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SCIENCE AND TECHNOLOGY

PART I

STANDARD TENTH (10th)

Chapter 1 :

Periodic Classification of Elements

1. How many periods and groups are present in the periodic table?

- a) 7 periods and 18 groups
- b) 8 periods and 7 groups
- c) 7 periods and 7 groups
- d) 8 periods and 8 groups

Answer: (a) 7 periods and 18 groups

Explanation: Modern periodic table consists of 7 horizontal rows known as periods and 18 vertical columns named as groups.

2. Which of the following forms the basis of the modern periodic table?

- a) Atomic mass
- b) Atomic number
- c) Number of nucleons
- d) All of these

Answer: (b) Atomic number

Explanation: Modern periodic table is based on the atomic numbers of elements as according to the modern periodic law the properties of elements are a periodic function of their atomic numbers.

3. What happens to the electropositive character of elements on moving from left to right in a periodic table?

- a) Increase
- b) Decreases
- c) First increases than decreases
- d) First decreases than increases

Answer: (b) Decreases

Explanation: Electropositive character of an element is its ability to lose electrons and form positive ions. Now, as on moving from left to right in a period of periodic table, the nuclear charge increases due to the gradual increase in number of protons, so the valence electrons are pulled more strongly by the nucleus. Thus, it becomes more and more difficult for the atoms to lose electrons causing a decrease in the electropositive character of elements on moving from left to right in a periodic table.

4. The electronic configuration of an element M is 2, 8, 4. In modern periodic table, the element M is placed in

- a) 4th group
- b) 2nd group
- c) 14th group
- d) 18th group

Answer: (c) 14th group

Explanation: In the periodic table, elements having 4 valence electrons are placed in group 14.

5. Which of the following is the correct order of the atomic radii of the elements oxygen, fluorine and nitrogen?

- a) $O < F < N$
- b) $N < F < O$
- c) $O < N < F$
- d) $F < O < N$

Answer: (d) $F < O < N$

Explanation: Oxygen (8), fluorine (9) and nitrogen (7) belong to the same period of the periodic table, in the order nitrogen, oxygen and fluorine. Now in a period, on moving from left to right the atomic radius of the elements decreases. Therefore, the atomic radius of nitrogen is the largest.

6. What is the other name for group 18th elements?

- a) Noble gases
- b) Alkali metals
- c) Alkali earth metals
- d) Halogens

Answer: (a) Noble gases

Explanation: Group 18th elements are named as noble gases as they are very stable due to having the maximum number of valence electrons their outermost shell can hold, hence they rarely react with other elements.

7. Which of the following is the most reactive element of the group 17?

- a) Oxygen
- b) Sodium
- c) Fluorine
- d) Magnesium

Answer: (c) Fluorine

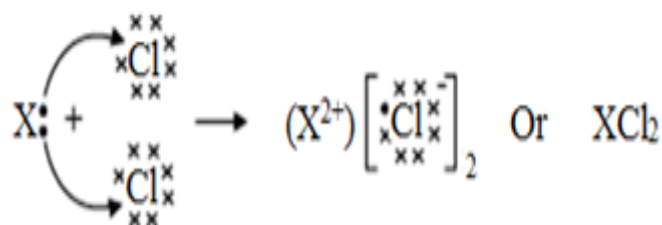
Explanation: As we move down in a group, the size of the atoms of elements goes on increasing. So, fluorine being on the top position in the halogen's group, is the smallest element and has the maximum tendency to gain an electron to complete its octet. Thus fluorine is the most reactive element of the group 17.

8. Element X forms a chloride with the formula XCl_2 , which is a solid with a high melting point. X would most likely be in the same group of the Periodic Table as

- a) Na
- b) Mg
- c) Al
- d) Si

Answer: (b) Mg

Explanation: Group 2 alkaline earth metal atoms have two valence electrons each. They can donate their two valence electrons to two other chlorine atoms to form the solid compounds of the form XCl_2 .



This XCl_2 compound being ionic in nature, has a very strong electrostatic forces of attraction between 2 chloride atoms and 1 metal atom. Thus a large amount of heat is required to break these strong bonds, causing the compound to have very high melting and boiling points.

9. Which group elements are called transition metals?

- a) Group number 1 to 2
- b) Group number 13 to 18
- c) Group number 3 to 12
- d) Group number 1 to 8

Answer: (c) Group number 3 to 12

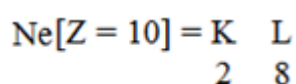
Explanation: The elements occurring in the group 3 to 12 are named as transition metals because they are metallic elements that form a transition between the main group elements, which occur in groups 1 and 2 on the left side, and groups 13–18 on the right side of the periodic table.

10. Which of the following elements has 2 shells and both are completely filled?

- a) Helium
- b) Neon
- c) Calcium
- d) Boron

Answer: (b) Neon

Explanation: Neon with the atomic number 10, has the electronic configuration as:



Hence, both its K and L shells are completely filled.

11. Which of the following is the atomic number of an element that forms basic oxide?

- a) 18
- b) 17
- c) 19
- d) 15

Answer: (c) 19

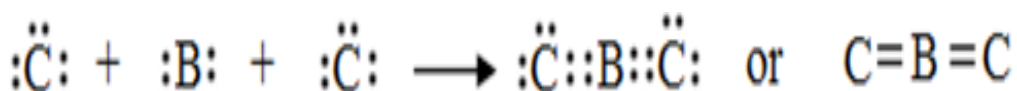
Explanation: The elements which can donate their valence electrons to other atoms are the metallic elements which form basic oxides as they give hydroxides in their aqueous solutions.

12. The elements A, B and C belong to group 2, 14 and 16 respectively, of the periodic table. Which of the two elements will form covalent bonds?

- a) A and B
- b) B and C
- c) C and A
- d) None of these

Answer: (b) B and C

Explanation: The covalent bond is formed by the sharing of electrons between two atoms. As the element B (which belongs to group 14) has 4 valence electrons which it can share with two elements of C type (from group 16) electrons to complete the octet of each included atom:



13. Which of the following does not decrease while moving down the group of the periodic table?

- a) Atomic radius
- b) Metallic character
- c) Number of shells in the atom
- d) Valence electrons

Answer: (d) Valence electrons

Explanation: Number of valence electrons in a group remain the same.

14. An element X belongs to the 3rd period and 1st group of the periodic table. What is the number of valence electrons in its atom?

- a) 1
- b) 3
- c) 6
- d) 8

Answer: (a) 1

Explanation: As the element belongs to the 1st group of the periodic table, so the number of valence electrons in its atom is one.

15. An element M is in group 13th of the periodic table, the formula for its oxide is

- a) MO
- b) M₂O₃
- c) M₃O₂
- d) None of these

Answer: (b) M₂O₃

Explanation: As the element M belongs to group 13th of the periodic table so it has 3 valence electrons, i.e., it can have +3 oxidation state while oxygen atom (with 2 valency) has -2 oxidation state. So the formula for the corresponding oxide is M₂O₃.

Elements	M	O
Oxidation State	+3	-2
Formula	M ₂ O ₃	

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Chapter 2: Chemical Reactions and Equations

1. Before burning in air, the magnesium ribbon is cleaned by rubbing with a sand paper to :

- a. Make the ribbon surface shinier
- b. Remove the layer of magnesium oxide from the ribbon surface
- c. Remove the layer of magnesium carbonate from the ribbon surface
- d. Remove the moisture from the ribbon surface

Answer. c. Remove the layer of magnesium carbonate from the ribbon surface.

2. In a chemical reaction between sulphuric acid and barium chloride solution the white precipitates formed are of :

- a. Hydrochloric acid
- b. Barium sulphate
- c. Chlorine
- d. Sulphur

Answer. b. Barium sulphate

3. The respiration process during which glucose undergoes slow combustion by combining with oxygen in the cells of our body to produce energy, is a kind of :

- a. Exothermic process
- b. Endothermic process
- c. Reversible process
- d. Physical process

Answer. a. Exothermic process

4. A chemical reaction does not involve:

- a. Formation of new substances having entirely different properties than that of the reactants
- b. Breaking of old chemical bonds and formation of new chemical bonds
- c. Rearrangement of the atoms of reactants to form new products
- d. Changing of the atoms of one element into those of another element to form new products

Answer. d. Changing of the atoms of one element into those of another element to form new products

5. One of the following processes does not involve a chemical reaction. That is:

- a. Melting of candle wax when heated
- b. Burning of candle wax when heated
- c. Digestion of food in our stomach
- d. Ripening of banana

Answer. a. Melting of candle wax when heated

6. It is necessary to balance a chemical equation in order to satisfy the law of:

- a. Conservation of motion
- b. Conservation of momentum
- c. Conservation of energy
- d. Conservation of mass

Answer. d. Conservation of mass

7. All the methods mentioned below can be used to prevent the food from getting rancid except:

- i. Storing the food in the air-tight containers**
- ii. Storing the food in refrigerator**
- iii. Keeping the food in clean and covered containers**
- iv. Always touching the food with clean hands**
- a. (i) and (ii)
- b. (i) and (iii)
- c. (i), (iii) and (iv)
- d. (iii) and (iv)

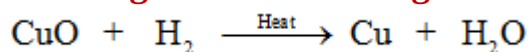
Answer. d. (iii) and (iv)

8. Rusting of iron involves a chemical reaction which is a combination of:

- a. Reduction as well as combination reactions
- b. Oxidation as well as combination reactions
- c. Reduction as well as displacement reactions
- d. Oxidation as well as displacement reactions

Answer. b. Oxidation as well as combination reactions

9. You are given the following chemical reaction:



This reaction represents:

- a. Combination reaction as well as double displacement reaction
- b. Redox reaction as well as displacement reaction
- c. Double displacement reaction as well as redox reaction
- d. Decomposition reaction as well as displacement reaction

Answer. b. Redox reaction as well as displacement reaction

10. When ferrous sulphate is heated strongly it undergoes decomposition to form ferric oxide as a main product accompanied by a change in colour from:

- a. Blue to green.
- b. Green to blue.
- c. Green to brown.
- d. Green to yellow.

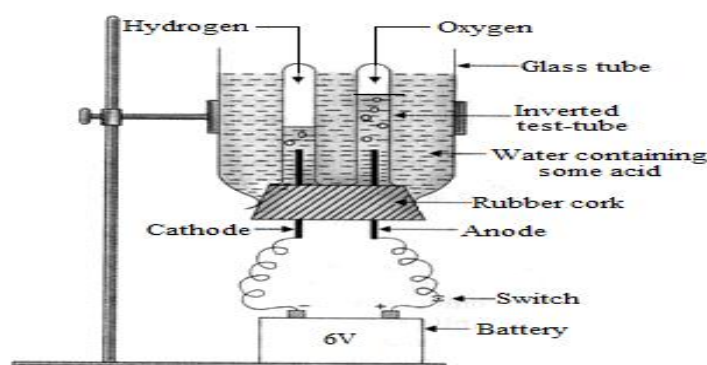
Answer. c. Green to brown

11. Which of the following gases is used in the storage of fat and oil containing foods for a long time?

- a. Carbondioxide gas
- b. Nitrogen gas
- c. Oxygen gas
- d. Neon gas

Answer. b. Nitrogen gas

12. Following is given a diagram showing an experimental set-up:



The given set-up is used to carry out:

- a. Distillation of water
- b. Purification of water
- c. Electrolysis of water
- d. Hydrolysis

Answer. c. Electrolysis of water

13. The displacement reaction between iron (III) oxide and a metal X is used for welding the rail tracks. Here X is:

- a. Copper granules
- b. Magnesium ribbon
- c. Sodium pellets
- d. Aluminium dust

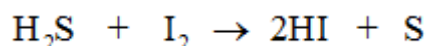
Answer. d. Aluminium dust

14. The neutralization reaction between an acid and a base is a type of:

- a. Double displacement reaction
- b. Displacement reaction
- c. Addition reaction
- d. Decomposition reaction

Answer. a. Double displacement reaction

15. The chemical reaction between Hydrogen sulphide and iodine to give Hydrogen iodide and sulphur is given below:



The reducing and oxidizing agents involved in this redox reaction are:

- a. Iodine and sulphur respectively
- b. Iodine and hydrogen sulphide respectively
- c. Sulphur and iodine respectively
- d. Hydrogen sulphide and sulphur

Answer. b. Iodine and hydrogen sulphide respectively

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Chapter 3 : Electricity

1. What is the amount of current flowing through an electric press, if the amount of charge passing through a conductor in 10 minutes is 300 C?

