

AIIMS

ASSERTION

&

REASON

CONCEPT BUILDING BY

True Assertion with Correct Explanation Technique

FEATURES

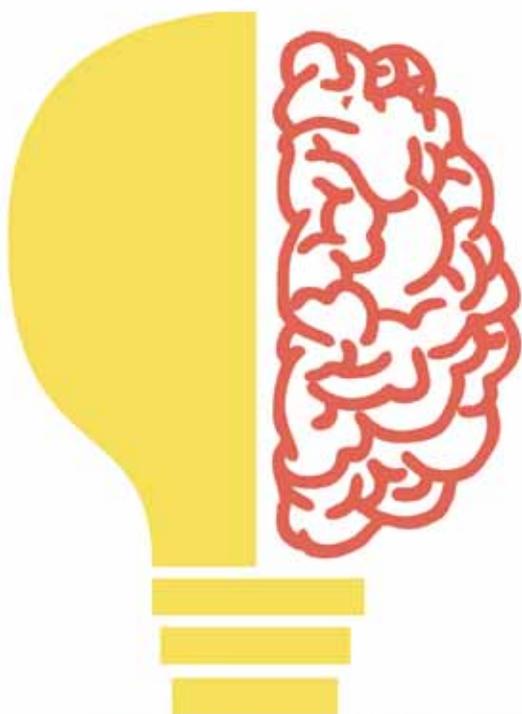
5500+ Chapterwise True Assertion with Correct Explanation

Past Year (1994-2017) AIIMS Exam Chapter wise A & R

5 Model Test Papers Based on AIIMS Past Year Papers

How to solve A&R by AIIMS Toppers

Concept Building for CBSE Exam



Physics



Chemistry



Biology



Mechanical Properties of Fluid

9

True Assertion

Correct Explanation

1. **A** : The blood pressure in human is greater at the feet than at the brain.

R : Height of blood column in the human body is greater at feet.

2. **A** : Atmospheric pressure at a height of about 6km decreases nearly half its value at the sea level though the height of the atmosphere is more than 100km.

R : Density of air decrease rapidly with the height of about 6km above the surface of earth.

3. **A** : Hydrostatic pressure is a scalar quantity even though pressure is force divided by area and force is a vector.

R : When we apply force. The pressure is transmitted equally in all directions inside the liquid.

4. **A** : The angle of contact of mercury with glass is obtuse, while that of water with glass is acute.

R : In case of mercury $\cos \theta$ is negative $SSL > SSA$ than water glass $\cos \theta$ is positive $SSA > SSL$.

5. **A** : Surface tension of liquid is independent of the area of liquid surface.

R : Surface tension is force acting per unit length on a line drawn tangentially to the liquid surface at rest.

6. **A** : Detergents should have small angle of contact.

R : Cloth has narrow spaces in form of capillaries. Small angle of contact makes $\cos \theta$ large. Due to which capillary rise will increase.

7. **A** : A drop of liquid under no external forces is always spherical in shape.

R : Due to surface tension, the surface of liquid drop tends to acquire the minimum surface area. For a given volume, the surface area of sphere is least.

8. **A** : Water on a clean glass surface tends to spread out while mercury on the same surface tends to form drop.

R : Angle of contact is obtuse for mercury glass. In order to make obtuse mercury tends to form a drop. Angle of contact of water is acute, so it spread.

9. **A** : To keep a piece of paper horizontal you should blow over not under it.

R : Velocity of air blow increases, pressure of air over the paper decreases. Pressure below paper is atmospheric pressure.

10. **A** : When we try to close a water tap with our fingers, the fast jets of water gust through the openings between our fingers.

R : It follows equation of continuity velocity of water increases as the area of outlet of water jet reduced.

