PRAYAS BATCH

JMPS-04

By Pankaj Sir

Today's GOAL

Biomolecules+Polymers
+Environmental chemistry
+ Chemistry in everyday life
+ Qualitative and Quantitative analysis

Q. The monomer units of starch are :

a. α–glucose

b. β–glucose

c. pyranose

d. galactose

Q. Maltose is made up of :

a. α–glucose

b. D–fructose

c. α–D–glucose and β – D – glucose

d. glucose and fructose

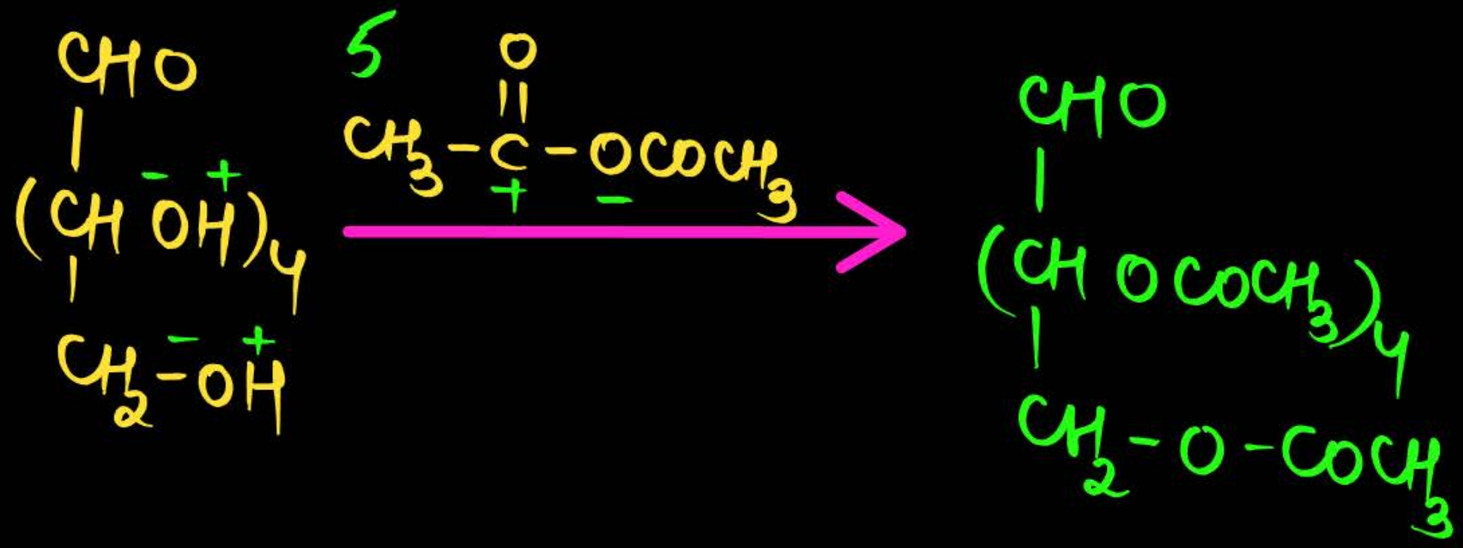
Q. Glucose reacts with acetic anhydride to form :

a. monoacetate

b. tetra–acetate

c. penta–acetate

d. hexa–acetate



Q. DNA molecule is formed of:

a. pentose sugar, pyrimidines and purines

b. pentose sugar, phosphoric acid, pyrimidines and purines

c. pentose sugar, phosphoric acid and purines

d. chloridepentose sugar, phosphoric acid and pyrimidines

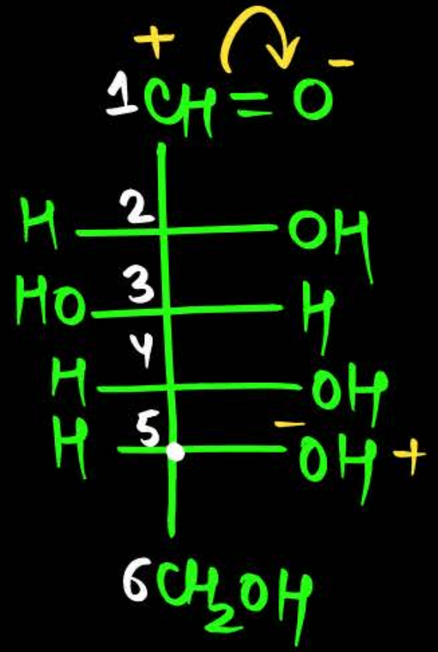
Q. Ring structure of glucose is due to formation of hemiacetal and ring formation between

