

SSLC SCIENCE ONE WORD QUESTION AND ANSWER

1. HEREDITY AND EVOLUTION

1. Mendel observed 7 pairs of contrasting characters in *Pisum sativum*. Which one of the following is not a part of that?

- i) Tall and dwarf
ii) Yellow and green seed colour
iii) Terminal and axial flower
iv) Smooth and rough stem

2. Primitive man evolved in _____ i) **Africa** ii) America iii) Australia iv) India

3. Which of the following is inheritable?

- i) an altered gene in sperm**
ii) an altered gene in liver cells
iii) an altered gene in skin cells
iv) an altered gene in udder cells

4. The theory of Natural Selection was proposed by _____.

- i) Charles Darwin** ii) Hugo de Vries iii) Gregor Johann Mendel iv) Baptise Lamarck

5. Somatic gene therapy causes _____.

- i) changes in sperm ii) changes in progeny **iii) changes in body cell** iv) changes in ovum

6. In a pea plant, the yellow colour of the seed dominates over the green colour. The genetic make up of the green colour of the seed can be shown as _____

- i) GG ii) Gg iii) Yy **iv) yy**

7. Some people can roll their tongue and this is a genetically controlled auto-somal dominant character. [Roller = RR / Rr and Non-roller = rr]

A child who can roll the tongue has one brother who is a non-roller and two sisters who are rollers. If both the parents are rollers, the genotypes of their parents would be _____.

- i) RR x RR **ii) Rr x Rr** iii) RR x rr iv) rr x rr

8. Hydra, a multi-cellular invertebrate of phylum cnidaria (coelenterata) can give rise to new offspring by various methods. Choose the method by which the offspring are produced with significant variations.

- i) budding ii) regeneration **iii) sexual reproduction** iv) asexual reproduction

9. The following are the events in the formation of the first cloned animal – the sheep Dolly.

- a) Removal of haploid nucleus from the ovum.
b) Implantation of ovum with diploid nucleus into the surrogate mother.
c) Collection of udder cell from the sheep.
d) Injection of diploid nucleus of udder cell into the enucleated ovum.
e) Development of a young clone.

The correct sequential order of these events is _____.

- i) abcde ii) cabed **iii) cadbe** iv) edcba

10. The following are statements about stem cells:

- a) There are unspecialised / undifferentiated cells.
b) They can be transformed into any type of body cell.
c) They can multiply rapidly to form a large number of similar types of cells.
d) They cannot transform into cardiac cells or nerve cells.
e) They are obtained from reproductive progeny only.

The correct statements are _____:

- i) a, b, c only** ii) c, d, e only iii) a, c, e only iv) b, c, e only

11. In persons suffering from insulin-dependent diabetes, _____ the cells of pancreas are degenerated.

- i) Alpha **ii) Beta** iii) Gamma iv) Delta

12. Identical twins are born as a result of fertilization between _____.

- i) two eggs and two sperms ii) two eggs and one sperm
iii) one egg and one sperm iv) one egg and two sperms

13. Identify the incorrect statement about identical twins.

- i) developed from a single zygote ii) always of the same sex
iii) look alike in many aspects **iv) differ in their blood groups**

14. The correct statement about Neanderthal man is:

- i) the first human like hominid ii) started agriculture
iii) ate meat and walked erectly **iv) buried the dead**

15. The inheritance of characteristics through generation is called "heredity". In Mendel's *Pisum sativum* plant, the genetic material responsible for heredity is _____.

- i) DNA** ii) RNA iii) Protein iv) Cytoplasm

2. IMMUNE SYSTEM

1. Pick out a case of healthy state of an individual.

- i) Mr. X is recovering from an infectious disease.
ii) Mr. Y takes insulin injection everyday .
iii) Mrs. Z is very depressed.
iv) Mr. K does his duty and spends time joyfully.

2. Which one of the following is not socially balanced ?

- i) He enjoys a birthday party.
ii) He behaves rudely over trivial matters.
iii) He adjusts well to the surrounding situation.
iv) He attends to his ailing mother at the hospital.

3. _____ is a bacterial disease.

