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Mazharul Uloom Higher Secondary School, Ambur.

Name of the Student :
Roll No :
Medium of Instruction : English Medium
Class & Section : 10th Std –

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SCIENCE ONE MARK QUESTIONS

1. LAWS OF MOTION

Choose the correct answer:

1) Inertia of a body depends on
(a) Weight of the object (b) acceleration due to gravity of the planet (c) mass of the object (d) Both a & b

2) Impulse is equals to
(a) Rate of change of momentum (b) rate of force and time (c) change of momentum (d) rate of change of mass

3) Newton's III law is applicable
(a) For a body is at rest (b) for a body in motion (c) both a & b (d) only for bodies with equal masses

4) Plotting a graph for momentum on the X-axis and time on Y-axis. Slope of momentum-time graph gives
(a) Impulsive force (b) Acceleration (c) Force (d) Rate of force

5) In which of the following sport the turning of effect of force used
(a) Swimming (b) tennis (c) cycling (d) hockey

6) The unit of 'g' is m s^{-2}. It can be also expressed as
(a) cm s^{-1} (b) N kg^{-1} (c) N m^2 kg^{-1} (d) cm^2 s^{-2}

7) One kilogram force equals to
(a) 9.8 dyne (b) $9.8 \times 10_4$ N (c) $98 \times 10_4$ dyne (d) 980 dyne

8) The mass of a body is measured on planet Earth as M kg. When it is taken to a planet of radius half that of the Earth then its value will be_____kg
(a) 4 M (b) 2M (c) M/4 (d) M

(9) If the Earth shrinks to 50% of its real radius its mass remaining the same, the weight of a body on the Earth will
(a) Decrease by 50% (b) increase by 50% (c) decrease by 25% (d) increase by 300%

10) To project the rockets which of the following principle(s) is / (are) required?
(a) Newton's third law of motion (b) Newton's law of gravitation
(c) Law of conservation of linear momentum (d) both a and c

Fill in the blanks.

1. To produce a displacement _____ is required.
2. Passengers lean forward when sudden brake is applied in a moving vehicle. This can be explained by _____
3. By convention, the clockwise moments are taken as _____ and the anticlockwise moments are taken as_____
4. _____ is used to change the speed of car.
5. A man of mass 100 kg has a weight of _____ at the surface of the Earth.

Match the following

Column I		Column II
1. Newton's 1	-	propulsion of a rocket
2. Newton's II law	-	Stable equilibrium of a body
3. Newton's III law	-	Law of force
4. Law of conservation of Linear momentum	-	Flying nature of bird

2. OPTICS

Choose the correct answer:

1. The refractive index of four substances A, B, C and D are 1.31, 1.43, 1.33, 2.4 respectively. The speed of light is maximum in
   (a) A (b) B (c) C (d) D
2. Where should an object be placed so that a real and inverted image of same size is obtained by a convex lens
   (a) f (b) 2f (c) infinity (d) between f and 2f
3. A small bulb is placed at the principal focus of a convex lens. When the bulb is switched on, the lens will produce
   (a) a convergent beam of light (b) a divergent beam of light
   (c) a parallel beam of light (d) a colored beam of light
4. Magnification of a convex lens is
   (a) Positive (b) Negative (c) either positive or negative (d) zero
5. A convex lens forms a real, diminished point sized image at focus. Then the position of the object is at
   (a) Focus (b) infinity (c) at 2f (d) between f and 2f
6. Power of a lens is –4D, then its focal length is
   (a) 4m (b) –40m (c) –0.25 m (d) –2.5 m
7. In a myopic eye, the image of the object is formed
   (a) Behind the retina (b) on the retina (c) in front of the retina (d) on the blind spot
8. The eye defect 'presbyopia' can be corrected by
   (a) Convex lens (b) concave lens (c) convex mirror (d) Bi focal lenses
9. Which of the following lens would you prefer to use while reading small letters found in a dictionary?
   (a) A convex lens of focal length 5 cm (b) A concave lens of focal length 5 cm
   (c) A convex lens of focal length 10 cm (d) A concave lens of focal length 10 cm
10. If V_B, V_G, V_R be the velocity of blue, green and red light respectively in a glass prism, then which of the following statement gives the correct relation?
    (a) $V_B = V_G = V_R$ (b) $V_B > V_G > V_R$ (c) $V_B < V_G < V_R$ (d) $V_B < V_G > V_R$

Fill in the blanks:

1. The path of the light is called as _____
2. The refractive index of a transparent medium is always greater than _____
3. If the energy of incident beam and the scattered beam are same, then the scattering of light is called as _____ scattering.
4. According to Rayleigh's scattering law, the amount of scattering of light is inversely proportional to the fourth power of its _____
5. Amount of light entering into the eye is controlled by _____

Match the following:

Column - I		Column – II
1. Retina	-	path way of light
2. Pupil	-	Far point comes closer
3. Ciliary muscles	-	near point moves away
4. Myopia	-	Screen of the eye
5. Hypermetropia	-	Power of accommodation.

3. THERMAL PHYSICS

Choose the correct answer:

1. The value of universal gas constant
   (a) 3.81 $mol^{-1} K^{-1}$ (b) 8.03 $mol^{-1} K^{-1}$ (c) 1.38 $mol^{-1} K^{-1}$ (d) 8.31 $mol^{-1} K^{-1}$
2. If a substance is heated or cooled, the change in mass of that substance is
   (a) Positive (b) negative (c) zero (d) none of the above
3. If a substance is heated or cooled, the linear expansion occurs along the axis of
   (a) X or –X (b) Y or –Y (c) both (a) and (b) (d) (a) or (b)
4. Temperature is the average _____ of the molecules of a substance
   (a) Difference in K.E and P.E (b) sum of P.E and K.E
   (c) Difference in T.E and P.E (d) difference in K.E and T.E
5. In the Given diagram, the possible direction of heat energy transformation is

a) A ← B, A ← C, B ← C
b) A → B, A → C, B → C
c) A → B, A ← C, B → C
d) A ← B, A → C, B ← C

Fill in the blanks:

1. The value of Avogadro number _____
2. The temperature and heat are _____ quantities.
3. One calorie is the amount of heat energy required to raise the temperature of _____ of water through_____
4. According to Boyle's law, the shape of the graph between pressure and reciprocal of volume is_____

Match the following:

Column-I		Column-II
1. Linear expansion	-	(a) change in volume
2. Superficial expansion	-	(b) hot body to cold body
3. Cubical expansion	-	(c) 1.381 X 10^{-23} JK^{-1}
4. Heat transformation	-	(d) change in length
5. Boltzmann constant	-	(e) change in area

4. ELECRTICITY

Choose the best answer:

1. Which of the following is correct?
   (a) Rate of change of charge is electrical power. (b) Rate of change of charge is current.
   (c) Rate of change of energy is current. (d) Rate of change of current is charge.

2. SI unit of resistance is

(a) mho (b) joule (c) ohm (d) ohm meter

3. In a simple circuit, why does the bulb glow when you close the switch?

(a) The switch produces electricity. (b) Closing the switch completes the circuit.

(c) Closing the switch breaks the circuit. (d) The bulb is getting charged.

4. Kilowatt hour is the unit of

(a) Resistivity (b) conductivity (c) electrical energy (d) electrical power

Fill in the blanks:

1. When a circuit is open, _____ cannot pass through it.
2. The ratio of the potential difference to the current is known as _____.
3. The wiring in a house consists of _____ circuits.
4. The power of an electric device is a product of _____ and _____.
5. LED stands for _____.

Match the following:

Column - I	Column - II
1. electric current	(a) volt
2. potential difference	(b) ohm meter
3. specific resistance	(c) watt
4. electrical power	(d) joule
5. electrical energy	(e) ampere

5. ACOUSTICS

Choose the correct answer:

1. When a sound wave travels through air, the air particles

(a) Vibrate along the direction of the wave motion (b) vibrate but not in any fixed direction

(c) Vibrate perpendicular to the direction of the wave motion (d) do not vibrate

2. Velocity of sound in a gaseous medium is 330 m s–1. If the pressure is increased by 4 times without causing a change in the temperature, the velocity of sound in the gas is

(a) 330 m s^{-1} (b) 660 m s^{-1} (c) 156 m s^{-1} (d) 990 m s^{-1}

3. The frequency, which is audible to the human ear is

(a) 50 kHz (b) 20 kHz (c) 15000 kHz (d) 10000 kHz

4. The velocity of sound in air at a particular temperature is 330 m s–1. What will be its value when temperature is doubled and the pressure is halved?

(a) 330 m s^{-1} (b) 165 m s^{-1} (c) 330 × √2 m s^{-1} (d) 320 / √ 2 m s^{-1}

5. If a sound wave travels with a frequency of 1.25 × 104 Hz at 344 m s–1, the wavelength will be

(a) 27.52 m (b) 275.2 m (c) 0.02752 m (d) 2.752 m

6. The sound waves are reflected from an obstacle into the same medium from which they were incident. Which of the following changes?

(a) Speed (b) frequency (c) wavelength (d) none of these

7. Velocity of sound in the atmosphere of a planet is 500 m s^{-1}. The minimum distance between the sources of sound and the obstacle to hear the echo, should be

(a) 17 m (b) 20 m (c) 25 m (d) 50 m

Fill up the blanks:

1. Rapid back and forth motion of a particle about its mean position is called _____
2. If the energy in a longitudinal wave travels from south to north, the particles of the medium would be vibrating in _____.
3. A whistle giving out a sound of frequency 450 Hz, approaches a stationary observer at a speed of 33 ms^{-1}.The frequency heard by the observer is (speed of sound = 330 ms^{-1}.) _____.
4. A source of sound is travelling with a velocity 40 km/h towards an observer and emits a sound of frequency 2000 Hz. If the velocity of sound is 1220 km/h, then the apparent frequency heard by the observer is _____.

