

Defence Exams

Important Biology Notes



- **Viral encephalitis** caused by Encephalitis virus (arbovirus) by some domestic animals' reservoir of virus, transmitted by mosquito bite to man.
- **Polio myelitis** caused by Poliovirus by contact, houseflies, fleas, food and water.
- **Rabies** (Hydrophobia) caused by Rabies virus (Rhabdovirus) by Bite a mad (rabid) dog
- **Dengue** fever or breakbone fever caused by Dengue virus (arbovirus) by Mosquito (Aedes) bite.
- Acquired Immunodeficiency Syndrome (**AIDS**) caused by Human Tcell
- Lenkemia virus (**HTLVIII**) also called LAV (Retrovirus) by blood and sperm among homosexuals, heterosexuals, intravenous drug users, haemophiliacs, promiscuous individuals and prostitutes.

Human Diseases Caused by Bacteria

- **Septic sore throat** caused by Streptococcus Sp by Bacteria infect throat and nasal membranes by droplets and direct contact.
- **Diphtheria** caused by Irregular rod (Corynebacterium diphtheria) by Bacteria infect respiratory tract by carrier, through contact, droplets and food items.
- **Pneumonia** caused by Diplococcus pneumonia by Bacteria transmitted to respiratory tract, including the lungs by droplet infection.
- **Tuberculosis** caused by Irregular rod (Mycobacterium tuberculosis) by Bacteria transmitted to lungs, bones and other organs by direct contact droplet infection, food and milk.
- **Plague** or **Bubonic** caused by Short rod (Yersinia pestis) by Rat flea spreads disease from rat to man.
- **Tetanus** or **LockJaw** caused by Clostridium tetani by Bacteria in soil, enter through wound.
- **Typhoid** or enteric fever caused by, Salmonella typhi by Flies, food, faces water and carriers.
- **Cholera** caused by Vibrio cholerae by Flies food, stools, water and carriers.
- **Bacillary** dysentery caused by short rod (Shigella dysenteriae) by Flies, food, faeces, water and carriers.
- **Whooping cough** caused by small short rod (Hemophilus pertussis) by Droplets protected during coughing and sneezing.
- **Syphilis** caused by Spiralshaped organism (Treponema pallidam) by direct contact, chiefly sexual intercourse.
- **Leprosy** caused by Mycobacterium Leprae by long and close contact with infected persons

- **Botulism** caused by Clostridium botulinum by organism produces poison in food.

Human Diseases Caused by Protozoans

- **Amoebic dysentery** (Amoebiasis) caused by Entamoeba histolytica by Transmission from man to man through ingestion of cysts in drinking water vegetables and food contaminated with faeces.
- **Diarrhea 'Giardiasis'** caused by Giardia intestinalis by Transmission from man to man through ingestion of cysts in drinking water vegetables and food contaminated with faces.
- **Malaria** caused by Plasmodium vivax by Transmitted to man by bite of an infected female auophelise mosquito.
- **Sleeping** sickness (Trypanosomiasis) caused by Trypanosoma brucei by Transmitted by bite of tsetse fly

Some Important Information & Facts Related to Biology

1. **Melvin Kelvin** was awarded Nobel Prize for his work on Photosynthesis
2. The **largest flower** in the world is Refflessia and the **smallest one** is **wolfessia**.
3. **Penicillin** is obtained from **penicillium Notatum**.
4. Reserpine derived from the plant 'serpentine' is used to alleviate high blood pressure.
5. Plants, living in acidic soils, are called **oxalophytes**.
6. **Photosynthesis** is most **active** in **blue** and red light in which light energy is converted into chemical energy and O₂ is not a limiting process during this process.
7. **The smallest bone**, lies **stapes** is found in the human ear.
8. **Enzymes** are basically **proteins**.
9. **Mitochondria** is called the '**power house of the cell**'
10. **Pancreas** is both an endocrine and **exocrine gland**.
11. Persons of blood group '**O**' are called '**Universal Donor**' while that of '**AB**' are called '**Universal Acceptors**'.
12. **Seedless** fruits are formed by **parthenogenesis**.
13. Simple plants that contain **no chlorophyll** are called **fungi**.
14. **Spirogyra** is commonly known as '**pond silk**'
15. The **longest muscle** in the human body is found **in thigh**.