(a) 30 A

(b) 0.3 A

(c) 0.5 A

(d) 5 A

Answer: (c) 0.5 A

2. An electrical appliance has a resistance of $25\ \Omega$. When this electrical appliance is connected to a 230 V supply line, the current passing through it will be:

(a) 0.92 A

(b) 2.9 A

(c) 9.2 A

(d) 92 A

Answer: (c) 9.2 A

3. When a $4\ \Omega$ resistor is connected across the terminals of a 2 V battery, the number of coulombs passing through the resistor per second is:

(a) 0.5

(b) 1

(c) 2

(d) 4

Answer: (a) 0.5

4. Keeping the potential difference constant, the resistance of the circuit is halved. The current will become:

(a) One-fourth

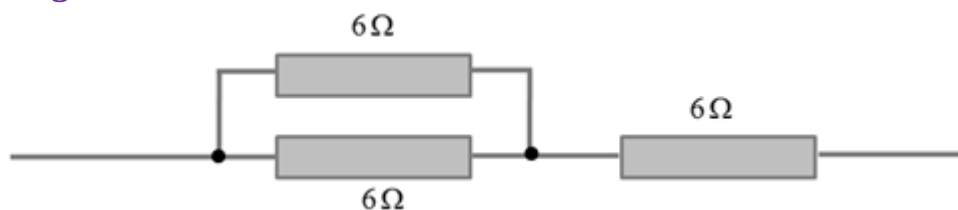
(b) Four times

(c) Half

(d) Double

Answer: (d) Double

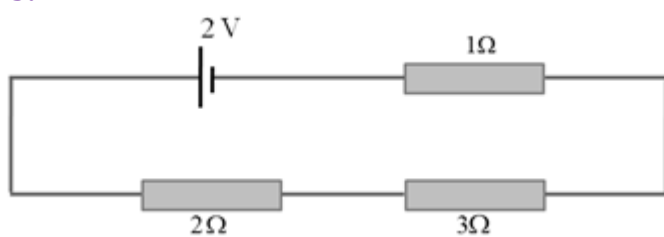
5. If in the given arrangement, the three resistors are to be replaced by a single resistor. What will be the value of this resistor?



- (a) 4Ω
- (b) 6Ω
- (c) 9Ω
- (d) 18Ω

Answer: (c) 9Ω

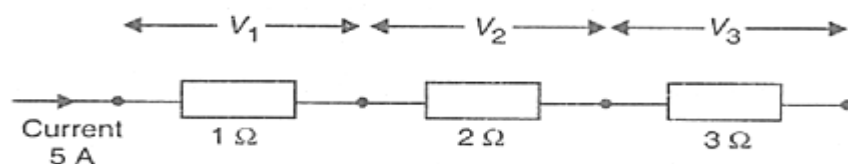
6. The potential difference across the 3Ω resistor in the following diagram is:



- (a) $1/9\text{ V}$
- (b) $1/2\text{ V}$
- (c) 2 V
- (d) 1 V

Answer: (d) 1 V

7. V_1 , V_2 and V_3 are the potential differences across the 1Ω , 2Ω and 3Ω resistors in the following diagram, and the current is 5 A .



Which of the following shows the correct values of V_1 , V_2 and V_3 measured in volts?

- (a) $V_1 = 1$, $V_2 = 2$ and $V_3 = 3$
- (b) $V_1 = 5$, $V_2 = 10$ and $V_3 = 15$
- (c) $V_1 = 5$, $V_2 = 2.5$ and $V_3 = 1.6$
- (d) $V_1 = 4$, $V_2 = 3$ and $V_3 = 2$

Answer: (b) $V_1 = 5$, $V_2 = 10$ and $V_3 = 15$

8. A wire of resistance R_1 is cut into five equal pieces. These five pieces of wire are then connected in parallel. If the resultant resistance of this combination be R_2 , then the ratio R_1/R_2 is:

- (a) $1/25$
- (b) $1/5$
- (c) 5
- (d) 25

Answer: (d) 25

9. Two appliances of rating 200 watt-250 volts and 100 watt-250 volts are joined in series to a 250 volts supply. Total power consumed in the circuit is

- (a) 46 watt
- (b) 67 watt
- (c) 10 watt
- (d) 30 watt

Answer: (b) 67 watt

10. When a current 'I' flows through a resistance 'R' for time 't' the electrical energy spent is given by

- (a) IRt
- (b) I^2Rt
- (c) IR^2t
- (d) I^2R/t

Answer: (b) I^2Rt

11. Two electric bulbs have resistances in the ratio 1:2. If they are joined in series, the energy consumed in them is in the ratio.

- (a) 2:1
- (b) 1:2
- (c) 4:1
- (d) 1:1

Answer: (b) 1:2

12. At a given time, a house is supplied with 100 A at 220 V. How many 75 W, 220 V light bulbs could be switched on in the house at the same time (if they are all connected in parallel)?

- (a) 93
- (b) 193
- (c) 293
- (d) 393

Answer: (c) 293

13. If the current flowing through a fixed resistor is halved, the heat produced in it will become:

- (a) One-fourth
- (b) One-half
- (c) Double
- (d) Four times

Answer: (a) One-fourth

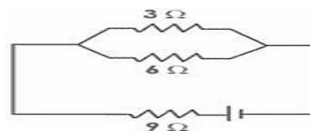
14. You are given four ammeters A, B, C and D having least counts mentioned below:

- (I) Ammeter A with least count 0.25 A
- (II) Ammeter B with least count 0.5 A
- (III) Ammeter C with least count 0.05 A
- (IV) Ammeter D with least count 0.1 A

Which of the ammeters would you prefer for doing an experiment to determine the equivalent resistance of two resistances most accurately, when connected in parallel?

- (a) Ammeter A
- (b) Ammeter B
- (c) Ammeter C
- (d) Ammeter D

Answer: (c) Ammeter c



15. In the given figure, the resistors

- (a) $6\ \Omega$, $3\ \Omega$ and $9\ \Omega$ are in series
- (b) $9\ \Omega$ and $6\ \Omega$ are in parallel and the combination is in series with $3\ \Omega$
- (c) $3\ \Omega$, $6\ \Omega$ and $9\ \Omega$ are in parallel
- (d) $3\ \Omega$ and $6\ \Omega$ are in parallel and the combination is in series with $9\ \Omega$

Answer: (d) $3\ \Omega$ and $6\ \Omega$ are in parallel and the combination is in series with $9\ \Omega$



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Chapter 4 : Magnetic Effects of Electric Current

1. The magnetic field lines outside a bar magnet:

- (a) Originate from the South pole and end at its North Pole
- (b) Originate from the North pole and end at its East Pole
- (c) Originate from the North Pole and end at its South Pole
- (d) Originate from the South pole and end at its West Pole

Answer: (c) Originate from the North Pole and end at its South Pole

2. The north pole of Earth's magnet is in the:

- (a) Geographical South
- (b) Geographical East
- (c) Geographical West
- (d) Geographical North

Answer: (a) Geographical South

3. A soft iron bar is inserted inside a current-carrying solenoid. The magnetic field inside the solenoid:

- (a) Will decrease
- (b) Will increase
- (c) Will become zero
- (d) Will remain the same

Answer: (b) Will increase

4. A current carrying conductor is held in exactly vertical direction. In order to produce a clockwise magnetic field around the conductor, the current should be passed in the conductor:

- (a) From top to bottom
- (b) From left to right
- (c) From bottom to top
- (d) From right to left

Answer: (a) From top to bottom

5. The force exerted on a current carrying wire placed in a magnetic field is zero when the angle between wire and the direction of magnetic field is:

- (a) 45°
- (b) 60°
- (c) 90°
- (d) 180°

Answer: (d) 180°

6. An induced emf is produced when a magnet is moved into a coil. The magnitude of induced emf does not depend on:

- (a) The speed with which the magnet is moved
- (b) The number of turns of the coil
- (c) The resistivity of the wire of the coil
- (d) The strength of the magnet

Answer: (c) The resistivity of the wire of the coil

7. A positive charge is moving towards a person. The direction of magnetic field lines will be in

- (a) Clockwise direction
- (b) Anticlockwise direction
- (c) Vertically upward direction
- (d) Vertically downward direction

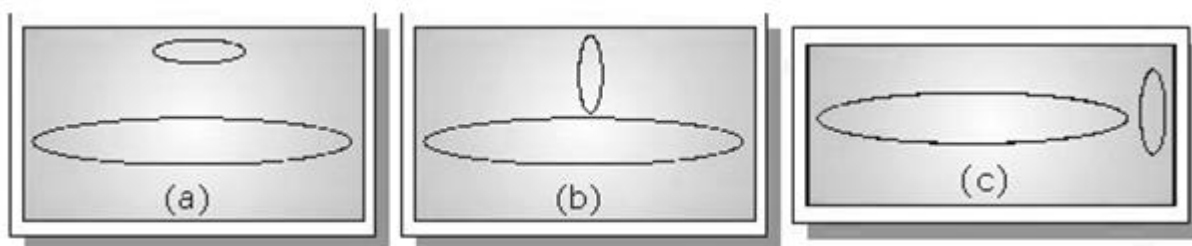
Answer: (b) Anticlockwise direction

8. A fuse should always be placed in the

- (a) Live wire of the main circuit
- (b) Neutral wire of the main circuit
- (c) Earth wire of the main circuit
- (d) Both live and neutral wire of the main circuit.

Answer: (a) Live wire of the main circuit

9. If two circular coils can be arranged in any of the three situations as shown in the diagrams below, then their mutual induction will be:



- (a) Maximum in situation a
- (b) Maximum in situation b
- (c) Maximum in situation c
- (d) The same in all situations

Answer: (a) Maximum in situation a

10. A coil of insulated copper wire is connected to a galvanometer forming a loop and a magnet is:

A: Held stationary

B: Moved away along its axis

C: Moved towards along its axis

There will be a induced current in:

- (a) A only
- (b) A and B only
- (c) B and C only
- (d) A, B and C

Answer: (c) B and C only

11. The shape of the magnetic field lines produced by a current carrying conductor are:

- (a) Straight lines
- (b) Concentric circles
- (c) Concentric ellipse
- (d) Concentric parabolas

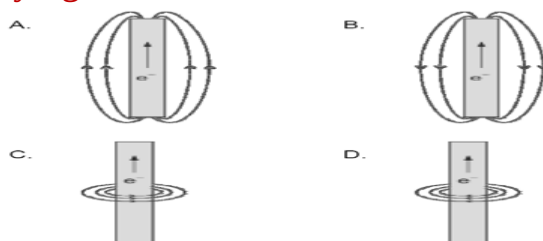
Answer: (b) Concentric circle

12. An electric motor is a device which transforms

- (a) Mechanical energy into electrical energy
- (b) Electrical energy into mechanical energy
- (c) Kinetic energy into potential energy
- (d) Electrical energy into Potential energy

Answer: (b) Electrical energy into mechanical energy

13. Which of the following diagrams correctly shows the magnetic field produced by a current- carrying wire?



- (a) A
- (b) B
- (c) C
- (d) D

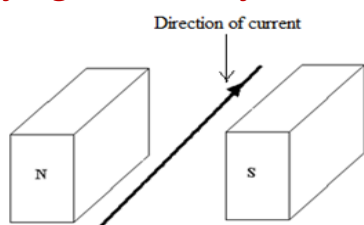
Answer: (d) D

14. The frequency of electricity produced by DC generator is equal to

- (a) 0 Hz
- (b) 50 Hz
- (c) 100 Hz
- (d) 200 Hz

Answer: (a) 0 Hz

15. A current flows in a wire running between the S and N poles of a magnet lying horizontally as shown in the figure below:



The force on the wire due to the magnet is directed:

- (a) From N to S
- (b) From S to N
- (c) Vertically downwards
- (d) Vertically upwards

Answer: (c) Vertically downwards

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Chapter 5: Light - Reflection and Refraction

1. An object is placed 20 cm in front of a plane mirror. The mirror is moved 2 cm towards the object. The distance between the positions of the original and final images seen in the mirror is:

- (a) 2 cm
- (b) 4 cm
- (c) 10 cm
- (d) 22 cm

Answer: (a) 2 cm

2. A ray of light that strikes a plane mirror PQ at an angle of incidence of 30° , is reflected from the plane mirror and then strikes a second plane mirror QR placed at right angles to the first mirror. The angle of reflection at the second mirror is:

- (a) 30°
- (b) 45°
- (c) 60°
- (d) 90°

Answer: (c) 60°

3. An object is placed at 100 mm in front of a concave mirror which produces an upright image (erect image). The radius of curvature of the mirror is:

- (a) Less than 100 mm
- (b) Between 100 mm and 200 mm
- (c) Exactly 200 mm
- (d) More than 200 mm

Answer: (d) More than 200 mm

4. Which position of the object will produce a magnified virtual image, if a concave mirror of focal length 15 cm is being used?

