

CHEMISTRY IN EVERYDAY LIFE

- The gas released during anaerobic degradation of vegetation may lead to :
 - Ozone hole
 - Acid rain
 - Corrosion of metals
 - Global warming and cancer
- Most suitable salt which can be used for efficient clotting of blood will be :-
 - NaHCO_3
 - FeSO_4
 - $\text{Mg}(\text{HCO}_3)_2$
 - FeCl_3
- Match List-I and List-II.

List-I	List-II
(a) Valium	(i) Antifertility drug
(b) Morphine	(ii) Pernicious anaemia
(c) Norethindrone	(iii) Analgesic
(d) Vitamin B ₁₂	(iv) Tranquilizer

 - (a)-(iv), (b)-(iii), (c)-(ii), (d)-(i)
 - (a)-(iv), (b)-(iii), (c)-(i), (d)-(ii)
 - (a)-(ii), (b)-(iv), (c)-(iii), (d)-(i)
 - (a)-(i), (b)-(iii), (c)-(iv), (d)-(ii)
- The functions of antihistamine are :
 - Antiallergic and Analgesic
 - Antacid and antiallergic
 - Analgesic and antacid
 - Antiallergic and antidepressant
- With respect to drug-enzyme interaction, identify the wrong statement:
 - Non-Competitive inhibitor binds to the allosteric site
 - Allosteric inhibitor changes the enzyme's active site
 - Allosteric inhibitor competes with the enzyme's active site
 - Competitive inhibitor binds to the enzyme's active site

- Match List-I with List-II :

List-I Chemical Compound	List-II Used as
(a) Sucralose	(i) Synthetic detergent
(b) Glyceryl ester of stearic acid	(ii) Artificial sweetener
(c) Sodium benzoate	(iii) Antiseptic
(d) Bithionol	(iv) Food preservative

Choose the correct match :

- (1) (a)-(iv), (b)-(iii), (c)-(ii), (d)-(i)
 - (2) (a)-(ii), (b)-(i), (c)-(iv), (d)-(iii)
 - (3) (a)-(iii), (b)-(ii), (c)-(iv), (d)-(i)
 - (4) (a)-(i), (b)-(ii), (c)-(iv), (d)-(iii)
- Match the list - I with list - II

List-I (Class of Drug)	List-II (Example)
(a) Antacid	(i) Novestrol
(b) Artificial sweetener	(ii) Cimetidine
(c) Antifertility	(iii) Valium
(d) Tranquilizers	(iv) Alitame

 - (a) - (ii), (b) - (iv), (c) - (i), (d) - (iii)
 - (2) (a) - (iv), (b) - (i), (c) - (ii), (d) - (iii)
 - (3) (a) - (iv), (b) - (iii), (c) - (i), (d) - (ii)
 - (4) (a) - (ii), (b) - (iv), (c) - (iii), (d) - (i)
 - Match List - I with List - II :

List - I (Class of Chemicals)	List - II (Example)
(a) Antifertility drug	(i) Meprobamate
(b) Antibiotic	(ii) Alitame
(c) Tranquilizer	(iii) Norethindrone
(d) Artificial Sweetener	(iv) Salvarsan

 - (1) (a)-(ii), (b)-(iii), (c)-(iv), (d)-(i)
 - (2) (a)-(iv), (b)-(iii), (c)-(ii), (d)-(i)
 - (3) (a)-(iii), (b)-(iv), (c)-(i), (d)-(ii)
 - (4) (a)-(ii), (b)-(iv), (c)-(i), (d)-(iii)
 - Thiamine and pyridoxine are also known respectively as :
 - Vitamin B₂ and Vitamin E
 - Vitamin E and Vitamin B₂
 - Vitamin B₆ and Vitamin B₂
 - Vitamin B₁ and Vitamin B₆

10. Sodium stearate $\text{CH}_3(\text{CH}_2)_{16}\text{COO}^-\text{Na}^+$ is an anionic surfactant which forms micelles in oil. Choose the **correct** statement for it from the following :

- (1) It forms spherical micelles with $\text{CH}_3(\text{CH}_2)_{16}$ – group pointing towards the centre of sphere.
- (2) It forms non-spherical micelles with COO^- group pointing outwards on the surface.
- (3) It forms spherical micelles with $\text{CH}_3(\text{CH}_2)_{16}$ – group pointing outwards on the surface of sphere
- (4) It forms non-spherical micelles with $\text{CH}_3(\text{CH}_2)_{16}$ –group pointing towards the centre.