Match the following:

1. Infrasonic	-	(a) Compressions
2. Echo	-	(b) 22 kHz
3. Ultrasonic	-	(c) 10 Hz
4. High pressure region	-	(d) Ultrasonography

6. NUCLEAR PHYSICS

Choose the correct answer:

1. Man-made radioactivity is also known as _____
   (a) Induced radioactivity (b) Spontaneous radioactivity (c) Artificial radioactivity (d) a & c
2. Unit of radioactivity is _____
   (a) Roentgen (b) curie (c) Becquerel (d) all the above
3. Artificial radioactivity was discovered by _____
   (a) Becquerel (b) Irene Curie (c) Roentgen (d) Neils Bohr
4. In which of the following, no change in mass number of the daughter nuclei takes place
   (i) α decay (ii) β decay
   (iii) γ decay (iv) neutron decay
   (a) (i) is correct (b) (ii) and (iii) are correct (c) (i) & (iv) are correct (d) (ii) & (iv) are correct
5. _____ Isotope is used for the treatment of cancer.
   (a) Radio Iodine (b) Radio Cobalt (c) Radio Carbon (d) Radio Nickel
6. Gamma radiations are dangerous because
   (a) it affects eyes & bones (b) it affects tissues
   (c) it produces genetic disorder (d) it produces enormous amount of heat
7. _____ aprons are used to protect us from gamma radiations
   (a) Lead oxide (b) Iron (c) Lead (d) Aluminium
8. Which of the following statements is/are correct?
   i. α particles are photons
   ii. Penetrating power of γ radiation is very low
   iii. Ionization power is maximum for α rays
   iv. Penetrating power of γ radiation is very high
   (a) (i) & (ii) are correct (b) (ii) & (iii) are correct (c) (iv) only correct (d) (iii) & (iv) are correct
9. Proton - Proton chain reaction is an example of _____
   (a) Nuclear fission (b) α - decay (c) Nuclear fusion (d) β - decay
10. In the nuclear reaction ${}_{6}X_{12}$ α decay ${}_{Z}Y_{A}$, the value of A & Z.
    (a) 8, 6 (b) 8, 4 (c) 4, 8 (d) cannot be determined with the given data
11. Kamini reactor is located at _____
    (a) Kalpakkam (b) Koodankulam (c) Mumbai (d) Rajasthan

12. Which of the following is/are correct?
    i. Chain reaction takes place in a nuclear reactor and an atomic bomb.
    ii. The chain reaction in a nuclear reactor is controlled
    iii. The chain reaction in a nuclear reactor is not controlled
    iv. No chain reaction takes place in an atom bomb

    (a) (i) only correct (b) (i) & (ii) are correct (c) (iv) only correct (d) (iii) & (iv) are correct

Fill in the blanks:

1. One roentgen is equal to _____ disintegrations per second
2. Positron is an_____.
3. Anemia can be cured by _____ isotope
4. Abbreviation of ICRP_____
5. _____is used to measure exposure rate of radiation in humans.
6. _____ has the greatest penetration power.
7. ${}_{Z}Y^{A} \rightarrow {}_{Z+1}Y^{A} + X$; Then, X is _____
8. ${}_{Z}X^{A} \rightarrow {}_{Z}Y^{A}$ This reaction is possible in _____ decay.
9. The average energy released in each fusion reaction is about _____ J.
10. Nuclear fusion is possible only at an extremely high temperature of the order of ____ K.
11. The radio isotope of _____ helps to increase the productivity of crops.
12. If the radiation exposure is 100 R, it may cause _____.

Match the following:

Match: I

1. BARC	-	Kalpakkam
2. India's first atomic power station	-	Apsara
3. IGCAR	-	Mumbai
4. First nuclear reactor in India	-	Tarapur

Match: II

1. Fuel	-	lead
2. Moderator	-	heavy water
3. Coolant	-	cadmium rods
4. Shield	-	uranium

Match: III

1. Soddy Fajan	-	Natural radioactivity
2. Irene Curie	-	Displacement law
3. Henry Becquerel	-	Mass energy equivalence
4. Albert Einstein	-	Artificial Radioactivity

Match: IV

1. Uncontrolled fission	-	Hydrogen Bomb reaction
2. Fertile material	-	Nuclear Reactor
3. Controlled fission	-	Breeder reactor reaction
4. Fusion reaction	-	Atom bomb

Match: V

1. Co - 60	-	Age of fossil
2. I - 131	-	Function of Heart
3. Na -11	-	Leukemia
4. C - 14	-	Thyroid disease

Arrange the following in the correct sequence:

1. **Arrange in descending order, on the basis of their penetration power**

   Alpha rays, beta rays, gamma rays, cosmic rays

2. Arrange the following in the chronological order of discovery

Nuclear reactor, radioactivity, artificial radioactivity, discovery of radium.

Use the analogy to fill in the blank:

1. Spontaneous process : Natural Radioactivity,
   Induced process: _____
2. Nuclear Fusion : Extreme temperature,
   Nuclear Fission: _____
3. Increasing crops : Radio phosphorous,
   Effective functioning of heart: _____
4. Deflected by electric field : α ray,
   Null Deflection: _____

7. ATOMS AND MOLECULES

Choose the best answer:

1. Which of the following has the smallest mass?
   (a) 6.023×10^{23} atoms of He (b) 1 atom of He (c) 2 g of He (d) 1 mole atoms of He
2. Which of the following is a triatomic molecule?
   (a) Glucose (b) Helium (c) Carbon dioxide (d) Hydrogen
3. The volume occupied by 4.4 g of CO_2 at S.T.P
   (a) 22.4 liter (b) 2.24 liter (c) 0.24 liter (d) 0.1 liter
4. Mass of 1 mole of Nitrogen atom is
   (a) 28 amu (b) 14 amu (c) 28 g (d) 14 g
5. Which of the following represents 1 amu?
   (a) Mass of a C–12 atom (b) Mass of a hydrogen atom
   (c) $1/12^{th}$ of the mass of a C – 12 atom (d) Mass of O – 16 atom
6. Which of the following statement is incorrect?
   (a) One gram of C – 12 contains Avogadro's number of atoms.
   (b) One mole of oxygen gas contains Avogadro's number of molecules.
   (c) One mole of hydrogen gas contains Avogadro's number of atoms.
   (d) One mole of electrons stands for 6.023×10^{23} electrons.
7. The volume occupied by 1 mole of a diatomic gas at S.T.P is
   (a) 11.2 litre (b) 5.6 litre (c) 22.4 litre (d) 44.8 litre
8. In the nucleus of $_{20}Ca_{40}$, there are
   (a) 20 protons and 40 neutrons (b) 20 protons and 20 neutrons
   (c) 20 protons and 40 electrons (d) 40 protons and 20 electrons
9. The gram molecular mass of oxygen molecule is
   (a) 16 g (b) 18 g (c) 32 g (d) 17 g
10. 1 mole of any substance contains ____ molecules.
    (a) 6.023×10^{23} (b) 6.023×10^{-23} (c) 3.0115×10^{23} (d) 12.046×10^{23}

Fill in the blanks:

1. Atoms of different elements having _____ mass number, but _____ atomic numbers are called isobars.
2. Atoms of different elements having same number of _____ are called isotones.
3. Atoms of one element can be transmuted into atoms of other element by _____
4. The sum of the numbers of protons and neutrons of an atom is called its _____
5. Relative atomic mass is otherwise known as _____
6. The average atomic mass of hydrogen is _____ amu.
7. If a molecule is made of similar kind of atoms, then it is called _____ atomic molecule.
8. The number of atoms present in a molecule is called its _____
9. One mole of any gas occupies _____ ml at S.T.P
10. Atomicity of phosphorous is _____

Match the following:

1. 8g of O_2	-	4 moles
2. 4g of H_2	-	0.25 moles
3. 52g of He	-	2 moles
4. 112g of N_2	-	0.5 moles
5. 35.5g of Cl_2	-	13 moles

8. PERIODIC CLASSIFICATION OF ELEMENTS

Choose the best answer:

1. The number of periods and groups in the periodic table are_____.
   (a) 6, 16 (b) 7, 17 (c) 8, 18 (d) 7, 18
2. The basis of modern periodic law is_____.
   (a) atomic number (b) atomic mass (c) isotopic mass (d) number of neutrons
3. _____ group contains the member of halogen family.
   (a) 17^{th} (b) 15^{th} (c) 18^{th} (d) 16^{th}
4. _____ is a relative periodic property
   (a) Atomic radii (b) ionic radii (c) electron affinity (d) electro negativity
5. Chemical formula of rust is _____.
   (a) $FeO.xH_2O$ (b) $FeO_4.xH_2O$ (c) $Fe_2O_3.xH_2O$ (d) FeO
6. In the alumino thermic process the role of Al is _____.
   (a) Oxidizing agent (b) reducing agent (c) hydrogenating agent (d) sulphurising agent
7. The process of coating the surface of metal with a thin layer of zinc is called_____.
   (a) Painting (b) thinning (c) galvanization (d) electroplating
8. Which of the following have inert gases 2 electrons in the outermost shell?
   (a) He (b) Ne (c) Ar (d) Kr

9. Neon shows zero electron affinity due to _____.
   (a) Stable arrangement of neutrons (b) Stable configuration of electrons
   (c) Reduced size (d) increased density
10. _____ is an important metal to form amalgam.
    (a) Ag (b) Hg (c) Mg (d) Al

Fill in the blanks:

1. If the electro negativity difference between two bonded atoms in a molecule is greater than 1.7, the nature of bonding is _____
2. _____ is the longest period in the periodical table.

3. _____ forms the basis of modern periodic table.