a. C_1 and C_5

b. C_1 and C_4

c. C_1 and C_3

d. C_2 and C_4



Q. A nucleoside is :

a. base + sugar

b. base + phosphate

c. sugar + phosphate

d. base + sugar + phosphate

Q. Which one is the complimentary base of adenine in one strand to that in the other strand of DNA?

a. Cytosine

b. Guanine

c. Uracil

d. Thymine

Agra Cant dur nahi hai

A G C T DNA

" " " U RNA

Q. The base present in RNA but not found in DNA is :

a. Thymine

b. Uracil

c. Adenine

d. Guanine

Q. Ascorbic acid is called is :

a. vitamin C

b. vitamin A

c. vitamin D

d. vitamin B

Q. Cobalt as a rare element is essential in the synthesis of this vitamin.

a. vitamin C

b. vitamin D

c. vitamin B_1

d. vitamin B_{12}

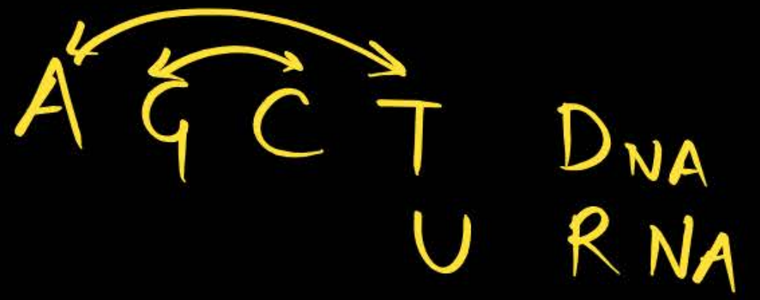
Q. AGCT are nitrogenous bases of DNA. The pairing is :

a. A – G, C – T

b. A – T, G – C

c. A – C, G – T

d. A – T, G – T



Q. Lactose is composed of

a. glucose + glucose

b. glucose + fructose

c. glucose + galactose

d. fructose + galactose

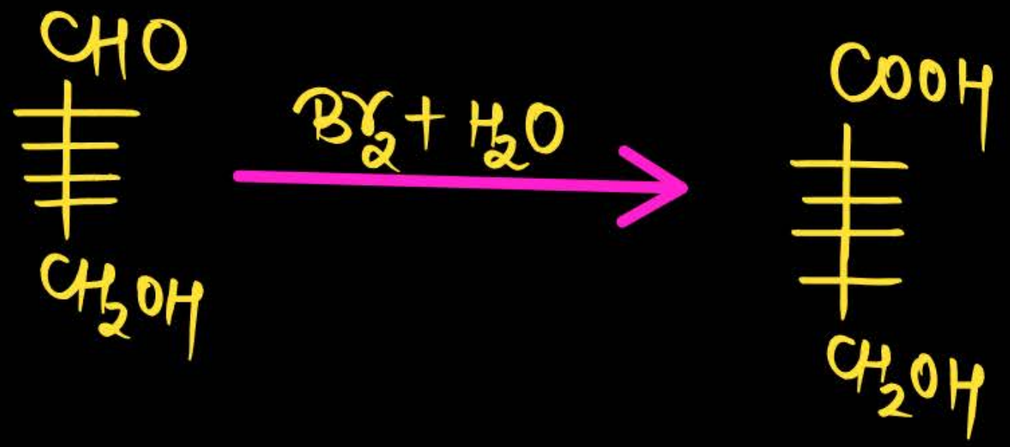
Q. Glucose $\xrightarrow{Br_2+H_2O}$ Product ; Product is :

a. glucaric acid

b. gluconic acid

c. hexanoic acid

d. bromo hexane



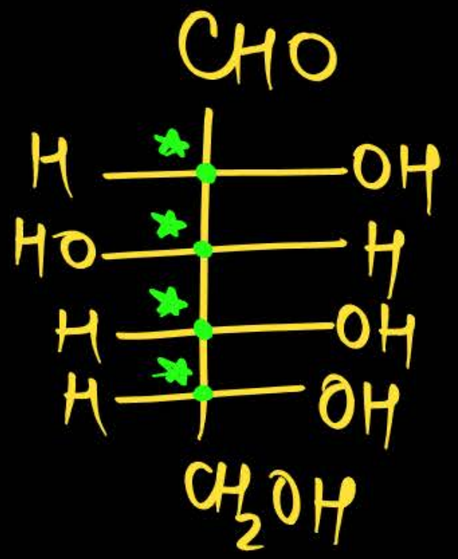
Q. The number of chiral centers in the open chain structure of glucose is

a. 3

b. 4

c. 5

d. 6



Q. α-D-Glucopyranose and β–D–glucopyranose are :

a. Anomers

b. Epimer

c. Diasteromers

d. Meso compounds

Q. Invert sugar is an equimolar mixture of:

Sucrose

a. D–Glucose and D–Fructose

(+d) (−l)

b. D–Glucose and L–Fructose

c. D–Glucose and L–Glucose

d. D–Fructose and L–Fructose

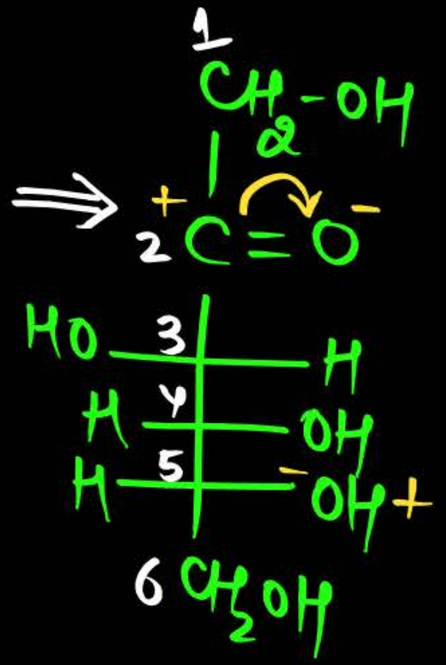
Q. In the ring structure of fructose, the anomeric carbon is

