



INDIAN SCHOOL AL WADI AL KABIR

Class: XII	Department: SCIENCE (CHEMISTRY)	Date : 25/06/2020
Marks: 30	UNIT TEST 1 + ANSWER KEY	Duration : 1 Hour

Instructions:

All questions are compulsory.

Section A consists of passage-based questions and carry 1 mark each.

Section B consists of multiple-choice questions and carry one 1 mark each.

Section C consists of Assertion Reason type questions and carry 1 mark each.

SECTION A

Answer the following questions based on the paragraph given below and related concepts.

During World War 1, chemical weapons were used in warfare. The poisonous chemicals used were phosgene, mustard gas etc. Gas masks were used then. One type of gas mask consists of activated charcoal and is used for breathing in coal mines to adsorb poisonous gases.

1. In the adsorption of oxalic acid on activated charcoal, activated charcoal is the _____
 - a. adsorbent
 - b. adsorbate
 - c. adsorber
 - d. activator
2. Choose the correct statements
 - i. Adsorption is a surface phenomenon whereas absorption is a bulk phenomenon.
 - ii Both adsorption and absorption can take place simultaneously also.
 - iii. Sorption refers to removal of adsorbed substances from a body.
 - iv. The air becomes dry in the presence of silica gel because the water molecules get absorbed on the surface of the gel.
 - a. i , ii , iv
 - b. i , iii
 - c. ii , iii
 - d. i , ii

3. For a linear plot of $\log(x/m)$ versus $\log p$ in a Freundlich isotherm, which of the following statements is correct? (k and n are constants)
- $1/n$ appears as intercept
 - Only $1/n$ appears as slope
 - $\log(1/n)$ appears as the intercept.
 - Both k and $1/n$ appear in the slope term.
4. Spontaneous adsorption of a gas on solid surface is an exothermic process. Give reason.
- ΔH increases for the system
 - ΔS increases for gas
 - ΔS decreases for gas
 - ΔG increases for gas
5. Which is favourable for physical adsorption?
- High T , High P
 - High T , Low P
 - Low T , High P
 - Low T , Low P

SECTION B

6. Which of the following types of drugs reduces fever?
- Tranquilizer
 - Antibiotic
 - Antipyretic
 - Analgesic
7. Tyndall effect is observed only when the following conditions are satisfied.
- The diameter of the dispersed particles is much smaller than the wavelength of light used.
 - The diameter of the dispersed particles is not much smaller than the wavelength of light used.
 - The refractive indices of the dispersed phase and dispersion medium are almost similar magnitude.
 - The refractive indices of the dispersed phase and dispersion medium differ greatly in magnitude.
- i and iv
 - ii and iv
 - i and iii
 - ii and iii
8. Arrange the following electrolytes in their increasing order for coagulating Sb_2S_3 sol.
- i. NH_4Cl ii. $CaCl_2$ iii. $Al_2(SO_4)_3$
- ii < iii < i
 - iii > ii > i
 - i < ii < iii
 - i < iii < ii

9. D-Glucose can be termed as _____

- i. aldose ii. hexose iii. furanose iv. dextrose

- a. i , ii , iii b. i , iii , iv
c. i , ii , iv d. i , ii , iii , iv

10. Select the incorrect statements.

- i. Equanil is used to control depression and hypertension.
ii. Norethindrone is an anti-fertility drug.
iii. A 1 % solution of phenol is antiseptic while 0.2 % solution is disinfectant.
iv. A drug which kills the bacteria in the body is called bacteriostatic.

- a. i , ii b. i , ii , iii
c. i , iii d. iii , iv

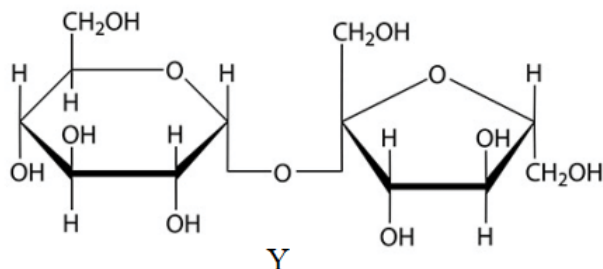
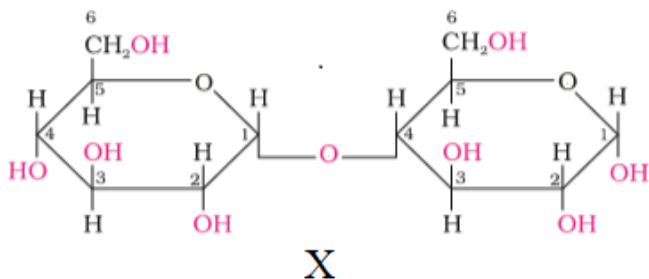
11. Which among the following represents soap?

- a. $C_{17}H_{35}COOK$
b. $C_{17}H_{35}COOH$
c. $(C_{17}H_{35}COO)_2Ca$
d. $C_{15}H_{31}COOH$

12. _____ is a broad-spectrum antibiotic.

- a. Chloroxylenol
b. Furacine
c. Penicillin G
d. Chloramphenicol

13. Observe the figures X and Y and mark the correct option.



- a. X is a reducing sugar and Y is a non reducing sugar.
b. X is a non reducing sugar and Y is a reducing sugar.
c. The glycosidic linkage in X and Y are β linkages.
d. X consists of two furanose rings.

