3
- (1) What is digital payment? What are benefits of digital payment?
  - (2) What is E-Wallet? How it is useful to the public?
- (D) Write a note on : (Any **One** out of Two) 5
- (1) What are cards? Discuss about the various types of cards provided by bank to the bank account holders.
  - (2) What are advantages of digital payments?
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