a. C — 1

b. C — 5

c. C — 2

d. C — 6



Q. Which of the following is a non reducing sugar?

a. Glyceraldehyde

b. Glucose

c. Fructose

d. Sucrose

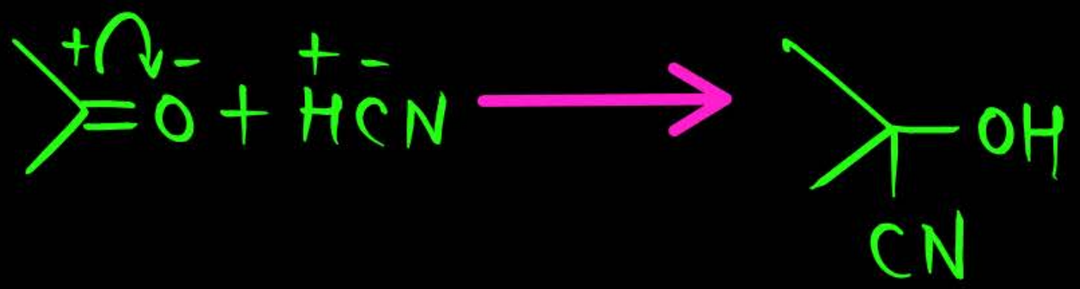
Q. Glucose does not react with :