- (a) 10 cm
- (b) 20 cm
- (c) 30 cm
- (d) 35 cm

Answer: (a) 10 cm

5. A concave mirror produces a magnification of +4. The object is placed:

- (a) At the focus
- (b) Between focus and centre of curvature
- (c) Between focus and pole
- (d) Beyond the centre of curvature

Answer: (c) Between focus and pole

6. Two big mirrors A and B are fitted side by side on a wall. A man is standing at such a distance from the wall that he can see the erect image of his face in both the mirrors. When the man starts walking towards the mirrors, he finds that the size of his face in mirror A goes on increasing but that in mirror B remains the same:

- (a) Mirror A is concave and mirror B is convex
- (b) Mirror A is plane and mirror B is concave
- (c) Mirror A is concave and mirror B is plane
- (d) Mirror A is convex and mirror B is concave

Answer: (c) Mirror A is concave and mirror B is plane

7. A ray of light is travelling in a direction perpendicular to the boundary of a parallel glass slab. The ray of light:

- (a) Is refracted towards the normal
- (b) Is refracted away from the normal
- (c) Is reflected along the same path
- (d) Does not get refracted

Answer: (d) Does not get refracted

8. A ray of light passes from a medium X to another medium Y. No refraction of light occurs if the ray of light hits the boundary of medium Y at an angle of:

- (a) 120°
- (b) 90°
- (c) 45°
- (d) 0°

Answer: (b) 90°

9. A lens of focal length 12 cm forms an erect image, three times the size of the object. The distance between the object and image is:

- (a) 8 cm
- (b) 16 cm
- (c) 24 cm
- (d) 36 cm

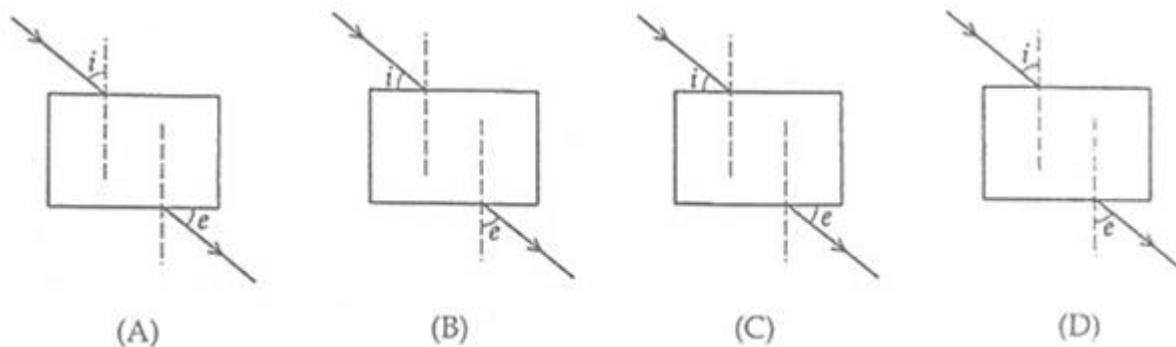
Answer: (a) 8 cm

10. If an object is placed 21 cm from a converging lens, the image formed is slightly smaller than the object. If the object is placed at a distance of 19 cm from the lens, the image formed is slightly larger than the object. The approximate focal length of the lens is:

- (a) 20 cm
- (b) 18 cm
- (c) 10 cm
- (d) 5 cm

Answer: (c) 10 cm

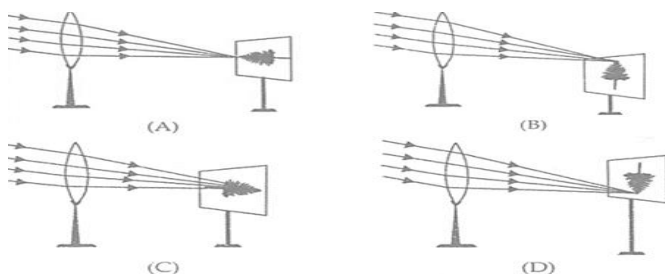
11. A student does the experiment on tracing the path of a ray of light passing through a rectangular glass slab for different angles of incidence. He can get a correct measure of the angle of incidence and the angle of emergence by following the labelling indicated in figure:



- (a) A
- (b) B
- (c) C
- (d) D

Answer: (d) D

12. While performing an experiment on determination of focal length of a convex lens, four students obtained the image of the same distant tree on the screen as follows:

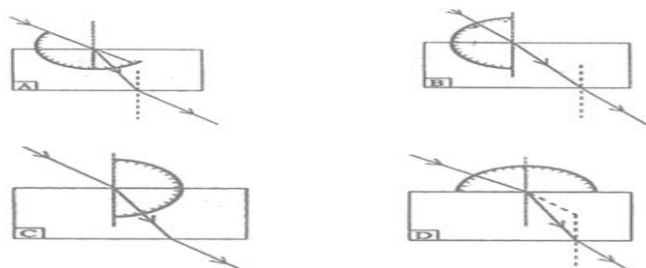


Which diagram shows the formation of image correctly?

- (a) A
- (b) B
- (c) C
- (d) D

Answer: (d) D

13. A student traces the path of a ray of light passing through a rectangular slab.

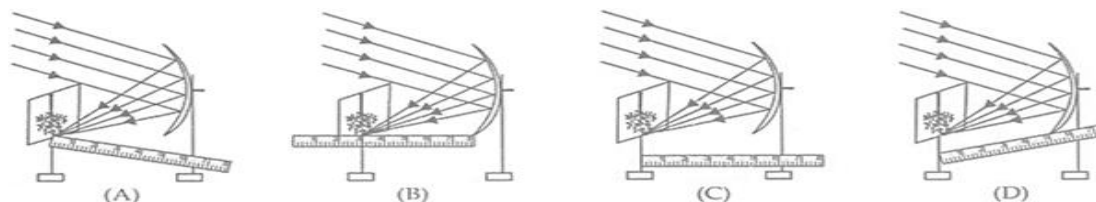


For measuring the angle of incidence, he must position the protractor in the manner shown in the figure:

- (a) A
- (b) B
- (c) C
- (d) D

Answer: (d) D

14. Four students A, B, C and D performed the experiment to determine the focal length of a concave mirror by obtaining the image of a distant tree on a screen. They measured the distances between the screen and the mirror as shown in the diagrams given below:

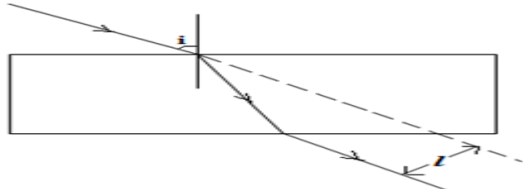


The correct way to measure accurate focal length of the mirror is:

- (a) A
- (b) B
- (c) C
- (d) D

Answer: (c) C

15. A student traces the path of a ray of light passing through a rectangular slab for three different values of angle of incidence ($\angle i$) namely 30° , 45° and 60° . He extends the direction of incident ray by a dotted line and measures the perpendicular distance 'l' between the extended incident ray and the emergent ray.



He will observe that:

- (a) 'l' keeps on increasing with increase in angle of incidence
- (b) 'l' keeps on decreasing with increase in angle of incidence
- (c) 'l' remains the same for all three angles of incidence
- (d) 'l' is the maximum for $\angle i = 45^\circ$ and is less than this value for $\angle i = 30^\circ$ and $\angle i = 60^\circ$.

Answer: (a) 'l' keeps on increasing with increase in angle of incidence

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part I & part II



Chapter 6: The Human Eye and The Colourful World

1. The term “accommodation” as applied to the eye, refers to its ability to:

- (a) Control the light intensity falling on the retina
- (b) Erect the inverted image formed on the retina
- (c) Adjust the focal length of the lens
- (d) Vary the distance between the lens and retina

Answer: (c) Adjust the focal length of the lens

2. How eyes adjust in order to focus the image of near or distant objects on retina?

- (a) The lens moves in or out according to the position of the object
- (b) The retina moves in or out according to the position of the object
- (c) The lens becomes thicker or thinner according to the position of the object
- (d) The pupil gets larger or smaller according to the position of the object

Answer: (c) The lens becomes thicker or thinner according to the position of the object

3. A person cannot see the distant objects clearly (though he can see the nearby objects clearly). He is suffering from the defect of vision called:

- (a) Cataract
- (b) Hypermetropia
- (c) Myopia
- (d) Presbyopia

Answer: (c) Myopia

4. A got his eye tested. The optician’s prescription for the spectacles was:

Left eye: -3 D

Right eye: -3.50 D

The person is having a defect of vision called:

- (a) Presbyopia
- (b) Myopia
- (c) Astigmatism
- (d) Hypermetropia

Answer: (b) Myopia

5. A man finds it difficult to read the odometer on the dashboard of the car but is able to clearly read a distant road sign. Which of the following statement is correct about this man?

- (a) The near point of his eyes has receded away.
- (b) The near point of his eyes has come closer to him.
- (c) The far point of his eyes has receded away.
- (d) The far point of his eyes has come closer to him.

