

1. Name the gland that controls the function of other endocrine glands.

- A. Pancreas
- B. Adrenal gland
- C. Renal gland
- D. Pituitary gland

Ans. D

Sol.

* **Pituitary gland is also known as Master gland** because it controls functioning of other glands.

* Pituitary gland is about the size of a pea and is situated in a bony hollow, just behind the bridge of your nose.

* It is attached to the base of your brain by a thin stalk.

2. Which cells in our body are popularly called "soldiers of the human body"?

- A. Red blood cells
- B. Eosinophils
- C. Basophils
- D. White blood cells

Ans. D

Sol.

• **WBCs are also known as Soldiers of human body.**

• White blood cells are part of the body's immune system. They help the body fight infection and other diseases.

• Types of white blood cells are granulocytes (neutrophils, eosinophils, and basophils), monocytes, and lymphocytes (T cells and B cells).

3. The amount of light entering into eye can be controlled and regulated by _____.

- A. Pupil
- B. Ciliary muscles
- C. Cornea
- D. Retina

Ans. A

Sol.

• **Pupil** is a small aperture in the iris that regulates the amount of light entering the eye.

• Pupil can expand or contract to control the amount of light entering the eye.

4. 'Mithun', a cattle breed is found in _____.

- A. Arunachal Pradesh
- B. Maharashtra

- C. Kerala
- D. Tamilnadu

Ans. A

Sol.

• Mithun is a cattle breed is found in **Arunachal Pradesh.**

• Mithun is also known as 'Cattle of Mountain'.

• It is an important bovine species of north-eastern hill region of India and also of China, Myanmar, Bhutan and Bangladesh.

• This magnificent massive bovine is presently reared under free-range condition in the hill forests at an altitude of 1000 to 3000 m above mean sea level.

5. Which of the following has the highest protein content per gram?

- A. Apple
- B. Groundnut
- C. Soyabean
- D. Wheat

Ans. C

Sol.

Soyabean is one of the richest source of protein. The nutrition facts for 3.5 ounces (100 grams) of boiled soybeans are -

- a) Protein: 16.6 grams
- b) Carbs: 9.9 grams
- c) Sugar: 3 grams
- d) Fiber: 6 grams
- e) Fat: 9 grams

6. Which hormone leads to the expulsion of milk from the breast, when baby sucks it?

- A. Progesterone
- B. Prolactin
- C. Estrogen
- D. Oxytocin

Ans. B

Sol.

• Prolactin is a hormone that is secreted by the pituitary gland in the brain which is responsible for the making milk by alveoli in breast. This hormone rises when the baby suckles the breast.

• **Oxytocin is the hormone that causes tiny muscles around the alveoli to squeeze the milk by milk ducts.**

7. Which of the following is a communicable disease?

- A. Diabetes
- B. Asthma
- C. Measles
- D. Scurvy

Ans. C

Sol.

• **Measles is a highly communicable disease.**

- It is a serious childhood disease caused by a virus.
- It is easily spread by coughing, sneezing or even talking to an infected person. Measles begins with a fever, runny nose and cough.

8. _____ is the branch of zoology concerned with the study of amphibians.

- A. Herpetology
- B. Ethology
- C. Mammology
- D. Morphology

Ans. A

Sol.

• **Herpetology**- It is the branch concerned with the study of amphibians.

• **Ethology**- It is the science of animal behaviour.

• **Mammology**- It is specialised science that deals with the study of mammals.

• **Morphology**- It is the study of forms of things.

9. _____ is the study of the microanatomy of cells, tissues and organs as seen through a microscope.

- A. Paleontology
- B. Histology
- C. Ichthyology
- D. Entomology

Ans. B

Sol.

• **Histology**- the study of the microanatomy of cells, tissues and organs as seen through a microscope.

• **Paleontology**- study of animal and plant fossils.

• **Ichthyology**- branch of zoology that deals with fishes.

• **Entomology**- study of insects.

10. Which of the following is NOT a symptom of Wilson's disease?

- A. Problems with speech, swallowing or physical coordination
- B. Uncontrolled movements or muscle stiffness
- C. Fluid build-up in the legs or abdomen
- D. Night blindness

Ans. D

Sol.

Wilson's disease, also known as hepatolenticular degeneration, is a rare genetic disorder that causes copper poisoning in the body. Its major symptoms are

- Problems with speech
- Swallowing or physical coordination
- Uncontrolled movements or muscle stiffness
- Fluid build-up in the legs or abdomen etc.

11. Bariatric surgery makes changes to a person's _____.

- A. Nasal passage
- B. Heart
- C. Digestive system
- D. Lungs

Ans. C

Sol.

• **Gastric bypass and other types of weight-loss surgery, collectively known as bariatric surgery, make surgical changes digestive system.**

- Gastric bypass surgery is the most common type of weight-loss surgery.
- It is done to maintain BMI, weight-related health problem, such as type 2 diabetes, high blood pressure or severe sleep apnea.

12. The deficiency of which nutrient causes night blindness?

- A. Vitamin K
- B. Vitamin C
- C. Proteins
- D. Vitamin A

Ans. D

Sol.

• **Night Blindness is caused by the deficiency of Vitamin A.**

- Vitamin A is a fat-soluble vitamin.
- It is important for growth and development, for the maintenance of the immune system and good vision.

13. In which part of the female flower does fertilisation take place?

- A. Filament
- B. Stigma
- C. Ovary
- D. Style

Ans. C

Sol.

• **The Fertilization of flower take place in Ovary.**

- A pollen grain on the stigma grows a tiny tube.
- This pollen tube carries a male gamete to meet a female gamete in an ovule.

14. Night Blindness is caused by the deficiency of Vitamin _____.

- A. K
- B. C
- C. B12
- D. A

Ans. D

Sol.