- i) Meningitis ii) Rabies **iii) Tetanus** iv) Small pox

4. One of the following is transmitted through air. Find it out.

- i) Tuberculosis** ii) Meningitis iii) Typhoid iv) Cholera

5. The most serious form of malaria is caused by *Plasmodium* _____.

- i) ovale ii) malariae **iii) falciparum** iv) vivax

6. An example of protozoan infecting our intestine is _____.

- i) *Plasmodium vivax* **ii) *Entamoeba histolytica***
iii) *Trypanosoma gambiense* iv) *Taenia solium*

7. One of the means of indirect transmission of a disease is _____.

- i) sneezing ii) coughing iii) through placenta **iv) using utensils of patients**

8. When antibodies, extracted from other animals are injected into your body, what kind of immunity do you gain?

- i) Artificially active acquired immunity **ii) Artificially passive acquired immunity**
iii) Naturally active acquired immunity iv) Naturally passive acquired immunity

9. The first vaccine injected into a just born baby is _____.

- i) Oral polio ii) DPT iii) DPT and Oral polio iv) **BCG**

10. In order to lead a healthy life, a person should enjoy physical, mental and social well-being. If a person lacks any one of them, then that person is suffering from _____.

Ans : **disease**

11. A child eats food rich in carbohydrates and avoids protein in its diet. Which type of nutritional deficiency will affect that child?

- i) **Kwashiorkar** ii) Nyctalopia iii) Diabetes iv) Down syndrome

12. Assertion (A) Expulsion of excess unused glucose in the blood through urine is observed in a diabetic mellitus person.

Reason (R) : insulin is not produced in sufficient quantity by pancreas.

i) **Both 'A' and 'R' are true and 'R' explains 'A'.**

ii) Both 'A' and 'R' are true but 'R' doesn't explain 'A'.

iii) Only 'A' is true but 'R' is false.

iv) A is false but 'R' is true.

3. STRUCTURE AND FUNCTIONS OF HUMAN BODY ORGAN SYSTEMS

1. Unipolar neurons are found in the _____.

- i) Brain ii) Spinal Cord iii) **Embryonic nervous tissue** iv) Adult nervous tissue

2. The sensory organs contain _____.

- i) Unipolar neuron ii) **Bipolar neuron** iii) Multipolar neuron iv) Medullated neuron

3. The part of brain which controls emotional reactions in our body is _____.

- i) Cerebellum ii) Cerebrum iii) Thalamus iv) **Hypothalamus**

4. One of the following is a part of the brain stem. Pick it out.

- i) Forebrain and midbrain ii) **Midbrain and hindbrain**
iii) Forebrain and hindbrain iv) Forebrain and spinal cord

5. Spinal nerves are _____.

- i) sensory nerves ii) motor nerves iii) **mixed nerves** iv) innervating the brain

6. An endocrine gland found in the neck is _____.

- i) adrenal gland ii) pituitary gland iii) **thyroid gland** iv) pancreas

7. An endocrine gland which is both exocrine and endocrine is the _____.

- i) **pancreas** ii) pituitary iii) thyroid iv) adrenal

8. Normal blood glucose level in 1dl of blood is _____.

- i) 80-100 mg/dl ii) **80-120 mg/dl** iii) 80-150 mg/dl iv) 70-120 mg/dl

9. The "T" lymphocytes are differentiated to resist infection in the _____.

- i) parathyroid gland ii) lymph gland iii) **thymus gland** iv) adrenal gland

10. In Meiosis-I, the pairing of homologous chromosomes take place during _____ stage.

- i) leptotene ii) **zygotene** iii) pachytene iv) diplotene

11. The two systems of the human body which help in the control and co-ordination of metabolic activities are _____.

- i) digestive and circulatory ii) respiratory and circulatory
iii) excretory and skeletal iv) **nervous and endocrine**

12. Neurotransmitters are released at the synapse by _____.

- i) Tips of Dendrites
ii) **Synaptic Knobs**
iii) Organelles of Cyton
iv) Myelin sheath of Axon

13. The endocrine gland related to the immune system is _____.

- i) Thyroid
ii) **Thymus**
iii) Adrenal
iv) Pineal

14. The hormone administered by doctors to a pregnant woman to help in childbirth during the time of natural delivery is _____.