11. A : A fluid flowing out of a small hole in a vessel, results in a backward thrust on the vessel.	R : Fluid passes through small hole possess large momentum. When no external force is acting on the system an impulse is experienced by vessel.
12. A : Liquid meniscus is concave in the tube contains water.	R : Resultant force is directed outward.
13. A : Water depresses in a glass tube which is coated inside with paraffin wax.	R : Force of cohesion between molecules of water is large than force of adhesion between molecules of water & wax.
14. A : When we put oil on the surface of water oil spreads.	R : Surface tension of oil is less than that of water.
15. A : When we put chalk into water, it emits bubbles in all directions.	R : Chalk pores act as narrow capillaries.
16. A : Water flows faster than honey.	R : Coefficient of viscosity is less than honey.
17. A : Rain drops falling under gravity do not possess high velocity.	R : A viscous drags force acts opposite to that of motion.
18. A : Velocity of bigger rain drop is higher than smaller one.	R : Bigger drop has greater terminal velocity.
19. A : Two stream lines of fluid cannot cut each other.	R : At a point of intersection of incoming fluid particle not have unique direction.
20. A : The size of the needle of syringe controls flow better than the thumb pressure exerted by a doctor while administering an injection.	R : Pressure has power one velocity has power two follows bernoulli's principle. or The needle of a syringe has very small cross-sectional area compared to the thumb so the pressure exerted at the tip of the needle is large.
21. A : Bernoulli's equation not be used to describe the flow of water through a rapid in a river.	R : Bernoulli's theorem is used only for stream line flow.
22. A : It's difficult to make mercury enter a fine pore of thermometer tube.	R : Cohesive forces are very large.
23. A : A slight blow on the cork can lead to break the bottle, when a bottle full of liquid is fitted with a light cork.	R : For increasing in pressure at one part of liquid is communicated equally at all other parts of liquid.
24. A : A man inside water requires less effort to move his body as compared to move his part in air.	R : Upthrust is more when immersed in water and its effective weight is less in water than air.
25. A : A small iron nail sinks in water while a large iron ship float.	R : Weight of liquid displaced by the immersed part of body in liquid is not equal to weight of body. or Density of liquid is less than density of material So, it will sink.

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| 26. A: Cotton towel is used to get our skin dry after taking a bath. | R: The cotton towel has a number of fibers shows capillarity phenomenon. |
| 27. A: Oil is spread over stagnant pool of water to eliminate mosquitoes. | R: Surface tension of oil being less, oil forms a thin film over stagnant water. |
| 28. A : A bottle full of liquid is fitted with a tight cork. A slight blow on the cork may be sufficient to break the bottles. | R : The increases in pressure at one part of liquid is communicated equally at all other parts of liquid. |
| 29. A : A balloon filled with helium does not rise in air in definitely but halts after a certain height. | R : Weight of the air displaced by balloon is more than the weight of the balloon and helium gas filled inside balloon. The density of air and the value of acceleration due to gravity decreases with height. |
| 30. A : The force required by a man to move his limbs immersed in water is smaller than the force for the same movement in air. | R : The upthrust on the limbs of a man is more when immersed in water than in air. As a result of it, the effective weight of limbs of a man is less in water than in air. |
| 31. A : Archimede's principle does not hold in a vessel in free fall. | R : The buoyant force accounting for Archimede's principle does not exist. |
| 32. A : Small drops of mercury are spherical and large loops become flat. | R : A small drop of mercury the force of gravity is small and the force of surface tension plays a vital role. In case of large mercury drop, the gravitational pull becomes more effective than the surface tension. |
| 33. A : Water is depressed in a glass tube whose inner surface is coated with praffin wax. | R : Force of cohesion between molecules of water is larger than the force of adhesion between the molecules of water and wax. |
| 34. A : Some oil spread uniformly on water, when others float as drops. | R : The force of surface tension of some oils is less than surface tension of water. |
| 35. A : An iron needle float on clean water but sink when some detergent is added to this water. | R : Due to surface tension, the free surface of liquid at rest behaves like a stretched membrane. When an iron needle floats on the surface on clean water, its weight is supported by the stretched membrane. When some detergent is added to this water, its surface tension decreases. |
| 36. A : It is better to wash the clothes in hot soap solution. | R : The soap solution has less surface tension as compared to ordinary water and its surface tension decreases further on heating. The hot soap solution can therefore, spread over large surface area and as such it has more wetting power. |