a. $C_6H_5NHNH_2$

b. $H_2N—OH$

c. HCN

d. $NaHSO_3$



Q. Cellulose is a linear polymer of:

a. α–D–Glucose

b. β- D– Glucose

c. α–D–Fructose

d. β–L–Glucose

Q. Amino acids undergo internal acid base reaction to form :

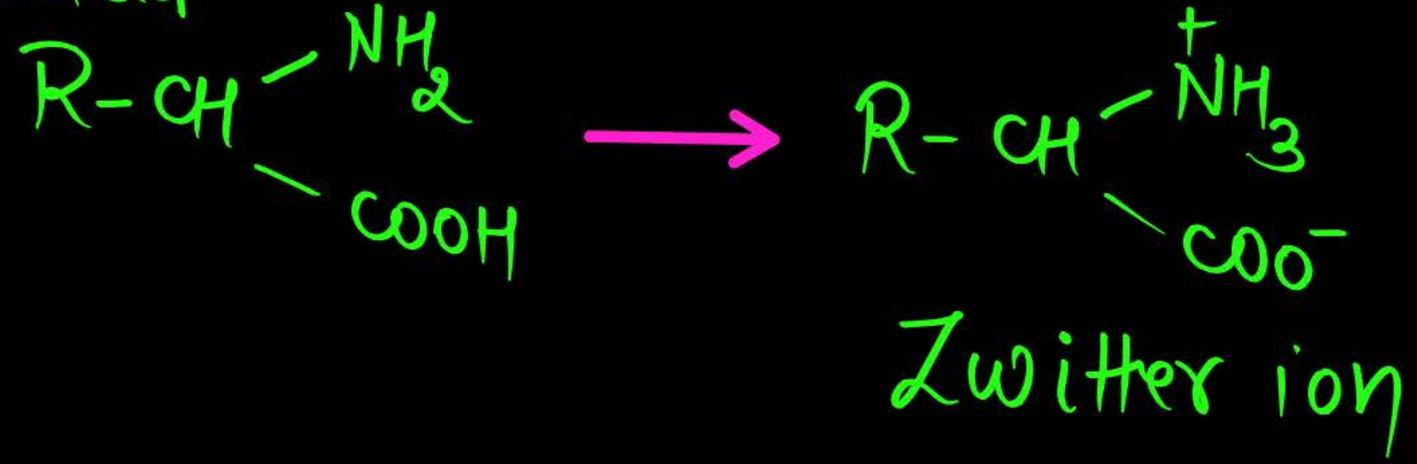
a. an amide

b. a lactum

c. zwitter ion

d. a peptide

α- amino acid



Zwitter ion

Q. Which one among following is a peptide linkage?

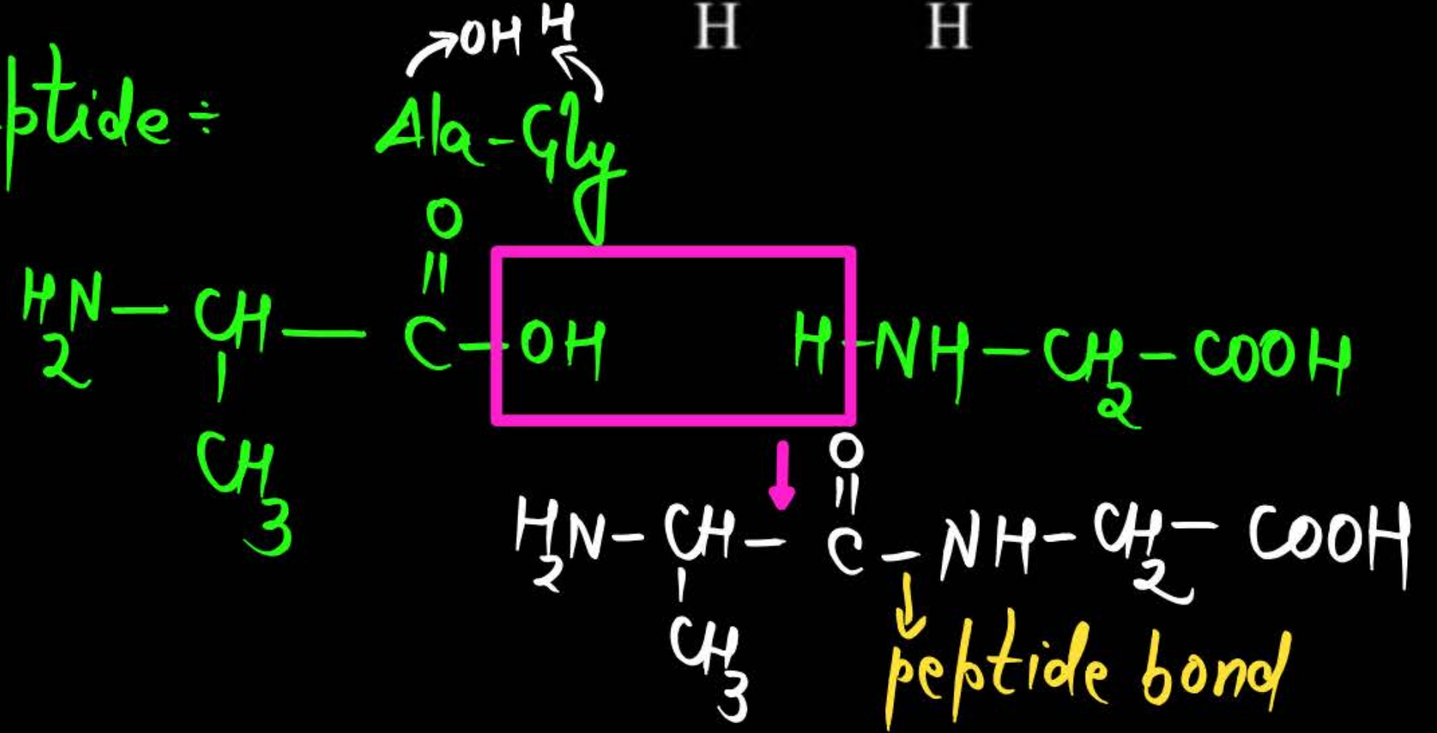
a. $-\overset{\overset{O}{\|}}{C}-NH-$

b. $-N(R)=C-O-$

c. $-C(R)=N-H$

d. $-C(H)-O-N(H)-$

Dipeptide :



Q. Amino acid at its isoelectric point, exist in solution as:

Zwitter ion

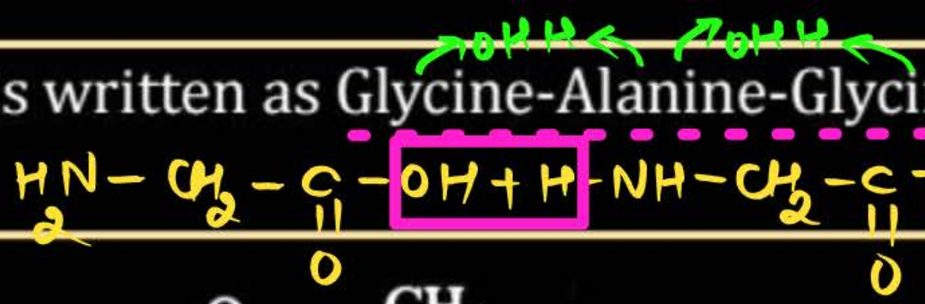
a. $H_2N-\underset{\underset{CH_3}{|}}{CH}-COO^{\ominus}$

b. $H_3\overset{\oplus}{N}-\underset{\underset{CH_3}{|}}{CH}-COOH$

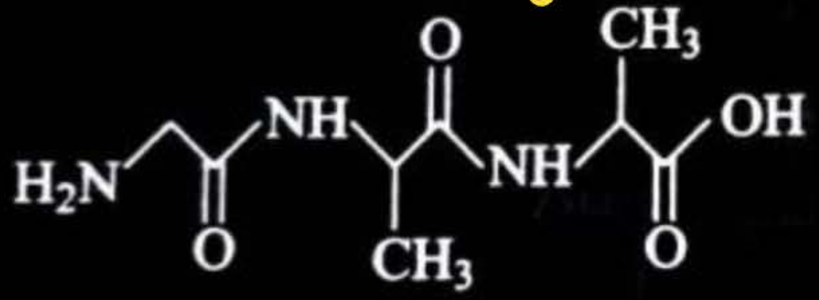
c. $H_3\overset{\oplus}{N}-\underset{\underset{CH_3}{|}}{CH}-COO^{\ominus}$

d. $H_2N-\underset{\underset{CH_3}{|}}{CH}-COOH$

Q. A tripeptide is written as Glycine-Alanine-Glycine. The correct structure of tripeptide



a.