- i) Oestrogen
ii) Progesterone
iii) Insulin
iv) **Relaxin**

15. The important event of meiosis is the crossing over. It occurs during _____.

- i) Leptotene
ii) **Pachytene**
iii) Diplotene
iv) Zygotene

16. Reduction division is the process by which gametes are produced. The cells in which reduction division take place are _____.

- i) **germinal epithelial cells**
ii) the sensory epithelial cells
iii) cuboidal epithelial cells
iv) columnar epithelial cells

17. In Amoeba, the cell division takes place _____.

- i) involving changes in the chromatin reticulum
ii) **without involving changes in the chromatin reticulum**
iii) leading to reduction in the number of chromosomes
iv) without dividing the nucleus

18. Pick out the item which has sequential arrangement.

- i) zygotene -> Leptotene -> Pachytene -> Diplotene -> Diakinesis
ii) Diakinesis -> zygotene -> Leptotene -> Pachytene -> Diplotene
iii) **Leptotene -> zygotene -> Pachytene -> Diplotene -> Diakinesis**

19. Polio is a viral disease and the affected child suffers from physical disability of limbs. Which system of the body is mostly affected due to this infection?

- i) **Nervous system**
ii) Digestive system
iii) Respiratory system
iv) Excretory system

20. Blinking when a beam of light is suddenly focussed on the eyes and sudden withdrawal of hand upon touching a hot body are some of the examples of reflex actions. Which part of the central nervous system acts as the centre these actions?

- i) Forebrain
ii) **Spinal cord**
iii) Hindbrain
iv) Synapse

21. The following are the parts of a neuron:

- a) Axon
b) Terminal branches
c) Cyton
d) Dendrites

The correct pathway of a nerve impulse through these parts are _____.

- i) badc
ii) **dcab**
iii) bdac
iv) adbc

22. For minor surgeries in the body, doctors administer local anaesthesia to a part of the body so that the pain will not be felt by the patient. At which part, do you think, the nerve impulse is being arrested due to the effect of anaesthesia?

- i) at cyton
ii) at axon
iii) **at synapse**
iv) in the middle of axon

23. Assertion (A) : All spinal nerves are mixed nerves.

Reason (R) : Each spinal nerve has a sensory root and a motor root.

- i) **Both 'A' and 'R' are true and 'R' explains 'A'.**
ii) Both 'A' and 'R' are true but 'R' doesn't explain 'A'.
iii) Only 'A' is true but 'R' is false.
iv) 'A' is false but 'R' is true.