37. A : Surface tension concept is only held for liquids and for gases which are also fluids.	R : The intermolecular distance between the gas molecules is quite large as compared to that of liquid.
38. A : The level of water in a jar rises, When the whole ice will melt and temperature changes from 4°C to 1°C.	R : It is so because, the density of water is maximum at 4°C and is less at 1°C. Due to it, the given mass of the water in jar will occupy more volume at 1°C than at 4°C.
39. A : The dam of water reservoir thick at the bottom.	R : The pressure of water in reservoir increases with depth.
40. A : A block of ice is floating in a liquid of specific gravity 1-2 contained in the beaker.	R : The level of water in a beaker will rise. It is so because of water formed by melting of ice is less than the density of liquid in a beaker.
41. A : When a shaving brush is taken out of water its hair cling together.	R : Due to surface tension, the water films formed between the hairs will tend to make the surface area minimum.
42. A : When a greased iron needle is placed gently on the surface of water at rest, it floats on the surface of water.	R : Due to surface tension, the free surface of water at rest behaves like a stretched membrane.
43. A : Put a piece of chalk into water. The chalk will emit bubbles in all directions.	R : Which act as narrow capillaries.
44. A : water flows faster than honey.	R : As η for water is less as compared to honey, therefore V for water is greater than that of honey.
45. A : Rain drops falling under gravity do not acquire very high velocity.	R : A viscous drag acts on it in a direction opposite to that of motion. This viscous drag goes on increasing with the increasing velocity of the drop till a stage comes when the total downward force on the drop is just balanced by the upward viscous drag. At this stage, there is not net force to accelerate rain drop.
46. A : The sides of a horizontal pipe carrying dirty water get dirty.	R : When dirty water is flowing through the horizontal pipe, the velocity of the water is maximum along the axis of pipe and is minimum near the walls of the pipe. A viscous drag comes into play which opposes the relative motion between the adjacent layers.
47. A : The velocity of fall of a man jumping with a parachute first increases and then becomes constant.	R : As a man jumps out from a height in air with a parachute, its velocity increases first, because of air which oppose the motion, As the velocity increases the viscous drag of air also increases and soon a stage is reached where viscous drag and buoyancy of air balances the gravity pull.

48. **A** : Deep water runs slow.

R : Area of cross-section 'a' is large, so velocity v is small.

49. **A** : It is advised not to stand near a running train.

R : The pressure of air will become low in between person and rail and is high on the other side of person. As a result of this pressure differences, a thrust acts on the person which may push the person towards rail side and the person may met with an accident.