11. Which one of the following chemical agent is **not** being used for dry-cleaning of clothes?

- (1) H_2O_2
- (2) CCl_4
- (3) Liquid CO_2
- (4) $\text{Cl}_2\text{C} = \text{CCl}_2$

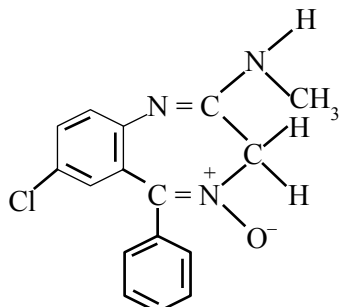
12. Match List-I with List-II :

List-I (Drug)	List-II (Class of Drug)
(a) Furacin	(i) Antibiotic
(b) Arsphenamine	(ii) Tranquillizers
(c) Dimetone	(iii) Antiseptic
(d) Valium	(iv) Synthetic antihistamines

Choose the **most appropriate** match :

- (1) (a)-(i), (b)-(iii), (c)-(iv), (d)-(ii)
- (2) (a)-(iii), (b)-(iv), (c)-(ii), (d)-(i)
- (3) (a)-(ii), (b)-(i), (c)-(iii), (d)-(iv)
- (4) (a)-(iii), (b)-(i), (c)-(iv), (d)-(ii)

13.

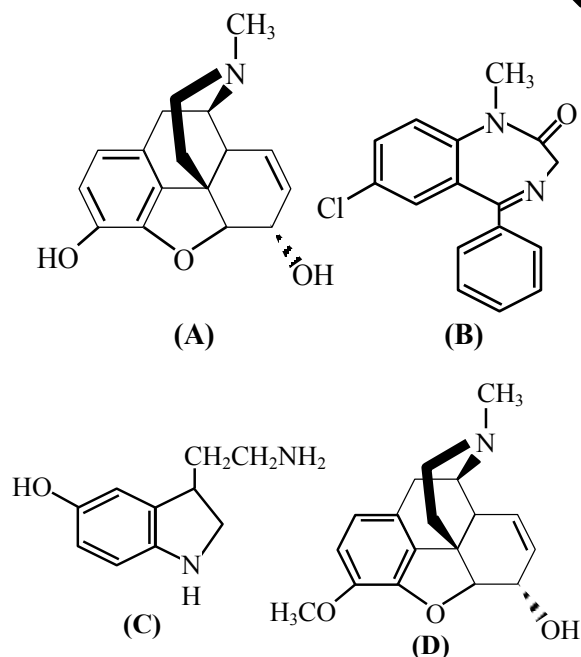


Chlordiazepoxide

The class of drug to which chlordiazepoxide with above structure belongs is :

- (1) Antacid
- (2) Analgesic
- (3) Tranquilizer
- (4) Antibiotic

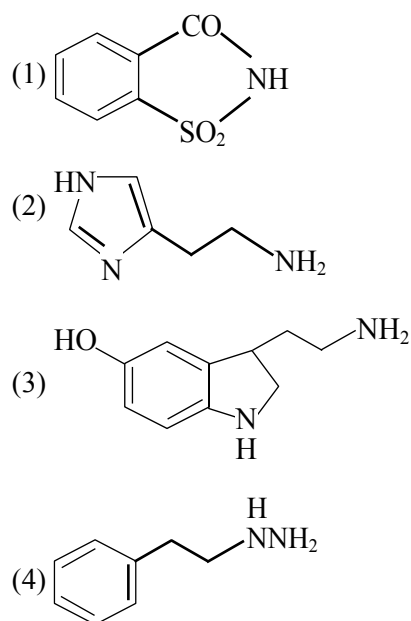
14.