Answer: (a) The near point of his eyes has receded away

6. With both eyes open, a person's field of view is about:

- (a) 90°
- (b) 150°
- (c) 180°
- (d) 360°

Answer: (c) 180°

7. When a beam of white light falls on a glass prism, the colour of light which will deviate least is:

- (a) Violet
- (b) Red
- (c) Green
- (d) Blue

Answer: (b) Red

8. The star appear shifted from their actual position due to the phenomenon of:

- (a) Diffraction of light
- (b) Scattering of light
- (c) Refraction of light
- (d) Reflection of light

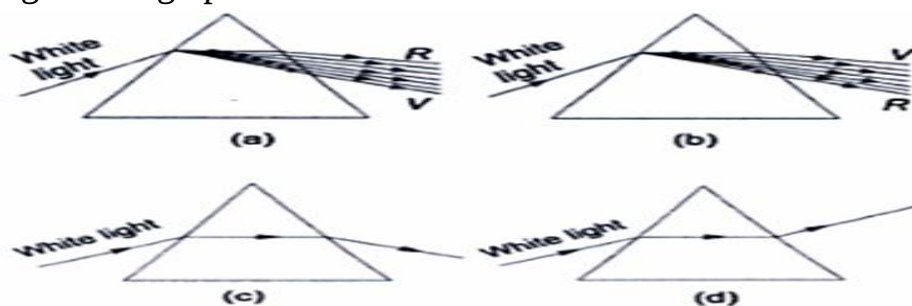
Answer: (c) Refraction of light

9. Blue colour of the sky is due to the phenomenon of:

- (a) Reflection of light
- (b) Refraction of light
- (c) Dispersion of light
- (d) Scattering of light

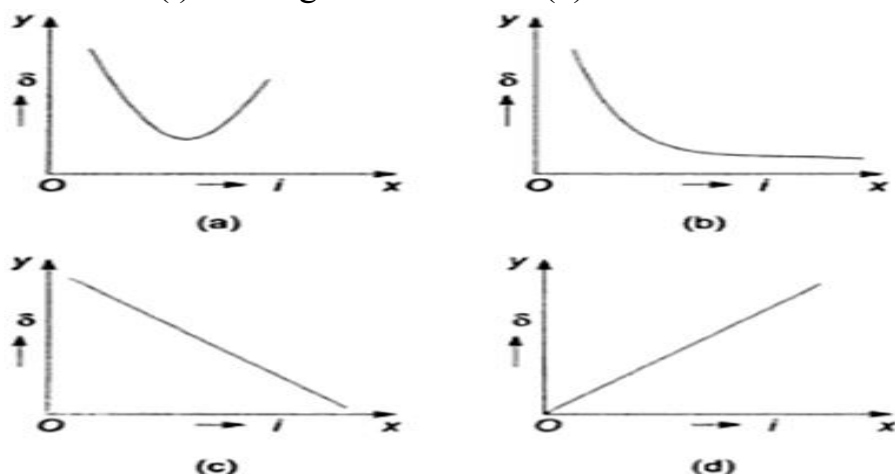
Answer: (d) Scattering of light

10. Which of the following figures correctly represents the passage of white light through prism?



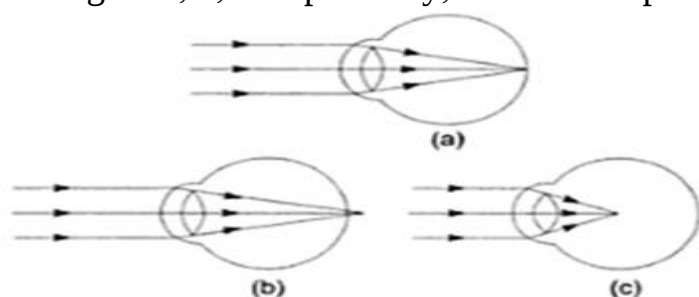
Answer: (a)

11. Which of the following graph represents the correct variation of angle of incidence (i) and angle of deviation (δ)?



Answer: (a)

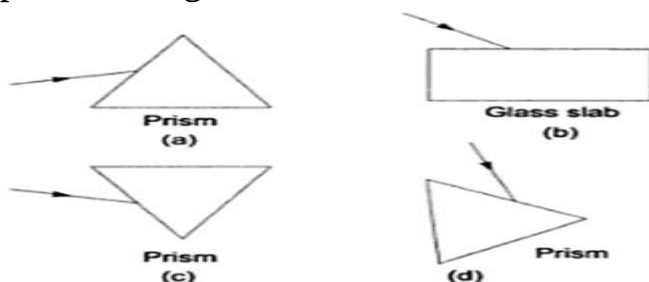
12. Figure a, b, c respectively; indicate the point in case of:



- (a) The Hypermetropia eye, the myopic eye and normal eye
- (b) The normal eye, the myopic eye and Hypermetropia eye
- (c) The normal eye, the Hypermetropia eye and myopic eye
- (d) The myopic eye, the normal eye and Hypermetropia eye

Answer: (c) The normal eye, the Hypermetropia eye and myopic eye

13. In which of the following cases will no dispersion take place when sunlight passes through it?



Answer: (b)

14. A: Astigmatism usually is caused by an irregularly shaped cornea.

B: Rainbow is the natural phenomenon in which dispersion takes place.

(a) Both 'A' and 'B' are true statements

(b) Both 'A' and 'B' are false statements.

(c) 'A' is true while 'B' is false.

(d) 'A' is false while 'B' is true

Answer: (a) Both 'A' and 'B' are true statements

15. Having two eyes facilitates in:

A: Increasing the field of view

B: Bringing three dimensional view

C: Developing the concept of distance/size.

Then the correct option is/are:

(a) A only

(b) A and B only

(c) B only

(d) A, B and C

Answer: (d) A, B and C

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II



Chapter 7 : Metals and Non-Metals

1. The non-metal which is liquid at room temperature is:

- a) Mercury
- b) Bromine
- c) Carbon
- d) Helium

Answer: (b) Bromine

Explanation: Bromine is the only non-metal which exists as a liquid at room temperature.

2. The number of protons in an atom of an element A is 19 then, the number of electron in its ion A^+ is:

- a) 18
- b) 19
- c) 20
- d) 21

Answer: (a) 18

Explanation: In the neutral atom of an element,
Number of protons = Number of electrons

$\therefore$ Number of electrons in element A = 19

Now, in A^+ ion, the positive charge is acquired by the loss of one electron.

$\therefore$ Number of electrons in ion $A^+ = 19 - 1 = 18$

3. Bauxite is an ore of

- a) Iron
- b) Aluminium
- c) Mercury
- d) Copper

Answer: (b) Aluminium

Explanation: Bauxite is a commercial ore of aluminium which consists largely of hydrated aluminium oxide, $Al_2O_3 \cdot 2H_2O$.

4. The metal which is liquid at room temperature is

- a) Bromine
- b) Mercury
- c) Iodine
- d) Potassium

Answer: (b) Mercury

Explanation: Mercury is the only metal which exists as a liquid at room temperature.

5. The sulphide ores are converted into oxides by heating strongly in the presence of excess air. This process is known as

- a) Roasting
- b) Smelting
- c) Calcination
- d) Refining

Answer: (a) Roasting

Explanation: The process of heating the sulphide ore strongly in the presence of air to convert it into metal oxide, is known as roasting.

6. In electrolytic refining, the cathode is made up of

- a) Pure metal
- b) Impure metal
- c) Alloy
- d) Metallic salt

Answer: (a) Pure metal

Explanation: In electrolytic refining of a metal, the cathode is made up of pure metal whereas the anode is made up of impure metal.

7. In the given reaction, $\text{Al}_2\text{O}_3 + \text{NaOH} \rightarrow \text{.....X.....} + \text{H}_2\text{O}$

What is element X?

- a) NaAlO_2
- b) Na_3Al
- c) Na_2O_3
- d) NaAl_2O_3

Answer: (a) NaAlO_2

Explanation: Aluminium oxide is amphoteric in nature, i.e., it reacts with acids as well as bases to form salt and water.

Here, aluminium oxide behaves as an acid as it reacts with NaOH, a base and forms sodium aluminate (NaAlO_2) and water:



8. Which of the following represent the correct order of decreasing reactivity?

- a) $\text{Mg} > \text{Al} > \text{Zn} > \text{Fe}$
- b) $\text{Mg} > \text{Zn} > \text{Al} > \text{Fe}$
- c) $\text{Al} > \text{Zn} > \text{Fe} > \text{Mg}$
- d) $\text{Mg} > \text{Fe} > \text{Zn} > \text{Al}$

Answer: (a) $\text{Mg} > \text{Al} > \text{Zn} > \text{Fe}$

Explanation: The decreasing order of the reactivity of the common metals is given below:

Li, K, Na, Ba, Ca, Mg, Al, Mn, Zn, Fe, Ni, Sn, Pb, [H], Cu, Hg, Ag, Au, Pt

9. An element reacts with oxygen to give a compound with a high melting point. This compound is also soluble in water. The element is likely to be

- (a) Ca
- (b) C
- (c) Si
- (d) Fe

Answer: (a) Ca

Explanation:

Calcium reacts with oxygen to give calcium oxide (CaO) which is having a high melting point and dissolves in water to form calcium hydroxide ($\text{Ca}(\text{OH})_2$) along with the release of large amount of thermal energy.

10. Which of the following pairs will give displacement reactions?

- (a) NaCl solution and copper metal
- (b) MgCl_2 solution and aluminium metal
- (c) FeSO_4 solution and silver metal
- (d) AgNO_3 solution and copper metal

Answer: (d) AgNO_3 solution and copper metal

Explanation: Copper (Cu) being more reactive than silver (Ag), displaces silver from silver nitrate (AgNO_3) to form copper nitrate



11. Which among the following is the most abundant metal found in the earth's crust?

- (a) Magnesium
- (b) Aluminium
- (c) Oxygen
- (d) Iron

Answer: (b) Aluminium

Explanation: Aluminium is the most abundant metal found in the earth's crust.

12. Which of the following pairs of reactants will go undergo a displacement reaction?

- (a) $\text{CuSO}_4 + \text{Fe}$
- (b) $\text{ZnSO}_4 + \text{Fe}$
- (c) $\text{MgSO}_4 + \text{Fe}$
- (d) $\text{Ca}(\text{SO}_4)_2 + \text{Fe}$

Answer: (a) $\text{CuSO}_4 + \text{Fe}$

Explanation: As per the reactivity series of metals, iron is more reactive than copper metal so it can displace copper from copper sulphate solution and form iron (II) sulphate and copper:

13. Galvanisation is a method of protecting steel and iron from rusting by coating them with a thin layer of

- (a) Copper
- (b) Aluminum
- (c) Zinc
- (d) Bauxite

Answer: (c) Zinc

Explanation: In this method a thin layer of zinc metal is deposited over the surface of steel or iron objects, which does not corrode on exposure to damp air and prevents the coated metals from rusting.

14. Which of the following alloys contains a non-metal as one of its constituents?

- (a) Steel
- (b) Brass
- (c) Amalgam
- (d) Bronze

Answer: (a) Steel

Explanation: Stainless steel is an alloy of iron (a metal) and carbon (a non metal).

15. An element X is soft and can be cut with the help of a knife. It is very reactive to air and cannot be kept open in the air. It reacts vigorously with water. Identify the element from the following:

- (a) Mg
- (b) Na
- (c) P
- (d) Ca

Answer: (b) Na

Explanation: Na is a metal which is soft enough to be cut with a knife. It is so reactive that it reacts vigorously with air or moisture and catches fire when kept in open. So to prevent it from coming in contact with oxygen and moisture, it is kept in kerosene.

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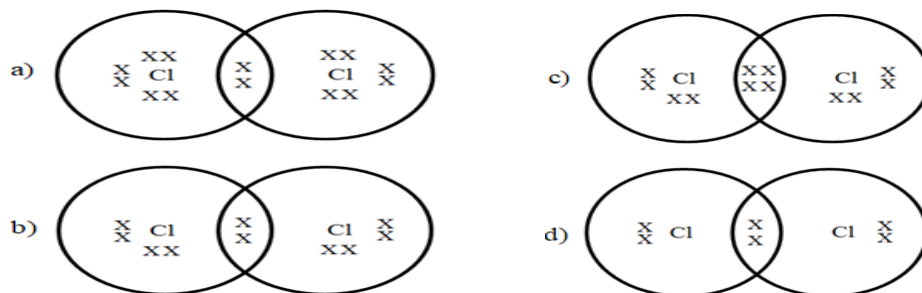
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II



Chapter 8: Carbon and its Compounds

1. Which of the following structures correctly represents the electron dot structure of a chlorine molecule?



Answer: (a)

Explanation: In an electron dot structure of a molecule there must be shown eight electrons (in the form of dots or crosses) around each element of the molecule, to represent the complete octet of the element.

2. While cooking, if the bottom of the vessel is getting blackened on the outside, it means that:

- a) The food is not cooked completely
- b) The fuel is not burning completely
- c) The fuel is wet
- d) The fuel is burning completely

Answer: (b) The fuel is not burning completely

Explanation: In case the fuel doesn't burn completely, i.e., there is not enough oxygen to react with the carbon to produce carbon dioxide, then the unburnt carbon particles are left behind in the form of black particles known as soot. These soot particles stick to the bottom of the vessel making it black.

3. Cation is formed when:

- a) Atom gains electrons
- b) Atom loses electrons
- c) Proton is lost by the atom
- d) Atom shares electrons

Answer: (b) Atom loses electrons

Explanation: A cation is formed by loss electrons from the atom of an element which acquires positive charge due to the presence of greater number of protons as compared to that of electrons.