AIIMS Past Year Assertion & Reason

- A** : The shape of an automobile is so designed that its front resembles the streamline pattern of the fluid through which it moves.
R : The resistance offered by the fluid is maximum. (1994)
- A** : A hydrogen filled balloon stops rising after it has attained a certain height in the sky.
R : The atmospheric pressure decreases with height and becomes zero when maximum height is attained. (1999)
- A** : Smaller drops of liquid resist deforming forces better than the larger drops
R : Excess pressure inside a drop is directly proportional to its surface area. (2004)
- A** : Specific gravity of a fluid is a dimensionless quantity.
R : It is the ratio of density of fluid to the density of water. (2005)
- A** : For Reynold number $R_e > 2000$, the flow of fluid is turbulent.
R : Inertial forces are dominant compared to the viscous forces at such high Reynold numbers. (2005)
- A** : A thin stainless steel needle can lay floating on a still water surface.
R : Any object floats when the buoyancy force balances the weight of the object. (2006)
- A** : Machine parts are jammed in winter.
R : The viscosity of lubricant used in machine parts increase at low temperatures. (1995, 2007)
- A** : A needle placed carefully on the surface of water may float, whereas a ball of the same material will always sink.
R : The buoyancy of an object depends both on the material and shape of the object. (1995, 2008)
- A** : Liquid molecules have greater potential energy at the melting point.
R : Intermolecular spacing between molecules increases at melting point. (2009)
- A** : Water kept in an open vessel will quickly evaporate on the surface of the moon.
R : The temperature of the surface of the moon is much higher than boiling point of water. (2010)
- A** : Surface energy of an oil drop is same whether placed on glass or water surface.
R : Surface energy is dependent only on the properties of oil. (2012)
- A** : Turbulence is always dissipative
R : High reynold number promotes turbulence. (2012)
- A** : When height of a tube is less than liquid rise in the capillary tube, the liquid does not overflow.
R : Product of radius of meniscus and height of liquid in the capillary tube always remain constant. (2014)
- A** : To Float, a body must displace liquid whose weight is greater than actual weight of the body.
R : During floating the body will experience no net downward force in that case. (2017)

Answer Key

1	2	3	4	5	6	7	8	9	10	11	12	13	14
c	b	c	a	a	b	a	c	c	a	d	b	a	d

Electrochemistry

3

True Assertion

1. **A** : The Daniell cell becomes dead after sometimes.

2. **A** : Electrolysis of molten CaH_2 produces H_2 gas at anode.

3. **A** : In Daniell cell when $E_{\text{ext}} = 1.1 \text{ V}$ Electricity not produced.

4. **A** : Galvanic cells used for electrical gadget's like heater, fan, geyser etc.

5. **A** : For the Daniell cell
 $\text{Zn} / \text{Zn}^{2+} / \uparrow \text{Cu}^{2+} / \text{Cu}$ with $E_{\text{cell}} = 1.1 \text{ V}$.
If $E_{\text{cell}} > 1.1 \text{ V}$ causes the flow of electrons from cathode to anode.

6. **A** : In galvanic cell,
 $\text{Cu}(\text{s}) / \text{Cu}^{2+} // \text{Ag}^+(\text{aq}) / \text{Ag}(\text{s})$, silver electrode act as cathode & copper electrode act as anode.

7. **A** : The potential of individual half cell cannot be measured.

8. **A** : In standard hydrogen electrode the pressure of H_2 gas is 1 bar & conc. Of hydrogen ion is 1 molar.

9. **A** : Cu does not dissolve in HCl.

10. **A** : Cu is react with nitric acid & get oxidised, but hydrogen of nitric acid do not involve.

Correct Explanation

R : Oxidation potential of zinc anode decreases & that of copper increases.

R : In CaH_2 , hydrogen is present in the form of H^- ion.

R : No flow of electrons takes places & no chemical reaction occur.

R : In this device the gives energy of the spontaneous redox reaction is converted into electrical work.

R : If $E_{\text{ext}} > 1.1 \text{ V}$ in the Daniell cell, current flows in the reverse direction.
i.e. electron flow from $(\text{Cu}^{2+} / \text{Cu})$ to $(\text{Zn} / \text{Zn}^{2+})$
• Reverse reaction takes place.

R : This is because reduction takes place at cathode & Ag deposited at silver electrode while copper dissolve at copper electrode.

R : A half cell called standard hydrogen electrode, is assigned a zero potential at all temperature. So, we can't calculate E.m.f of the cell.

R : The concentration of both the reduced & oxidised forms of hydrogen is maintained at unity.

R : Hydrogen ion cannot oxidised copper.

R : In nitric acid ,Cu is oxidised by nitrate ion, & not by hydrogen ion.