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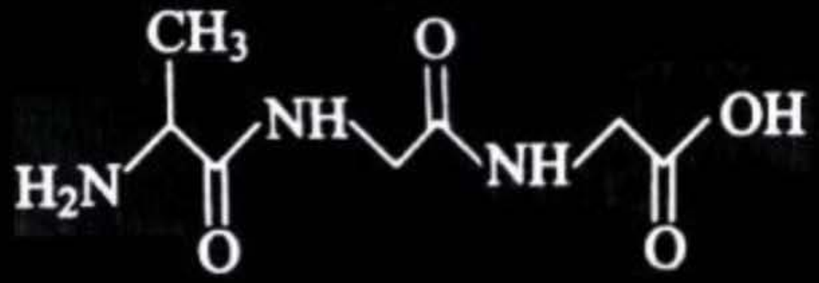
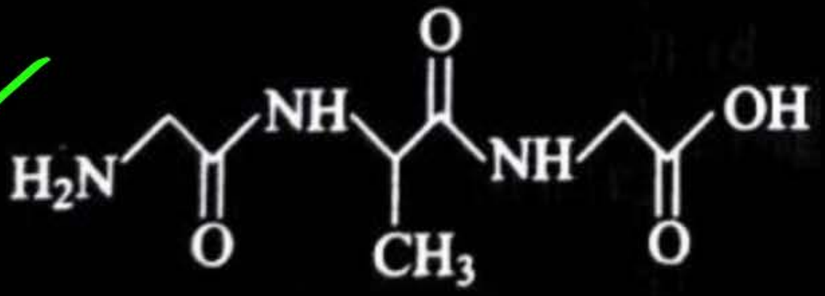


c.



d. None of these

Q. Carbon and hydrogen in organic compounds are detected by heating compound with :

a. FeO

b. CaO

c. CuO

d. MnO

$C \longrightarrow CO_2$

$H \longrightarrow H_2O$

Q. Lassaigne's test is not used for the detection of:

a. N

b. S

c. Cl

d. O

P, S, N, X par

Q. Ammonium molybdate is used for detection of which element in organic compound :

a. C

b. N

c. P

d. S

$(NH_4)_3PO_4 \cdot 12MoO_3$

Canary yellow

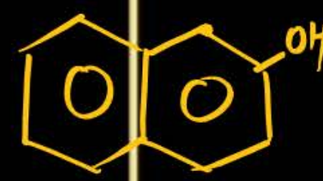
Q. A white crystalline solid ' X ' give following chemical test :

(i) it liberates CO_2 with $NaHCO_3$

(ii) it form a coloured dye on diazotisation and coupling with β-naphthol

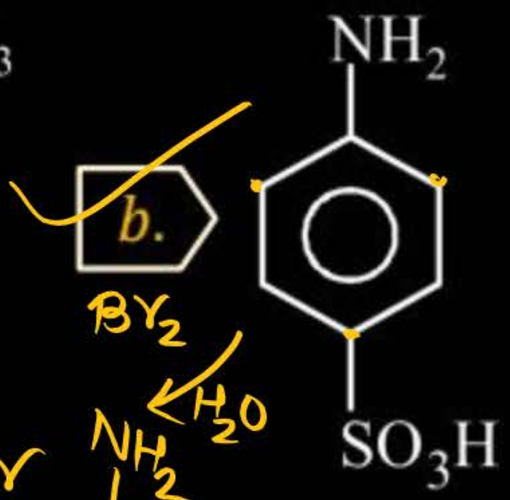
(iii) with Br_2 water it forms white precipitate of 2, 4, 6-tribromo aniline.

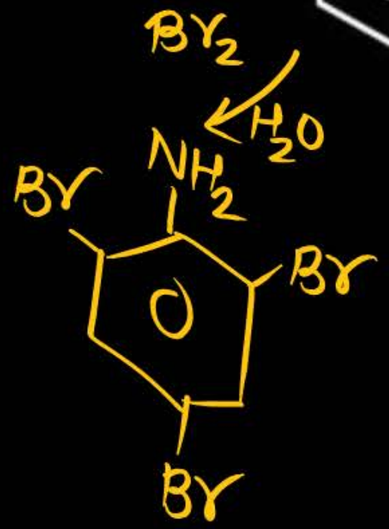
'X' can be identified as



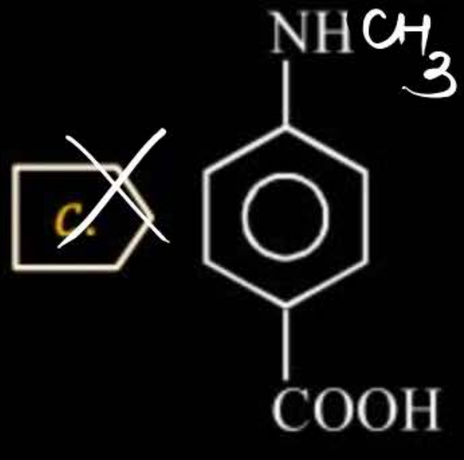
a.

b.