4.REPRODUCTION IN PLANTS

1. The method of reproduction in unicellular organisms like amoeba and bacteria in which they split into two equal halves and produce new ones is called _____.
- i) fragmentation **ii) binary fission** iii) budding iv) spore formation
2. In sexual reproduction of flowering plants, the first event involved in this is _____.
- i) fertilization ii) germination iii) regeneration **iv) pollination**
3. Which of the following statement is true?
- i) Thin-walled non-mobile spores are called zoospores.
ii) A motile asexual spore produced by some algae, bacteria and fungi are Akinetes.
iii) Uninucleate, non-motile, asexual spores produced by fungus are called conidia.
iv) Thick-walled vegetative cells produced by algae during adverse conditions are called aplanospores.
4. The fertilized ovary is a fruit. The fruit that develops from a single flower with multi carpellary, apocarpous superior ovary is _____.
- i) Aggregate fruit** ii) Composite fruit iii) Simple fruit iv) Multiple fruit
5. If a water soaked seed is pressed, a small drop of water comes out through the _____.
- i) stomata ii) lenticel **iii) micropyle** iv) radicle
6. The mango fruit is called a stone fruit because it has _____.
- i) skinny epicarp ii) stony mesocarp iii) fleshy endocarp **iv) hard endocarp**
7. Pick out the wrong statement.
- i) In a dicot seed there is a short longitudinal whitish ridge called the raphae.
ii) The minute opening in a dicot seed is known as micropyle.
iii) The rudimentary stem portion is known as radicle.
iv) The rudimentary root portion is called radicle.
8. Consider the following statements regarding the dispersal of fruits and seeds by wind and select the correct answer.
- i) Fruits and seeds are dispersed with a sudden jerk by an explosive mechanism.
ii) The fruits of tridax carry a persistent calyx modified into pappus.
iii) The fruits of xanthium have sharp pointed stiff hooks.
iv) The mesocarp of coconut is fibrous.
9. The product of triple fusion which acts as nutritive tissue for the development of an embryo is _____.
- i) zygote ii) placenta iii) scutellum **iv) endosperm**
10. The disadvantage of self-pollination is _____.
- i) There is no wastage of pollen grains. **ii) The seeds are less in number.**
iii) Self-pollination is sure in bisexual flowers iv) Flowers need not depend on agents of pollination.
11. The flower is important to a plant because it helps in _____.
- i) attracting ii) production of nectar iii) pollination **iv) sexual reproduction**
12. The essential organs of the flower are _____.
- i) Calyx and Corolla **ii) Androecium and Gynoecium**
iii) Calyx and Androecium iv) Corolla and Gynoecium
13. Cross pollination is important for producing _____.
- i) new varieties of plants ii) plants with better growth
iii) More viable seeds **iv) all of the above**

14. Anemophily occurs in _____ .

- i) Vallisneria **ii) Grass** iii) Coconut iv) Datura

15. Which of the following structure / arrangement favours entamophily ?

- i) Pollen grains with wings and feathery stigma **ii) Colourful petals and nectar secretion**
iii) A bunch of flowers with less pollen iv) Pollen grains with mucous covering.

16. Post-fertilization, the ovule changes into a/an _____ .

- i) seed** ii) fruit iii) endosperm iv) pericarp.

17. Which of the following is correctly matched?

- i) False fruit – mango ii) Multiple fruit – apple
iii) Aggregate fruit – polyalthia iv) Caryopsis – banana

18. Identify the mismatched pair.

- i) Legume – Dry dehiscent fruit ii) Cypsela – Dry indehiscent fruit
iii) Pome – Fleshy fruit **iv) Regma – Resembles legume**

5. A REPRESENTATIVE STUDY OF MAMMALS

1. Select important characteristic features of mammals

- i) four-chambered heart ii) fore-limbs and hind limbs
iii) milk-producing glands iv) post anal tail

2. Carnivorous animals use these teeth to tear flesh.

- i) incisors **ii) canines** iii) premolars iv) molars

3. The Henle's loop of nephron is mainly responsible for reabsorption of water in the kidney. Which of the following has a long loop of Henle in its nephrons to conserve water?

- i) polar bear **ii) camel** iii) frog iv) whale

4. Which blood cells of mammals are concerned with immunity?

- i) Young Erythrocytes **ii) Leucocytes** iii) Thrombocytes iv) Matured Erythrocytes

5. You were given two unlabelled slides with blood smears of an amphibian and a mammal. You would differentiate the blood samples by observing the _____ .

- i) colour **ii) nature of RBC's** iii) nature of WBC's iv) contents of plasma

6. For the digestion of cellulose, an enzyme called cellulase is required. Some mammals lodge cellulase producing bacteria in their digestive system by offering them food and shelter. These mammals are mostly _____.

- i) Herbivores** ii) Carnivores iii) Omnivores iv) Sanguivores

7. Forelimbs of mammals have a common basic structure or pattern, but are different in their usage/ function in different animals. They can be called _____ .