4. The I.U.P.A.C name of $\text{CH}_3\text{CH}_2\text{CH}=\text{CH}_2$ is?

- a) 3-Butene
- b) Prop-1-ene
- c) But-1-ene
- d) Butyne

Answer: (c) But-1-ene

Explanation: As the compound, $\text{CH}_3\text{CH}_2\text{CH}=\text{CH}_2$ contains four carbon atoms and a double bond attached to the first carbon, so the I.U.P.A.C name of $\text{CH}_3\text{CH}_2\text{CH}=\text{CH}_2$ is But-1-ene.

5. Which of the following compounds of carbon does not consist of ions?

- a) CHCl_3
- b) CaCO_3
- c) NaHCO_3
- d) Ca_2C

Answer: (a) CHCl_3

Explanation: Carbon always forms covalent compounds by sharing its electrons with other atoms. Now, in covalent bonding, the two electrons shared by the atoms are attracted to the nucleus of both atoms and neither atom completely loses or gains electrons as in ionic bonding. So the compounds in which all the atoms are directly attached to C-atom, contain covalent bonding and no ionic bond.

In CHCl_3 , all the three chlorine atoms are bonded covalently to the carbon atom, not to the hydrogen atom. So CHCl_3 is a covalent compound and does not consist of ions.

6. The property of self-linkage among identical atoms to form long chain compounds is known as:

- a) Catenation
- b) Isomerisation
- c) Superposition
- d) Halogenation

Answer: (a) Catenation

Explanation: Catenation is the property of self-linking of an element by which an atom combines with the other atoms of the same element to form long chains.

7. Which of the following is the molecular formula of cyclobutane?

a) C_4H_{10}

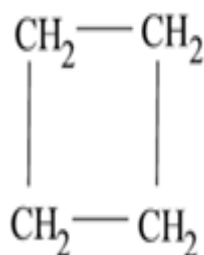
b) C_4H_6

c) C_4H_8

d) C_4H_4

Answer: (c) C_4H_8

Explanation: Cyclobutane is a cyclic hydrocarbon consisting of four carbon atoms where each carbon atom is attached to the two other carbon atoms and two hydrogen atoms, as shown below:



8. Which of the following statements about graphite and diamond is true?

a) They have the same crystal structure

b) They have the same degree of hardness

c) They have the same electrical conductivity

d) They can undergo the same chemical reactions

Answer: (d) They can undergo the same chemical reactions

Explanation: Both Graphite and diamond being the allotropes of the same element, carbon, have similar chemical properties. So they undergo the same chemical reactions.

9. How many number of carbon atoms are joined in a spherical molecule of buckminsterfullerene?

a) 30

b) 60

c) 90

d) 120

Answer: (b) 60

Explanation: Buckminsterfullerene is a molecule of carbon in the form of a hollow sphere consisting of 60 C-atoms and is having the formula C_{60} .

10. Which of the followings is the major constituent of the liquefied petroleum gas?

- a) Methane
- b) Ethane
- c) Propane
- d) Butane

Answer: (d) Butane

Explanation: The major constituent of the liquefied petroleum gas is butane.

11. The organic compounds having functional group are known as:

- a) Aldehyde
- b) Ketone
- c) Carboxylic acids
- d) Alcohol

Answer: (c) Carboxylic acids

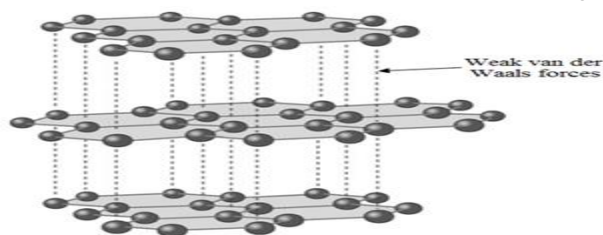
Explanation: Carboxylic acids are compounds which contain a group also known as carboxyl group.

12. From which of the following substance pencil lead is formed?

- a) Charcoal
- b) Wood
- c) Lead
- d) Graphite

Answer: (d) Graphite

Explanation: Pencil lead is formed of graphite. Graphite is an allotropic form of carbon in which each carbon atom is joined to three others, forming layers:



These layers are put together by weak van der Waals forces which enable the layers to slide over each other, making graphite soft and slippery. So graphite is used as pencil 'lead'. As the pencil moves across the paper, layers of graphite rub off leaving the dark marks on paper.

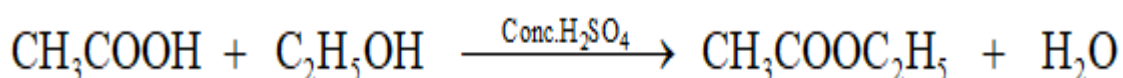
13. Ester is formed by the reaction between:

- a) An acid and an alcohol
- b) An acid and a base
- c) A base and an alcohol
- d) An acid and an alkene

Answer: (a) An acid and an alcohol

Explanation: Reaction between an acid and an alcohol results in the formation of ester, and the reaction is named as esterification.

For example: Acetic acid reacts with ethyl alcohol in the presence of concentrated sulphuric acid to form Ethyl acetate:



14. What is denatured alcohol?

- a) Ethyl alcohol which has been made unfit for drinking purpose by adding small amount of poisonous substance
- b) Methyl alcohol which has been made unfit for drinking purpose by adding small amount of poisonous substance
- c) Alcohol having properties of an acid
- d) Ethyl alcohol containing 60% of water by weight

Answer: (a) Ethyl alcohol which has been made unfit for drinking purpose by adding small amount of poisonous substance

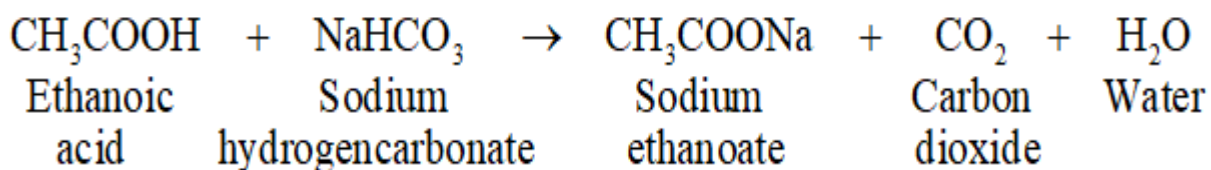
Explanation: Denatured alcohol is the ethyl alcohol which has been made unfit for drinking purpose by adding small amount of poisonous substance like methanol, pyridine, etc. This is mainly done to prevent the misuse of industrial alcohol for drinking purposes.

15. Which of the following substance produces brisk effervescence with baking soda solution?

- a) Ethanoic acid
- b) Table salt
- c) Vinegar
- d) Sunflower oil

Answer: (a) Ethanoic acid

Explanation: Ethanoic acid when treated with baking soda (Sodium hydrogencarbonate) gives brisk effervescence of Carbon dioxide gas.



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II



SCIENCE AND TECHNOLOGY

PART II

STANDARD TENTH (10th)

Chapter 9 : Heredity and Evolution

1. The sequence of gradual changes which takes place in the primitive organisms over millions of years in which new species are produced is known as

- (a) Evolution
- (b) Heredity
- (c) Generation
- (d) Inheritance

Answer. (a) Evolution

Explanation: Evolution is a series of gradual changes in an organism, wherein in the end, the organism is evolved and advanced.

2. If a normal cell of human body contains 46 pairs of chromosomes then the numbers of chromosomes in a sex cell of a human being is most likely to be:

- (a) 60
- (b) 23
- (c) 22
- (d) 40

Answer. (b) 23

Explanation: The sex gametes are always haploid. They have 23 chromosomes.

3. In the human blood grouping, the four basic blood types are type A, type B, type AB, and type O. They are:

- (a) Simple dominant and recessive traits
- (b) Co-dominant traits
- (c) Recessive traits
- (d) Inherited traits

Ans: (b) Co-dominant traits

Explanation: A co-dominant trait is the one in which neither allele is dominant or recessive and both are expressed equally.

4. A pregnant woman has an equal chance of her baby being blood group A or blood group AB. Which one of the following shows the possible genotypes of the woman and the father of her child?

(a) $I^A I^A$ and $I^B I^O$

(b) $I^A I^B$ and $I^B I^O$

(c) $I^A I^O$ and $I^B I^O$

(d) $I^O I^B$ and $I^A I^O$

Answer. (a) $I^A I^A$ and $I^B I^O$

Explanation:

	I^B	I^O
I^A	$I^A I^B$ means AB	$I^A I^O$ means A
I^A	$I^A I^B$ means AB	$I^A I^O$ means A

Ratio of AB: A = 1:1. Hence, first answer is correct.

5. What will be the number of chromosomes present in each gamete produced by the plants if the palisade cells of a species of plant contain 28 chromosomes in all?

(a) 56

(b) 28

(c) 14

(d) 4

Answer. (c) 14

Explanation: Gamete cells are always haploid.

6. The following results were obtained by a scientist who crossed the F_1 generation of pure-breeding parents for round and wrinkled seeds.

Dominant trait	Recessive trait	No. of F_2 offspring
Round seeds	Wrinkled seeds	7524

From these results, it can be concluded that the actual number of round seeds he obtained was:

(a) 1881

(b) 22572

(c) 2508

(d) 5643

Answer. (d) 5643

Explanation: The actual number of seeds obtained were 5643.

7. A cross between a tall plant (TT) and short plant (tt) resulted in progeny that were all tall plants as:

- (a) Tallness is the dominant trait
- (b) Shortness is the dominant trait
- (c) Tallness is the recessive trait
- (d) Height of plant is not governed by gene t or t

Answer. (a) Tallness is the dominant trait

Explanation: The best traits are always superior. For instance, tallness and round seeds are dominant traits.

8. In peas, a pure tall plant (TT) is crossed with a pure short plant (tt). The ratio of pure tall plants to pure short plants in F₂ generation will be:

- (a) 1 : 3
- (b) 3 : 1
- (c) 1 : 1
- (d) 2 : 1

Answer. (c) 1 : 1

Explanation: The ratio of TT and tt plants of F₂ generation will be the same.

9. In human males, all the chromosomes are paired perfectly except one. These unpaired chromosomes are:

- (i) Large chromosome
 - (ii) Small chromosome
 - (iii) Y chromosome
 - (iv) X chromosome
- (a) (i) and (ii)
 - (b) (iii) and (ii)
 - (c) (iii) and (iv)
 - (d) (ii) and (iv)

Answer. (c) (iii) and (iv)

Explanation: X and Y are sex chromosomes.

10. Which of the following determines the sex of a child?

- (a) The length of the mother's pregnancy
- (b) The length of time between ovulation and copulation
- (c) The presence of an X chromosome in an ovum
- (d) The presence of a Y chromosome in a sperm

Answer. (d) The presence of a Y chromosome in a sperm

Explanation: The male sex chromosome is the deciding factor for the gender of the child. If the X part fertilizes with the ovum, girl is born. If Y fertilizes, then a boy is born.

11. Which is the one characteristic of the parents that can be inherited by their children?

- (a) Deep scar on chin
- (b) Snub nose
- (c) Technique of swimming
- (d) Cut nose

Answer. (b) Snub nose

Explanation: A dominant inherent character can only be inherited by the children.

12. What could be the reason for the fossil of an organism to be found in the deeper layers of the earth?

- (a) The extinction of organism has occurred few years back
- (b) The extinction of organism has occurred thousands of years ago
- (c) The position of fossil in the layers of earth is not related to its time of extinction
- (d) Time of extinction cannot be determined.

Answer. (b) The extinction of organism has occurred thousands of years ago

Explanation: The deeper the fossil is embedded in the earth, the more likely it is to be very old.

13. What is the ancient name for all human beings?

- (a) Monkey
- (b) Chimpanzee
- (c) Homo sapiens
- (d) Invertebrates

Answer. (c) Homo sapiens

Explanation: The scientific name of human is Homo sapiens.

14. The organs present in two organisms indicate that they are derived from the same ancestor are:

- (a) Analogous Organs
- (b) Respiratory Organs
- (c) Sense organs
- (d) Homologous Organs

Answer. (d) Homologous Organs

Explanation: The structures which are similar in their morphology, anatomy, and embryology but dissimilar in their functions are homologous organs.