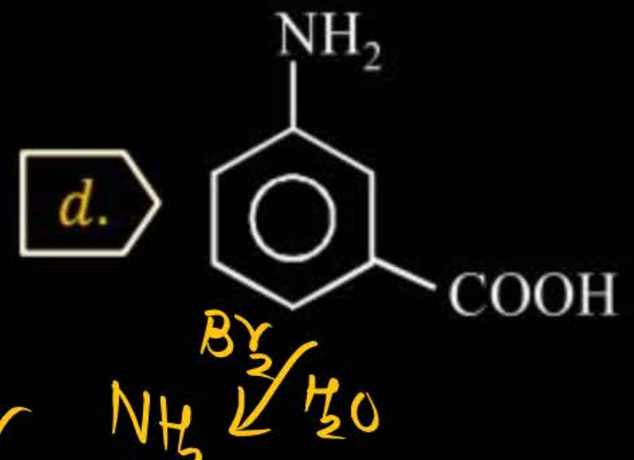


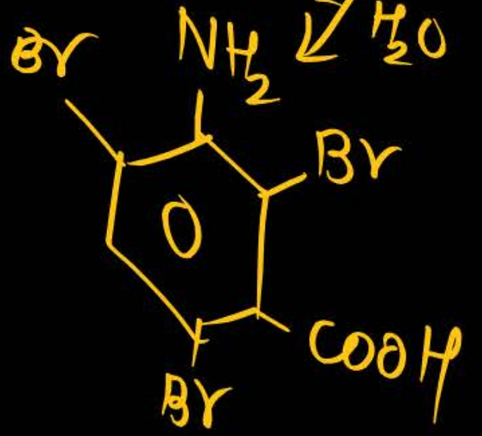


c.



d.





Q. 0.59 g of an organic substance when treated with caustic soda evolved ammonia, which required 20 c.c. of N/2 sulphuric acid for neutralization. The percentage of nitrogen is

a. 40%

b. 53.6%

c. 63.6%

d. 23.73%

$$\% N = \frac{1.4\, N V_{(mL)}}{W_{(gm)}} \%$$

$$= \frac{1.4 \times \frac{1}{2} \times 20}{0.5g} = \frac{14}{0.5g} \%$$

Q. In organic compounds P is estimated as-

a. H_3PO_4

b. P_2O_5

c. $Mg_3(PO_4)_2$

d. $(NH_4)_3PO_4.12MoO_3$

Q. Air pollutants that produce photochemical smog –

a. Ozone, chlorine and sulphur dioxide

b. Oxygen, chlorine and nitric acid

c. Nitrous oxide, Nitric Oxide, Nitric acid

d. CO_2, CO and SO_2

Q. Which is not a green house gas -

a. CFC's

b. Methane

c. H_2

d. CO_2

Q. Taj Mahal is threatened by pollution from -

a. Carbon dioxide

b. Oxygen

c. Sulphur dioxide

d. Chlorine

Q. Acid rain occurs in areas where -

a. There are big industries and the atmosphere is polluted with SO_2

b. There are large plantation of pine plants

c. Citrus plants are grown

d. There are large plantation of eucalyptus

Q. Protections from ultraviolet rays coming from sun is provided by -

a. SO_2

b. CO_2

c. Ozone

d. Oxygen

Q. The 'blue baby syndrome' is caused due to pollution by -

a. Nitrates

b. Chlorides

c. Cyanides

d. Fluorides

Q. BOD is -

a. Biochemical oxygen demand

b. Biological oxygen deficit

c. Biosphere oxygen demand

d. None of the above

Q. The compound that does not give a blue colour in Lassaigne's test is-

a. Aniline $Ph-NH_2$

b. Glycine $CH_2(NH_2)-COOH$

c. Hydrazine NH_2-NH_2

d. Urea $NH_2-\overset{\overset{O}{\|}}{C}-NH_2$

$$Na + C + N \longrightarrow NaCN$$

Q. In Lassaigne's test, the organic compound is fused with sodium metal so as to-

a. Burn the compound

b. Form a sodium derivative

c. Convert N, S, or halogen into soluble ionic compound

d. None of these

Q. Which of the following compound will give blood red colour while doing the Lassaigne's test for N.

a. $(NH_2)_2C=O$

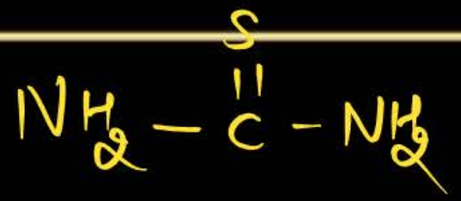
b. $H_2N(C_6H_4)SO_3H$

c. $C_6H_5SO_3H$

d. $CHCl_3$

$Na + C + S + N \longrightarrow NaSCN$

Q. In Lassaigne test thiourea is converted into-



a. NaSCN

b. Na_2S

c. NaCN

d. Na_2SO_4

Q. In a Lassaignes's test for sulphur in the organic compound with sodium nitroprusside solution the purple colour formed is due to-

a. $Na_4[Fe(CN)_5NOS]$

b. $Na_3[Fe(CN)_5S]$

c. $Na_2[Fe(CN)_5NOS]$

d. $Na_3[Fe(CN)_6]$

Q. If 0.32gm of an organic compound containing sulphur produces 0.233 g of $BaSO_4$ Then the percentage of sulphur in it is-

a. 10

b. 15

c. 20

d. 25

$$\% \text{ 'S'} = \frac{32}{233} \times \frac{w_1}{w} \times 100$$

$$= \frac{32}{233} \times \frac{0.233}{0.32} \times 100$$

$$= 10\ \%$$

Q. Carbon and Hydrogen are estimated by-

a. Liebig's method

b. Duma's method

c. Carius method

d. Kjeldahl's method

Q. 0.2 g of an organic compounds on complete combustion produces 0.44 g of CO_2, then the percentage of carbon in it is-

a. 50

b. 60

c. 70

d. 80

$$\% \text{ 'C'} = \frac{12}{44} \times \frac{\omega_1}{\omega} \times 100$$

$$= \frac{12}{44} \times \frac{0.44}{0.2} \times 100$$

Q. 0.2 g of an organic compound on complete combustion produces 0.18 g of water, then the percentage of hydrogen in it is-