• **Night Blindness is caused by the deficiency of vitamin A.**

- Night blindness is the inability to see well at night or in poor light. Its causes include glaucoma medications and cataracts.
- Vitamin A is the name of a group of fat-soluble retinoids.

15. The phrase 'Survival of the fittest' as a way of describing the mechanism of natural selection was coined by _____.

- A. Marie Curie
- B. Louis Pasteur
- C. Charles Babbage
- D. Herbert Spencer

Ans. D

Sol.

• The phrase 'Survival of the fittest' as a way of describing the mechanism of natural selection **was coined by Herbert Spencer.**

- Spencer developed an all-embracing conception of evolution as the progressive development of human culture and societies.
- The phrase 'Survival of the fittest' refers that only those species survives which is strong and fittest of all.

16. DNA is stored majorly in _____ of the cell.

- A. nucleus
- B. golgi body
- C. cytoplasm
- D. plasma membrane

Ans. A

Sol.

• Mainly **DNA is stored in cell nucleus** but a small amount of DNAs are also present in mitochondria.

- DNA is the hereditary material in humans and almost all other organisms.
- The important property of DNA is that it can replicate, or make copies of itself. Each strand of DNA in the double helix can serve as a pattern for duplicating the sequence of bases.

17. Which tissue transport food to various parts of a plant?

- A. Phloem
- B. Parenchyma
- C. Xylem
- D. Sclerenchyma

Ans. A

Sol.

Phloem is the vascular tissue responsible for the transport of food from source tissues.

- Sclerenchyma, parenchyma, sieve elements and companion cells are some of the cell types from which Phloem is formed.
- *Xylem* transport water from roots to stems in plants.

18. Rajat has hypermetropia. What type of lens will the ophthalmologist recommend to correct his vision?

- A. Bifocal
- B. Progressive
- C. Concave
- D. Convex

Ans. D

Sol.

• **Hypermetropia is a eye disorder in which nearby objects seems blurred but far distant objects seems clear.**

- Convex lens is used to cure Hypermetropia.
- It can also be cured by Laser Surgery.

19. Both, haemoglobin and myoglobin require _____ for formation.

- A. Calcium
- B. Vitamin A
- C. Iron
- D. Vitamin B12

Ans. C

Sol.

• **Iron is vital element in haemoglobin and myoglobin for their formation.**

- Haemoglobin (Hb) is a protein found in the red blood cells that carries oxygen in your body and gives blood its red colour.
- Myoglobin (symbol Mb or MB) is an iron- and oxygen-binding protein found in the muscle tissue.

20. Which human body part can well be called the 'chemical factory' of our body?

- A. Kidneys
- B. Stomach
- C. Liver
- D. Lungs

Ans. C

Sol.

• **The liver is called the chemical factory of your body.**

- It is called so because it receives substances and converts them into essential elements required for body.
- The liver is also responsible for filtering toxic substances out of your blood.

1. A few organisms can tolerate and thrive in a wide range of temperatures. Such organisms are called _____.

- A. Osmotic
- B. Eurythermal
- C. Stenothermal
- D. Hydrothermal

Ans. B

Sol. Eurytherm is the type of organism, often specifically an ectoderm, who can function, tolerate, and grow at a wide range of body temperatures. For example: dogs, cats, tigers, etc.

2. The method of soil conservation in the coastal and dry regions where rows of trees are planted to check the wind movement to protect soil cover is called?

- A. Mulching
- B. Contour barriers
- C. Rock dam
- D. Shelter belts

Ans. D

Sol.

- Shelter belts are designed to protect farmsteads and livestock from wind and blowing snow. This is also known as "wind breaks".
- These are "environmental buffers" that are planted in a variety of settings, such as on cropland, pasture, and rangeland, along roads, farmsteads, feedlots, and in urban areas. They also protect wildlife wintering areas.
- It acts as a barrier of trees and shrubs which provides protection (as for crops) from wind and storm and reduces erosion.

3. Which of the following is one of the commercial products obtained from Gelidium and Gracilaria and are used to grow microbes and in preparations of icecreams and jellies?

- A. Agar
- B. Chlorella
- C. Spirulina
- D. Gymnosperms

Ans. A

Sol. Agar is a jelly-like substance, obtained from algae. Agar can be used as a laxative, an appetite suppressant, a vegetarian substitute for gelatin, a thickener for soups, in fruit preserves, ice cream, and other desserts, as a clarifying agent in brewing, and for sizing paper and fabrics.

The gelling agent in agar is an unbranched polysaccharide obtained from the cell walls of some species of red algae, primarily from the genera Gelidium and Gracilaria. For commercial purposes, it is derived primarily from Gelidium amansii. In chemical terms, agar is a polymer made up of subunits of the sugar galactose.

4. _____ are made up of sclerenchymatous cells. These are generally absent in the primary phloem but are found in the secondary phloem.

- A. Xylem fibres
- B. Xylem parenchyma
- C. Phloem parenchyma
- D. Phloem fibres

Ans. D

Sol. Bast fibre (also called phloem fibre or skin fibre) is plant fibre collected from the phloem (the "inner bark", sometimes called "skin") or bast surrounding the stem of certain dicotyledonous plants. They support the conductive cells of the phloem and provide strength to the stem. They are made up of sclerenchymatous cells. These are generally absent in the primary phloem but are found in the secondary phloem.

5. What type of a body plan does coelenterates, ctenophores and echinoderms have?

- A. Annelida B. Radial
C. Bilateral D. Platyhelminthes

Ans. B

Sol. A body plan is a group of structural and developmental characteristics that can be used to identify a group of animals, such as a phylum. All members of a particular group share the same body plan at some point during their development—in the embryonic, larval, or adult stage. Coelenterates, ctenophores and echinoderms have Radial type of body plan.