16. In a leaf, the opening between two guard cells is **stomata**.
17. **Gibberellins** are responsible for cell elongation.
18. The chemical **name of chlorophyll** is magnesium Dihydro prophyisin.
19. **Bile** is produced in liver and stored in **gel bladder**.
20. All arteries, except pulmonary artery carry oxygenated blood.
21. The main function of **W.B. C.** is to produce **antibodies**.
22. **Retina** in the eye, acts as a film in the **camera**.
23. Human tears contain a mild antibacterial agent, named **Lysozyme**.
24. The biggest bone in the human body is **femur**.
25. Vitamin **B12** is almost never found in plants.
26. **Agrostology** is the study of **grasses**.
27. **Phycology** is the study of a algae while the study of fossils is called paleontology
28. **Hydroponics** is cultivating plants without using soil.
29. Palco botany is the study of fossils of **botanical specimens**.
30. **Pepsin & Lactose** enzymes ad on proteins in the digestive system.
31. The water soluble vitamins are **vitamin B and C**
32. A chemical change in **DNA molecule** is called **mutation**.
33. **Glycogen** acts as a short term food reserve in animals.
34. **Estrogen** is a female sex **hormone**.
35. The enzyme amylase aids in the digestion of starch.
36. **ATP** synthesis takes place in **mitochondria**.
37. **70%** of the body weight of a man is **water**.
38. The tough transparent membrane that protects the eye ball is called cornea.
39. Energy is produced in human body by Carbohydrates.
40. Sugar is the product of the dark reactions of photosynthesis.

Important One-liner Type Questions-

1. Banana Freckle, a plant disease, is caused by _____. - **Fungus**
2. What is the scientific name of Neem? - **Azadirachta Indica**
3. Who discovered the Bacteria? - **Van Leeuwenhoek**
4. To which phylum does the Amoeba belong? - **Protozoa**
5. Who is known as The Father of the Green Revolution? - **Norman Ernest Borlaug**
6. Pneumonia affects which part of the Human Body? - **Lungs**
7. Who is known as The Father of Genetics? - **Gregor Mendel**
8. Which is the second largest gland of the Human Body? - **Pancreas**
9. The deficiency of vitamin B-1 causes _____. - **Beri-Beri**
10. Which drug is yielded from Cinchona tree to cure Malaria? - **Quinine**
11. What is the common name of the Retinol? - **Vitamin A**
12. Human Skin have _____ layers? - **Three**
13. What is the full form of DNA? - **Deoxyribonucleic Acid**
14. Beetroot is which portion of the plant? - **Tap Root**
15. _____ is the basic unit of heredity. - **Gene**
16. Who is also known as Father of Microbiology? - **Van Leeuwenhoek**
17. Which scientist had developed the Theory of Evolution? - **Charles Darwin**
18. Which branch of science is concerned with the classification of organisms? - **Taxonomy**
19. In plants, respiration takes place through _____. - **Stomata**
20. Dermatitis is a _____ disease. - **Fungal**
21. In which form, Glucose is stored in our body? - **Glycogen**
22. Plants synthesize proteins from _____. - **Amino Acids**
23. Which organ is also known as The Biochemical Laboratory of the Human Body? - **Liver**
24. What is responsible for the yellow colour of urine? - **Urochrome**
25. Who discovered the Antibiotics? - **Alexander Flaming**
26. The functional unit of the Kidney is known as _____. - **Nephrons**
27. Leprosy is caused by _____. Bacteria
28. Lipase, the fat-digesting enzyme is secreted by _____. - **Pancreas**
29. Scientists who proposed The Cell Theory? - **Theodor Schwann and Matthias Jakob Schleiden**
30. Who proposed the Mutation Theory? - **Hugo de Vries**

10. Nitrification is the biological process of converting
A. N₂ into nitrate
B. N₂ into nitrite
C. Ammonia into nitrite
D. Ammonia into N₂

Ans. C.

11. Blood is red in colour due to the presence of _____ .
A. Cytochrome B. Chlorophyll
C. Hemocyanin D. Haemoglobin

Ans. D.