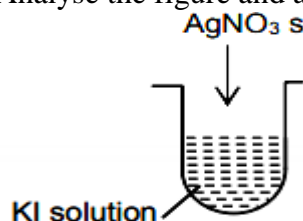
14. Which of the following is not used as a filler in laundry soaps?

- a. Borax
- b. Glycerol
- c. Sodium carbonate
- d. Sodium silicate

15. Choose the one which produces allergic response to pollen.

- a. Dimetapp
- b. Seldane
- c. Histamine
- d. Valium

16. Analyse the figure and assign the charge for the colloid formed.



- a. Positive
- b. Negative
- c. Negative and positive
- d. Negative or positive

17. Match the items given in column I and column II.

Column I	Column II
i. Preparation	p. Brownian movement
ii. Coagulation	q. Dialysis
iii. Stability	r. Bredig's arc method
iv. Purification	s. Delta

- a. i - q , ii - s , iii - r , iv - p
- b. i - r , ii - s , iii - p , iv - q
- c. i - r , ii - q , iii - p , iv - s
- d. i - r , ii - s , iii - q , iv - p

18. Aspartame is an artificial sweetener whose use is limited to cold foods. Give reason.

- a. It has very low boiling point
- b. It gets dissociated at cooking temperature
- c. It is sweeter at low temperature.
- d. It is insoluble at higher temperature.

19. When α -D-glucose units are joined by C₁ - C₄ and C₁ - C₆ glycosidic linkage, the structure of which compound is obtained?

- a. Cellulose
- b. Amylopectin
- c. Amylose
- d. Lactose

20. Muddy water can be purified through coagulation using _____

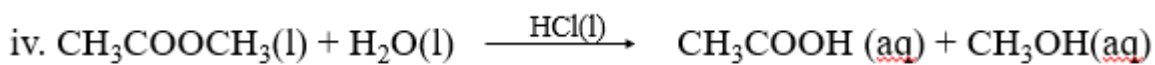
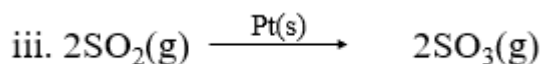
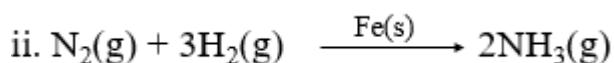
- a. Common salt
- b. Alums
- c. Sand
- d. Lime

21. Find the incorrect statements about enzyme.

- i. They are protein rich molecules.
- ii. One enzyme can catalyse more than one reaction.
- iii. Human body temperature is suitable for enzyme catalysed reactions.
- iv. The rate of enzyme catalysed reaction is maximum at pH value 4.

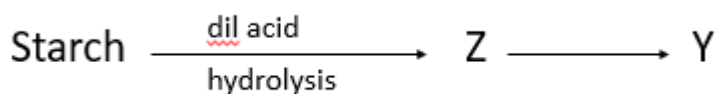
- a. i, ii
- b. i, iii, iv
- c. ii, iv
- d. iii, iv

22. Which of the following reactions are examples of heterogeneous catalysis?



- a. i, iv
- b. ii, iii
- c. ii, iii, iv
- d. i, ii

23. Identify the compounds - Z and Y.



- a. Maltose, glucose
- b. Sucrose, glucose
- c. Lactose, fructose
- d. Maltose, fructose

24. Match the Columns.

Column I	Column II
i. Stearic acid + Polyethylene glycol	p. Cationic
ii. Cetyl trimethyl ammonium bromide	q. Receptors
iii. Body's communication process	r. Non-ionic
iv. Blocking of message	s. Antagonists

- a. i - p, ii - r, iii - q, iv - s
- b. i - r, ii - p, iii - q, iv - s
- c. i - r, ii - p, iii - s, iv - q
- d. i - s, ii - q, iii - r, iv - p

25. Complete hydrolysis of Cellulose gives _____

- a. D-fructose
- b. D-ribose
- c. D-glucose
- d. L-glucose

SECTION C

In the following questions, two statements are given. One of them is labelled as Assertion and the other is labelled as Reason. Examine the statements carefully and mark the correct option.

- a. Both Assertion and Reason are true and Reason is the correct explanation of the Assertion.
- b. Both Assertion and Reason are true and Reason is not the correct explanation of the Assertion.
- c. Assertion is true but Reason is false.
- d. Reason is true but Assertion is false.

26. Assertion: Glucose on reaction with Br_2 water forms Gluconic acid.

Reason: Alcohols on mild oxidation form carboxylic acid.

27. Assertion: Aqueous solution of sucrose is laevorotatory in nature.

Reason: Glucose ($+52.5^\circ$) and fructose (-92.4°) are the two components obtained on hydrolysis of sucrose.

28. Assertion: Catalyst in general is in the form of finely divided powder.

Reason: Finer is the particle of a solid, greater is its surface area.

29. Assertion: The potential difference between colloidal particle and the fixed layer is called Zeta potential.

Reason: The presence of equal and similar charge on the colloid is responsible for stability of sols.

30. Assertion: Competitive inhibitors compete with natural substrate for their attachment on the enzyme.

Reason: In competitive inhibition, inhibitor changes the shape of the active site.

Answer Key

Q. No	Answers	Q.No	Answers	Q.No	Answers
1	a	11	a	21	c
2	d	12	d	22	b
3	b	13	a	23	a
4	c	14	b	24	b
5	c	15	c	25	c
6	c	16	b	26	c
7	b	17	b	27	a
8	c	18	b	28	a
9	c	19	b	29	d
10	d	20	b	30	c