4. If the distance between two Cl atoms in Cl_2 molecule is 1.98Å, then the radius of Cl atom is _____.

5. Among the given species A^-, A^+, and A, the smallest one in size is _____.

6. The scientist who propounded the modern periodic law is _____.

7. Across the period, ionic radii _____ (increases, decreases).

8. _____ and _____ are called inner transition elements.

9. The chief ore of Aluminium is _____.

10. The chemical name of rust is _____.

Match the following:

1. Galvanisation	-	Noble gas elements
2. Calcination	-	Coating with Zn
3. Redox reaction	-	Silver-tin amalgam
4. Dental filling	-	Alumino thermic process
5. Group 18 elements	-	Heating in the absence of air

9. SOLUTIONS

Choose the correct answer:

1. A solution is a _____ mixture.
   (a) homogeneous (b) heterogeneous (c) homogeneous and heterogeneous (d) non homogeneous

2. The number of components in a binary solution is _____
   (a) 2 (b) 3 (c) 4 (d) 5

3. Which of the following is the universal solvent?
   (a) Acetone (b) Benzene (c) Water (d) Alcohol

4. A solution in which no more solute can be dissolved in a definite amount of solvent at a given temperature is called _____
   (a) Saturated solution (b) un saturated solution (c) Super saturated solution (d) Dilute solution

5. Identify the non aqueous solution.
   (a) Sodium chloride in water (b) glucose in water
   (c) Copper sulphate in water (d) sulphur in carbon-di-sulphide

6. When pressure is increased at constant temperature the solubility of gases in liquid _____.
   (a)No change (b) increases (c) decreases (d) no reaction

7. Solubility of NaCl in 100 ml water is 36 g. If 25 g of salt is dissolved in 100 ml of water how much more salt is required for saturation _____.
   (a) 12g (b) 11g (c) 16g (d) 20g

8. A 25% alcohol solution means
   (a) 25 ml alcohol in 100 ml of water (b) 25 ml alcohol in 25 ml of water
   (c) 25 ml alcohol in 75 ml of water (d) 75 ml alcohol in 25 ml of water

9. Deliquescence is due to _____
   (a) Strong affinity to water (b) Less affinity to water (c) Strong hatred to water (d) Inertness to water

10. Which of the following is hygroscopic in nature?
    (a) Ferric chloride (b) Copper sulphate penta hydrate (c) Silica gel (d) none of the above

Fill in the blanks:

1. The component present in lesser amount, in a solution is called _____
2. Example for liquid in solid type solution is _____
3. Solubility is the amount of solute dissolved in _____ g of solvent.

4. Polar compounds are soluble in _____ solvents
5. Volume percentage decreases with increases in temperature because _____

Match the following:

1. Blue vitriol	–	$CaSO_4.2H_2O$
2. Gypsum	–	CaO
3. Deliquescence	–	$CuSO_4.5H_2O$
4. Hygroscopic	–	$NaOH$

10. TYPES OF CHEMICAL REACTIONS

Choose the correct answer:

1. $H_{2(g)} + Cl_{29(g)} \rightarrow 2HCl_{(g)}$ is a
   (a) Decomposition Reaction (b) Combination Reaction
   (c) Single Displacement Reaction (d) Double Displacement Reaction
2. Photolysis is a decomposition reaction caused by _____
   (a) Heat (b) electricity (c) light (d) mechanical energy
3. The reaction between carbon and oxygen is represented by $C_{(s)} + O_{2(g)} \rightarrow CO_{2(g)}$ + Heat. In which of the type(s), the above reaction can be classified?
   (i) Combination Reaction
   (ii) Combustion Reaction
   (iii) Decomposition Reaction
   (iv) Irreversible Reaction
   (a) i and ii (b) i and iv (c) i, ii and iii (d) i, ii and iv
4. The chemical equation
   $Na_2SO_{4(aq)} + BaCl_{2(aq)} \rightarrow BaSO_{4(s)}\downarrow + 2NaCl_{(aq)}$ represents which of the following types of reaction?
   (a) Neutralization (b) Combustion (c) Precipitation (d) Single displacement
5. Which of the following statements are correct about a chemical equilibrium?
   (i) It is dynamic in nature
   (ii) The rate of the forward and backward reactions are equal at equilibrium
   (iii) Irreversible reactions do not attain chemical equilibrium
   (iv) The concentration of reactants and products may be different
   (a) i, ii and iii (b) i, ii and iv (c) ii, iii and iv (d) i, iii and iv
6. A single displacement reaction is represented by $X_{(s)} + 2HCl_{(aq)} \rightarrow XCl_{2(aq)} + H_{2(g)}$.
   Which of the following(s) could be X. (i) Zn (ii) Ag (iii) Cu (iv) Mg. Choose the best pair.
   (a) i and ii (b) ii and iii (c) iii and iv (d) i and iv
7. Which of the following is not an "element + element → compound" type reaction?
   (a) $C_{(s)} + O_{2(g)} \rightarrow CO_{2(g)}$ (b) $2K_{(s)} + Br_{2(l)} \rightarrow 2KBr_{(s)}$
   (c) $2CO_{(g)} + O_{2(g)} \rightarrow 2CO_{2(g)}$ (d) $4Fe_{(s)} + 3O_{2(g)} \rightarrow 2Fe_2O_{3(s)}$
8. Which of the following represents a precipitation reaction?
   (a) $A_{(s)} + B_{(s)} \rightarrow C_{(s)} + D_{(s)}$ (b) $A_{(s)} + B_{(aq)} \rightarrow C_{(aq)} + D_{(l)}$
   (c) $A_{(aq)} + B_{(aq)} \rightarrow C_{(s)} + D_{(aq)}$ (d) $A_{(aq)} + B_{(s)} \rightarrow C_{(aq)} + D_{(l)}$
9. The pH of a solution is 3. Its $[OH^-]$ concentration is
   (a) 1×10^{-3} M (b) 3 M (c) 1×10^{-11} M (d) 11 M
10. Powdered $CaCO_3$ reacts more rapidly than flaky $CaCO_3$ because of _____.
    (a) Large surface area (b) High pressure (c) High concentration (d) High temperature

Fill in the blanks:

1. A reaction between an acid and a base is called _____.
2. When zinc metal is placed in hydrochloric acid, _____ gas is evolved.
3. The equilibrium attained during the melting of ice is known as _____.
4 The pH of a fruit juice is 5.6. If you add slaked lime to this juice, its pH _____
5. The value of ionic product of water at 25^{O} C is _____.
6. The normal pH of human blood is _____
7. Electrolysis is type of _____ reaction.
8. The number of products formed in a synthesis reaction is _____
9. Chemical volcano is an example for _____ type of reaction.
10. The ion formed by dissolution of H^{+} in water is called _____

Match the following:

Identify the types of reaction

REACTION	TYPE
$NH_4OH_{(aq)} + CH_3COOH_{(aq)} \rightarrow CH_3COONH_{4(aq)} + H_2O_{(l)}$	Single Displacement
$Zn_{(s)} + CuSO_{4(aq)} \rightarrow ZnSO_{4(aq)} + Cu_{(s)}$	Combustion
$ZnCO_{3(s)} + {}_{Heat} \rightarrow ZnO_{(s)} + CO_{2(g)}$	Neutralisation
$C_2H_{4(g)} + 4O_{2(g)} \rightarrow 2CO_{2(g)} + 2H_2O_{(g)} + Heat$	Thermal decomposition

11. CARBON AND ITS COMPOUNDS

Choose the best answer:

1. The molecular formula of an open chain organic compound is C_3H_6. The class of the compound is
   (a) alkane (b) alkene (c) alkyne (d) alcohol
2. The IUPAC name of an organic compound is 3-Methyl butan-1-ol. What type compound it is?
   (a) Aldehyde (b) Carboxylic acid (c) Ketone (d) Alcohol
3. The secondary suffix used in IUPAC nomenclature of an aldehyde is ____
   (a) - ol (b) – oic acid (c) - al (d) - one
4. Which of the following pairs can be the successive members of a homologous series?
   (a) C_3H_8 and C_4H_{10} (b) C_2H_2 and C_2H_4 (c) CH_4 and C_3H_6 (d) C_2H_5OH and C_4H_8OH
5. $C_2H_5OH + 3O_2 \rightarrow 2CO_2 + 3H_2O$ is a
   (a) Reduction of ethanol (b) Combustion of ethanol
   (c) Oxidation of ethanoic acid (d) Oxidation of ethanal
6. Rectified spirit is an aqueous solution which contains about _____ of ethanol
   (a) 95.5 % (b) 75.5 % (c) 55.5 % (d) 45.5 %
7. Which of the following are used as anaesthetics?
   (a) Carboxylic acids (b) Ethers (c) Esters (d) Aldehydes
8. TFM in soaps represents _____ content in soap
   (a) Mineral (b) vitamin (c) fatty acid (d) carbohydrate
9. Which of the following statements is wrong about detergents?
   (a) It is a sodium salt of long chain fatty acids (b) It is sodium salts of sulphonic acids
   (c) The ionic part in a detergent is $-SO_3^{-}\ Na^{+}$ (d) It is effective even in hard water.

Fill in the blanks:

1. An atom or a group of atoms which is responsible for chemical characteristics of an organic compound is called _____.

2. The general molecular formula of alkynes is _____

3. In IUPAC name, the carbon skeleton of a compound is represented by _____ (root word / prefix / suffix)

4. (Saturated / Unsaturated) _____ compounds decolourize bromine water.