6. The first formed primary xylem elements are called _____.

- A. Metaxylem
B. Protoxylem
C. Xylem fibres
D. Xylem parenchyma

Ans. B

Sol.

- Protoxylem is the first formed part of the primary xylem elements that matures.
- Metaxylem is the part of the primary system that differentiates after the protoxylem and are generally larger than the latter.

7. Nereis, Pheretima (Earthworm) and Hirudinaria (blood sucking leech) are examples of which Phylum

- A. Coelenterata B. Aschelminthes
C. Annelida D. Arthropoda

Ans. C

Sol. It is Annelida to which Nereis, Pheretima (Earthworm) and Hirudinaria

(blood sucking leech) are examples of. These Phylum groups have over 17000 extant species. And these have adapted to various ecologies like Marine, fresh and so on.

8. Which among the following does not have a cell wall?

- A. Euglena B. Paramecium
C. Gonyaulax D. Mycoplasma

Ans. D

Sol. Mycoplasma is the smallest bacteria which does not have cell wall around their cell membrane and can survive without oxygen and have various shapes. Due to lack of cell wall, these bacteria are unaffected by many common antibiotics or other beta-lactam antibiotics that targets cell wall synthesis. They can act as parasitic or saprotrophic as well.

9. Which organelle is also called as 'powerhouse of the cell'?

- A. Plastids B. Mitochondria
C. Golgi bodies D. Cell wall

Ans. B

Sol.

- **Mitochondria** are also known as the 'Power House of the Cell'.
- Mitochondria create energy in the form of ATP (Adenosine Triphosphate) molecules by taking nutrients and breaking them down and this process of creating energy for the cell is known as cellular respiration.
- If a cell feels it is not getting enough energy to survive then more mitochondria can be created as per need.

10. Which of the following is responsible for giving colour to human skin?

- A. Luciferin B. Haemoglobin
C. Flavonoids D. Melanin

Ans. D

Sol.

- **Melanin** is responsible for giving colour to human skin.
- It is a black pigment occurring in the hair, skin, and iris of the eye in people and animals.
- It is responsible for tanning of skin exposed to sunlight.

11. Which among the following carries impure blood from human heart to lungs?

- A. Aorta
- B. Pulmonary vein
- C. Pulmonary arteries
- D. Vena Cava

Ans. C

Sol. Pulmonary arteries carry deoxygenated blood from the heart to the lungs via capillaries and alveoli to purify the impure blood into pure.

12. Nephron is related to which of the following system of human body?

- A. Circulatory system
- B. Excretory system
- C. Reproductive system
- D. Respiratory system

Ans. B

Sol. Nephron is related to excretory system. It is the functional unit of kidney consisting of renal corpuscle and tubule for blood filtration. The renal corpuscle filters out large solutes from the blood, delivering water and small solutes to the renal tubule for modification.

13. Who discovered bacteria?

- A. AntonieVan Leeuwenhoek
- B. Robert Brown
- C. Robert Hook
- D. Robert Koch

Ans. A

Sol. AntonieVan Leeuwenhoek discovered Bacteria. He was a Dutch scientist and is called the Father of Microbiology as He discovered single cell prokaryotic microorganisms without nucleus which were later named as Bacteria.

14. What is the name of a group of similar cells performing a specific function?

- A. Tissue
- B. Organ
- C. Organ system
- D. Cellular organization

Ans. A

Sol.

- Group of similar cells performing a specific function are called as Tissues and group of tissues form Organs.
- There are four tissues namely muscles, connective, epithelial and nervous tissues which performs functions like

movement of the body, propagation of nerve signals and integration of all parts of the body.

15. Which of the following carries oxygen to various parts of human body?

- A. Red blood cells
- B. White blood cells
- C. Plasma
- D. Nerves

Ans. A

Sol.

- Red Blood Cells carries oxygen to various parts of human body.
- It consists of Haemoglobin which carries oxygen from pulmonary artery to heart and helps in transporting carbon dioxide from heart to lungs to exhale it out.

16. In a majority of flowering plants, out of the four megaspores, what is the ratio of functional and degenerate megaspores?

- A. 2:2 B. 1:3
- C. 3:1 D. 4:0

Ans. B

Sol. In gymnosperms and most flowering plants, only one of the four megaspores is functional at maturity, and the other three soon degenerate. Means the ratio of functional and degenerated megaspore is 1:3. The megaspore that remains, divides mitotically and develops into the gametophyte, which eventually produces one egg cell. In the most common type of megagametophyte development in flowering plants (the Polygonum type), three mitotic divisions are involved in producing the gametophyte, which has seven cells, one of which (the central cell) has two nuclei that later merge to make a diploid nucleus. Double fertilization occurs in flowering plants, which involves two sperm fertilizing the two gametes inside the megagametophyte (the egg cell and the central cell) to produce the embryo and the endosperm.

17. With which of the following body organ is 'pace-maker' associated?

- A. Liver B. Brain
- C. Heart D. Lungs

Ans. C

Sol.

- The **SA node** is sometimes called the heart's "**natural pacemaker**."
- Electrical impulses from the heart muscle make the heart to beat, These electrical impulses are generated by the pacemaker.

18. Haemoglobin is an important component of _____.

- A. White blood cells
- B. Red blood cells
- C. Plasma
- D. All options are correct

Ans. B

Sol. Haemoglobin is an important component of red blood cells. It consists of amino acids and iron due to which it is red in colour. Hemoglobin in the blood carries oxygen from the lungs to the rest of the body helping in aerobic respiration and metabolism. Deficiency in haemoglobin may cause diseases like anaemia.

19. Snakes, turtle, lizards and crocodiles falls under which category of animals?

- A. Pisces B. Mammals
- C. Reptilian D. Aves

Ans. C

Sol. Snakes, turtle, lizards and crocodiles falls under Reptilian category of animals. They are cold blooded animals hence can live both in water and on land depending on temperatures. They have a dry skin with scales to protect their body and further they lay soft shelled eggs.

