LESSON 1 - LAWS OF MOTION

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) 9.8×10^4 N

c) 98×10^4 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

LESSON 2 - OPTICS

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 coloured 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 VB, VG, VR 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) VB = VG = VR b) VB > VG >VR

c) VB < VG < VR d) VB < VG > VR

LESSON 3 THERMAL PHYSICS

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

UNIT 4 ELECTRICITY

I. 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

UNIT 5 ACOUSTICS

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

UNIT 06 NUCLEAR PHYSICS

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. Bequerel 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 ${}_{6}X^{12} \xrightarrow{\alpha \text{ decay}} {}_{Z}Y^{A}$, 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

UNIT 07 ATOMS AND MOLECULES

1. Which of the following has the smallest mass?

a. 6.023 × 1023 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. Th e volume occupied by 4.4 g of CO_2 at S.T.P

a. 22.4 litre b. 2.24 litre c. 0.24 litre d. 0.1 litre

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. 1/12th 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 × 1023 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 20Ca40, 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}

LESSON 8

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) 17th b) 15th c) 18th d) 16th

4. _____ is a relative periodic property

a) atomic radii b) ionic radii

c) electron affinity d) electronegativity

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

LESSON 10

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

LESSON 11

1. $H_2(g) + Cl_2(g) \rightarrow 2HCl(g)$ 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. A 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. Neutralisation 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) → 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) → CO_2(g)

b. 2K(s) + Br_2(l) → 2KBr(s)

c. 2CO(g) + O_2(g) → $2CO_2$(g)

d. 4Fe(s) + $3O_2$(g) → $2Fe_2O_3$(s)

8. Which of the following represents a precipitation reaction?

a. A(s) + B(s) → C(s) + D(s)

b. A(s) + B(aq) → C(aq) + D(l)

c. A(aq) + B(aq) → C(s) + D(aq)

d. A(aq) + B(s) → 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 CaCO3 reacts more rapidly than flaky CaCO3 because of _____.

a. large surface area b. high pressure

c. high concentration d. high temperature

LESSON 11

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.

LESSON 12

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

b) 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

LESSON 13

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

LESSON 14

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

LESSON 15

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

LESSON 16

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

LESSON 17

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

LESSON 18

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 are _____.

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

LESSON 19

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

LESSON 20

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

8. DNA fingerprinting is based on the principle of identifying ---------- sequences of DNA

a. single stranded b. mutated c. polymorphic d. repetitive

9. 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

10. In a hexaploid wheat(2n = 6 x = 42) the haploid (n) and the basic(x) number of chromosomes respectively 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

LESSON 21

1. Tobacco consumption is known to stimulate secretion of adrenaline. The component causing this could be

a) Nicotine b) Tannic acid c) Curcumin d) Leptin

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) Mutated Cells 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 function

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

LESSON 22

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

LESSON 23

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