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| 11. A : Sometimes metals like platinum or gold are used as inert electrode. | R : This is because pt & Au do not participate in the reaction but provide their surface for oxidation or reduction reaction & for conduction of electrons. |
| 12. A : Three metallic cations X , Y & Z has standard reduction potential value 0.52, -3.03 & -1.18V respectively, its order of reducing power is Y > Z > X | R : Greater the reduction potential, less is the reducing power.
∴ Reduction potential $\propto \frac{1}{\text{reducing power}}$ |
| 13. A : Fluorine gas is the strongest oxidising agent & fluoride ion is the weakest reducing agent. | R : This due to highest electrode potential of fluorine causes fluorine gas has the maximum tendency to get reduced to fluoride ions. |
| 14. A : Lithium ion is the weakest oxidising agent. | R : Lithium has the lowest electrode potential. |
| 15. A : If half cell reaction $A + e^- \rightarrow R^-$ has a large negative reduction potential causes A ⁻ is readily oxidized. | R : This is due to high oxidation potential |
| 16. A : If length of any object is increases its electrical resistance also increase. | R : This is because electric resistance is directly proportional to its length & inversely proportional to its area.
$R \propto \frac{l}{A}$ |
| 17. A : Electrical conductance through metals is called metallic or electronic conductance. | R : This is due to movement of electrons. |
| 18. A : Acetylene gas produce a polymer. | R : This is due to polymerisation, poly acetylene when exposed to vapours of iodine acquires metallic lustre & conductivity. |
| 19. A : When electrolytes are dissolved in water, conductivity of water increases. | R : This is because very pure water has small amount of hydrogen & OH ⁻ (~ 10 ⁻⁷ M) , when electrolytes added they furnish their own ions in the solution. |
| 20. A : Passage of direct current through the ionic solution over a prolonged period can lead to a composition change. | R : This is due to electrochemical reaction. |
| 21. A : We generally used KCl solutions to determined cell constant. | R : KCl solution whose conductivity is known accurately at various concentration. |
| 22. A : The conductivity of solution of different electrolytes in the same solvent & at a given temp differs. | R : This is due to charge & size of the ions in which they dissociate, the conc. Of ions or ease with which the ions move under pot. Gradient. |
| 23. A : Conductivity always decreases with decrease in concentration both, for weak & strong electrolyte. | R : This is due to number of ions per unit volume that carry the current in a solution decrease on dilution. |

24. A : Molar conductivity increase with decreases in concentration.	R : This is because the total vol. (V) of sol ⁿ containing one mole of electrolyte also increases.
25. A : The products of electrolysis may be different for reactive & inert electrodes	R : If the electrode is inert, it does not participate & if the electrode reactive it participates in the electrode reaction.
26. A : As a lead storage battery gets discharged, density of electrolyte, present in it, decreases.	R : Lead & lead dioxide both react with sulphuric acid to form lead sulphate.
27. A : The mobility of sodium ions is lower than that of potassium ion.	R : The ions mobilities depend upon the effective radius of the ion.
28. A : osmotic pressure of 0.1 N urea solution is less than that of 0.1 M NaCl solution.	R : osmotic pressure is a colligative property depends upon number of particles present in the solution.
29. A : KCl / NaCl / NH ₄ Cl etc cannot be used in the salt bridge of a cell containing silver.	R : Because they react to form AgCl ppt.
30. A : A dry cell does not have a long life.	R : This is because the acidic NH ₄ Cl corrodes the zinc container even when the cell is not in use.
31. A : Iron does not rust if pH is above 9-10/	R : If pH is high, reduction of O ₂ may not take place.
32. A : Pure metal do not corrode.	R : Impurities are absent in pure metals.
33. A : Galvanised iron does not rust.	R : Zinc metal has more negative electrode potential than iron.
34. A : Cu ²⁺ ions get reduced more easily than H ⁺ ions.	R : Standard electrode potential of copper is 0.34 V.
35. A : To obtain maximum work from galvanic cell charge has to be passed reversibly.	R : The reversible work done by a galvanic cell is equal to decrease in its Gibbs energy.
36. A : Kohlrausch law helps to find the molar conductivity of weak electrolyte at infinite dilution.	R : Molar conductivity of a weak electrolyte at infinite dilution cannot be determined experimentally.
37. A : Current stops flowing when E _{cell} = 0	R : Equilibrium of the cell reaction is attained.
38. A : A standard hydrogen electrode is also called reversible electrode.	R : Standard hydrogen electrode can act both as anode as well as cathode in an electrochemical cell.