20. Which of the following fibres is considered as the strongest natural fibre?

- A. Cotton B. Jute
- C. Wool D. Silk

Ans. D

Sol.

- **Silk** is considered as the **strongest** natural fibre.
- Natural fibers are fibers that are produced by plants, animals, and geological processes. They can be used as a component of composite materials, where the orientation of fibers impacts the properties.
- Natural fibers can also be matted into sheets to make products such as paper

or felt. Natural fibers are made from plant, animal, and mineral sources. Natural fibers can be classified according to their origin.

21. The blotting technique used to identify the isolated protein is _____

- A. Northern blotting
- B. Western blotting
- C. Southern blotting
- D. Cloning

Ans. B

Sol. The blotting technique used to identify the isolated protein is Western blotting. Western blotting is an analytical technique used to detect specific proteins in a given sample of tissue homogenate or extract. It uses gel electrophoresis to separate native or denatured proteins by the length of the polypeptide (denaturing conditions) or by the 3-D structure of the protein (native/ non-denaturing conditions). The proteins are then transferred to a membrane (typically nitrocellulose or PVDF), where they are probed (detected) using antibodies specific to the target protein.

22. Morphology of Chromosomes can be best studied at _____

- A. Interphase B. Prophase
- C. Metaphase D. Zygotene

Ans. C

Sol.

- Morphology of Chromosomes can be best studied at **Metaphase**.
- Metaphase is a **stage of mitosis** in the eukaryotic cell cycle in which chromosomes are at their second-most condensed and coiled stage (they are at their most condensed in anaphase).
- These chromosomes, carrying genetic information, align in the equator of the cell before being separated into each of the two daughter cells.
- Metaphase accounts for approximately **4% of the cell cycle's duration**.

23. A pair of contrasting characters controlling the same trait is called

- A. factors B. loci
- C. allele D. lineage

Ans. C

Sol. An allele is one of the possible forms of a gene. If an organism is heterozygous for that trait, or possesses one of each allele, then the dominant trait is expressed. So a gene is a particular region of your DNA that controls a specific trait.

24. What is commonly known as 'white plague'?

- A. Typhoid B. Malaria
C. Tuberculosis D. HIV

Ans. C

Sol.

- Tuberculosis (TB) is an infectious disease usually caused by the bacterium *Mycobacterium tuberculosis*.
- The disease most commonly associated with the white plague is tuberculosis.

25. Hearing in brain is associated with

- A. Frontal lobe B. Occipital lobe
C. Temporal lobe D. Parietal lobe

Ans. C

Sol. The Temporal Lobe mainly revolves around hearing and selective listening. It receives sensory information such as sounds and speech from the ears.

26. Sullage water is _____

- A. Waste water released from kitchen
B. waste water released from toilets
C. Water from rivers
D. Underground water

Ans. A

Sol.

- Sullage is all wastewater generated in households or office buildings from streams without fecal contamination
- It also known as Grey water.
- It generally doesn't contain fecal contamination. Sullage contains less pathogen than domestic waste water, so it is generally safer to handle and easier to treat.

27. Companion cells are unique to

- A. Bryophytes B. Pteridophytes
C. Angiosperms D. Gymnosperms

Ans. C

Sol.

- Companion cells are unique to **Angiosperm**.

- It's a type of cell found within the phloem of flowering plants. Each companion cell is usually closely associated with a sieve element.
- Its function is uncertain, though it appears to regulate the activity of the adjacent sieve element and to take part in loading and unloading sugar into the sieve element.

28. _____ is any attribute of the organism (morphological, physiological, behavioural) that enables the organism to survive and reproduce in its habitat.

- A. Adaptation B. Migration
C. Conformation D. Regulation

Ans. A

Sol. Adaptation is any attribute of the organism (morphological, physiological, behavioural) that enables the organism to survive and reproduce in its habitat. It is a biological term in which an animal or plant species becomes fitted to its environment and help organisms survive in their ecological niches.

29. _____ is the interaction in which one species benefits and the other is neither harmed nor benefited.

- A. Predation B. Commensalism
C. Competition D. Parasitism

Ans. B

Sol.

- Commensalism is a long term biological interaction or association between the organisms in which one species benefits and the other is neither harmed nor benefited.
- Predation is a biological interaction where one organism, the predator, kills and eats another organism.

30. Which of the following is not correct?

- A. Members of Chlorophyceae are commonly called green algae
B. Members of Phaeophyceae are commonly called red algae
C. Members of Rhodophyceae are commonly called red algae
D. Members of Phaeophyceae are commonly called brown algae

Ans. B

Sol.

- Members of Phaeophyceae are commonly called Brown algae.

- Phaeophyta are greenish-brown colored algae that is mostly adapted to the marine water and have chlorophyll A and C. Unlike green algae or Chlorophyta, they lack true starch.
- Like all other algae reproduction of this algae takes place by both sexual and asexual means. Phaeophyta or brown algae are a group of autotrophic, multicellular organisms

31. Among plants, three different genera Solanum, Petunia and Datura are placed in which family?

- A. Cancidae B. Solanaceae
C. Felis D. Felidae

Ans. B

Sol. Among plants, three different genera Solanum, Petunia and Datura are placed in the family of Solanaceae. The plant of this family served as food and drugs e.g potato is the main member of this family and some other are peppers, tobacco and datura. The members plant of this family mainly found in the latin America. The family Solanaceae is in the major group Angiosperms that is Flowering plants.

32. A multicellular organism grows by _____.

- A. Cell addition B. Cell explosion
C. Cell implosion D. Cell division

Ans. D

Sol. A multicellular organism grows **by cell division**.