- i) Homologous organs** ii) Analogous organs iii) Vestigial organs iv) Rudimentary organs

8. Sensitive whiskers are found in _____ i) Bat ii) Elephant iii) Deer **iv) Cat**

9. The tusks of elephants are modified _____ **ans : Incisors**

10. Pick out an animal which has a four-chambered stomach.

- i) Elephant ii) Dolphin **iii) Deer** iv) Kangaroo

11. Normal body temperature of man is _____.

- i) **98.4 – 98.6°F** ii) 96.6 – 96.8°F iii) 94.4 – 98.6°F iv) 98.4 – 99.6°F

12. Mitral valve is found between _____.

- i) Right auricle and right ventricle **ii) Left auricle and left ventricle**
iii) Right ventricle and pulmonary artery iv) Left ventricle and aorta

13. Assertion (A) : Mammalian heart is called myogenic heart.

Reason (R): Heartbeat is regulated by a specialized muscle bundle (pacemaker) in mammals.

i) Both 'A' and 'R' are true and 'R' explains 'A'.

ii) Both 'A' and 'R' are true but 'R' doesn't explain 'A'.

iii) 'A' is true but 'R' is false.

iv) A is false but 'R' is true.

14. One of the following groups contains a non-mammalian animal. Pick up the group.

i) dolphin, walrus, porcupine, rabbit, bat

ii) elephant, pig, horse, donkey, monkey

iii) antelope, deer, cow, buffalo, black buck

iv) dog, cat, crocodile, lion, tiger

15. The epidermis of mammals contains _____ .

i) hair, bristles, quills

ii) hair, nails, claws

iii) hair, bristles, horns

iv) hair, nails, scales

16. Based on relationship, fill in: Whale: Flippers:: Bat : _____ **Ans : Wings**

17. Fill in the blank. RBC: Carrier of oxygen; WBC: _____

Ans : Engulfing germs and producing antibodies.

18. Based on modifications, make the pairs:

incisor: tusks of elephant; _____ : quills of porcupine

Ans : Hair

6. LIFE PROCESSES

1. In monotropa the special type of root which absorbs nourishment is the _____

i) Haustoria

ii) Mycorrhizal root

iii) Clinging root

iv) Adventitious root

2. The product obtained in the anaerobic respiration of yeast is _____

i) Lactic acid

ii) Pyruvic acid

iii) Ethanol

iv) Acetic acid

3. The roots of a coconut tree are seen growing far from the plant. Such a kind of movement of root for want of water is _____ .

i) Phototropism

ii) Geotropism

iii) Chemotropism

iv) Hydrotropism

4. The xylem in the plants is responsible for _____ .

i) transport of water

ii) transport of food

iii) transport of aminoacids

iv) transport of oxygen

5. The autotrophic nutrition requires

i) CO₂ and water

ii) chlorophyll

iii) sunlight

iv) all the above

6. Leaf pores / stomata help in _____ .

i) intake of CO₂ during photosynthesis

ii) release of O₂ during photosynthesis

iii) release of water vapour during transpiration

iv) All of these

7. _____ of green plants are called factories of food production.

