

GURUDAS COLLEGE
DEPARTMENT OF BIOCHEMISTRY
UG INTERMEDIATE EXAMINATION, 2020
B. Sc. PART II BIOCHEMISTRY HONOURS
Paper-III, Module-V

Time 30 mins

FM-25

Answer all questions

Choose the correction answer

1. The efficiency of a heat engine is maximum when
 - (A) Temperature of the source is greater than that of sink
 - (B) Temperature difference of source and sink is maximum.
 - (C) Temperature difference of source and sink is minimum.
 - (D) Temperature of sink is greater than that of source.
2. $\Delta E = Q + W$ is the mathematical form of
 - (A) 1st law of thermodynamics.
 - (B) 3rd law of thermodynamics.
 - (C) 2nd law of thermodynamics.
 - (D) None of these.
3. For a gaseous reaction $x\text{A} + y\text{B} \leftrightarrow l\text{C} + m\text{D}$
 - (A) $K_P = K_C (RT)^{(l+m) - (x+y)}$
 - (B) $K_P = K_C$
 - (C) $K_P = 1/K_C$
 - (D) $K_P = (K_C)^{(l+m)}$
4. “Whenever a stress is applied to a system at equilibrium shifts in such a way so as to undo the effect of the stress imposed”. This is the statement of
 - (A) Rate law
 - (B) Le-chatelier principle
 - (C) Dilution law
 - (D) Law of mass action.
5. Which of the following condition is not correct for ideal solution?
 - (A) No change in volume on mixing.
 - (B) No change in enthalpy on mixing.

- (C) It obeys Raoult's law.
- (D) Ionisation of solute should occur to a small extent.
6. On mixing 10ml of acetone with 50ml of chloroform the total volume of the solution is
(A) < 60ml (B) > 60ml (C) = 60ml (D) Unpredictable.
7. The protective power of lyophilic sol is
(A) Dependent on the size of colloidal particles.
(B) Expressed in terms of gold number.
(C) Expressed by x/m
(D) Directly proportional to the magnitude of charge on it.
8. Latex is a colloidal suspension of rubber particles, they carry
(A) No charge.
(B) Positive charge.
(C) Negative charge.
(D) May be positive or negative charge.
9. What change in λ_{\max} will be observed if H^+ is added to the aniline?
a. Bathochromic shift
b. Hypsochromic shift
c. Hyperchromic shift
d. Hypochromic shift
10. $\nu_{C=O}$ for $-CONH_2$ appears at
a. 1730 cm^{-1}
b. 1720 cm^{-1}
c. 1800 cm^{-1}
d. 1685 cm^{-1}
11. Which one of the following statements is false?
a. TMS is highly volatile in nature.
b. TMS has 12 chemically and magnetically equivalent H atoms, thus we get single sharp peak for 12 H atoms.
c. Since Si is more E.P than C atom that is why it appears at upfield zone (δ ppm ~ 0).

d. TMS has 12 chemically and magnetically non-equivalent H atoms, thus we get multiplet for 12 H atoms.

12. Three types of radioactive elements are emitted when unstable nuclei undergo radioactive decay. Which of the following is not one of them?

- a. Beta
- b. Gamma
- c. Alpha
- d. delta