* **Cell division** is the process by which a parent cell divides into two or more daughter cells.

* There are two distinct types of cell division:

1. Meiosis
2. Mitosis

33. Order Primata comprising monkey, gorilla and gibbon is placed in class Mammalia along with order Carnivora that includes?

- A. Giraffe, Camels and Elephants
B. Crocodile, Lizard and Snake
C. Lion, Leopard and Tiger
D. Tiger, Cats and Dogs

Ans. D

Sol. Order Primata comprising monkey, gorilla and gibbon is placed in class Mammalia along with order Carnivora

that includes Tiger, Cats and Dogs. A primate is a mammal of the order Primates. Primates arose from ancestors that lived in the trees of tropical forests. Carnivora is a diverse scrotiferan order that includes over 280 species of placental mammals. Its members are formally referred to as carnivorans, whereas the word "carnivore" can refer to any meat-eating organism.

34. Which is the only one example of Mollusca Phylum?

- A. Locust B. Butterfly
C. Scorpion D. Octopus

Ans. D

Sol. The octopus is a soft-bodied, eight-armed Mollusca of the order Octopoda. The octopus is bilaterally symmetric with two eyes and a beak, with its mouth at the centre point of the arms. The soft body can rapidly alter its shape, enabling octopuses to squeeze through small gaps. They trail their eight arms behind them as they swim. The siphon is used both for respiration and for locomotion, by expelling a jet of water. Octopuses have a complex nervous system and excellent sight, and are among the most intelligent and behaviourally diverse of all invertebrates.

35. Which of the following Phylum are also called flatworms?

- A. Mollusca B. Chordata
C. Ctenophora D. Platyhelminthes

Ans. D

Sol. The phylum name Platyhelminthes literally means "flatworms." Members of this phylum are soft, thin-bodied, leaf or ribbonlike worms, including the familiar planaria of ponds and streams, as well as the flukes and tapeworms parasitic in human and other animal bodies. Some defining characteristics of the phylum are that flatworms are acoelomate (they have no body cavity), triploblastic (the body has three tissue layers), and bilaterally symmetric (they have symmetric right and left sides and usually a definite head), and they have organ systems, including an excretory, digestive, reproductive, and nervous system, but no respiratory system.

36. Vocal chords in women are _____ than vocal chords in men.
A. 5mm shorter B. 15mm shorter
C. 5mm longer D. 15mm longer

Ans. A

Sol. The human voice frequency is specifically a part of human sound production in which the vocal folds (vocal cords) are the primary sound source. Adult men and women typically have different sizes of vocal fold; reflecting the male-female differences in larynx size. Adult male voices are usually lower-pitched and have larger folds. The male vocal folds (which would be measured vertically in the opposite diagram), are between 17 mm and 25 mm in length. The female vocal folds are between 12.5 mm and 17.5 mm in length. Vocal chords in women are 5mm shorter than vocal chords in men.

37. Animals like annelids and arthropods etc where the body can be divided into identical left and right halves in only one plane, exhibit _____ symmetry.

A. Coelenterata B. Radial
C. Ctenophora D. Bilateral

Ans. D

Sol. **Bilateral symmetry** is the symmetrical arrangement of an organism or part of an organism along a central axis, so that the organism or part can be divided into two equal halves. Examples of **animals that possess bilateral symmetry** are: Flatworms, common worms, clams, snails, octopuses, crustaceans, insects, spiders, brachiopods, sea stars, sea urchins, and vertebrates, annelids and arthropods.

38. Taenia (Tapeworm), Fasciola (Liver fluke) are examples of which Phylum?

A. Coelenterata B. Platyhelminthes
C. Annelida D. Arthropoda

Ans. B

Sol.

• Fasciola hepatica, also known as the common liver fluke or sheep liver fluke, is a parasitic trematode (fluke or flatworm, a type of helminth) of the class Trematoda, phylum Platyhelminthes.

• Taenia (Phylum-Platyhelminthes), is a genus of tapeworms (a type of helminth) that includes some important parasites of livestock.

39. Which part of our body will be impacted if a person is infected by Japanese Encephalitis?

A. Nervous and Immune system.
B. Central Nervous system.
C. Kidney, bones, lungs etc.
D. Membrane around the brain.

Ans. D

Sol. Japanese encephalitis (JE) is a disease spread through mosquito bites. Symptoms usually take 5-15 days to develop and include fever, headache, vomiting, confusion, and difficulty moving. Symptoms that develop later include swelling around the brain and coma. JE is a serious disease that may cause death.

40. In the names Mangifera indica (mango), Solanum tuberosum (potato) and Panthera leo (lion), the terms Mangifera, Solanum and Panthera represent the higher level of?

A. Taxon
B. Taxonomic Hierarchy
C. Specific Epithet
D. Binomial Nomenclature

Ans. A

Sol. In biology, a taxon is a group of one or more populations of an organism or organisms seen by taxonomists to form a unit. Let us consider Mangifera indica (mango), Solanum tuberosum (potato) and Panthera leo (lion). All the three names, indica, tuberosum and leo, represent the specific epithets, while the first words Mangifera, Solanum and Panthera are genera and represents another higher level of taxon or category.

41. In male reproductive system, the testes are situated outside the abdominal cavity within a pouch called _____.

A. Glands
B. Scrotum
C. Testicular Lobules
D. Seminiferous Tubules

Ans. B

Sol.

- The scrotum is an anatomical male reproductive structure that consists of a suspended dual-chambered sack of skin and smooth muscle that is present in most terrestrial male mammals and located under the penis.
- One testis is typically lower than the other to avoid compression in the event of impact. The perineal raphe is a small, vertical, slightly raised ridge of scrotal skin under which is found the scrotal septum. It appears as a thin longitudinal line that runs front to back over the entire scrotum. The scrotum contains the external spermatic fascia, testes, epididymis and ductus deferens.