12. Which one of the following events in a botanical garden is never directly influenced by light?
A. Flowering B. Photosynthesis
C. Transpiration D. Fertilization

Ans. D.

13. Which of the following is usually not an airpollutant?
A. Hydrocarbons B. Sulphur dioxide
C. Carbon dioxide D. Nitrous oxide

Ans. D.

14. Which of the following is the treatment of water pollution?
A. Bag house filter
B. Windrow composting
C. Venturi scrubber
D. Reverse Osmosis

Ans. D.

15. Which cells in pancreas produce Insulin ?
A. Thymus B. Estrogen
C. Corpus epididymis D. Islets of Langerhans

Ans. D.

16. The waste management technique that involves the use of micro-organisms to remove or neutralize pollutants from contaminated site is called
A. Bio sensor B. Bio magnification
C. Bio remediation D. Bio concentration

Ans. C.

17. The source of energy that causes the least global warming is
A. coal B. Geothermal energy
C. Natural Gas D. Petroleum

Ans. B.

18. The oxygen liberated during photosynthesis comes from
A. Water B. Carbon dioxide
C. Glucose D. Chlorophyll

Ans. A.

19. The term 'Higgs Boson' is associated with
A. Nano Technology
B. Oncology
C. God Particle

- D. Stem Cell Research

Ans. C.

20. The hormone that stimulates heart beat is
A. Thyroxine B. Gastrin
C. Glycogen D. Dopamine

Ans. A.

21. The presence of air bubble in blood stream is dangerous to life because
A. Air combines with blood forming a complex
B. The flow of blood increases manifold
C. The flow of blood is obstructed
D. The pressure of blood increases manifold

Ans. C.

22. The study of relation of animals and plants to their surroundings is called
A. Ecology B. Ethology
C. Genealogy D. Iconology

Ans. A.

23. Which of the following plays an important role in photosynthesis?
A. Chloroplast B. Centrosome
C. Tonoplast D. Nematoblast

Ans. A.

24. The xylem in plants are responsible for:
A. transport of water
B. transport of food
C. transport of amino acids
D. transport of oxygen

Ans. A.

25. Project 'Sankalp' started for the purpose _____
A. To eradicate illiteracy
B. To eradicate Polio
C. To eliminate AIDS/HIV
D. To eliminate unemployment

Ans. C.

26. Which of the following bacterium causes crown gall disease in plants?
A. Bacillus thurigiensis
B. Agrobacterium tumefaciens
C. Pseudomonas fluorescens
D. None of these

Ans. B.

27. Eustachian Tube is located in which part of human body?
A. Nose B. Ear
C. Eyes D. Throat

Ans. B.

28. Which part of the brain plays an important role in motor control?
A. Cerebellum B. Cerebrum
C. Medulla D. Pons

Ans. A.

29. Meibomian glands are located in
A. Eye B. Ear
C. Nose D. Skin
Ans. A.
30. Which of the following vitamins are water soluble?
A. Vit. A & Vit. B B. Vit. B & Vit. C
C. Vit. C & Vit. D D. Vit. A & Vit. K
Ans. B.
31. Sphygmomanometer measures the blood pressure in the
A. Veins B. Arteries
C. Eyes D. Synovial
Ans. B.
32. The reverse effect of X-ray emission is
A. Raman effect
B. Compton effect
C. Zeeman effect
D. Photo-electric effect
Ans. D.
33. The connective tissue that connects a muscle to a bone is
A. Cartilage B. Ligament
C. Tendon D. Interstitial fluid
Ans. C.
34. Goitre is caused by the deficiency of _____
A. Zinc B. Calcium
C. Iodine D. Chlorine
Ans. C.
35. Which organ gets affected in Weil's disease?
A. Liver B. Lung
C. Heart D. Kidney
Ans. D.
36. What does the term 'Ebola' stand for?
A. A viral disease outbreak in West Africa
B. A viral disease outbreak in Bangladesh
C. A city in Syria destroyed by ISIS.
D. None of the these
Ans. A.
37. The virus of AIDS affects the growth of _____
A. Haemoglobin
B. RBCs in blood
C. T cells in blood
D. Grey cells in brain
Ans. C.
38. Bacterial decomposition of biological material under anaerobic condition is
A. fermentation B. fertilization
C. contamination D. composting
Ans. A.
39. The elements known as primary nutrients for plants
A. Nitrogen, Phosphorus and Potassium
B. Nitrogen, Oxygen and Silicon
C. Potassium, Boron and Nitrogen