1. **A** : In electrolysis, the quantity of electricity needed for depositing 1 mole of silver is different from that required for 1 mole of copper.
R : The atomic weights of silver and copper are different. (1996, 2016)
2. **A** : Sodium ions are discharged in preference to hydrogen ions at mercury electrode.
R : The nature of cathode can affect the order of discharge of cations. (1996)
3. **A** : Identification of cathode and anode is done by the use of a thermometer.
R : Higher the value of reduction potential, greater would be its reducing power. (1999)
4. **A** : Zinc displaces copper from copper sulphate solution.
R : The $E_{298\text{ K}}^0$ of Zn is -0.76 volts and that of Cu is +0.34 volts. (1999, 2010, 2015)
5. **A** : Equivalent conductance of all electrolytes decreases with increasing concentration.
R : Lesser number of ions are available per gram equivalent at higher concentration. (1999)
6. **A** : Galvanised iron does not rust.
R : Zinc has a more negative electrode potential than iron. (2005)
7. **A** : For the Daniell cell, $\text{Zn}|\text{Zn}^{2+}||\text{Cu}^{2+}|\text{Cu}$ with $E_{\text{cell}}^0 = 1.1\text{ V}$, the application of opposite potential greater than 1.1 V results into flow of electrons from cathode to anode.
R : Zn is deposited at anode and Cu is dissolved at cathode. (2006)
8. **A** : A reaction is spontaneous if $E_{\text{cell}} = +\text{ve}$.
R : For $E_{\text{cell}} = +\text{ve}$, ΔG is always $-\text{ve}$. (2011)
9. **A** : Conductivity of all electrolytes decreases on dilution.
R : On dilution number of ions per unit volume decreases. (2014)
10. **A** : Pure iron when heated in dry air is covered with a layer of rust.
R : Rust has the composition Fe_3O_4 . (2015)
11. **A** : As the lead storage battery get discharged, density of electrolyte, present in it, decreases.
R : Lead and lead dioxide both react with sulphuric acid to form lead sulphate. (2017)
12. **A** : On dilution, the equivalent as well as molar conductivity of solution increases.
R : With dilution, the number of current carrying particles per cm^3 increases. (2017)

Answer Key

1	2	3	4	5	6	7	8	9	10	11	12
b	a	d	a	a	a	b	a	a	d	a	c

Biomolecules

9

True Assertion

1. **A** : Enzymes make life possible.

Correct Explanation

R : Metabolism is the essence of life, and enzymes enable the metabolic reactions to occur at required rate.

2. **A** : Vitamins and trace elements have the same role.

R : Both act as cofactors of apoenzymes.

3. **A** : Cholesterol is a crucial molecule in animals.

R : Cholesterol is a common compound in animal cell membranes, and is a source of many vertebrate hormones, and other steroids.

4. **A** : Coenzyme is a non protein group without which certain enzymes are inactive or incomplete.

R : Coenzymes provide a point of attachment to chemical group being transferred and influence the properties of the group.

5. **A** : Enzymes named now by adding suffix 'ase', but the enzyme name pepsin ends with 'in'.

R : Enzymes with 'in' at end were named before modern system of naming the enzymes was devised.

6. **A** : Enzymes work best at body temperature.

R : High temperature denatures the enzymes permanently and freezing makes them temporarily inactive.