i) Mitochondria

ii) Chloroplasts

iii) Endoplasmic reticulum

iv) Nucleus

8. The special root-like structure of plant parasites in cuscuta and viscum are called _____ .

i) Rhizoids

ii) Haustoria

iii) Hyphae

iv) Stolons

9. Pick out the odd one : The parts of the alimentary canal are

i) pharynx

ii) mouth

iii) buccal cavity

iv) pancreas

7. CONSERVATION OF ENVIRONMENT

- Which of the following groups contain only bio-degradable items?
 - Grass, flowers and leaves
 - Grass, wood and plastic
 - Fruit peels, cake and plastic
 - Cake, wood and glass
- Which of the following constitutes a food chain?
 - Grass, wheat and mango
 - Grass, goat and human
 - Goat, cow and elephant
 - Grass, fish and goat
- Which of the following are environmental friendly practices?
 - Carrying cloth bags for shopping
 - Switching off light and fans when not in use
 - Using public transport
 - All the above
- What is called as 'black gold'?
 - hydrocarbons
 - coal
 - petroleum
 - ether
- Based on the food chain, pick the odd one out:
plants → grasshopper → frog → tiger → snake
Ans : Tiger
- Example for product of green chemistry is _____
 - plastic
 - paper
 - bio plastics
 - halogen flame retardants
- _____ is a green house gas which causes climate change and global warming.
 - hydrogen
 - oxygen
 - nitrogen
 - carbondioxide
- The _____ form decomposers in the pond ecosystem.
 - plants
 - bacteria
 - frogs
 - phytoplanktons
- _____ is used in seeding clouds.
 - potassium iodide
 - calcium carbonate
 - sulphurdioxide
 - ammonium phosphate
- An example for fossil fuel is _____.
 - copper
 - iron
 - magnesium
 - coal
- Air pollution is caused by transport exhaust fumes and emission of gases like SO₂, CO₂, NO₂ from industries. Similarly, water pollution is caused by _____.
 - sewage
 - crop cultivation
 - rain
 - soil erosion
- If wild animals are killed, what difficulty would we face?
 - imbalance in nature
 - decrease in fog rain
 - decrease in population
 - increase in rain
- Water is an essential commodity for survival. What can we do to help increase water resources?
 - deforestation
 - reducing the use of vehicles
 - the burning of the wastage
 - afforestation
- The tiger and the lion are carnivores. Likewise the elephant and the bison are _____.
Ans ; Herbivores
- Assertion (A) : Coal and petroleum are called fossil fuels.
Reason (R) : Fossil fuels are formed from the remains of dead organisms after millions of years.
 - Both 'A' and 'R' are true and 'R' explains 'A'.
 - Both 'A' and 'R' are true and but 'R' doesn't explain 'A'
 - Only 'A' is true but 'R' is false.
 - 'A' is false but 'R' is true.

16. Compressed Natural Gas (CNG) is considered a better fuel than coal/ petroleum, because _____.

Ans : It does not pollute the environment.

17. Now-a-days water bottles and lunch boxes are made from agricultural products like fruit pulp. These are called _____.

Ans : Green chemistry

8. WASTE WATER MANAGEMENT

1. An example of water-borne disease is _____.

- i) scabies ii) dracunculiasis iii) trachoma **iv) typhoid**

2. The sedimented and floating materials are removed by this treatment process.

- i) primary treatment** ii) secondary treatment iii) tertiary treatment iv) peripheral treatment

3. Which is a non-renewable resource?

- i) coal ii) petroleum iii) natural gas **iv) all the above**

4. _____ is the chief component of natural gas.

- i) ethane **ii) methane** iii) propane iv) butane

9. SOLUTIONS

1. A true solution is a homogeneous mixture of solute and solvent. Chalk powder in water is a heterogenous mixture. Is it a true solution?

Ans : No, it is a suspension

2. A solution that contains water as the solvent is called an aqueous solution. If carbon disulphide is a solvent in a given solution, then the solution is called _____.

(aqueous solution, **non- aqueous solution**)

3. The solubility of common salt in 100g of water is 36g. If 20g of salt is dissolved in it, how much more is required to attain saturation?

Ans : 16 gram

4. If two liquids are mutually soluble, they are called _____ liquids. (**miscible**, immiscible)

5. When sunlight passes through the window of a classroom, its path is visible. This is due to _____ of light. (reflection, **scattering**)

6. The particles in various forms are visible only under an ultramicroscope. A solution containing such particles is called _____. (true solution, **colloidal solution**)

7. The number of components in a binary solution are/is _____ (one / **two**)

8. The mixture of gases used by deep-sea divers is _____ (**helium-oxygen**, oxygen nitrogen)

9. Soil cannot store more nitrogen than it can hold. Hence soil is said to be in a state of _____. (**saturation**, unsaturation)

10. In an endothermic process, solubility increases with _____ in temperature. (**increase**, decrease)

11. Aquatic species are more comfortable in cold water because _____

i) as the temperature decreases, the solubility of dissolved oxygen increases.

ii) as the temperature increases, the solubility of dissolved oxygen increases.

iii) as the temperature increases, the solubility of dissolved oxygen decreases

3. Assertion: Due to catenation a large number of carbon compounds are formed.

Reason: Carbon compounds show the property of allotropy.

Does the reason hold good for the given Assertion?

Ans : No, the stability of carbon compounds is the reason.