- D. Nitrogen, Phosphorus and Iron
Ans. A.
40. A genetically engineered form of brinjal known as the BT-brinjal has been developed. The objective of this is
A. to make it pest resistant
B. to improve its taste and nutritive value
C. to make it drought resistant
D. to make its shelf-life longer
Ans. A.
41. Blood group was discovered by
A. Alexander Fleming
B. William Harvey
C. Landsteiner
D. Paulov
Ans. C.
42. Decoding and interpretation of visual information in brain is associated with
A. Frontal lobe B. Occipital lobe
C. Temporal lobe D. Parietal lobe
Ans. C.
43. _____ is a byproduct of sewage treatment and can be decomposed to produce bio-gas
A. Sewage B. Sludge
C. Sewer D. Scum
Ans. B.
44. The food in Onion is stored in the form of _____
A. Cellulose B. Protein
C. Starch D. Sugar
Ans. A.
45. Motor cortex are associated with which part of the brain?
A. Frontal lobe B. Parietal Lobe
C. Temporal lobe D. Occipital Lobe
Ans. A.
46. Which enzyme is present in all members of the animal kingdom except Protozoa?
A. Insulin B. Pepsin
C. Renin D. Amylase
Ans. D.
47. The most serious air pollutant causing health hazard is
A. Sulphur dioxide B. Carbon monoxide
C. Ozone D. Nitrogen oxide
Ans. A.
48. Companion cells are unique to
A. Bryophytes B. Pteridophytes
C. Angiosperms D. Gymnosperms
Ans. C.

49. Lacrimal glands are situated in the
A. Palms B. Buccal cavity
C. Eye orbit D. Stomach
Ans. C.
50. Depletion of ozone layer causes
A. Breast cancer B. Skin cancer
C. Lung cancer D. Blood cancer
Ans. B.
51. Majority of the fungal bionts of lichens belong to
A. Baridiomycetes B. Ascomycetes
C. Gomycetes D. Deuteromycetes
Ans. B.
52. Which of the following has open vascular system?
A. Cockroach B. Human
C. Rat D. Birds
Ans. A.
53. The human faeces is yellow in colour due to the presence of a pigment called
A. Pepsin B. Renin
C. Amylase D. Urobilin
Ans. D.
54. What is contained in Chlorophyll?
A. sodium B. potassium
C. manganese D. magnesium
Ans. D.
55. Epigraphy is the study of which of the following?
A. Coins B. Inscriptions
C. Temples D. Birds
Ans. B.
56. Why is Carbon Monoxide a pollutant?
A. Reacts with haemoglobin
B. Makes nervous system inactive
C. It reacts with Oxygen
D. It inhibits glycolysis
Ans. A.
57. Silk worms feed on
A. Basil leaves
B. Curry leaves
C. Rose leaves
D. Mulberry leaves
Ans. D.
58. The sexual reproductive organs of aspergillus are:
A. Spermatium and Oogonium
B. Antheridium and Oogonium
C. Spermatium and Ascogonium
D. Antheridium and Ascogonium
Ans. D.
59. Ornithophily is effected by
A. snails B. bats
C. insects D. birds
Ans. D.
60. Science dealing with study of soil is called
A. Pedology B. Pedagogy
C. Ecology D. Pomology
Ans. A.
61. If waste materials contaminate the source of drinking water, which of the following diseases will spread?
A. Scurvy B. Typhoid
C. Malaria D. Anaemia
Ans. B.
62. Pneumonia is a bacterial disease caused by the type of bacteria called _____
A. Bacilli B. Cocci
C. Sprilli D. Vibrio
Ans. B.
63. Which mosquito is the carrier of Zika virus?
A. Culex B. Aedes
C. Anopheles D. Culiseta
Ans. B.
64. Root cap is derived from
A. Dermatogen B. Calyptrogen
C. Protoderm D. Histogen
Ans. B.