a. 5

b. 10

c. 15

d. 20

$$\% \text{ 'H'} = \frac{2}{18} \times \frac{\omega_2}{\omega} \times 100$$

$$= \frac{2}{18} \times \frac{0.18}{0.2} \times 100$$

Q. Chloroxylenol is an important component of

a. Soap

b. Antibiotics

c. Dettol

d. Pain killing ointments

Q. Which of the following is used as pain killers-

a. Antibiotic

b. Analgesic

c. Antipyretic

d. Penicillin

Q. The drug used for treatment of typhoid is

a. Chloromycetin

b. Novalgin — Antipyretic & Analgesic

c. Paracetamol — Antipy Anal

d. Quinine — Malaria

Q. Hydrolysis of sucrose (+) is called :

H_3O → Glucose (+) + fructose (−)

(−)

a. esterification

b. saponification

c. inversion

d. hydration

Q. Aspirin is an

a. Antipyretic

b. Antiseptic

c. Antimalarial

d. Narcotic

Q. Which of the following can bring down the body temperature-

a. Aspirin

b. Chloroquine

c. Penicillin

d. Quinine

Q. Which of the following can be used as an analgesic-

a. Paracetamol

b. Penicillin

c. Chloremphenicol

d. Streptomycin

Q. Vernol, a barbituric drug is used as a-

Tranquilizer

a. Anaesthetic

b. Sedative

c. Antiseptic

d. Antipyretic

Q. A substance which can act both as an analgesic and antipyretic is

a. Quinine

b. Aspirin

c. Penicillin

d. Insulin

Q. Sulpha drugs are derivatives of

a. Benzene sulphonic acid

b. Sulphanilic acid

c. Sulphanilamide

d. P–Aminobenzenzoic acid

Q. Soap is-

a. Sodium stearate $C_{17}H_{35}COONa$

b. Calcium stearate

c. Sodium acetate

d. Sodiumbenzoate

Q. The polar head of sodium stearate is-

a. Na^+

b. H^+

c. $-COO-$

d. $CH_3(CH_2)_{16}$

$$C_{17}H_{35}COONa \rightarrow C_{17}H_{35}COO^{\ominus} + Na^{\oplus}$$

$C_{17}H_{35}$: non polar tail

$COO^{\ominus}$: polar head

Q. Detergents.....the surface tension of water-

a. Reduces

b. Increases

c. Keeps constant

d. Slightly increases

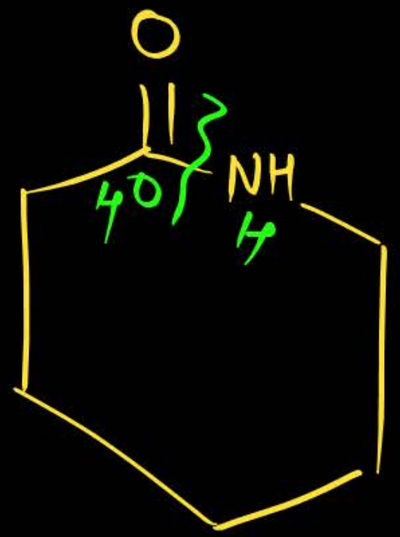
Q. Caprolactum is used to prepare which of the polymer-

a. Nylon – 66

b. Melamine

c. Nylon – 6

d. PMMA



$$\xrightarrow{\eta}\ HO-\overset{\overset{O}{\|}}{C}-(CH_2)_6-NH_2 \longrightarrow \left[\overset{\overset{O}{\|}}{C}-(CH_2)_6-NH\right]_\eta$$