15. Which of the following pair of organ is not homologous?

- (a) Forelimbs in humans and lizard
- (b) Forelimbs in lizard and frog
- (c) Wings in butterfly and bat
- (d) None of these

Answer. (c) Wings in butterfly and bat

Explanation: Wings of a bat and a butterfly are considered as analogous organs.

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II



Chapter 10 : Life Processes

1. Which of the following is not a digestive enzyme contained in the pancreatic juice?

- i. Lipase ii. Hydrochloric acid iii. Mucus iv. Trypsin
- a) (i) and (ii)
- b) (i) and (iv)
- c) (ii) and (iii)
- d) (i) and (iii)

Answer: (c) (ii) and (iii)

Explanation: The enzymes lipase and trypsin are present in the pancreatic juice that breakdown emulsified fats and degrade proteins respectively.

2. The enzymes pepsin and trypsin are secreted respectively by

- a) Stomach and pancreas
- b) Salivary gland and stomach
- c) Liver and pancreas
- d) Liver and salivary gland

Answer: (a) Stomach and pancreas

Explanation: Stomach secretes the enzyme pepsin and pancreas produces trypsin. Both of them breakdown protein.

3. Among the following choose the correct option which includes the organisms that have a holozoic mode of nutrition:

- a) Plasmodium and Amoeba
 - b) Parakeet and Amoeba
 - c) Paramecium and Plasmodium
 - d) Paramecium and Parasite
- Answer: (b) Parakeet and Amoeba**

Explanation: Holozoic nutrition involves the ingestion of organic food particles and later its assimilation for the purpose of supplying energy to the whole body.

4. Raw materials required in the autotrophic mode of nutrition involves:

- i. Carbon dioxide and water
- ii. Chlorophyll
- iii. Nitrogen
- iv. Sunlight
- a) (i), (ii) and (iii)
- b) (i) and (ii)
- c) (i), (ii) and (iv)

d) All (i), (ii), (iii) and (iv)

Answer: (c) (i), (ii) and (iv)

Explanation: Autotrophic mode of nutrition involves the use of sunlight, chlorophyll, carbon dioxide and water to produce starch.

5. The enzymes contained in pancreatic juices help in the digestion of:

- a) Fats and carbohydrates
- b) Proteins and fats
- c) Proteins and carbohydrates
- d) Proteins, fats and carbohydrates

Answer: (d) Proteins, fats and carbohydrates

Explanation: The pancreas contains all kinds of enzymes that can digest proteins, fats and carbohydrates.

6. Which of the following help in protecting the inner lining of the stomach from the harmful effect of hydrochloric acid?

- a) Mucus
- b) Pepsin
- c) Trypsin
- d) Bile

Answer: (a) Mucus

Explanation: Mucus is a viscous secretion that protects the inner lining of the stomach from the action of HCl.

7. Sometimes we get painful cramps in our leg muscles after running for a long time due to the accumulation of:

- a) Hydrochloric acid
- b) Fat
- c) Carbon dioxide
- d) Lactic acid

Answer: (d) Lactic acid

Explanation: The build-up of lactic acid in our muscles while running (less oxygen conditions) causes cramps.

8. The vein which brings clean blood from the lungs into the heart is known as:

- a) Pulmonary vein
- b) Hepatic vein
- c) Superior vena cava

d) Pulmonary artery

Answer: (a) Pulmonary vein

Explanation: The pulmonary vein is responsible for bringing oxygenated and pure blood into the heart.

9. Movement of the synthesized products from the leaves to the roots and other parts of a plant's body takes place through the phloem. This process is known as:

a) Translocation

b) Transpiration

c) Transportation

d) Excretion

Answer: (a) Translocation

Explanation: The transport of soluble products of photosynthesis through all parts of the plant by specialized structures called phloem is translocation.

10. The process of diffusion of solvent particles from the region of less solute concentration to a region of high solute concentration through semi-permeable membrane is known as

a) Diffusion

b) Osmosis

c) Translocation

d) Transpiration

Answer: (b) Osmosis

Explanation: The diffusion of solvent particles from a region of less concentration to high concentration (concentration gradient) through a semi permeable membrane is called osmosis.

11. Which among the following procedures is used for cleaning the blood of a person by separating the waste substance from it?

a) Kidney transplant

b) Blood transfusion

c) Dialysis

d) Hydrolysis

Answer: (c) Dialysis

Explanation: Dialysis is the procedure of detoxifying the blood by isolating the waste and unwanted constituents in it.

12. The excretory unit of the human excretory system is known as:

- a) Nephridia
- b) Neuron
- c) Nephron
- d) kidneys

Answer: (c) Nephron

Explanation: Each kidney has large numbers of the filtration units called nephrons.

13. Plants use the energy stored in ATP to accomplish the process of transportation of:

- a) Water and minerals
- b) Oxygen
- c) Water, minerals and food
- d) Food

Answer: (d) Food

Explanation: Translocation of food by phloem is achieved by utilizing energy from ATP.

14. Which among the following is necessary to carry out the blood coagulation in a cut or wound?

- a) White Blood Cells
- b) Blood plasma
- c) Platelets
- d) Red blood cells

Answer: (c) Platelets

Explanation: Platelets coagulate blood whenever there is a cut or a wound. This stops excess flow of blood or hemorrhagic conditions.

15. Arteries and veins are connected by a network of extremely narrow tubes called:

- a) Sieve tubes
- b) Capillaries
- c) Vena cava
- d) Valves

Answer: (b) Capillaries

Explanation: Blood capillaries are vessels that connect arteries and veins and help in blood circulation.

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Chapter 11: Control and Coordination

1. The movement of a plant part in response to the force of attraction exerted by the earth is called:

- (a) Hydrotropism
- (b) Geotropism
- (c) Chemotropism
- (d) Phototropism

Answer. (b) Geotropism

2. A big tree falls in a forest, but its roots are still in contact with the soil. The branches of this fallen tree grow straight up (vertically). This happens in response to:

- (a) Water and light
- (b) Water and minerals
- (c) Gravity and water
- (d) Light and gravity

Answer. (d) Light and gravity

3. The main function of the plant hormone called abscisic acid is to:

- (a) Increase the length of cells
- (b) Promote cell division
- (c) Inhibit growth
- (d) Promote growth of stem and roots

Answer. (c) Inhibit growth

4. The growth of tendrils in pea plants is due to the:

- (a) Effect of sunlight on the tendril cells facing the sun
- (b) Effect of gravity on the part of tendril hanging down towards the earth
- (c) Rapid cell division and elongation in tendril cells that are away from the support
- (d) Rapid cell division and elongation in tendril cells in contact with the support

Answer. (c) Rapid cell division and elongation in tendril cells that are away from the support

5. The plant hormone which triggers the fall of mature leaves and fruits from the plant body is:

- (a) Auxin
- (b) Gibberellin
- (c) Abscissic acid
- (d) Cytokinin

Answer. (c) Abscissic acid

6. The stimulus in the process of thigmotropism is:

- (a) Touch
- (b) Gravity
- (c) Light
- (d) Chemical

Answer. (a) Touch

7. A growing seedling is kept in a dark room. A burning lamp is placed near to it for a few days. The top part of seedling bends towards the burning candle. This is an example of:

- (a) Chemotropism
- (b) Hydrotropism
- (c) Phototropism
- (d) Geotropism

Answer. (c) Phototropism

8. Dandelion flowers open the petals in bright light during the daytime but close the petals in dark at night. This response of dandelion flowers to light is called:

- (a) Phototropism
- (b) Thigmonasty
- (c) Chemotropism
- (d) Photonasty

Answer. (d) Photonasty

9. The number of pairs of nerves which arises from the spinal cord is:

- (a) 21
- (b) 31
- (c) 41
- (d) 51

Answer. (b) 31

10. Iodine is necessary for the synthesis of which of the following hormone?

- (a) Adrenaline
- (b) Auxin
- (c) Thyroxine
- (d) Insulin

Answer. (c) Thyroxine

11. Which of the following controls the involuntary actions in the body?

- (a) Medulla in forebrain
- (b) Medulla in hindbrain
- (c) Medulla in spinal cord
- (d) Medulla in midbrain

Answer. (b) Medulla in hindbrain

12. Which of the following control and regulate the life process?

- (a) Reproductive and endocrine systems
- (b) Respiratory and nervous systems
- (c) Endocrine and digestive systems
- (d) Nervous and endocrine systems

Answer. (d) Nervous and endocrine systems

13. A doctor advised a person to take injection of insulin because his:

- (a) Blood pressure was high
- (b) Heart beat was high
- (c) Blood sugar was high
- (d) Thyroxine level in blood was high

Answer. (c) Blood sugar was high

14. The dramatic changes in body features associated with puberty are mainly because of the secretions of:

- (a) Estrogen from testes and testosterone from ovary
- (b) Estrogen from adrenal gland and testosterone from pituitary gland
- (c) Testosterone from testes and estrogen from ovary
- (d) Testosterone from thyroid gland and estrogen from pituitary gland

Answer. (c) Testosterone from testes and estrogen from ovary

15. Electrical impulse travels in a neuron from:

- (a) Dendrite → axon → axon end → cell body
- (b) Cell body → dendrite → axon → axon end
- (c) Dendrite → cell body → axon → axon end
- (d) Axon end → axon → cell body → dendrite

Answer. (c) Dendrite → cell body → axon → axon end

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II



Chapter 12: Our Environment

1. Every food chain in the ecosystem begins with..... which are the original source of food.

- (a) Saprophytes
- (b) Parasites
- (c) Producers
- (d) Herbivores

Answer: (c) Producers

Explanation: All green plants and few blue-green algae which can produce food by photosynthesis are called the producers.

2. We should reduce the use of the plastic bags, bottles etc. because:

- (a) They are not durable
- (b) They are non-biodegradable
- (c) They are made of toxic materials
- (d) They react with the atmospheric gases

Answer: (b) They are non-biodegradable

Explanation: Plastics bags and bottles come under the category of non-biodegradable products because they cannot be broken down by natural process and tend to damage the safety of the environment.

3. Among the following choose the correct option which contains only biodegradable items?

- i. Wood, paper, PVC
 - ii. Paper, seeds, detergent,
 - iii. Paper, animal excreta, wood
 - iv. Wool, leaves, paper
- (a) (i), (ii) and (iii)
 - (b) (i) and (iii)
 - (c) (ii), (iii) and (iv)
 - (d) (iii) and (iv)

Answer: (d) (iii) and (iv)**Explanation:** All natural things produced by nature are biodegradable.

4. Which among the following statements is incorrect in view of the plants?

- (a) They convert the solar energy into mechanical energy
- (b) They prepare their food from organic compounds
- (c) They are also called producers
- (d) They are the initial source of energy in a food chain

Answer: (b) They prepare their food from organic compounds

Explanation: Plants prepare food from sunlight and inorganic constituents like carbon dioxide and water.

5. In a food chain the second trophic level is occupied by:

- (a) Carnivores
- (b) Autotrophs
- (c) Herbivores
- (d) Producers

Answer: (c) Herbivores

Explanation: Herbivores occupy the second trophic level after autotrophs or producers.

6. Green plants utilize percent of sun's energy to prepare their food by the process of photosynthesis?

- (a) 1 percent
- (b) 10 percent
- (c) 20 percent
- (d) 99 percent

Answer: (a) 1 percent

Explanation: The study of flow of energy between various ecosystems state that the autotrophs in a terrestrial ecosystem capture about 1% of the energy of sunlight that falls on their leaves and convert it into feed.

7. The process of accumulation of harmful chemical substances like pesticides, in the body of living organisms at each trophic level of a food chain is known as:

- (a) Biological magnification
- (b) Biological accumulation
- (c) Chemical magnification
- (d) Chemical accumulation

Answer: (a) Biological magnification

Explanation: The build-up of toxic and chemical constituents like pesticides, DDT, herbicides in the body of biotic organisms through food web/chain is bio-magnification.

