## 61127

# First Semester B.Sc. Degree Examination, December 2018

(CBCS - Semester Scheme)

(Freshers and Repeaters – 2014-15 and onwards)

#### BIOCHEMISTRY

#### Paper I

Time : 3 Hours]

[Max. Marks: 70

Instructions to Candidates :

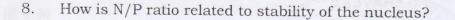
- 1) This Paper is for the students of the new syllabus : 2014-15.
- 2) The Question Paper has two Parts : Part-A and Part-B.
- 3) Answer any eight questions from Part-A.
- 4) Answer any nine questions from Part-B.

## PART – A

Answer any **EIGHT** of the following questions. Each question carries **2** marks :

 $(8 \times 2 = 16)$ 

- 1. Mention the advantages of graphical representation of data.
- 2. What is meant by accuracy in quantitative analysis?
- 3. What are electromagnetic radiation? Give examples.
- 4. State Pauli Exclusion Principle.
- 5. What is lattice energy?
- 6. Define van der Waal's forces.
- 7. Write a note on applications of  $P^{32}$ .





### 61127

- What are isotonic solutions? 9.
- 10. What are electrochemical cells?
- Classify the following as Lewis acids and Lewis bases : AlCl<sub>3</sub>, BF<sub>3</sub>, NH<sub>3</sub>, SO<sub>3</sub>. 11.
- What are surfactants? Give an example. 12.

#### PART - B

Answer any NINE of the following questions. Each question carries 6 marks :  $(9 \times 6 = 54)$ 

- 13. (a) Describe all the four quantum numbers.
  - Write the electronic configuration of the elements with atomic number (b) 24 and 29. (4 + 2)
- 14. (a)Explain the geometry of Methane molecule on the basis of hybridization.
  - What are Chelates? Give an example. (4 + 2)(b)
- Explain the molecular orbital diagram for the formation of oxygen molecule. 15. (a)
  - What is intramolecular hydrogen bonding? Give example. (b) (4 + 2)
  - Write a note on tracer techniques and mention any two applications of Co<sup>60</sup> 16. (a) and  $C^{14}$ .
    - (b)State group displacement law. (4 + 2)
  - 17. (a) Derive decay constant from decay law.

KGF

- Define half life period of radioactive elements. (b)(4 + 2)
- 18. (a) How is osmotic pressure experimentally determined by Berkely-Hartley's method?

THAC WAY Find the energy of whose wavelength is 380 nm (h =  $6.6 \times 10^{-34}$  Js). (b)(4 + 2)

# 61127

19.	(a)	Explain the construction and working principle of SHE.	
	(b)	What is meant by standard electrode potential?	(4 + 2)
20.	(a)	How pH is determined using glass electrode?	
	(b)	What are reversible electrodes? Mention the types.	(4 + 2)
21.	(a)	Explain about the ionic product of water.	
	(b)	Derive de-Broglie's equation.	(3 + 3)
22.	(a)	Describe Lewis acid-base concept and mention the demerits of Bronsted theory.	Lowry-
	(b)	What is meant by buffer capacity?	(4 + 2)
23.	(a)	Explain the significance of viscosity in biological systems.	
	(b)	Define viscosity and give its SI unit.	(4 + 2)
24.	(a)	Write a note on Radioactivity safety measures.	
	(b)	Define packing fraction.	(4 + 2)
25.	(a)	Explain the geometry of Ammonia molecule on the basis of VSEPR t	heory.
	(b)	Define bond length.	(4 + 2)