Nylon-6

Q. The fibre obtained by the condensation of hexamethylene diamine and adipic acid is-

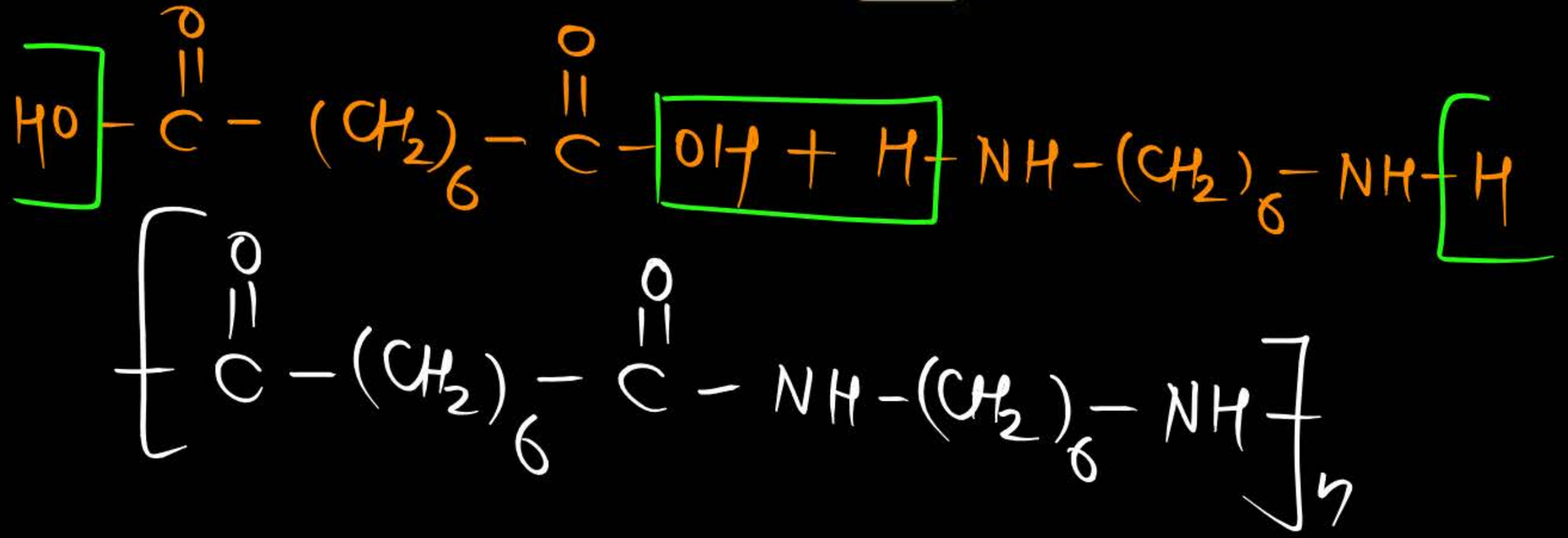
6 C 6 C

a. Dacron

b. Nylon 66

c. Rayon

d. Teflon



Q. Of the following which is a step growth polymer-

a. Bakelite

b. Polyethylene

c. Teflon

d. PVC

Q. An example of a natural biopolymer is-

a. Teflon $\{CF_2-CF_2\}_n$

b. Neoprene

c. Nylon–66

d. DNA

Q. Peptide bond is a key feature in-

a. Polysaccharide

b. Proteins

c. Polyester

d. Vitamins

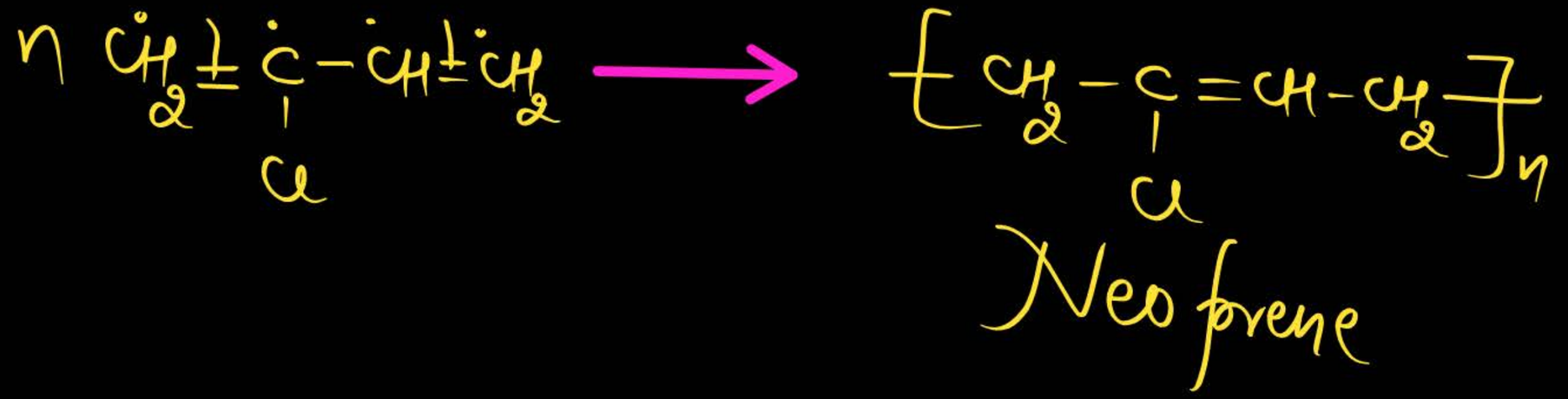
Q. Neoprene rubber is obtained by the polymerization of -

a. 1, 3 –Butadiene

b. 2– Methyl –1, 3–butadiene

c. 2– Chloro – 1,3 butadiene

d. Styrene and butadiene



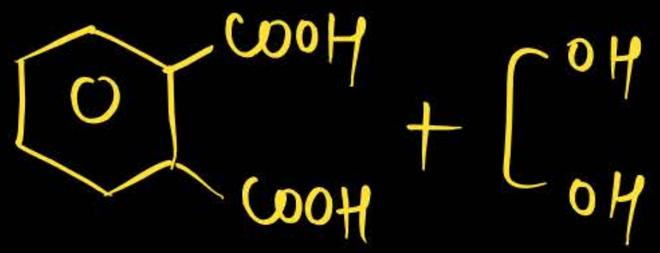
Q. Which of the following is not a natural polymer-

a. Starch

b. Cellulose

c. Glyptal

d. Glycogen



Q. Teflon is a polymer of:

a. Tetra–fluroethylene

b. Tetra–bromoethylene

c. Tetra–iodoethylene

d. Tetra–chloroethylene

$$n\ CF_2=CF_2 \longrightarrow \{CF_2-CF_2\}_n$$

Thank you!!