7. **A** : Higher the turnover, more efficient the enzyme is.

R : Enzymes occur in the cell in minute amounts due to their high turnover numbers.

8. **A** : DNA replication needs RNA primer.

R : DNA polymerase enzyme can make a DNA chain longer but cannot initiate its synthesis.

9. **A** : Enzymes make the biochemical reactions go at ordinary temperature and instantaneously.

R : Enzymes bring the reactant molecules together for rapid interaction.

10. **A** : Prokaryotic mRNA is polycistronic and specifies more than one polypeptide.

R : Polycistronic mRNA is transcribed from more than one gene.

11. A : Milk becomes sour if kept at room temperature for a long time.	R : Bacteria, <i>Streptococcus lactis</i> , convert the milk sugar lactose into lactic acid.
12. A : Sucrose is a non-reducing sugar.	R : Anomeric carbon or reducing end of both glucose and fructose are involved in making glycosidic bond.
13. A : Cellulose of our diet simply provides bulk (fibre, roughage) and no nutrient.	R : Cellulose is not hydrolyzed in our gut. It hastens movement of faeces through the intestine.
14. A : Two chains of DNA molecule are antiparallel.	R : The 5-3 directions of the two DNA chains are opposite.
15. A : Oils containing polyunsaturated fatty acid are considered good for health.	R : They help reduce blood cholesterol level, thereby decreasing chances of heart attack.
16. A : Macromolecules are formed from micromolecule monomers by condensation.	R : There is a loss of water molecule for addition of each micromolecule in the synthesis of macromolecules.
17. A : In solutions of different pH, the ionic form of amino acids changes.	R : NH_2 and $-\text{COOH}$ groups of amino acids are of ionizable nature.
18. A : Biomolecules which are found in the acid insoluble fraction are considered as macromolecules.	R : Biomolecules found in acid insoluble fraction have molecular weight more than 1000 Dalton.
19. A : Lipids whose molecular weight does not exceed 800 Dalton come under acid insoluble fraction.	R : Lipids are present not only as such but also arranged in structures like membranes during grinding these lipids form vesicles.
20. A : Lipids are not strictly macromolecules.	R : Molecular weight of lipids does not exceed 800 Dalton.
21. A : GLUT—4 is one of the essential proteins for bioenergetics of the cell.	R : GLUT-4 enables glucose transport into cell.
22. A : Starch can be stained with iodine but cellulose can not be stained by iodine although both are homopolymer of glucose monomers.	R : Cellulose does not contain complex helices so can not hold iodine molecules.
23. A : Together with polysaccharides and polypeptides nucleic acids comprise the true macromolecular fraction of any living tissue or cell.	R : Like polysaccharides and polypeptides nucleic acids also have molecular weight more than 1000 Dalton.
24. A : Adenine and Guanine are substituted purines.	R : In Adenine and Guanine purine heterocyclic ring has either amino or amino and oxy groups.
25. A : Primary structure of protein is the positional information in protein.	R : Primary structure is determined on the basis of amino acid sequence.