42. Which of the following is not among the 3 main classes of Algae?

- A. Chlorophyceae B. Rhodophyceae
C. Phaeophyceae D. Gymnosperms

Ans. D

Sol. Here Gymnosperms is not among the 3 main classes of Algae. The gymnosperms are a group of seed-producing plants that includes conifers, cycads, Ginkgo, and gnetophytes. Algae are members of a group of predominantly aquatic photosynthetic organisms of the kingdom Protista. The eleven main classes of algae are:

1. Chlorophyceae
2. Xanthophyceae
3. Chrysophyceae
4. Bacillariophyceae
5. Cryptophyceae
6. Dinophyceae
7. Chloromonadineae
8. Euglenineae
9. Phaeophyceae
10. Rhodophyceae
11. Cyanophyceae or Myxophyceae.

43. Sycon (Scypha), Spongilla (Fresh water sponge) and Euspongia (Bath sponge) are examples of which Phylum?

- A. Coelenterata B. Platyhelminthes
C. Ctenophora D. Porifera

Ans. D

Sol. Sponges, the members of the phylum Porifera, are a basal Metazoa clade as sister of the Diploblasts. They are multicellular organisms that have bodies full of pores and channels allowing water

to circulate through them, consisting of jelly-like mesohyl sandwiched between two thin layers of cells. Sycon (Scypha), Spongilla (Fresh water sponge) and Euspongia (Bath sponge) are examples of Porifera Phylum.

44. In which of the following part of the cell does the pyruvic acid is broken down into carbon dioxide, water and energy?

- A. Cytoplasm B. Nucleus
C. Mitochondria D. Chloroplast

Ans. C

Sol.

- It's in **Mitochondria** that pyruvic acid is broken down into carbon dioxide, water and energy.

- Such reaction has given Mitochondria the name of energy currency of the cell and it is found in all eukaryotic cells.

45. What is plant cell wall mainly composed of_____.

- A. Lipids B. Vitamin
C. Cellulose D. Protein

Ans. C

Sol.

- Plant cell walls are composed of cellulose.

- These cellulose are made up of structural carbohydrate and is considered a complex sugar and assist plant in both protection and structure.

46. How does a Unicellular Organism reproduce?

- A. Cell division
B. Cell reproduction
C. Cell synthesis
D. Fragmentation

Ans. A

Sol. Unicellular Organism reproduce through cell division done through mitosis which is also known as asexual reproduction. Examples are all prokaryotes like amoeba, yeast.

47. What is study of fungus known as?

- A. Physiology B. Phrenology
C. Mycology D. Biology

Ans. C

Sol.

- Mycology is a branch of biology which is concerned with the study of fungi, their genetic and biochemical

properties, their taxonomy and their use to humans as a source for medicines and food.

- Mycological research has led to the development of antibiotic drugs such as penicillin, streptomycin, and tetracycline.

48. How many pairs of ribs are there in human body?

- A. 13 B. 11
C. 12 D. 14

Ans. C

Sol.

- There are **12 pair of ribs** in human body.
- Ribs are long curved bones located in thorax surrounding the chest, enabling the lungs to expand and thus facilitate breathing.
- They serve to protect the lungs, heart, and other internal organs of the thorax.

49. What is full form of BOD?

- A. Biological Oxygen Deficit
B. Biological Oxygen Difference
C. Biological Oxygen Demand
D. Biological Oxygen Distribution

Ans. C

Sol. BOD is abbreviated as Biological Oxygen Demand. It is the amount of dissolved oxygen needed by aerobic biological organisms to break down organic material present in the water and it is an indicator of pollution in water. When BOD levels are high, dissolved oxygen levels decrease because the oxygen that is available in the water is being consumed by the bacteria and hence less dissolved oxygen is available in the water, fish and other aquatic organisms may not survive also leading to Eutrophication.

50. Alveoli is related to which of the following system of human body?

- A. Circulatory system
B. Excretory system
C. Reproductive system
D. Respiratory system

Ans. D

Sol. Alveoli are related to respiratory system in human body. Alveoli made up

of pneumocytes are tiny thin walled sacs within our lungs that allow oxygen and carbon dioxide to move between the lungs and bloodstream.

51. Which of the following disease is non-communicable in nature?

- A. Cholera B. Chicken-pox
C. Tuberculosis D. Cancer

Ans. D

Sol.

- Cancer is non-communicable in nature. It is caused by an uncontrolled division of abnormal cells in a part of the body. It is cured by chemotherapy.
- Cancer can be detected by certain signs and symptoms or screening tests. It is then typically further investigated by medical imaging and confirmed by biopsy.

52. Which of the following is the largest mammal?

- A. Whale B. Rhinoceros
C. Elephant D. Human

Ans. A

Sol. The mammals are those who give birth and feed their babies like humans. The largest mammal on the earth is the Blue Whale.

53. Insulin is a kind of _____.

- A. Hormone B. Protein
C. Enzyme D. Vitamin

Ans. A

Sol.

- Insulin is a kind of **hormone** secreted by pancreas and released into the bloodstream by specialized cells called beta cells found in islets of langerhans.
- It is a main anabolic hormone regulating the metabolism of carbohydrates, fats and protein by absorbing glucose from the blood and store them as fat for future use.

54. Which Vitamin is obtained from Sun rays?

- A. Vitamin A B. Vitamin C
C. Vitamin K D. Vitamin D

Ans. D

Sol. Vitamin D is obtained from Sun rays. When the sun's UV-B rays hit the skin, a

reaction takes place that enables skin cells which contains dehydrated cholesterol to manufacture vitamin D3 which is carried to the liver and then to kidneys to transform it to active vitamin D.