4. Buckminster fullerene is the allotropic form of _____. (Nitrogen / **Carbon** / Sulphur)

5. Eventhough it is a non-metal, graphite conducts electricity. It is due to the presence of _____. (**free electrons** / bonded electrons)

6. The formula of methane is CH₄ and its succeeding member ethane is expressed as C₂H₆. The common difference of succession between them is _____. (**CH₂** / C₂H₂)

7. IUPAC name of the first member of alkyne is _____. (ethene / **ethyne**)

8. Out of ketonic and aldehydic group, which is the terminal functional group?

Ans : Aldehydic group is a terminal functional group

9. Acetic acid is heated with Na₂CO₃ in a test tube. A colourless and odourless gas (X) is evolved. The gas turns lime water milky. Identify X. **Ans : X - CO₂**

10. Assertion: Denaturation of ethyl alcohol makes it unfit for drinking purpose.

Reason: Denaturation of ethyl alcohol is carried out by pyridine.

Check whether the reason is correct for assertion.

Ans : correct

14. MEASURING INSTRUMENTS

1. Screw Gauge is an instrument used to measure the dimensions of very small objects upto (0.1 cm, 0.01 cm, 0.1 mm, **0.01 mm**)

2. In a Screw Gauge, if the zero of the head scale lies below the pitch scale axis, the zero error is. (**positive**, negative, nil)

3. The Screw Gauge is used to measure the diameter of a . (crowbar, **thin wire**, cricket ball)

4. One light year is equal to .

i) **365.25 x 24 x 60 x 60 x 3 x 10⁸ m**

ii) 1x 24 x 60 x 60 x 3 x 10⁸ m

iii) 360 x 24 x 60 x 60 x 3 x 10⁸ m

5. One astronomical unit is the mean distance between the centre of the Earth and centre of the i) Moon ii) **Sun** iii) Mars

15. LAWS OF MOTION AND GRAVITATION

1. The acceleration in a body is due to _____.

i) balanced force ii) **unbalanced force** iii) electro static force

2. The physical quantity which is equal to the rate of change of momentum is

i) displacement ii) acceleration iii) **force** iv) impulse

3. The momentum of a massive object at rest is _____.

i) very large ii) very small iii) **zero** iv) infinity

4. The mass of a person is 50 kg. The weight of that person on the surface of the earth will be _____. i) 50 N ii) 35 N iii) 380 N iv) **490 N**

5. The freezing of biotechnology products like vaccines require _____ freezing system.

i) Helium ii) **Nitrogen** iii) Ammonia iv) Chlorine

6. Two objects of same mass, namely A and B hit a man with a speed of 20 km/hr and 50 km/hr respectively and comes to rest instantaneously. Which object will exert more force on that man? Justify your answer.

Ans : Object with the speed of 50 km/hr will exert more force on the man.

Reason : because the momentum of an object depends on its mass and velocity. i.e. $P = mV$

7. An object is moving with a velocity of 20 m/s. A force of 10 N is acting in a direction perpendicular to its velocity. What will be the speed of the object after 10 seconds?

Ans : 20 m/s

8. Assertion(A) : Liquefied cryogenic gases are sprayed on electric cables in big cities.

Reason(R): Liquefied cryogenic gases prevent wastage of power.

i) A is incorrect and R is correct.

ii) A is correct and R is incorrect

iii) Both A and R are incorrect.

iv) A is correct and R supports A.

9. The acceleration due to gravity on the surface of the earth will be maximum at _____ and minimum at _____

Ans : the poles, the equator

10. If the radius of the earth is reduced to half of its present value, with no change in the mass, how will the acceleration due to gravity, be affected?

Ans : The acceleration will 4 times greater

11. Selvi placed her purse on the passenger's seat of her car when she drove to work.

By the time she reached her office, her purse had fallen on the floor in front of the passenger's seat. Why did this happen? Explain.

Ans : It is due to the law of inertia, that the purse falls on the floor.

12. Why does a fielder in the game of cricket pull his hands back when he catches a ball?

Ans : To reduce the impact of force

13. From the following statements, choose that which is not applicable to the mass of an object

i) It is a fundamental quantity.

ii) It is measured using physical balance.

iii) It is measured using spring balance.