5. Dehydration of ethanol by conc. Sulphuric acid forms _____ (ethene/ ethane)

6. 100 % pure ethanol is called _____

7. Ethanoic acid turns _____ litmus to _____

8. The alkaline hydrolysis of fatty acids is termed as _____

9. Biodegradable detergents are made of _____(branched / straight) chain hydrocarbons.

Match the following:

1. Functional group –OH	Benzene
2. Heterocyclic	Potassium stearate
3. Unsaturated	Alcohol
4. Soap	Furan
5. Carbocyclic	Ethene

12. PLANT ANATOMY AND PLANT PHYSIOLOGY

Choose the correct answer:

1. Casparian strips are present in the _____ of the root.
   (a) cortex (b) pith (c) pericycle (d) endodermis
2. The endarch condition is the characteristic feature of
   (a) Root (b) stem (c) leaves (d) flower
3. The xylem and phloem arranged side by side on same radius is called _____
   (a) Radial (b) amphivasal (c) conjoint (d) None of these
4. Which is formed during anaerobic respiration
   (a) Carbohydrate (b) Ethyl alcohol (c)Acetyl CoA (d) Pyruvate
5. Kreb's cycle takes place in
   (a) Chloroplast (b) mitochondrial matrix (c) stomata (d) inner mitochondrial membrane
6. Oxygen is produced at what point during photosynthesis?
   (a) When ATP is converted to ADP (b) when CO_2 is fixed (c) when H_2O is splitted (d) All of these

Fill in the blanks:

1. Cortex lies between _____.
2. Xylem and phloem occurring on the same radius constitute a vascular bundle called _____.
3. Glycolysis takes place in _____.
4. The source of O_2 liberated in photosynthesis is _____.
5. _____ is ATP factory of the cells

Match the following:

1. Amphicribal	-	Dracaena
2. Cambium	-	Translocation of food
3. Amphivasal	-	Fern
4. Xylem	-	Secondary growth
5. Phloem	-	Conduction of water

13. STRUCTURAL ORGANISATION O F ANIMALS

Choose the correct answer:

1. In leech locomotion is performed by
   (a) Anterior sucker (b) Posterior sucker (c) Setae (d) None of the above
2. The segments of leech are known as
   (a) Metameres (somites) (b) Proglottids (c) Strobila (d) All the above
3. Pharyngeal ganglion in leech is a part of
   (a) Excretory system (b) Nervous system (c) Reproductive system (d) Respiratory system
4. The brain of leech lies above the
   (a) Mouth (b) Buccal Cavity (c) Pharynx (d) Crop
5. The body of leech has
   (a) 23 segments (b) 33 segments (c) 38 segments (d) 30 segments
6. Mammals are _____ animals.
   (a) Cold blooded (b) Warm blooded (c) Poikilothermic (d) All the above
7. The animals which give birth to young ones are
   (a) Oviparous (b) Viviparous (c) Ovoviviparous (d) All the above

Fill in the blanks:

1. The posterior sucker is formed by the fusion of the _____ segments.
2. The existence of two sets of teeth in the life of an animal is called _____ dentition.
3. The anterior end of leech has a lobe-like structure called _____.
4. The blood sucking habit of leech is known as _____.
5. _____ separate nitrogenous waste from the blood in rabbit.
7. _____ spinal nerves are present in rabbit.

Match columns I, II and III correctly:

Organs	Membranous Covering	Location
Brain	pleura	abdominal cavity
Kidney	capsule	mediastinum
Heart	meninges	enclosed in thoracic cavity
Lungs	pericardium	cranial cavity

14. TRANSPORTATION IN PLANTS AND CIRCULATION IN ANIMALS

Choose the correct answer:

1. Active transport involves
   (a) movement of molecules from lower to higher concentration (b) expenditure of energy
   (c) it is an uphill task (d) all of the above
2. Water which is absorbed by roots is transported to aerial parts of the plant through
   (a) Cortex (b) epidermis (c) phloem (d) xylem
3. During transpiration there is loss of
   (a) Carbon dioxide (b) oxygen (c) water (d) none of the above
4. Root hairs are
   (a) cortical cell (b) projection of epidermal cell (c) unicellular (d) both b and c

5. Which of the following process requires energy?
(a) active transport (b) diffusion (c) osmosis (d) all of them

6. The wall of human heart is made of
(a) Endocardium (b) Epicardium (c) Myocardium (d) All of the above

7. Which is the sequence of correct blood flow?
(a) ventricle - atrium - vein – arteries (b) atrium - ventricle - veins - arteries
(c) atrium - ventricle - arteries - vein (d) ventricles - vein - atrium - arteries

8. A patient with blood group **O** was injured in an accident and has blood loss. Which blood group the doctor should effectively use for transfusion in this condition?
(a) O group (b) AB group (c) A or B group (d) all blood group

9. **'Heart of heart'** is called
(a) SA node (b) AV node (c) Purkinje fibres (d) Bundle of His

10. Which one of the following regarding blood composition is correct?
(a) Plasma - Blood + Lymphocyte (b) Serum - Blood + Fibrinogen
(c) Lymph - Plasma + RBC + WBC (d) Blood - Plasma + RBC+ WBC +Platelets

Fill in the blanks:

1. _____ involves evaporative loss of water from aerial parts.
2. Water enters the root cell through a _____ plasma membrane.
3. Structures in roots that help to absorb water are _____.
4. Normal blood pressure is _____.
5. The normal human heartbeat rate is about _____ time per minute.

Match the following:

Section I

1. Symplastic pathway	-	Leaf
2. Transpiration	-	Plasmodesmata
3. Osmosis	-	Pressure in xylem
4. Root Pressure	-	Pressure gradient

Section II

1. Leukemia	-	Thrombocytes
2. Platelets	-	Phagocyte
3. Monocytes	-	Decrease in leucocytes
4. Leucopenia	-	Blood Cancer
5. AB blood group	-	Allergic condition
6. O blood group	-	Inflammation
7. Eosinophil	-	Absence of antigen
8. Neutrophils	-	Absence of antibody

15. NERVOUS SYSTEM

Choose the correct answer:

1. Bipolar neurons are found in
(a) retina of eye (b) cerebral cortex (c) embryo (d) respiratory epithelium

2. Site for processing of vision, hearing, memory, speech, intelligence and thought is
(a) Kidney (b) ear (c) brain (d) lungs

3. In reflex action, the reflex arc is formed by
(a) brain, spinal cord, muscle (b) receptor, muscle, spinal cord
(c) muscle, receptor, brain (d) receptor, spinal cord, muscle

4. Dendrites transmit impulse cell body and axon transmit impulse cell body.
(a) away from, away from (b) towards, away from
(c) towards,towards (d) away from, towards

5. The outer most of the three cranial meninges is
(a) arachnoid membrane (b) piamater (c) duramater (d) myelin sheath

6. There are pairs of cranial nerves and pairs of spinal nerves.
(a) 12, 31 (b) 31, 12 (c) 12, 13 (d) 12, 21

7. The neurons which carries impulse from the central nervous system to the muscle fibre.
(a) afferent neurons (b) association neuron (c) efferent neuron (d) unipolar neuron

8. Which nervous band connects the two cerebral hemispheres of brain?
(a) thalamus (b) hypothalamus (c) corpus callosum (d) pons

9. Node of Ranvier is found in
(a) muscles (b) axons (c) dendrites (d) cyton

10. Vomiting centre is located in
(a) medulla oblongata (b) stomach (c) cerebrum (d) hypothalamus

11. Nerve cells do not possess
(a) neurilemma (b) sarcolemma (c) axon (d) dendrites

12. A person who met with an accident lost control of body temperature, water balance, and hunger. Which of the following part of brain is supposed to be damaged?
(a) Medulla oblongata (b) cerebrum (c) pons (d) hypothalamus

Fill in the blanks:

1. _____ is the longest cell in our body.
2. Impulses travel rapidly in _____ neurons.
3. A change in the environment that causes an animal to react is called _____.
4. _____ carries the impulse towards the cell body.
5. The two antagonistic component of autonomic nervous system are _____ and _____.
6. A neuron contains all cell organelles except _____.
7. _____ maintains the constant pressure inside the cranium.
8. _____ and _____ increases the surface area of cerebrum.
9. The part of human brain which acts as relay center is _____.

Match the following:

Column I	Column II
1. Nissil's granules	Forebrain
2. Hypothalamus	Peripheral Nervous system
3. Cerebellum	Cyton
4. Schwann cell	Hindbrain

16. PLANT AND ANIMAL HORMONES

Choose the correct answer:

1. Gibberellins cause:
(a) Shortening of genetically tall plants (b) Elongation of dwarf plants
(c) Promotion of rooting (d) yellowing of young leaves

2. The hormone which has positive effect on apical dominance is:
(a) Cytokinin (b) Auxin (c) Gibberellin (d) Ethylene

3. Which one of the following hormones is naturally not found in plants?
(a) 2, 4-D (b) GA3 (c) Gibberellin (d) IAA

4. Avena coleoptile test was conducted by
(a) Darwin (b) N. Smit (c) Paal (d) F.W. Went

5. To increase the sugar production in sugarcanes they are sprayed with _____
(a) Auxin (b) Cytokinin (c) Gibberellins (d) Ethylene

6. LH is secreted by
(a) Adrenal gland (b) Thyroid gland (c) Anterior pituitary (d) Hypothalamus.

7. Identify the exocrine gland
(a) Pituitary gland (b) Adrenal gland (c) Salivary gland (d) Thyroid gland

8. Which organ acts as both exocrine gland as well as endocrine gland?
(a) Pancreas (b) Kidney (c) Liver (d) Lungs

9. Which one is referred as "Master Gland"?
(a) Pineal gland (b) Pituitary gland (c) Thyroid gland (d) Adrenal gland

Fill in the blanks:

1. _____ causes cell elongation, apical dominance and prevents abscission.
2. _____ is a gaseous hormone involved in abscission of organs and acceleration of fruit ripening.
3. _____ causes stomatal closure.
4. Gibberellins induce stem elongation in _____ plants.
5. The hormone which has negative effect on apical dominance is _____.
6. Calcium metabolism of the body is controlled by _____.
7. In the islets of Langerhans, beta cells secrete _____.
8. The growth and functions of thyroid gland is controlled by _____.
9. Decreased secretion of thyroid hormones in the children leads to _____.

