Roll No.

Total No. of Pages : 02

Total No. of Questions : 11

B.Sc (Forensic Sciences) (Sem.-1) FORENSIC CHEMISTRY Subject Code : BFS-103-21 M.Code : 91429 Date of Examination : 19-01-2023

Time: 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

- 1. SECTION-A is COMPULSORY consisting of EIGHT questions carrying TWO marks each.
- 2. SECTION-B contains EIGHT questions carrying FOUR marks each and students have to attempt any SIX questions.
- 3. SECTION-C will comprise of two compulsory questions with internal choice in both these questions. Each question carries TEN marks.

SECTION-A

1. Write briefly :

- a) Mention one example of positive electromeric effect.
- b) Define resonance effect.
- c) State Heisenberg's uncertainty principle.
- d) Define atomic radii.
- e) Mention one example of homogeneous catalyst.
- f) Write down the unit of rate constant for first order reaction.
- g) What do you mean by gravimetric analysis?
- h) Give one example of volumetric experiment.

SECTION-B

- 2. Briefly discuss the difference between addition reaction and elimination reaction with proper mechanism.
- 3. Explain why allyl and benzyl halides are more reactive than primary alkyl halides towards substitution reaction?
- 4. What are carbocations? Discuss the formation, structure and stability of carbocations.
- 5. Write a short note on collision theory.
- 6. Explain how energy of activation is determined with the help of Arrhenius equation?
- 7. Discuss the variation in ionic radius along a period and down a group in periodic table.
- 8. Discuss the principle and applications of any volumetric method.
- 9. Discuss Aufbau principle and mention the limitations.

SECTION-C

10. Discuss the mechanism and kinetics of enzyme catalyzed reaction.

OR

Derive the rate expression and half life time of first order reaction. Give one example.

11. Explain hyper conjugative effect and compare the stabilities of 1-butene and 2-butene with this effect Discuss the hydrogen bonding in organic reaction with suitable example.

OR

Illustrate the mechanism of the formation of sp hybridisation.

NOTE : Disclosure of Identity by writing Mobile No. or Marking of passing request on any paper of Answer Sheet will lead to UMC against the Student.