8. Which of the following may be a conclusion of the excessive exposure of humans to sun's ultraviolet rays?

- i. Peptic ulcers
 - ii. Eye disease like cataract
 - iii. Damage to lungs
 - iv. Skin cancer
- (a) (i) and (iv)
(b) (ii), (iii) and (iv)
(c) (ii) and (iv)
(d) Only (iv)

Answer: (c) (ii) and (iv)

Explanation: Too much exposure to the ultraviolet rays in the sun can increase the risk of cataract and skin cancer.

9. Which among the following is a correct full form for DDT?

- (a) Dichlorodiphenyltrichloroethane
(b) Dichlorodiphenyltetrachloroethane
(c) Dichlorodecaphenyltrichloroethane
(d) Dichlorodiethyltrichloroethane

Answer: (a) Dichlorodiphenyltrichloroethane

Explanation: The full form of DDT is Dichlorodiphenyltrichloroethane. It is known for its insecticidal properties.

10. If 100 J energy is available at the producer level in a food chain then the energy available to the secondary consumer will be:

- (a) 10 J
(b) 0.1 J
(c) 1 J
(d) 0.01 J

Answer: (c) 1 J

Explanation: Producers convert sunlight into chemical energy and when one form of energy is changed to another, some energy is lost to the environment in forms which cannot be used again.

11. Which of the following radiations is responsible for the conversion of atmospheric oxygen to ozone?

- (a) Gamma radiations
- (b) Cosmic radiations
- (c) Infrared radiations
- (d) Ultraviolet radiations

Answer: (d) Ultraviolet radiations

Explanation: UV radiation is a highly damaging radiation, which when enters the environment can change atmospheric nitrogen into ozone.

12. The substance which is chiefly responsible for the depletion of ozone layer is:

- (a) CFCs
- (b) CH₄
- (c) DDT
- (d) O₃

Answer: (a) CFCs

Explanation: The use of chemicals like CFCs has endangered the ozone layer.

13. What will happen if deer is missing in the food chain given below?

Grass → Deer → Tiger

- (a) The population of tiger increases
- (b) The population of grass decreases
- (c) Tiger will start eating grass
- (d) The population of tiger decreases and the population of grass increases

Answer: (d) The population of tiger decreases and the population of grass increases

Explanation: If herbivores start missing, the producer population will increase and the population of carnivores will decrease dramatically.

14. Which of the following substances will not be converted to compost when added in a composting pit?

- (a) Waste paper
- (b) Fruit and vegetable peels
- (c) Human and animal excreta
- (d) Plastic bags

Answer: (d) Plastic bags

Explanation: Plastics bags and bottles come under the category of non-biodegradable products because they cannot be broken down by natural process and tend to damage the safety of the environment.

15. Global warming is a phenomenon related to:

- (a) Evaporation
- (b) Ecological balance
- (c) Greenhouse effect
- (d) Desertification

Answer: (c) Greenhouse effect

Explanation: The increase in greenhouse gases in the environment leads to global warming.

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II 

Chapter 13 : Sources of Energy

1. A good fuel is one that possesses:

- (a) High calorific value and low ignition temperature
- (b) Low calorific value and low ignition temperature
- (c) High calorific value and moderate ignition temperature
- (d) Low calorific value and moderate ignition temperature

Answer: (c) High calorific value and moderate ignition temperature

2. There are four fuels which all contain only carbon and hydrogen. The fuel having highest calorific value will be one which has:

- (a) More of carbon but less of hydrogen
- (b) Less of carbon but more of hydrogen
- (c) Equal proportions of carbon and hydrogen
- (d) Less of carbon as well as less of hydrogen

Answer: (b) Less of carbon but more of hydrogen

3. Coke is more valuable when used:

- (a) As a fuel for industrial boilers
- (b) As an oxidizing agent
- (c) As a reducing agent
- (d) As a fuel in domestic ovens

Answer: (c) As a reducing agent

4. In a hydroelectric power plant more electrical power can be generated if water falls from a greater height because:

- (a) Its temperature increases.
- (b) Larger amount of potential energy is converted into kinetic energy.
- (c) The electricity content water increases with height.
- (d) More water molecules dissociate into ions.

Answer: (b) Larger amount of potential energy is converted into kinetic energy.

5. In order to make efficient solar cooker, the cover of cooker box should be made of:

- (a) Transparent plastic sheet
- (b) Shining aluminium sheet
- (c) Butter paper sheet
- (d) Transparent glass

Answer: (d) Transparent glass

6. Which of the followings is not a fossil fuel?

- (a) Coal
- (b) Petroleum
- (c) Natural gas
- (d) Nuclear fuel

Answer: (d) Nuclear fuel

7. The rise of sea-water during high tide is caused by the gravitational pull of the:

- (a) Sun
- (b) Earth
- (c) Moon
- (d) Mars

Answer: (c) Moon

8. What is the energy equivalent of one atomic mass unit?

- (a) 93.1 MeV
- (b) 9.31 MeV
- (c) 1 MeV
- (d) 931 MeV

Answer: (d) 931 MeV

9. How many joules are there in 1eV?

- (a) 1.6×10^{-19} J
- (b) 9.1×10^{-31} J
- (c) 6.0×10^{23} J
- (d) 1.6×10^{-13} J

Answer: (a) 1.6×10^{-19} J

10. The disposal of wastes produced in a nuclear power plant is a big problem because it is:

- (a) Highly radioactive
- (b) Highly inflammable
- (c) Extremely foul smelling
- (d) Too heavy

Answer: (a) Highly radioactive

11. The energy efficient device for producing light is:

- (a) DLF
- (b) CFL
- (c) FCL
- (d) LPG

Answer: (b) CFL

12. The radiation present in the sunlight that gives us the feeling of hotness is

- (a) Visible radiation
- (b) Infra-red
- (c) Red
- (d) Ultra-violet

Answer: (b) Infra-red

13. The major constituent of biogas is

- (a) Methane
- (b) Ethane
- (c) Propane
- (d) Butane

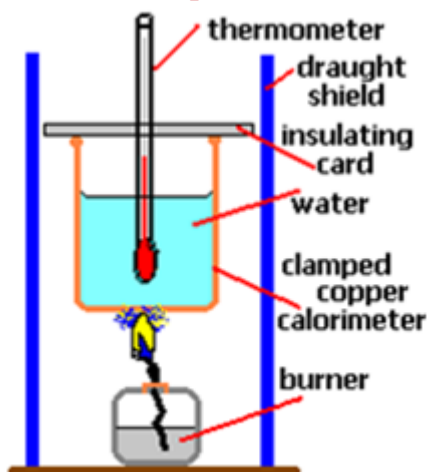
Answer: (a) Methane

14. The process by which energy is produced in the sun is

- (a) Nuclear fission
- (b) Nuclear fusion
- (c) Both nuclear fusion and fission
- (d) Combustion of hydrogen

Answer: (b) Nuclear fusion

15. The diagram shows a simple calorimeter system for measuring the heat given out by a liquid fuel contained in the burner. The experimental data for four fuels A, B, C and D is given below. 100 ml (100g) of water was put in the calorimeter and a thermometer is used to measure the change in temperature. With the help of the data find the fuel which is the least efficient?



Mass of fuel	Rise in temperature
0.80 g	12°C
1.20 g	24°C
0.50 g	9°C
1.75g	28°C

- (a) A
- (b) B
- (c) C
- (d) D

Answer: (a) A

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II



Chapter 14:

How Do Organisms Reproduce

1. Which among the following is a unicellular organism that reproduces by budding:

- (a) Hydra
- (b) Planaria
- (c) Yeast
- (d) Spirogyra

Answer. (c) Spirogyra

2. Which among the following does not reproduce by spore formation:

- (a) Penicillium fungus
- (b) Yeast fungus
- (c) Mucor fungus
- (d) Rhizopus fungus

Answer. (b) Yeast fungus

3. The rapid spreading of bread mould on slices of bread are due to:

- (i) Presence of large number of spores in air
 - (ii) Presence of large number of thread-like branched hyphae
 - (iii) Presence of moisture and nutrients
 - (iv) Formation of round shaped sporangia
- (a) (i) and (iii)
 - (b) (ii) and (iv)
 - (c) (i) and (ii)
 - (d) (iii) and (iv)

Answer. (a) (i) and (iii)

4. The asexual reproduction in the Spirogyra involves:

- (a) Breaking up of filaments into smaller bits
- (b) Division of a cell into many cells
- (c) Division of a cell into two cells
- (d) Formation of a large number of buds

Answer. (b) Division of a cell into many cells

5. Reason for the greater similarities among the offsprings produced by asexual reproduction, is:

- (i) Asexual reproduction involves only one parent
- (ii) Asexual reproduction involves two parents
- (iii) Asexual reproduction involves gametes
- (iv) Asexual reproduction does not involve gametes

- (a) (i) and (ii)
- (b) (i) and (iii)
- (c) (ii) and (iv)
- (d) (i) and (iv)

Answer. (d) (i) and (iv)

6. The process of the division of cell into several cells during reproduction in Plasmodium is termed as:

- (a) Fragmentation
- (b) Budding
- (c) Multiple fission
- (d) Binary fission

Answer. (c) Multiple fission

7. The number of chromosomes in parents and offsprings of a particular species remains constant due to:

- (a) Doubling of chromosomes after zygote formation
- (b) Halving of chromosomes during gamete formation
- (c) Doubling of chromosomes after gamete formation
- (d) Halving of chromosomes after gamete formation

Answer. (b) Halving of chromosomes during gamete formation

8. A Planaria worm is cut horizontally in the middle into two halves P and Q such that the part P contains the whole head of the worm. Another Planaria worm is cut vertically into two halves R and S in such a way that both the cut pieces R and S contain half head each. Which of the cut pieces of the two Planaria worms could regenerate to form the complete respective worms?

- (a) Only P
- (b) Only R and S
- (c) P, R and S
- (d) P, Q, R and S

Answer. (d) P, Q, R and S

9. The number of chromosomes in both parents and offsprings of a particular species remains constant because:

- (a) Chromosomes get doubled after zygote formation
- (b) Chromosomes get doubled after gamete formation
- (c) Chromosomes get halved during gamete formation
- (d) Chromosomes get halved after gamete formation

Answer. (c) Chromosomes get halved during gamete formation

10. The figure given alongside shows the human male reproductive organs. Which structures make sperms and seminal fluid?

- (a) V makes sperms and X makes seminal fluid
- (b) W makes sperms and Y makes seminal fluid
- (c) X makes sperms and W makes seminal fluid
- (d) Y makes sperms and V makes seminal fluid

Answer. (d) Y makes sperms and V makes seminal fluid

11. An organism capable of reproducing by two asexual reproduction methods one similar to the reproduction in yeast and the other similar to the reproduction in Planaria is:

- (a) Spirogyra
- (b) Hydra
- (c) Bryophyllum
- (d) Paramecium

Answer. (b) Hydra

12. Among the following select the statements that are true regarding the sexual reproduction in flowering plants?

- (i) Fertilisation is a compulsory event
 - (ii) It always results in the formation of zygote
 - (iii) Offsprings formed are clones
 - (iv) It requires two types of gametes
- (a) (i) and (iv)
 - (b) (i), (ii) and (iii)
 - (c) (i), (ii) and (iv)
 - (d) (ii), (iii) and (iv)

Answer. (c) (i), (ii) and (iv)

13. Which among the following are not the functions of testes at puberty?

- (i) Formation of germ cells
- (ii) Secretion of testosterone
- (iii) Development of placenta
- (iv) Secretion of estrogen
- (a) (i) and (ii)
- (b) (i) and (iii)
- (c) (ii) and (iv)
- (d) (iii) and (iv)

Answer. (d) (iii) and (iv)

14. Which out of the following processes does not lead to the formation of clones:

- (a) Fertilisation
- (b) Fission
- (c) Tissue culture
- (d) Fragmentation

Answer. (a) Fertilisation

15. The ratio of number of chromosomes in a human zygote and a human sperm is:

- (a) 2 : 1
- (b) 3 : 1
- (c) 1 : 2
- (d) 1 : 3

Answer. (a) 2 : 1

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Scan qr code for online test series of science and technology part I & part

II



Chapter 15: Acids, Bases and Salts

1. Some fruits like mango, lemon, raw grapes, orange, etc., have a sour taste due to the presence of:

- a. Acetic acid
- b. Citric acid
- c. Lactic acid
- d. Oxalic acid

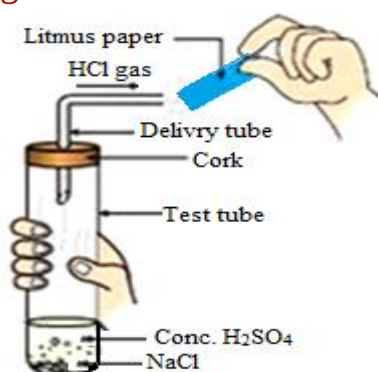
Answer. b. Citric acid

2. Zinc granules on treating with an acid X, form the zinc sulphate (ZnSO_4) salt along with the evolution of a gas Y which burns with a pop sound when brought near to a burning candle. Identify the acid X and gas evolved Y.