55. Which of the following function is performed by the kidneys in the human body?

- A. Excretion B. Respiration
C. Digestion D. Transportation

Ans. A

Sol. Excretion is performed by the kidneys in the human body. They reside against the back muscles in the upper abdominal cavity and perform the essential function of removing waste products from the blood and regulating the water fluid levels, form urine, and aid in other important functions of the body.

56. Which is the longest bone in human body?

- A. febula B. Tibia
C. Stapes D. Femur

Ans. D

Sol. Femur is the longest bone in human body. It is present in our thigh. It starts from acitabulam cavity to knee. It is also the strongest bone in the body. Femals have wider pelvic bones, causing their femora to converge more than in males. Femur length on average is 26.74%of a person's height.

57.Opposite the micropylar end, is the _____, representing the basal part of the ovule.

- A. hilum B. funicle
C. chalaza D. nucellus

Ans. C

Sol. In basal part of the ovule , Chalaza is present opposite the micropylar end.It is the tissue where the integuments and nucellus are joined. Nutrients from the plant travel through vascular tissue in the funiculus and outer integument through the chalaza into the nucellus. If the micropyle is towards the funicle then it is called anatropous ovule. If the chalaza is towards the funicle then it is called orthotropous ovule. In this the basal part of the ovule is chalaza.

58.In unicellular organisms, all functions like digestion, respiration and reproduction are performed by how many cell(s)?

- A. 1 B. 2
C. 3 D. 4

Ans. A

Sol. A unicellular organism, also known as a single celled organism. It consists of only one cell. In unicellular organism, all function like digestion, respiration and reproduction are performed by only one cell. Multicellular organism consists two or more than two cell.

59.Red rot is a disease caused to which of the following plant?

- A. Paddy B. Sugarcane
C. Mustard D. Wheat

Ans. B

Sol.

- Red rot is a disease which affects sugarcane.
- It is caused by fungus *Glomerella tucumanensis*.
- The Primary reasons for transmission can be through soil and diseased sets, while the secondary reasons can be attributed to transmission through air, and rain splash.

60. Which of the following micro-organism causes diseases like polio and chicken pox?

- A. Bacteria B. Protozoa
C. Algae D. Virus

Ans. D

Sol. Polio and chicken pox disease is caused by a Virus. In the case of polio the virus destroys nerve cells in the spinal cord and is transmitted through contaminated water or food or contact with an infected person. In case of Chicken pox, rashes arises on the infected person body and is caused by Varicella-zoster virus (VZV) and is spread through contact with an infected person.

61.Who was the inventor of frozen foods?

- A. Alfred Nobel
B. Clarence Birdseye
C. Frank Whittle
D. Ives McGaffey

Ans. B

Sol. Clarence Birdseye is the inventor of frozen foods. He was an American entrepreneur who discovered that fast freezing doesn't spoil the tissues of the product and on this idea he formed Birdseye Seafoods Inc and General Seafood Corporation.

62. Synapse gap is present between which of the following?

- A. Two neurons
- B. Brain and Spinal Cord
- C. Two Kidneys
- D. None of these

Ans. A

Sol. Synapse gap is present between two neurons. Synapse act like a junction where the neurons meet each other.

63. Which organ has finger like outgrowths which are called as Villi (Singular Villus)?

- A. Large Intestine
- B. Bladder
- C. Small Intestine
- D. Stomach

Ans. C

Sol.

- Small intestine has finger like outgrowths which are called as Villi.
- Food which is digested is absorbed by these villi. There are many finger like projection in the intestine that extended to lumen in the small intestine.

64. Who discovered malaria causing germs?

- A. Christiaan Bernard
- B. Charles Louis Alphonse Laveran
- C. Dmitry Ivanovsky
- D. Martinus William Beijerinck

Ans. B

Sol. Charles Louis Alphonse Laveran discovered malaria causing germs. Mosquito is parasitic infection caused by Anopheles mosquitoes.

65. Xylem helps in transportation of which of the following?

- A. Food
- B. Water solubles
- C. All solid nutrients
- D. Both food and water

Ans. B

Sol.

- Xylem helps in the transportation of water in the plant. These are vascular tissue and take along with water, nutrients from the roots to the rest of the plant. Moreover, it also helps to form the woody element in the stem.
- Xylem is also responsible for transporting **water-soluble nutrients**, but as all nutrients are not water soluble.

66. Which acid is released when an Ant bites?

- A. Hydrochloric Acid
- B. Formic Acid
- C. Acetic Acid
- D. Phosphoric Acid

Ans. B

Sol. Ant bites consist of Formic Acid which is the simplest carboxylic acid, containing a single carbon. It occurs naturally in various sources including the venom of bee and ant stings, and is a useful organic synthetic reagent.

67. One of the best solutions to get rid of non biodegradable waste is_____.

- A. Burning
- B. Dumping
- C. Burying
- D. Recycling

Ans. D

Sol. Non-biodegradable wastes cannot be easily decomposed or dissolved by the natural process. Hence recycling is the best way to deal with non-biodegradable waste.

68. Which of the following is the cleanest source of energy?

- A. Biofuel
- B. Fossil fuel
- C. Nuclear power
- D. Wind energy

Ans. D

Sol. Some of the features of clean energy is non-renewable, unlimited resource and nearly zero pollution. Only wind energy satisfy all of the above mentioned criterion.

69. The specific role of 'Vitamin K' is in the synthesis of _____.

- A. Albumin
- B. Antibodies
- C. Globulin
- D. Prothrombin

Ans. D

Sol.

- Vitamin K is required for the synthesis of proteins that are prerequisites for blood coagulations.
- Prothrombin is an essential factor responsible for the coagulation of blood.