Match Column I with Columns II and III:

Column I	Column II	Column III
Auxin	*Gibberella fujikuroi*	Abscission
Ethylene	Coconut milk	Internodal elongation
Abscisic acid	Coleoptile tip	Apical dominance
Cytokinin	Chloroplast	Ripening
Gibberellins	Fruits	Cell division

Match the following hormones with their deficiency states:

Hormones	*Disorders*
a) Thyroxine	- Acromegaly
b) Insulin	- Tetany
c) Parathormone	- Simple goitre
d) Growth hormone	- Diabetes insipidus
e) ADH	- Diabetes mellitus

17. REPRODUCTION IN PLANTS AND ANIMALS

Choose the correct answer:

1. The plant which propagates with the help of its leaves is _____.
(a) Onion (b) Neem (c) Ginger (d) Bryophyllum

2. Asexual reproduction takes place through budding in _____.
(a) Amoeba (b) Yeast (c) Plasmodium (d) Bacteria

3. Syngamy results in the formation of _____.
(a) Zoospores (b) Conidia (c) Zygote (d) Chlamydospores

4. The essential parts of a flower are _____.
(a) Calyx and Corolla (b) Calyx and Androecium
(c) Corolla and Gynoecium (d) Androecium and Gynoecium

5. Anemophilous flowers have _____.
(a) Sessile stigma (b) Small smooth stigma (c) Colored flower (d) Large feathery stigma

6. Male gametes in angiosperms are formed by the division of _____.
(a) Generative cell (b) Vegetative cell (c) Microspore mother cell (d) Microspore

7 What is true of gametes?
(a) They are diploid (b) They give rise to gonads
(c) They produce hormones (d) They are formed from gonads

8. A single highly coiled tube where sperms are stored, get concentrated and mature is known as
(a) Epididymis (b) Vasa efferentia (c) Vas deferens (d) Seminiferous tubules

9. The large elongated cells that provide nutrition to developing sperms are
(a) Primary germ cells (b) Sertoli cells (c) Leydig cells (d) Spermatogonia

10 Estrogen is secreted by
(a) Anterior pituitary (b) Primary follicle (c) Graffian follicle (d) Corpus luteum

11. Which one of the following is an IUCD?
(a) Copper – T (b) Oral pills (c) Diaphragm (d) Tubectomy

Fill in the blanks:

1. The embryo sac in a typical dicot at the time of fertilization is _____.
2. After fertilization the ovary develops into _____.
3. Planaria reproduces asexually by _____.
4. Fertilization is _____ in humans
5. The implantation of the embryo occurs at about _____ day of fertilization
6. _____ is the first secretion from the mammary gland after child birth
7. Prolactin is a hormone produced by _____.

Match the following:

Column 1	Column 2
Fission	Spirogyra
Budding	Amoeba
Fragmentation	Yeast

Match the following terms with their respective meanings:

1. Parturition - Duration between pregnancy and birth
2. Gestation - Attachment of zygote to endometrium
3. Ovulation - Delivery of baby from uterus
4. Implantation - Release of egg from Graafian follicle

18. HERIDITY

Choose the correct answer:

1. According to Mendel alleles have the following character
   (a) Pair of genes (b) Responsible for character (c) Production of gametes (d) Recessive factors

2. 9: 3: 3: 1 ratio is due to
   (a) Segregation (b) Crossing over (c) Independent assortment (d) Recessiveness

3. The region of the chromosome where the spindle fibres get attached during cell division
   (a) Chromomere (b) Centrosome (c) Centromere (d) Chromonema

4. The centromere is found at the centre of the _____ chromosome.
   (a) Telocentric (b) Metacentric (c) Sub-metacentric (d) Acrocentric

5. The _____ units form the backbone of the DNA.
   (a) 5 carbon sugar (b) Phosphate (c) Nitrogenous bases (d) Sugar phosphate

6. Okasaki fragments are joined together by _____.
   (a) Helicase (b) DNA polymerase (c) RNA primer (d) DNA ligase

7. The number of chromosomes found in human beings is _____.
   (a) 22 pairs of autosomes and 1 pair of allosomes. (b) 22 autosomes and 1 allosome
   (c) 46 autosomes (d) 46 pairs autosomes and 1 pair of allosomes.

8. The loss of one or more chromosome in a ploidy is called _____.
   (a) Tetraploidy (b) Aneuploidy (c) Euploidy (d) polyploidy

Fill in the blanks:

1. The pairs of contrasting character (traits) of Mendel are called _____.
2. Physical expression of a gene is called _____
3. The thin thread like structures found in the nucleus of each cell is called _____.
4. DNA consists of two _____ chains.
5. An inheritable change in the amount or the structure of a gene or a chromosome is called _____.

Match the following:

1. Autosomes	-	Trisomy 21
2. Diploid condition	-	9:3:3:1
3. Allosome	-	22 pair of chromosome
4. Down's syndrome	-	2n
5. Dihybrid ratio	-	23rd pair of chromosome

19. ORIGIN AND EVOLUATION OF LIFE

Choose the correct answer:

1. Biogenetic law states that _____
   (a) Ontogeny and phylogeny go together (b) Ontogeny recapitulates phylogeny
   (c) Phylogeny recapitulates ontogeny (d) There is no relationship between phylogeny and ontogeny

2. The 'use and disuse theory' was proposed by _____.
   (a) Charles Darwin (b) Ernst Haeckel (c) Jean Baptiste Lamarck (d) Gregor Mendel

3. Paleontologists deal with
   (a) Embryological evidences (b) Fossil evidences (c) Vestigial organ evidences (d) All the above

4. The best way of direct dating fossils of recent origin is by
(a) Radio-carbon method (b) Uranium lead method (c) Potassium-argon method (d) Both (a) and (c)
5. The term Ethnobotany was coined by
(a) Khorana (b) J.W. Harsbberger (c) Ronald Ross (d) Hugo de Vries

Fill in the blanks:

1. The characters developed by the animals during their life time, in response to the environmental changes are called _____.
2. The degenerated and non-functional organs found in an organism are called _____.
3. The forelimb of bat and human are examples of _____ organs.
4. The theory of natural selection for evolution was proposed by _____.

Match the following:

Column A		Column B
1. Atavism	-	caudal vertebrae and vermiform appendix
2. Vestigial organs	-	a forelimb of a cat and a bat's wing
3. Analogous organs	-	rudimentary tail and thick hair on the body
4. Homologous organs	-	a wing of a bat and a wing of an insect
5. Wood park	-	radiocarbon dating
6. W.F. Libby	-	Thiruvakkarai

20. BREEDING AND BIOTECHNOLOGY

Choose the correct answer:

1. Which method of crop improvement can be practised by a farmer if he is inexperienced?
(a) clonal selection (b) mass selection (c) pureline selection (d) hybridisation
2. Pusa Komal is a disease resistant variety of _____.
(a) sugarcane (b) rice (c) cow pea (d) maize
3. Himgiri developed by hybridisation and selection for disease resistance against rust pathogens is a variety of _____.
(a) chilli (b) maize (c) sugarcane (d) wheat
4. The miracle rice which saved millions of lives and celebrated its 50th birthday is _____
(a) IR 8 (b) IR 24 (c) Atomita 2 (d) Ponni
5. Which of the following is used to produce products useful to humans by biotechnology techniques?
(a) enzyme from organism (b) live organism (c) vitamins (d) both (a) and (b)
6. We can cut the DNA with the help of
(a) scissors (b) restriction endonucleases (c) knife (d) RNAase
7. rDNA is a
(a) vector DNA (b) circular DNA (c) recombinant of vector DNA and desired DNA (d) satellite DNA
9. DNA fingerprinting is based on the principle of identifying ---------- sequences of DNA
(a) single stranded (b) mutated (c) polymorphic (d) repititive

10. Organisms with modified endogenous gene or a foregin gene are also known as
(a) transgenic organsims (b) genetically modified (c) mutated (d) both a and b

11. In a hexaploid wheat (2n = 6 x = 42) the haploid (n) and the basic(x) number of chromosomes are
(a) n = 7 and x = 21 (b) n = 21 and x = 21 (c) n = 7 and x = 7 (d) n = 21 and x = 7

Fill in the blanks:

1. Economically important crop plants with superior quality are raised by_____.
2. A protein rich wheat variety is _____.
3. _____is the chemical used for doubling the chromosomes.
4. The scientific process which produces crop plants enriched with desirable nutrients are called _____.
5. Rice normally grows well in alluvial soil, but _____ is a rice variety produced by mutation breeding that grows well in saline soil.
6. _____ technique made it possible to genetically engineer living organism.
7. Restriction endonucleases cut the DNA molecule at specific positions known as _____.
8. Similar DNA fingerprinting is obtained for _____.
9. _____ cells are undifferentiated mass of cells.
10. In gene cloning the DNA of interest is integrated in a _____.