The correct statement about (A), (B), (C) and (D) is :

- (1) (A), (B) and (C) are narcotic analgesics
- (2) (B), (C) and (D) are tranquillizers
- (3) (A) and (D) are tranquillizers
- (4) (B) and (C) are tranquillizers

15. Which one of the following chemicals is responsible for the production of HCl in the stomach leading to irritation and pain?



SOLUTION

1. Official Ans. by NTA (4)

Sol. The gas CH_4 evolved due to anaerobic degradation of vegetation which causes global warming and cancer.

2. Official Ans. by NTA (4)

Sol. Blood : negatively charged sol
According to Hardy-schulz rule, for the negatively charged sol, most (+) ve ion is needed for its efficient coagulation.

Ans. : FeCl_3

3. Official Ans. by NTA (2)

Sol. (a) Valium – Tranquilizer (a)-(iv)
(b) Morphine – Analgesic (b)-(iii)
(c) Norethindrone – Antifertility Drug (c)-(i)
(d) Vitamin B_{12} – Pernicious anaemia (d)-(ii)

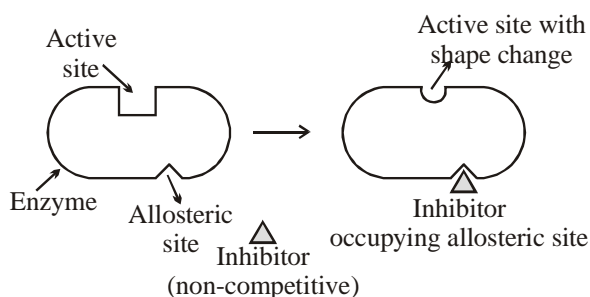
4. Official Ans. by NTA (2)

5. Official Ans. by NTA (3)

Sol. Some drug do not bind to the Enzyme's active site. These bind to a different site of enzyme which called **allosteric site**.

This binding of inhibitor at allosteric site changes the shape of the active site in such a way that substrate can not recognise it.

Such inhibitor is known as **Non-competitive inhibitor**.



6. Official Ans. by NTA (2)

Sol. Artificial sweetner : Sucralose
Antiseptic : Bithional
Preservative : Sodium Benzoate
Glyceryl ester of stearic acid : Sodium steasate

7. Official Ans. by NTA (1)

Sol. (a) Antacid : Cimetidine
(b) Artificial Sweetener : Alitame
(c) Antifertility : Novestrol
(d) Tranquilizers : Valium

8. Official Ans. by NTA (3)

Sol. (A) Antifertility drug → (iii) Nor ethindrone
(B) Antibiotic → (iv) Salvarsan
(C) Tranquilizer → (i) Meprobamate
(D) Artificial sweetener → (ii) Alitame

Ans. A–iii, B–iv, C–i, D–ii

9. Official Ans. by NTA (4)

Sol. Vitamine- B_1 is also known as Thiamine while vitamin B-6 is known as Pyridoxine

10. Official Ans. by NTA (1)

Sol. Forms spherical micelles with $\text{CH}_3(\text{CH}_2)_{16}$ group pointing towards the centre of sphere

11. Official Ans. by NTA (4)

Sol. CO_2 , CCl_4 and $\text{Cl}_2\text{C} = \text{CCl}_2$ are used as dry cleaning agents for clothes.

H_2O_2 is used as bleaching agent in laundry.

12. Official Ans. by NTA (4)

Sol. → furacine acts as Antiseptic
→ Arsphenamine also known as salvarsan acts as antibiotic
→ Dimetone is synthetic histamine
→ valium is a Tranquilizer

13. Official Ans. by NTA (3)

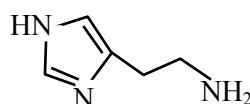
Sol. The drug named chlordiate poxide is example of tranquilizer.

14. Official Ans. by NTA (4)

Sol. B and C are tranquilizers

15. Official Ans. by NTA (2)

Sol. Histamine stimulate the secretion of HCl



Histamine structure