

### Topic :- Biomolecules

- 3 **(c)**  
Oils are unsaturated esters or glycerides olein is ester of unsaturated acid.
- 4 **(b)**  
Aldehydes and  $\alpha$ -hydroxyl ketones give positive Tollen's test. Glucose is a polyhydroxy aldehyde and fructose is an  $\alpha$ -hydroxyl ketone
- 5 **(b)**  
Lysine contains two basic groups.  
*e.g.*,  $\text{NH}_2$
- 6 **(d)**  
Glucose is  $\text{CHO}(\text{CHOH})_4\text{CH}_2\text{OH}$ .
- 7 **(b)**  
 $\text{C}_1$  carbon of monosaccharides is called anomeric carbon. When the  $-\text{OH}$  group attached with  $\text{C}_1$  carbon is towards right, it is called  $\alpha$  - form and when the  $-\text{OH}$  group is towards left, it is called  $\beta$  - form. Such pair of optical isomers which differ in the configuration only around anomeric carbon are called anomers.
- The diagram illustrates the two anomeric forms of glucose. On the left, the  $\alpha$ -form is shown with the anomeric carbon (C1) bonded to H on the left and OH on the right. On the right, the  $\beta$ -form is shown with the anomeric carbon (C1) bonded to HO on the left and H on the right. Both structures are labeled as 'anomeric carbon (asymmetric)'.
- 8 **(c)**  
Glucose  $\xrightarrow{\text{Conc. H}_2\text{SO}_4}$   $6\text{C} + 6\text{H}_2\text{O}$ ; this is dehydration.
- 9 **(c)**  
Reserved fat act as thermoinsulator.
- 12 **(b)**  
Both surfactants and detergents possess the surface activity, i.e., the tendency lower surface tension of water. A surfactant also having cleansing action, i. e., detergency in addition to surface activity is called detergent.
- 14 **(c)**  
Sucrose gives glucose and fructose on hydrolysis with invertase enzyme.
- $$\text{C}_{12}\text{H}_{22}\text{O}_{11} + \text{H}_2\text{O} \xrightarrow{\text{Invertase}} \text{C}_6\text{H}_{12}\text{O}_6 + \text{C}_6\text{H}_{12}\text{O}_6$$
- Sucrose
glucose
fructose

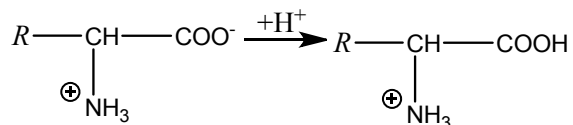
15 **(c)**  
A characteristic of detergent.

16 **(a)**  
The general formula of saturated acids is  $C_nH_{2n}O_2$  or  $C_nH_{2n+1}COOH$ .

17 **(c)**  
The two polynucleotide chains or strands of DNA are joined by hydrogen bonding between the nitrogenous base molecules of their nucleotide monomers

19 **(d)**  
A nucleotide contains a pentose sugar [deoxyribose (in DNA) or ribose (in RNA)], nitrogenous base [such as adenine or guanine or thymine (in DNA) or cytosine or uracil (in RNA)] and a phosphate molecule.

20 **(d)**  
At pH = 4, an amphoteric Zwitter ion structure changes into cation when an acid is added to it.



PE

<b>ANSWER-KEY</b>										
<b>Q.</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
<b>A.</b>	<b>D</b>	<b>C</b>	<b>C</b>	<b>B</b>	<b>B</b>	<b>D</b>	<b>B</b>	<b>C</b>	<b>C</b>	<b>C</b>
<b>Q.</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>
<b>A.</b>	<b>C</b>	<b>B</b>	<b>A</b>	<b>C</b>	<b>C</b>	<b>A</b>	<b>C</b>	<b>B</b>	<b>D</b>	<b>D</b>

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