Match the following:

Column A		Column B
1. Sonalika	-	Phaseolus mungo
2. IR 8	-	Sugarcane
3. Saccharum	-	Semi-dwarf wheat
4. Mung No. 1	-	Ground nut
5. TMU – 2	-	Semi-dwarf Rice
6. Insulin	-	Bacillus thuringienesis
7. Bt toxin	-	Beta carotene
8. Golden rice	-	first hormone produced using rDNA technique

21. HEALTH AND DISEASES

Choose the correct answer:

1. Tobacco consumption is known to stimulate secretion of adrenaline. The component causing this could be
(a) Nicotine (b) Tannic acid (c) Curcumin (d) heptin
2. World 'No Tobacco Day' is observed on
(a) May 31 (b) June 6 (c) April 22 (d) October 2
3. Cancer cells are more easily damaged by radiations than normal cells because they are
(a) Different in structure (b) Non dividing (c) Starved mutation (d) Undergoing rapid division

4. Which type of cancer affects lymph nodes and spleen?
(a) Carcinoma (b) Sarcoma (c) Leukemia (d) Lymphoma
5. Excessive consumption of alcohol leads to
(a) Loss of memory (b) Cirrhosis of liver (c) State of hallucination (d) Supression of brain
6. Coronary heart disease is due to
(a) *Streptococci* bacteria (b) Inflammation of pericardium
(c) Weakening of heart valves (d) Insufficient blood supply to heart muscles

7. Cancer of the epithelial cells is called
(a) Leukemia (b) Sarcoma (c) Carcinoma (d) Lipoma

8. Metastasis is associated with
(a) Malignant tumour (b) Benign tumour (c) Both (a) and (b) (d) Crown gall tumour

9. Polyphagia is a condition seen in
(a) Obesity (b) Diabetes mellitus (c) Diabetes insipidus (d) AIDS

10. Where does alcohol effect immediately after drinking?
(a) eyes (b) auditory region (c) liver (d) central nervous system

Expand the following abbreviations:

1. IDDM 2. HIV 3. BMI 4. AIDS 5. CHD 6. NIDDM

Match the following:

1. Sarcoma	-	Stomach cancer
2. Carcinoma	-	Excessive thirst
3. Polydipsia	-	Excessive hunger
4. Polyphagia	-	Lack of blood flow to heart muscle
5. Myocardial Infarction	-	Connective tissue cancer

Fill in the blanks:

1. Cirrhosis is caused in liver due to excessive use of _____
2. A highly poisonous chemicals derived from tobacco is _____
3. Blood cancer is called _____.
4. Less response of a drug to a specific dose with repeated use is called _____
5. Insulin resistance is a condition in _____diabetes mellitus.

Analogy type questions. Identify the first words and their relationship and suggest a suitable word for the fourth blank:

1. Communicable: AIDS: Non communicable: _____
2. Chemotherapy: Chemicals: Radiation therapy: _____
3. Hypertension: Hyper cholesterolomia: Glycosuria: _____

22. ENVIRONMENTAL MANAGEMENT

Choose the correct answer:

1. Which of the following is / are a fossil fuel? i.Tar ii.Coal iii.Petroleum
(a) i only (b) i and ii (c) ii and iii (d) i, ii and iii
2. What are the steps will you adopt for better waste management?
(a) reduce the amount of waste formed (b) reuse the waste (c) recycle the waste (d) all of the above
3. The gas released from vehicles exhaust are i.carbon monoxide ii.Sulphur dioxide iii.Oxides of nitrogen
(a) i and ii (b) i and iii (c) ii and iii (d) i, ii and iii
4. Soil erosion can be prevented by
(a) deforestation (b) afforestion (c) over growing (d) removal of vegetation
5. A renewable source of energy is
(a) petroleum (b) coal (c) nuclear fuel (d) trees
6. Soil erosion is more where there is
(a) no rain fall (b) low rainfall (c) rain fall is high (d) none of these
7. An inexhaustible resources is
(a) wind power (b) soil fertility (c) wild life (d) all of the above
8. Common energy source in village is
(a) electricity (b) coal (c) biogas (d) wood and animal dung

9. Green house effect refers to
   (a) cooling of earth (b) trapping of UV rays (c) cultivation of plants (d) warming of earth
10. A cheap, conventional, commercial and inexhaustible source of energy is
   (a) hydropower (b) solar energy (c) wind energy (d) thermal energy
11. Global warming will cause
   (a) raise in level of oceans (b) melting of glaciers (c) sinking of islands (d) all of these
12. Which of the following statement is wrong with respect to wind energy
   (a) wind energy is a renewable energy
   (b) the blades of wind mill are operated with the help of electric motor
   (c) production of wind energy is pollution free
   (d) usage of wind energy can reduce the consumption of fossil fuels.

Fill in the blanks:

1. Deforestation leads to _____ in rainfall.
2. Removal of soil particles from the land is called _____.
3. Chipko movement is initiated against _____.
4. _____ is a biosphere reserve in Tamilnadu.
5. Tidal energy is _____ type of energy.
6. Coal, petroleum and natural gas are called _____ fuels.
7. _____ is the most commonly used fuel for the production of electricity.

Match the following:

1. Soil erosion	-	energy saving
2. Bio gas	-	acid rain
3. Natural gas	-	removal of vegetation
4. Green house gas	-	renewable energy
5. CFL bulbs	-	CO_2
6. Wind	-	non-renewable energy
7. Solid waste	-	lead and heavy metals

23. VISUAL COMMUNICATION

Choose the best answer:

1. Which software is used to create animation?
   a) Paint b) PDF c) MS Word d) Scratch
2. All files are stored in the _____
   a) Folder b) box c) Pai d) scanner
3. Which is used to build scripts?
   a) Script area b) Block palette c) stage d) sprite
4. Which is used to edit programs?
   a) Inkscape b) script editor c) stage d) sprite
5. Where you will create category of blocks?
   a) Block palette b) Block menu c) Script area d) sprite

Match the Following:

1. Script Area	-	Type notes
2. Folder	-	Animation software
3. Scratch	-	Edit programs
4. Costume editor	-	Store files
5. Notepad	-	Build Scripts

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ALL THE BEST

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SCIENCE 2 & 5 - MARK QUESTIONS

1. LAWS OF MOTION

Answer briefly:

1. Define inertia. Give its classification.
2. Classify the types of force based on their application.
3. If a 5 N and 15 N forces are acting opposite to one another. Find the resultant force and the direction of action of the resultant force.
4. Differentiate mass and weight.
5. Define moment of a couple.
6. State the principle of moments.
7. State Newton's second law.
8. Why a spanner with a long handle is preferred to tighten screws in heavy vehicles?
9. While catching a cricket ball the fielder lowers his hands backwards. Why?
10. How does an astronaut float in a space shuttle?

Answer in detail:

1. What are the types of inertia? Give an example for each type.
2. State Newton's laws of motion?
3. Deduce the equation of a force using Newton's second law of motion.
4. State and prove the law of conservation of linear momentum.
5. Describe rocket propulsion.
6. State the universal law of gravitation and derive its mathematical expression.
7. Give the applications of gravitation.

2. OPTICS

Answer Briefly:

1. What is refractive index?
2. State Snell's law.
3. Draw a ray diagram to show the image formed by a convex lens when the object is placed between F and 2F.
4. Define dispersion of light.
5. State Rayleigh's law of scattering.
6. Differentiate convex lens and concave lens.
7. What is power of accommodation of eye?
8. What are the causes of 'Myopia'?
9. Why does the sky appear in blue colour?
10. Why are traffic signals red in colour?

Give the answer in detail:

1. List any five properties of light.
2. Explain the rules for obtaining images formed by a convex lens with the help of ray diagram.
3. Differentiate the eye defects: Myopia and Hypermetropia.
4. Explain the construction and working of a 'Compound Microscope'.

3. THERMAL PHYSICS

Answer in briefly:

1. Define one calorie.
2. Distinguish between linear, arial and superficial expansion.
3. What is co-efficient of cubical expansion?
4. State Boyle's law.
5. State-the law of volume.
6. Distinguish between ideal gas and real gas.
7. What is co-efficient of real expansion?
8. What is co-efficient of apparent expansion?

Answer in detail:

1. Derive the ideal gas equation.
2. Explain the experiment of measuring the real and apparent expansion of a liquid with a neat diagram.

4. ELECTRICITY

Very short answer questions:

1. Define the unit of current.
2. What happens to the resistance, as the conductor is made thicker?
3. Why is tungsten metal used in bulbs, but not in fuse wires?
4. Name any two devices, which are working on the heating effect of the electric current.

Short answer questions:

1. Define electric potential and potential difference.
2. What is the role of the earth wire in domestic circuits?
3. State Ohm's law.
4. Distinguish between the resistivity and conductivity of a conductor.
5. What connection is used in domestic appliances and why?
6. Explain the component and draw the symbols of electric circuit.

Long answer questions:

1. With the help of a circuit diagram derive the formula for the resultant resistance of three resistances connected:
   a) in series and b) in parallel.
2. a) What is meant by electric current?
   b) Name and define its unit.
   c) Which instrument is used to measure the electric current? How should it be connected in a circuit?

3. a) State Joule's law of heating.
   b) An alloy of nickel and chromium is used as the heating element. Why?
   c) How does a fuse wire protect electrical appliances?
4. Explain about domestic electric circuits. (Circuit diagram not required)
5. a) What are the advantages of LED TV over the normal TV?
   b) List the merits of LED bulb.

5. ACOUSTICS

Answer very briefly:

1. What is a longitudinal wave?
2. What is the audible range of frequency?
3. What is the minimum distance needed for an echo?
4. What will be the frequency sound having 0.20 m as its wavelength, when it travels with a speed of 331 ms^{-1} ?
5. Name three animals, which can hear ultrasonic vibrations.

Answer briefly:

1. Why does sound travel faster on a rainy day than on a dry day?
2. Why does an empty vessel produce more sound than a filled one?
3. Air temperature in the Rajasthan desert can reach 46°C. What is the velocity of sound in air at that temperature? (V_0 = 331 m s^{-1})
4. Explain why, the ceilings of concert halls are curved.
5. Mention two cases in which there is no Doppler effect in sound?

Answer in Detail:

1. What are the factors that affect the speed of sound in gases?
2. What is mean by reflection of sound? Explain
   (a) Reflection at the boundary of a rarer medium
   (b) Reflection at the boundary of a denser medium
   (c) Reflection at curved surfaces.
3. a) What do you understand by the term 'ultrasonic vibration'?
   b) State three uses of ultrasonic vibrations.
   c) Name three animals which can hear ultrasonic vibrations.
4. What is an echo?
   a) State two conditions necessary for hearing an echo.
   b) What are the medical applications of echo?
   c) How can you calculate the speed of sound using echo?