Biology is one of the important subjects from the exam point of view. In this post we have come up with Short Notes from the **Biology** part of the **General Knowledge section**. A good number of questions are asked in every exam. Thus, the post is very helpful for the upcoming **SSC & Railway Exams**

Vitamins:

- Organic compound required in small amounts in the die to maintain normal metabolic functions are known as 'Vitamins'.
- The term vitamin was changed to vitamin when it was realized that not all vitamins are amines.
- Many vitamins act as (or) are converted into coenzymes; they neither provide energy nor are incorporated into tissues.
- These also regulate the Bio-chemical processes in the body.

Vitamins are classified into two groups

1. **Fat soluble vitamins** (A, D, E, K). These are rich in liver cells.
2. **Water soluble vitamins** (C, B-complex). These are present in much smaller amounts in cells.

Fat soluble vitamins:

Vitamin A:

- Vitamin A is also known as '**Retinol**'.
- **Deficiency diseases:** Night blindness, redness in eyes (Exophthalmia), degeneration of lachrymal glands.

Vitamin D:

- Vitamin D is also known as 'Calciferol'.
- **Deficiency diseases:** Rickets in children, Osteomalacia in adults.

Vitamin E:

- Vitamin E is also known as 'Tocopherol'.
- Deficiency diseases: Sterility nutritional nuclear dystrophy, neurosis of heart muscles.

Vitamin K:

- Vitamin K is also known as '**Anti hemorrhagic**'.
- Deficiency diseases: Blood coagulation is prevented, continuous bleeding occurs.

Water soluble vitamins:

Vitamin 'B Complex': Vitamin B Complex is a mixture of B1, B2, B3, B5, B6, B7, B9, and B12.

Vitamin B1:

- Vitamin B1 is also known as **Thiamin**.
- **Deficiency diseases:** Beri Beri disease which affects the legs.

Vitamin B2:

- Vitamin B2 is also known as Riboflavin.
- **Deficiency diseases:** Dark red tongue, dermatitis, cheilosis occurs at the corners of mouth & lips.

Vitamin B3:

- Vitamin B3 is also known as **Pantothenic acid**.
- **Deficiency diseases:** Burning sensations of feet.

Vitamin B5:

- Vitamin B5 is also known as Nicotinic acid/Niacin.
- **Deficiency diseases:** Pellagra, dermatitis, diarrhea.

Vitamin B6:

- Vitamin B6 is also known as **Pyridoxine**.
- **Deficiency diseases:** Dermatitis and convulsions.

Vitamin B7:

- Vitamin B7 is also known as **Biotin** (also considered as vitamin H).
- **Deficiency diseases:** Dermatitis, blood cholesterol increases, loss of hair and paralysis.

Vitamin B9:

- Vitamin B9 is also known as Folic acid.
- **Deficiency diseases:** Anemia, inflammation of tongue, gastro intestinal disorders.

Vitamin B12:

- Vitamin B12 is also known as '**Cynocobal amine**'.
- **Deficiency diseases:** Pernicious anemia, hyperglycemia.

Vitamin C:

- Vitamin C is also known as '**Ascorbic acid**'.
- **Deficiency diseases:** Scurvy, delay in wound healing.

Human Diseases Caused by Fungi :-

- Ringworm caused by Microsporum, Trichophyton by direct contact from unbathed cats and dogs or objects handled by infected individuals.
- Athlete's foot caused by Trichophyton by Bad foot hygiene where skin remains warm and moist for long period, fungi finds optimal condition, invade dead outer layer of skin.

Human Diseases Caused by Viruses

- **Smallpox** caused by Variola Virus by direct contact (droplets), indirect by infected articles.
- **Chicken pox** caused by Varicella virus by direct contact (droplets) indirect by infected objects.
- **Common cold** caused by Rhinovirus by contact.
- Influenza/Flu caused by Orthomixovirus by contact (droplets) virus transmitted through discharge from respiratory tracts of persons infected with disease
- **Mumps** caused by Mumps virus by direct contact, virus in Saliva and secretion of nose invades salivary glands.