26. A : Last amino acid of any protein is known as C—terminal amino acid.	R : Last amino acid of any protein possess free —COOH group.
27. A : All living organisms from bacteria to human being show a dynamic state of body constituents.	R : Such dynamic state of body constituents keep maintain the level of energy and biochemicals required for livingness.
28. A : Living state is a non equilibrium steady state to be able to perform work.	R : Any system of equilibrium can not work and living organisms work continuously so they can not afford to reach equilibrium.
29. A : Structural efficiency of enzymes is determined by primary configuration of proteins.	R : Structure of any proteinaceous chemical is governed by sequence of amino acids.
30. A : Functional specificity of an enzyme is governed by tertiary or quaternary structure of protein.	R : In tertiary or quaternary structure of proteins grooves arise due to folding that act as active sites for substrate.
31. A : In enzyme catalysed reaction there is obligatory formation of an E-S complex.	R : Such complex formation is a transient phenomenon which leads to creation of transition state structure in which bond making/breaking is completed.
32. A : When inhibitor closely resembles the substrate in its molecular structure and inhibit the activity of the enzyme then it is known as competitive inhibitor.	R : Due to close structural similarity with the substrate the inhibitor compete with the substrate for active sites of enzymes.
33. A : Metal ions are important for functioning of cells.	R : Metal ions may act as Co—factor for several enzymes.
34. A : Saturated fatty acids are non—essential fatty acids.	R : They can be synthesized in animal body.
35. A : Normally the genetic code is degenerate.	R : One amino acid is coded by more than one codon.
36. A : All monosaccharides are reducing sugar	R : Monosaccharides contain free aldehyde or free ketonic group.
37. A : Sucrose is called invert sugar	R : Sucrose is initially dextrorotatory but in hydrolysed solution mixture is laevorotatory i.e. rotation of light is changed
38. A : In the oxidation of monosaccharide first step is always phosphorylation.	R : All monosaccharide are active with their phosphate derivatives.
39. A : Cholesterol is an important biochemical.	R : Cholesterol is parental steroid it plays important role in the synthesis of other biologically active steroid hormones.
40. A : Constant diameter of DNA double helix is 20 Angstrom.	R : Purines always pair with pyrimidines and vice-versa

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| 41. A : All monosaccharides give Benedict's test. | R : All monosaccharide contain free aldehyde or ketonic group. |
| 42. A : Phospholipid is a amphipathic molecule. | R : Phospholipid contain both hydrophobic and hydrophilic end. |
| 43. A : Prokaryotic DNA has high T_m as compare to eucaryotic DNA. | R : Prokaryotic DNA contains more G-C pairs as compare to eukaryotic DNA. |
| 44. A : Ricin protein inhibit the eukaryotic translation. | R : Ricin protein inactivates the larger subunit of ribosome. |
| 45. A : Wobbling process established the economy of t—RNA. | R : In wobbling process single t—RNA recognizes more than one codon of m—RNA. |

AIIMS Past Year Assertion & Reason

- A** : Adenine cannot pair with cytosine.
R : This is because there would be two hydrogen atoms one at the bonding positions and one at the other. (1999)
- A** : Co-enzyme is a non-protein group without which certain enzymes are inactive or incomplete.
R : Co-enzymes not only provide a point of attachment of the chemical group being transformed but also influence the properties of the group. (1999)
- A** : Competitive inhibitor is also called as substrate analogue.
R : It resembles the enzymes in structure. (2008)
- A** : Enzymes lower down the activation energy of the reactant molecule to make its transition into product easier.
R : Enzymes are highly substrate specific catalysts. (2011)
- A** : All proteinecous enzymes have a three-dimensional structure.
R : The secondary structure of protein is according to amino acid present inside the polypeptides. (2013)
- A** : Glutamine contains amide group.
R : Isoelectric point of glutamine is 7. (2013)
- A** : Secondary metabolites are produced in small quantities and their extraction from the plant is difficult and expensive.
R : Secondary metabolites can be commercially produced by using tissue culture technique. (2015)

Answer Key

1	2	3	4	5	6	7
c	a	c	b	b	c	b



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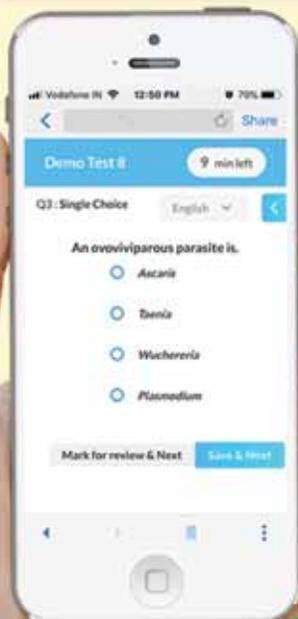
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