6. NUCLEAR PHYSICS

Answer in one or two word (Very Short Answer):

1. Who discovered natural radioactivity?
2. Which radioactive material is present in the ore of pitchblende?
3. Write any two elements which are used for inducing radioactivity?
4. Write the name of the electromagnetic radiation which is emitted during a natural radioactivity.
5. If A is a radioactive element which emits an α - particle and produces $_{104}Rf^{259}$. Write the atomic number and mass number of the element A.
6. What is the average energy released from a single fission process?
7. Which hazardous radiation is the cause for the genetic disease?
8. What is the amount of radiation that may cause death of a person when exposed to it?

9. When and where was the first nuclear reactor built?
10. Give the SI unit of radioactivity.
11. Which material protects us from radiation?

Answer the following questions in few sentences:

1. Write any three features of natural and artificial radioactivity.
2. Define critical mass.
3. Define one Roentgen.
4. State Soddy and Fajan's displacement law.
5. Give the function of control rods in a nuclear reactor.
6. In Japan, some of the new born children are having congenital diseases. Why?
7. Mr. Ramu is working as an X - ray technician in a hospital. But, he does not wear the lead aprons. What suggestion will you give to Mr. Ramu?
8. What is stellar energy?
9. Give any two uses of radio isotopes in the field of agriculture?
10. What is stellar energy?

Answer the following questions in detail:

1. Explain the process of controlled and uncontrolled chain reactions.
2. Compare the properties of alpha, beta and gamma radiations.
3. What is a nuclear reactor? Explain its essential parts with their functions.

7. ATOMS AND MOLECULES

Short answer questions:

1. Define Relative atomic mass.
2. Write the different types of isotopes of oxygen and its percentage abundance.
3. Define Atomicity
4. Give any two examples for hetero diatomic molecules.
5. What is Molar volume of a gas?
6. Find the percentage of nitrogen in ammonia.

Long answer questions:

1. Calculate the number of water molecule present in one drop of water which weighs 0.18 g.
2. $N_2 + 3\ H_2 \rightarrow 2\ NH_3$

   (The atomic mass of nitrogen is 14, and that of hydrogen is 1)

   1 mole of nitrogen (_____g) + 3 moles of hydrogen (_____ g) → 2 moles of ammonia (_____ g)
3. Calculate the number of moles in

   (i) 27g of Al (ii) 1.51×10^{23} molecules of NH_4Cl
4. Give the salient features of "Modern atomic theory".
5. Derive the relationship between Relative molecular mass and Vapour density.

8. PERIODIC CLASSIFICATION OF ELEMENTS

Short answer questions:

1. A is a reddish brown metal, which combines with O_2 at < 1370 K gives B, a black coloured compound. At a temperature > 1370 K, A gives C which is red in colour. Find A,B and C with reaction.

2. A is a silvery white metal. A combines with O_2 to form B at 800^oC, the alloy of A is used in making the aircraft. Find A and B.
3. What is rust? Give the equation for formation of rust.
4. State two conditions necessary for rusting of iron.

Long answer questions:

1. (a) State the reason for addition of caustic alkali to bauxite ore during purification of bauxite.
   (b) Along with cryolite and alumina, another substance is added to the electrolyte mixture. Name the substance and give one reason for the addition.
2. The electronic configuration of metal A is 2, 8, 18, 1.
   The metal A when exposed to air and moisture forms B a green layered compound. A with con. H_2SO_4 forms C and D along with water. D is a gaseous compound. Find A, B, C and D.
3. Explain smelting process.

9. SOLUTIONS

Short answer questions:

1. Define the term 'Solution'.
2. What is mean by binary solution?
3. Give an example each (i) gas in liquid (ii) solid in liquid (iii) solid in solid (iv) gas in gas.
4. What is aqueous and non-aqueous solution? Give an example.
5. Define Volume percentage.
6. The aquatic animals live more in cold region. Why?
7. Define Hydrated salt.
8. A hot saturated solution of copper sulphate forms crystals as it cools. Why?
9. Classify the following substances into deliquescent, hygroscopic.
   Conc. Sulphuric acid, Copper sulphate penta hydrate, Silica gel, Calcium chloride, and Gypsum salt.

Long answer question:

1. Write notes on (i) saturated solution (ii) unsaturated solution.
2. Write notes on various factors affecting solubility.
3. (a) What happens when $MgSO_4.7H_2O$ is heated? Write the appropriate equation.
   (b) Define solubility.
4. In what way hygroscopic substances differ from deliquescent substances.
5. A solution is prepared by dissolving 45 g of sugar in 180 g of water. Calculate the mass percentage of solute.
6. 3.5 litres of ethanol is present in 15 litres of aqueous solution of ethanol. Calculate volume percent of ethanol solution.

10. TYPES OF CHEMICAL REACTIONS

Short answer questions:

1. What are called thermolysis reactions?
2. Explain the types of double displacement reactions with examples.
3. Explain the factors influencing the rate of a reaction.
4. How does pH play an important role in everyday life?
5. What is a chemical equilibrium? What are its characteristics?

Answer in detail:

1. When an aqueous solution of potassium chloride is added to an aqueous solution of silver nitrate, a white precipitate is formed. Give the chemical equation of this reaction.

2. Why does the reaction rate of a reaction increase on raising the temperature?

3. Define combination reaction. Give one example for an exothermic combination reaction.
4. Differentiate reversible and irreversible reactions.

11. CARBON AND ITS COMPOUNDS

Short answer questions:

1. Name the simplest ketone and give its structural formula.
2. Classify the following compounds based on the pattern of carbon chain and give their structural formula
   (i) Propane (ii) Benzene (iii) Cyclobutane (iv) Furan
3. How is ethanoic acid prepared from ethanol? Give the chemical equation.
4. How do detergents cause water pollution? Suggest remedial measures to prevent this pollution?
5. Differentiate soaps and detergents.

Long answer questions:

1. What is called homologous series? Give any three of its characteristics?
2. Arrive at, systematically, the IUPAC name of the compound: $CH_3–CH_2–CH_2–OH$.
3. How is ethanol manufactured from sugarcane?
4. Give the balanced chemical equation of the following reactions:
   (i) Neutralization of NaOH with ethanoic acid.
   (ii) Evolution of carbon dioxide by the action of ethanoic acid with $NaHCO_3$.
   (iii) Oxidation of ethanol by acidified potassium dichromate.
   (iv) Combustion of ethanol.
5. Explain the mechanism of cleansing action of soap.

12. PLANT ANATOMY AND PLANT PHYSIOLOGY

Answer in a sentence:

1. What is collateral vascular bundle?
2. Where does the carbon that is used in photosynthesis come from?
3. What is the common step in aerobic and anaerobic pathway?
4. Name the phenomenon by which carbohydrates are oxidized to release ethyl alcohol.

Short answer questions:

1. Give an account on vascular bundle of dicot stem.
2. Write a short note on mesophyll.
3. Draw and label the structure of oxysomes.
4. Name the three basic tissues system in flowering plants.
5. What is photosynthesis and where in a cell does it occur?
6. What is respiratory quotient?
7. Why should the light dependent reaction occur before the light independent reaction?
8. Write the reaction for photosynthesis?

Long answer questions;

1. Differentiate the following
   (a) Monocot root and Dicot root
   (b) Aerobic and Anaerobic respiration
2. Describe and name three stages of cellular respiration that aerobic organisms use to obtain energy from glucose.

3. How does the light dependent reaction differ from the light independent reaction? What are the end product and reactants in each? Where does each reaction occur within the chloroplast?

13. STRUCTURAL ORGANISATION OF ANIMALS

Answer in a sentence:

1. Give the common name of the ***Hirudinaria granulosa***.
2. How does leech respire?
3. Write the dental formula of rabbit.
4. How many pairs of testes are present in leech?
5. How is diastema formed in rabbit?
6. What organs are attached to the two bronchi?
7. Which organ acts as suction pump in leech?
8. What does CNS stand for?
9. Why is the teeth of rabbit called heterodont?
10. How does leech suck blood from the host?

Short answer questions:

1. Why are the rings of cartilages found in trachea of rabbit?
2. List out the parasitic adaptations in leech.

Long answer questions:

1. How is the circulatory system designed in leech to compensate the heart structure?
2. How does locomotion take place in leech?
3. Explain the male reproductive system of rabbit with a labeled diagram.

14. TRANSPORTATION IN PLANTS AND CIRCULATION IN ANIMALS

Answer in a word or sentence:

1. Name two layered protective covering of human heart.
2. What is the shape of RBC in human blood?
3. Why is the colour of the blood red?
4. Which kind of cells is found in the lymph?
5. Name the heart valve associated with the major arteries leaving the ventricles.
6. Mention the artery which supplies blood to the heart muscle.

Short answer questions:

1. What causes the opening and closing of guard cells of stomata during transpiration?
2. What is cohesion?
3. Trace the pathway followed by water molecules from the time it enters a plant root to the time it escapes into the atmosphere from a leaf.
4. What would happen to the leaves of a plant that transpires more water than its absorption in the roots?
5. Describe the structure and working of the human heart.
6. Why is the circulation in man referred to as double circulation?
7. What are heart sounds? How are they produced?
8. What is the importance of valves in the heart?
9. Who discovered Rh factor? Why was it named so?
10. How are arteries and veins structurally different from one another?
11. Why is the Sinoatrial node called the pacemaker of heart?

12. Differentiate between systemic circulation and pulmonary circulation.
13. The complete events of cardiac cycle last for 0.8 sec. What is the timing for each event?