70. Bio-fertilizers convert nitrogen to _____.

- A. nitrates B. ammonia
C. nitrogenase D. amino acids

Ans. B

Sol. **Bio-fertilizers convert nitrogen to ammonia.**

- Nitrogen fixation is a process by which nitrogen in the Earth's atmosphere is converted into **ammonia (NH₃)** or other molecules available to living organisms.
- Atmospheric nitrogen or molecular **di nitrogen (N₂)** is relatively inert: it does not easily react with other chemicals to form new compounds.
- Nitrogen fixation is carried out naturally in the soil by nitrogen-fixing bacteria such as Azotobacter.

71. Root cap is derived from

- A. Dermatogen B. Calyptragen
C. Protoderm D. Histogen

Ans. B

Sol. Root cap is derived from Calyptragen. Calyptragen is a layer of rapidly dividing cells at the tip of a plant root, from which the root cap is formed. It occurs in grasses and many other plants. The root system begins its development from the embryonic root (radicle), which grows out of the seed after the seed has absorbed water. This is the primary root of a new plant. The tip of the root is covered by a mass of loose cells called the root cap.

72. Polio is caused by ?

- A. Bacteria B. Virus
C. Fungus D. Protozoa

Ans. B

Sol.

- Polio, or poliomyelitis, is a crippling and potentially deadly infectious disease. It is caused by the poliovirus.
- The virus spreads from person to person and can invade an infected person's

brain and spinal cord, causing paralysis. Polio is a viral disease which may affect the spinal cord causing muscle weakness and paralysis.

- The polio virus enters the body through the mouth, usually from hands contaminated with the stool of an infected person.

73. Increased RBC's in the blood leads to a condition called _____.

- A. Anemia B. Haemophilia
C. Polycythemia D. Leukaemia

Ans. C

Sol.

- Polycythemia is a condition that results in an increased level of circulating red blood cells in the bloodstream.
- People with this condition have thicker blood, which makes it harder for blood to circulate around the body.

74. Which of the following is an emergency hormone in humans?

- A. Thyroxine B. Insulin
C. Adrenalin D. Progesterone

Ans. C

Sol.

- It is a "Hormone", "Neurotransmitter and Epinephrine (medication).
- **Adrenalin** is normally produced by both the Adrenal gland and certain Neurons".
- It plays an important role in the flight or fight response by increasing blood flow to muscles, output of the heart, "Pupil dilation" and Blood sugar".

75. The deficiency of Niacin a vitamin of B complex group causes the disease

- A. Marasmus B. Pellagra
C. Rickets D. Night blindness

Ans. B

Sol. Excessive refining and polishing of cereals removes considerable proportions of B vitamins contained in these cereals. Clinical manifestations of deficiency of some B vitamins - such as pellagra, and oral and genital lesions (related to riboflavin deficiency) - were once major public health problems in parts of the

world.

Vitamin	Physiologic roles	Deficiency
Niacin (nicotinic acid and nicotinamide)	Co-substrate/co-enzyme for hydrogen transfer with numerous dehydrogenases	Pellagra with diarrhoea, dermatitis, and dementia

76. The food in Onion is stored in the form of _____

- A. Cellulose B. Protein
C. Starch D. Sugar

Ans. A

Sol. Cellulose fibers are fibers made with ether or esters of cellulose, which can be obtained from the bark, wood or leaves of plants, or from a plant-based material. The outer concentric layers of Onion constitutes the cellulose.

77. Which light is used by insects to differentiate one flower from another?

- A. Ultraviolet B. Infra red
C. Visible light D. None of these

Ans. A

Sol. **Ultraviolet light** is used by **insects** to differentiate one flower from another. Unlike humans bees can perceive ultraviolet light. Thus, the **pigments** in flower petals that absorb UV light create patterns visible to bees, but that may be invisible to humans.

78. What is the full form of DNA?

- A. Diribo nucleic acid
B. Di nucleic acid
C. Dual nitrogen acid
D. Deoxyribonucleic acid

Ans. D

Sol. DNA is abbreviated as deoxyribonucleic acid. It is found in the nucleus of the cells in human body and is the primary carrier of genetic information. We can trace a person's DNA through their hair or nails.

79. The right portion of human heart receives _____ blood.

- A. pure B. impure
C. mixed D. None of these

Ans. B

Sol. It's the impure blood which is received by the right portion of human heart. The impure blood stands for

deoxygenated blood, and is pushed through the right ventricle to the pulmonary artery, which then takes it to the lungs for oxygenation.

80. UV rays coming from Sun, majorly causes which cancer?

- A. Lungs cancer B. Liver cancer
C. Mouth cancer D. Skin cancer

Ans. D

Sol. Even though UV rays make up only a very small portion of the sun's rays but they are the main cause of the sun's damaging effects on the skin. UV rays coming from the Sun damages the DNA genes that control skin cell growth and causes skin cancers

There are 3 types of UV rays-

1. UVA rays: it causes the aging of skin cells and also damage their DNA which causes skin cancer.
2. UVB rays: these rays have more energy than UVA rays which causes Sunburns and skin cancer.
3. UVC rays: these rays have more energy than UVA and UVB rays. These rays are not the part of sun rays. Hence, do not cause skin cancer.

81. What is the full form of RNA?

- A. Ribonucleic Acid
B. Ribonitric Acid
C. Ribonutrient Acid
D. Reverse Nucleic Acid

Ans. A

Sol. RNA stands for RiboNucleic Acid. It is a polymeric molecule which is essential in various biological roles, like in coding, decoding, regulation, and expression of genes.

82. Cinnamon is obtained from which part of the plant?

- A. Stem B. Bark
C. Roots D. Fruit

Ans. B

Sol. Cinnamon is obtained from the inner bark of cinnamon tree. It is an evergreen tree native to Sri Lanka and South India. Cinnamon is used as an aromatic spice and flavoring additive in a wide variety of cuisines.