



[54]

SARDAR PATEL UNIVERSITY

S.Y.B.Sc. SEMESTER III

EXAMINATION JUNE 2022

BIOCHEMISTRY: USO3CBCH02

TITLE: BIOPHYSICAL AND ENVIRONMENTAL BIOCHEMISTRY

Date: 18 /06/2022 Saturday Time:12:00 P.M to 2:00 P.M. TOTAL MARKS: 70

Q.1 Select proper option from following MCQ. [10]

- At normal blood pH 7.4, the ratio of bicarbonate to carbonic acid is _____.
a) 10:5 b) 20:1 c) 1:2 d) Both A and C.
- Water intoxication is a result due to _____.
a) Dehydration b) Poor secretion of ADH
c) Renal failure d) None
- Which of the following is strong acid?
a) HCL b) H₂CO₃ c) NH₄ d) H₂O
- Emulsoids are _____.
a) Lyophillic colloids b) Lyophobic colloids
c) Protective colloids d) None of the above
- Suspensions are examples of _____.
a) Association colloids b) Protective colloids
c) Lyophobic colloids d) Lyophillic colloids
- Size of solutes in crystalloids is _____.
a) 1×10^{-7} b) 2×10^{-5} c) $>1 \times 10^{-7}$ d) $<1 \times 10^{-7}$
- Electrodes are usually made of _____.
a) Gold b) Bronze c) Platinum d) Aluminum
- The speed of rotor is called as _____.
a) RCF b) G c) RPM d) None of these
- High concentration of _____ stimulate release of epinephrine.
a) Arsenic b) Lead c) Mercury d) Cyanide
- Chronic exposure to arsenic leads to _____ disease.
a) Black foot b) Kidney stone c) Minamata d) All of above

Q2. Fill in the blanks and true false [8]

- Chemical formula of water is _____.
- Inhibition of water is due to _____.
- Desktop centrifuge works at maximum RPM _____.
- White arsenic is chemically known as _____.

P.T.O

True or false

1. The bond angle between hydrogen and oxygen atom in structure of water is 104.5.
2. In plants opening and closing of stomata is regulated by light.
3. Electrophoretic mobility depends upon ionic strength of buffer.
4. Majority of cyanide in the body is bound to Protein.

Q3. Answer in short. (Any ten)

[20]

1. Define hydrogen bond.
2. Define buffer with example.
3. How buffers resist the change in pH.
4. Define osmosis.
5. Define diffusion.
6. Define colloids.
7. What are the functions of rotor?
8. What is centrifugation? Enlist the factors affecting speed of centrifuge.
9. What is zone electrophoresis?
10. Write the general principle of Metal toxicity.
11. Write sources and types of Arsenic.
12. How Heme synthesis is affected by Lead inhalation?

Q4. Long answer questions. (Any four) (8 marks each)

[32]

1. Give distribution of water in our body.
2. Write note on abnormal water balance.
3. Write classification of colloids.
4. Write significance of osmosis.
5. Explain application of centrifugation.
6. Explain paper electrophoresis.
7. Write effect of cyanide on human.
8. Explain adverse reaction for mercury.