Long answer questions:

1. How do plants absorb water? Explain.
2. What is Transpiration? Give the importance of transpiration.
3. Why are leucocytes classified as granulocytes and agranulocytes? Name each cell and mention its functions.
4. Differentiate between systole and diastole. Explain the conduction of heart beat.
5. Enumerate the functions of blood.

15. NERVOUS SYSTEM

Short answer question:

1. Define stimulus.
2. Name the parts of the hind brain.
3. What are the structures involved in the protection of brain?
4. Give an example for conditioned reflexes.
5. Which acts as a link between the nervous system and endocrine system?
6. Define reflex arc.

Differentiate between

1. Voluntary and involuntary actions.
2. Medullated and non-medullated nerve fibre.

Long answer question:

1. With a neat labeled diagram explain the structure of a neuron.
2. Illustrate the structure and functions of brain.
3. What will you do if someone pricks your hand with a needle? Elucidate the pathway of response with a neat labeled diagram.
4. Describe the structure of spinal cord.
5. How nerve impulses are transferred from one neuron to next neuron?
6. Classify neurons based on its structure.

16. PLANT AND ANIMAL HORMONES

Answer in a word or sentence:

1. Which hormone promotes the production of male flowers in Cucurbits?
2. Write the name of a synthetic auxin.
3. Which hormone induces parthenocarpy in tomatoes?
4. What is the hormone responsible for the secretion of milk in female after child birth?
5. Name the hormone which regulates water and mineral metabolism in man.
6. Which hormone is secreted during emergency situation in man?
7. Which gland secretes digestive enzymes and hormones?
8. Name the endocrine glands associated with kidneys.

Short answer questions:

1. What are synthetic auxins? Give examples.
2. What is bolting? How can it be induced artificially?
3. Bring out any two physiological activities of abscisic acid
4. What will you do to prevent leaf fall and fruit drop in plants? Support your answer with reason.
5. What are chemical messengers?
6. Write the differences between endocrine and exocrine gland.

7. What is the role of parathormone?
8. What are the hormones secreted by posterior lobe of the pituitary gland? Mention the tissues on which they exert their effect.
9. Why are thyroid hormones refered as personality hormone?
10. Which hormone requires iodine for its formation? What will happen if intake of iodine in our diet is low?

Long answer questions:

1. (a) Name the gaseous plant hormone. Describe its three different actions in plants. (b) Which hormone is known as stress hormone in plants? Why?
2. Describe an experiment which demonstrates that growth stimulating hormone is produced at the tip of coleoptiles.
3. Write the physiological effects of gibberellins.
4. Where are estrogens produced? What is the role of estrogens in the human body?
5. What are the conditions which occur due to lack of ADH and insulin? How are the conditions different from one another?

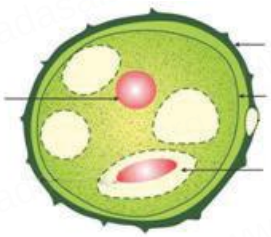
17. REPRODUCTION IN PLANTS AND ANIMALS

Answer in a word or sentence:

1. If one pollen grain produces two male gametes, how many pollen grains are needed to fertilize 10 ovules?
2. In which part of the flower germination of pollen grains takes place?
3. Name two organisms which reproduce through budding.
4. Mention the function of endosperm.
5. Name the hormone responsible for the vigorous contractions of the uterine muscles.
6. What is the enzyme present in acrosome of sperm?
7. When is World Menstrual Hygiene Day observed?
8. What is the need for contraception?
9. Name the part of the human female reproductive system where the following occurs.
   a. Fertilization b. Implantation

Short answer question:

1. What will happen if you cut planaria into small fragments?
2. Why is vegetative propagation practiced for growing some type of plants?
3. How does binary fission differ from multiple fission?
4. Define triple fusion.
5. Write the characteristics of insect pollinated flowers.
6. Name the secondary sex organs in male
7. What is colostrums? How milk production is hormonally regulated?
8. How can menstrual hygiene be maintained during menstrual days?
9. How does developing embryo gets its nourishment inside the mother's body?
10. Identify the parts A, B, C and D



11. Write the events involved in the sexual reproduction of a flowering plant.
    a. Discuss the first event and write the types.
    b. Mention the advantages and the disadvantages of that event.
12. Why are the human testes located outside the abdominal cavity? Name the pouch in which they are present.
13. Luteal phase of the menstrual cycle is also called the secretory phase. Give reason.
14. Why are family planning methods not adopted by all the people of our country?

Long answer questions:

1. With a neat labeled diagram describe the parts of a typical angiospermic ovule.
2. What are the phases of menstrual cycle? Indicate the changes in the ovary and uterus.

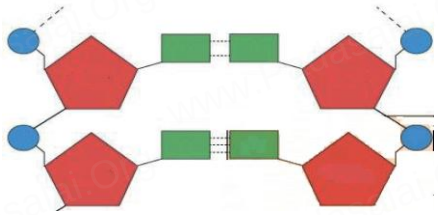
18. HEREDITY

Answer in a sentence:

1. What is a cross in which inheritance of two pairs of contrasting characters are studied?
2. Name the conditions when both the alleles are identical?
3. A garden pea plant produces axial white flowers. Another of the same species produced terminal violet flowers. Identify the dominant trait?
4. What is the name given to the segments of DNA, which are responsible for the inheritance of a particular character?
5. Name the bond which binds the nucleotides in a DNA.

Short answers questions:

1. Why did Mendel select pea plant for his experiments?
2. What do you understand by the term phenotype and genotype?
3. What are allosomes?
4. What are Okazaki fragments?
5. Why is euploidy considered to be advantageous to both plants and animals?
6. A pure tall plant (TT) is crossed with pure dwarf plant (tt), what would be the F_1 and F_2 generations? Explain.
7. Explain the structure of a chromosome.
8. Label the parts of the DNA in the diagram given below. Explain the structure briefly.



Long answer questions:

1. Explain with an example the inheritance of dihybrid cross. How is it different from monohybrid cross?
2. How is the structure of DNA organised? What is the biological significance of DNA?
3. The sex of the new born child is a matter of chance and neither of the parents may be considered responsible for it. What would be the possible fusion of gametes to determine the sex of the child?

19. ORIGIN AND EVOLUTION OF LIFE

Answer in a word or sentence:

1. A human hand, a front leg of a cat, a front flipper of a whale and a bat's wing look dissimilar and adapted for different functions. What is the name given to these organs?
2. Which organism is considered to be the fossil bird?
3. What is the study of fossils called?

Short answers questions:

1. The degenerated wing of a kiwi is an acquired character. Why is it an acquired character?
2. Why is Archaeopteryx considered to be a connecting link?
3. Define Ethnobotany and write its importance.
4. How can you determine the age of the fossils?

Long answer questions:

1. Natural selection is a driving force for evolution-How?
2. How do you differentiate homologous organs from analogous organs?
3. How does fossilization occur in plants?

20. BREEDING AND BIOTECHNOLOGY

Answer in a sentence:

1. Give the name of wheat variety having higher dietary fibre and protein.
2. Semi-dwarf varieties were introduced in rice. This was made possible by the presence of dwarfing gene in rice. Name this dwarfing gene.
3. Define genetic engineering.
4. Name the types of stem cells.
5. What are transgenic organisms?
6. State the importance of biofertiliser.

Short answers questions:

1. Discuss the method of breeding for disease resistance.
2. Name three improved characteristics of wheat that helped India to achieve high productivity.
3. Name two maize hybrids rich in amino acid lysine
4. Distinguish between
   (a) Somatic gene therapy and germ line gene therapy.
   (b) Undifferentiated cells and differentiated cells.
5. State the applications of DNA fingerprinting technique.
6. How are stem cells useful in regenerative process?
7. Differentiate between out breeding and inbreeding.

Long answers questions:

1. What are the effects of hybrid vigour in animals?
2. Describe mutation breeding with an example.
3. Biofortification may help in removing hidden hunger. How?
4. With a neat labeled diagram explain the techniques involved in gene cloning.
5. Discuss the importance of biotechnology in the field of medicine.

21. HEALTH AND DISEASES

Answer in a sentence:

1. What are psychotropic drugs?
2. Mention the diseases caused by tobacco smoke.
3. What are the contributing factors for Obesity?
4. What is adult onset diabetes?
5. What is metastasis?
6. How does insulin deficiency occur?

Short answer questions:

1. What are the various routes by which transmission of human immune deficiency virus takes place ?
2. How is a cancer cell different from a normal cell?
3. Differentiate between Type-1 and Type-2 diabetes mellitus
4. Why is a dietary restriction recommended for an obese individual?
5. What precautions can be taken for preventing heart diseases?

Long answer questions:

1. Suggest measures to overcome the problems of an alcoholic.
2. Changes in lifestyle is a risk factor for occurrence of cardiovascular diseases. Can it be modified? If yes, suggest measures for prevention.

22. ENVIRONMENTAL MANAGEMENT

Answer in a sentence:

1. What will happen if trees are cut down?
2. What would happen if the habitat of wild animals is disturbed?
3. What are the agents of soil erosion?
4. Why fossil fuels are to be conserved?
5. Solar energy is a renewable energy. How?
6. How are e-wastes generated?

Short answer questions:

1. What is the importance of rainwater harvesting?
2. What are the advantages of using biogas?
3. What are the environmental effects caused by sewage?
4. What are the consequences of deforestation?

Long answer questions:

1. How does rainwater harvesting structure recharge ground water?
2. How will you prevent soil erosion?
3. What are the sources of solid wastes? How are solid wastes managed?
4. Enumerate the importance of forest.
5. What are the consequences of soil erosion?
6. Why is the management of forest and wildlife resource considered as a challenging task?

23. VISUAL COMMUNICATION

Answer the following:

1. What is Scratch?
2. Write a short note on editor and its types?
3. What is Stage?
4. What is Sprite?

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