14. List out the names of the organisations which are not associated with Chandrayaan-I

mission from the following: i) ISRO ii) BARC iii) NASA iv) ESA v) WHO vi) ONGC

Ans : ii) BARC v) WHO vi) ONGC

16. ELECTRICITY AND ENERGY

1. The potential difference required to pass a current 0.2 A in a wire of resistance 20 ohm is _____.

i) 100 V

ii) 4 V

iii) 0.01 V

iv) 40 V

2. Two electric bulbs have resistances in the ratio 1 : 2. If they are joined in series, the energy consumed in these are in the ratio _____. (1 : 2, 2 : 1, 4 : 1, 1 : 1)

3. Kilowatt-hour is the unit of _____.

i) potential difference

ii) electric power

iii) electric energy

iv) charge

4. _____ surface absorbs more heat than any other surface under identical conditions.

i) White

ii) Rough

iii) Black

iv) Yellow

5. The atomic number of natural radioactive element is _____.

i) greater than 82

ii) less than 82

iii) not defined

iv) atleast 92

6. Which one of the following statements does not represent Ohm's law?

i) current / potential difference = constant

ii) potential difference / current = constant

iii) **current = resistance x potential difference**

7. What is the major fuel used in thermal power plants?

Ans : coal

8. Which is the ultimate source of energy?

Ans : sun

9. What must be the minimum speed of wind to harness wind energy by turbines?

Ans : higher than 15 km/hr

10. What is the main raw material used in the production of biogas?

Ans : cowdung

17. MAGNETIC EFFECT OF ELECTRIC CURRENT AND LIGHT

1. The magnification produced by a mirror is + . Then the mirror is a _____
(concave mirror, **convex mirror**, plane mirror)

2. The phenomenon of producing an emf in a circuit whenever the magnetic flux linked with a coil changes is _____.

(**electromagnetic induction**, inducing current, inducing voltage, change in current)

3. An electric current through a metallic conductor produces _____ around it.

(**magnetic field**, mechanical force, induced current)

4. The field of view is maximum for _____ (plane mirror, concave mirror, **convex mirror**)

5. An object is placed 25 cm from a convex lens whose focal length is 10 cm. The image distance is _____. (50 cm, **16.66 cm**, 6.66 cm, 10 cm)

6. From the following statement write down that which is applicable to a commutator.

a. A galvanometer uses a commutator for deadbeat

b. A transformer uses a commutator to step up voltage

c. A motor uses a commutator to reverse the current

7. An overhead wire carries current from east to west. Find the direction of the magnetic field 5cm below the wire.

Ans : the direction of the magnetic field is from north to south

8. In the arrangement shown in the figure, there are two coils wound on a non-conducting cylindrical rod. Initially the key is not inserted. Then the key is inserted and later removed. Then, which of the following statement is correct?

a. The deflection in the galvanometer remains zero throughout.

b. There is a momentary deflection in the galvanometer but it dies out shortly.

9. Which part of the human eye helps in changing the focal length of the eye lens?

Ans : Ciliary muscles

10. A pencil partly immersed in water in a glass tumbler appears to be bent at the interface of air and water. Name the phenomenon of light responsible for it.

Ans : Refraction of light

11. Sitting in her parlour one night, Chitra sees the reflection of her cat in the living room window. If the image of her cat makes an angle of 40° with the normal, at what angle does Chitra see the reflected image of the cat?

Ans : 40° Reason : Angle of incidence = Angle of reflection

12. Why do the lines of the magnetic field not cross each other?

Ans : As the lines of the magnetic field are closed curves they do not cross each other

13. What is the magnetic field midway between two parallel conductors carrying same amount of current in the same direction and in the opposite direction?

Ans : When the current is in the same direction : magnetic field zero

When the current is in the opposite direction : magnetic field doubles

14. How can an AC generator be converted into a DC generator?

Ans : by changing slip rings into split ring type commutator.

15. Compute the position of the object placed in front of a concave mirror of focal length 'f' so that the image formed is of the same size of the object.

Ans : At c