- a. X- Sulphuric acid and Y- Oxygen gas
- b. X- Hydrochloric acid and Y- Oxygen gas
- c. X- Sulphuric acid and Y- Hydrogen gas
- d. X- Hydrochloric acid and Y- Hydrogen gas

Answer. c. X- Sulphuric acid and Y- Hydrogen gas

3. The figure given below represents the experiment carried out between conc. sulphuric acid and sodium chloride, which react with each other to form HCl gas.



Blue litmus paper is brought near the mouth of the delivery tube to check the presence of HCl acid but no change is observed in the color of litmus paper because:

- a. The litmus paper used is dry
- b. The litmus paper used is moist
- c. Blue litmus paper does not change its color with an acid
- d. The litmus paper is kept very close to the mouth of the delivery tube

Answer. a. The litmus paper used is dry

4. Which of the following phenomena occur, when a small amount of acid is added to water?

- i. Ionisation
 - ii. Neutralisation
 - iii. Dilution
 - iv. Salt formation
- a. (i) and (ii)
 - b. (i) and (iii)
 - c. (ii) and (iii)
 - d. (ii) and (iv)

Answer. b. (i) and (iii)

5. Which of the following indicators turn red in an acidic solution?

- i. Phenolphthalein
- ii. Litmus
- iii. Turmeric
- iv. Methyl orange

Choose the correct option:

- a. (i) and (ii)
- b. (ii) and (iii)
- c. Only (ii)
- d. (ii) and (iv)

Answer. d. (ii) and (iv)

6. Dilute acid does not produce carbon dioxide on being treated with:

- a. Marble
- b. Lime
- c. Baking soda
- d. Limestone

Answer. b. Lime

7. The sample of soil from a particular place was tested for its pH value. It came out to be 5. Which one of the following should be added to the soil to make it suitable for the plant growth?

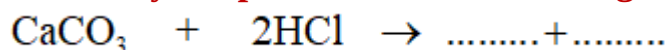
- i. Calcium chloride
- ii. Calcium Hydroxide
- iii. Calcium oxide

Choose the correct option:

- a. Both (i) and (ii)
- b. Both (ii) and (iii)
- c. Only (i)
- d. Only (iii)

Answer. b. Both (ii) and (iii)

8. Identify the products of the following reaction:



- a. Calcium hydrogencarbonate and chlorine gas
- b. Calcium chloride and water
- c. Calcium oxide, carbon dioxide and water
- d. Calcium chloride, carbon dioxide and water

Answer. d. Calcium chloride, carbon dioxide and water

9. An ant's sting can be treated withwhich will neutralise the effect of the chemical injected by the ant's sting into our skin.

Choose the correct option from the following to be filled in the blank space:

- a. Methanoic acid
- b. formic acid
- c. Baking soda
- d. Caustic soda

Answer. c. Baking soda

10. In the following reaction, identify the salt formed



- a. NH_4NO_3
- b. $(\text{NH}_4)_2\text{SO}_4$
- c. $(\text{NH}_4)_3\text{PO}_4$
- d. $(\text{NH}_4)_2\text{S}$

Answer. b. $(\text{NH}_4)_2\text{SO}_4$

11. Which of the following salt will give acidic solution when dissolved in water?

- a. NH_4Cl
- b. NaCl
- c. Na_2CO_3
- d. CH_3COONa

Answer. a. NH_4Cl

12. Bleaching powder is used as a disinfectant for water to:

- a. Make water tastier
- b. Remove all the dirt from water
- c. Make water germ-free
- d. Make water clear

Answer. c. Make water germ-free

13. Which among the following represents the chemical formula for ‘Plaster of Paris’?

- a. $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$
- b. $\text{CaSO}_4 \cdot \frac{1}{2}\text{H}_2\text{O}$
- c. $\text{CaSO}_4 \cdot \text{H}_2\text{O}$
- d. $\text{CaSO}_4 \cdot 10\text{H}_2\text{O}$

Answer. b. $\text{CaSO}_4 \cdot \frac{1}{2}\text{H}_2\text{O}$

14. Which one of the following salts will dissolve in water to form an alkaline solution?

- a. Potassium carbonate
- b. Sodium chloride
- c. Sodium carbonate
- d. Potassium sulphate

Answer. a. Potassium carbonate

15. Copper sulphate crystals when heated strongly, lose their water of crystallization to give anhydrous copper sulphate accompanied by a change in color from:

- a. Blue to green
- b. Blue to white
- c. Blue to sky blue
- d. Blue to grey

Answer. b. Blue to white

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II



Chapter 16:

Management of Natural Resources

1. Which of the following is/ are not the consequence/consequences of building high-rise dams?

- i. Loss of biodiversity
- ii. Depletion of the natural habitats of wild animals
- iii. Soil erosion leading to the infertility of land
- iv. Fall in the groundwater level

Choose the correct option from the following:

- (a) (i) and (iv)
- (b) (ii) and (iii)
- (c) (iii) and (iv)
- (d) (ii) and (iv)

Answers: (c) (iii) and (iv)

Explanation: Building of dams causes environmental problems because they contribute enormously to deforestation and the loss of biological diversity.

2. Which of the following activities will prove to be effective in preventing floods?

- i. Removing the topsoil
- ii. Afforestation
- iii. Construction of dams
- iv. Cutting of trees

Choose the correct option from the following:

- (a) (i) and (iv)
- (b) (ii) and (iii)
- (c) (iii) and (iv)
- (d) (ii) and (iv)

Answer: (b) (ii) and (iii)

Explanation: Planting of more trees and building more dams help combating floods.

3. Which among the following was a message conveyed by the ‘Chipko Movement’?

- (a) To promote more and more developmental projects
- (b) To involve the community in forest conservation efforts
- (c) To ignore the forest conservation efforts in sake of development
- (d) None of these

Answer: (b) To involve the community in forest conservation efforts

Explanation: The Chipko Movement objectives were to end the alienation of people from their forests and teach people to participate in the management of forest ecosystem.

4. The quality of environment can be improved by-

- (a) Deforestation
- (b) Overuse of natural environment
- (c) Erosion
- (d) Conservation

Answer: (d) Conservation

Explanation: We can improve the quality of the environment by conserving the biodiversity and looking after it.

5. Which among the following is an eco-friendly activity?

- (a) Making use of automobiles
- (b) Making use of poly bags for shopping
- (c) Making use of dyes for colouring the clothes
- (d) Making windmill to generate power for irrigation

Answer: (d) Making windmill to generate power for irrigation

Explanation: Wind is a natural resource and energy, it can be used by the windmill to generate power for irrigation.

6. Which of the following does not lead to the depletion of groundwater?

- (a) Establishing thermal power plants
- (b) Cultivation of high yielding varieties of crops
- (c) Process of deforestation
- (d) Process of afforestation

Answer: (d) Process of afforestation

Explanation: The planting of trees does not deplete the groundwater level.

7. Government launched the ‘Ganga Action Plan’ (GAP) project in 1985.

The main purpose of this project was to:

- (a) Build new dams over the Ganga river
- (b) Make its water pollution free
- (c) Utilise the river water for irrigation purposes
- (d) Promote the growth of water animals like fish, in the river

Answer: (b) Make its water pollution free

Explanation: The aim of GAP is to reduce pollution load in the river Ganga. Pollutants include human, industrial and religious wastes.

8. Which among the following factors help in confirming the contamination of river water?

i. Measurement of pH of river water

ii. Presence of chlorine in river water

iii. Existence of diverse life forms in river water

iv. Presence of coliform bacteria in river water

Choose the correct option from the following:

- (a) (i) and (iv)
- (b) (ii) and (iii)
- (c) (iii) and (iv)
- (d) (ii) and (iv)

Answer: (a) (i) and (iv)

Explanation: The pH of water and coliform presence in water indicates contamination by disease-causing microorganisms

9. Among the following choose the correct option which includes acts related to the three R's strategy which can be useful for conserving our natural resources?

- (a) Recycle, regenerate, reuse
- (b) Reduce, regenerate, reuse
- (c) Reduce, reuse, redistribute
- (d) Reduce, recycle, reuse

Answer: (d) Reduce, recycle, reuse

Explanation: The three R's- reduce, recycle, reuse helps in the conservation of our natural resources.

10. Who started chipkoandalon?

- (a) A. K. Banerjee
- (b) Amrita devibisni
- (c) SundarlalBahuguna
- (d) Medhapatkar

Answer: (c) SundarlalBahuguna

Explanation: SundarlalBahuguna was a noted Garhwali environmentalist who started the chipkoandalan.

11. SardarSarovar Dam is situated on river:

- (a) Ganga
- (b) Narmada
- (c) Yamuna
- (d) Godavari

Answer: (b) Narmada

Explanation: The high rise dam the SardarSarovar is situated on the river Narmada.

12. Which among the following is a major programme that was started to replenish the damaged forests?

- (a) Agriculture
- (b) Tissue culture
- (c) Silviculture
- (d) Horticulture

Answer: (c) Silviculture

Explanation: Silviculture is the practice of controlling the composition, growth, health and quality of forests for various needs.

13. In our country, there are attempts to increase the height of several existing dams like Tehri and Almati dams across the Narmada. Choose the correct statements among the following that are a consequence of raising the height of dams

- i. Terrestrial flora and fauna of the area is destroyed completely**
- ii. Dislocation of people and domestic animals living in the area**
- iii. Valuable agricultural land may be permanently lost**
- iv. It will generate permanent employment for people**

Choose the correct option from the following:

- (a) (i) and (ii)
- (b) (i), (ii) and (iii)
- (c) (ii) and (iv)
- (d) (i) (iii) and (iv)

Answer: (b) (i), (ii) and (iii)

Explanation: A large area of land is covered in building the dams which causes the devastation of the terrestrial flora and fauna. Masses of people have to be displaced to other locations and also there is a loss of a large part of the valuable agricultural land.

14. Given below are a few statements related to biodiversity. Pick those that correctly describe the concept of biodiversity

- i. Biodiversity refers to the different species of flora and fauna present in an area**
- ii. Biodiversity refers to only the flora of a given area**
- iii. Biodiversity is greater in a forest**
- iv. Biodiversity refers to the total number of individuals of a particular species living in an area**

Choose the correct option from the following:

- (a) (i) and (ii)
- (b) (ii) and (iv)
- (c) (i) and (iii)
- (d) (ii) and (iii)

Answer: (c) (i) and (iii)

Explanation: The term biodiversity refers to the variety of life forms on Earth. Forests are rich in biodiversity as a number of forms of life are found in forests, including trees, plants, animals, fungi and micro-organisms, and their roles in nature.

15. Which among the statements given below is incorrect?

- (a) Sustainable development does not take into consideration the viewpoints of all stakeholders
- (b) Sustainable development is a long planned and persistent development
- (c) Economic development is linked to environmental development
- (d) Sustainable development meets the current basic human needs along with preserving resources for future generations

Answer: (a) Sustainable development does not take into consideration the viewpoints of all stakeholders

Explanation: Management of forest resources has to take into account the interests of various stakeholders.

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II



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