# BIOLOGY WORK SHEET FOR GRADE 12 STUDENTS OROMIA SPECIAL BOARDING SCHOOLS

## GENERAL DIRECTIONS

- ✓ These questions are from Grade 9 contents and attempt all questions accordingly.
- ✓ There are four multiple choices for all and one best answer and choose the best one.

1. Which of the following idea explain contribution of Dr. Aklilu Lemma to international biological knowledge?
   A. Investigation of the life cycle of Schistosoma.
   B. Investigation of how our immune system defends against Schistosomiasis.
   C. Finds effective way of controlling Schistosoma which does not cost too much.
   D. Investigation of the life cycle of snail.
2. To which of the following resource conservation Institute of Biodiversity Conservation of Ethiopia involved?
   A. A. Soil, Animals and Plants C. Air, Soil and Microorganisms
   B. B. Plants, Animals and Microorganisms D. Water, Soil and Air
3. Your teacher told you to observe bacterial cell under the microscope and then draw and label all structures you observe under the microscope. Which of the following structures may NOT be included in your structure?
   A. A. Flagella B. Cell wall C. Ribosome D. Mitochondria
4. When air enters into the lungs (inhalation) which of the following would happen?
   A. A. diaphragm muscle relax C. internal intercostal muscle contract
   B. B. higher pressure inside the lungs D. internal intercostal muscle relax

The following is list of functions of elements in human circulatory system.

i. The transport medium
ii. Pump blood around the body
iii. The pathways along which the transport takes place.

5. Which one of the following is a correct order of elements of circulatory system responsible for the above function respectively as i, ii, iii?
   A. A. Blood, Heart, Blood vessels C. Blood vessels, Heart, Blood
   B. B. Heart, Blood vessels, Blood D. Blood vessels, Blood, Heart
6. The following idea characterize the three types of blood vessels

| Blood vessel | Characteristics |
|---|---|
| Arteries | Thin wall with little muscle and elastic fiber, wider lumen |
| Veins | Thick wall with muscle and elastic fiber, narrower lumen |
| Capillaries | Wall is a single cell thick, tiniest vessel with narrow lumen |

Which blood vessel is correctly matched with its characteristics?
   A. Arteries B. Veins C. Capillaries D. Arteries and veins
7. Enlarged lymph glands are a sign of:
   A. the body is fighting off an invading pathogen. C. your immune system is weakened

B. lack of essential nutrients D. your body is recovered from disease

8. Which of the following idea is **not** true about bile?
   A. Secreted by liver cell C. neutralizes acid from stomach in the small intestine.
   B. stored in the pancreas until needed D. emulsify fats
9. Which of the following components of the blood play important role in clotting blood during injury?
   A. plasma B. red blood cells C. white blood cells D. platelets
10. The two types of human teeth that are used for chewing and crushing food.
   A. Canines and premolars C. premolars and molars
   B. incisors and premolars D. incisors and canines
11. Which of the following is the **correct order** of food (substrate), enzyme and breakdown product of digestive process in the small intestine?
   A. A. Fat, trypsin, glucose C. Lipid, Lipase, Fatty acid and glycerol
   B. B. Starch, Amylase, Amylose D. Protein, lipase, amino acids
12. Once the digested food molecules have been taken into the blood and then taken into the liver that processes some of the food. Which blood vessel is responsible to carry digested food into the liver?
   A. hepatic artery C. hepatic portal artery
   B. hepatic vein D. hepatic portal vein
13. What is diastolic blood pressure? It is when the heart muscles:
   A. relax and fill with blood C. at rest
   B. contract and force out blood D. stop working
14. Which of the following is an orderly sequence when going from broader one to narrower?
   A. kingdom, phylum, class, order, family, species and genus
   B. kingdom, phylum, class, order, family, genus and species
   C. Species, genus, class, order, family, phylum and kingdom
   D. Species, genus, family, order, class, phylum and kingdom
15. Which of the following characteristics is common for organisms belongs to kingdom animalia?
   A. They all possess back bone C. They are heterotrophs
   B. They all possess structural cell wall D. They all are autotrophs
16. Which of the following phylum is correctly matched with their appearance?
   A. Platyhelminthes_ flat worms C. Mollusca- spiny-skinned
   B. Cnidaria_ soft-bodied D. Annelida_ round worm

17. One of the following ideas is not characterize phylum coelenterates?

    A. ring of tentacles for capturing their prey.
    B. are exceptionally beautiful creatures.
    C. have only one opening called the mouth.
    D. have bilateral body symmetry.

18. Mammals are the well-known organisms of all animals. Which of the following **is not** the feature that makes them different from other groups of vertebrate?

    A. having hair on the skin and external ears
    B. producing milk for their young in mammary glands
    C. producing sweat to help control their body temperature
    D. their body being covered with scale.

19. Who developed binomial system of nomenclature?

    A. Aristotle  B. Carl Linnaeus  C. Louis Pasture  D. Robert Koch

20. Which one of the following scientific name is correctly written?

    A. *Eragrostis Teff*  C. ***Agaris Campestris***
    B. Canis Simensis  D. *Apis mellifera*

The next question number 21 and 22 are based on the following groups of organisms

I. Mosses  III. Arthropods  V. Ferns  VII. Gymnosperm
II. Aves  IV. Angiosperms  VI. Pisces

21. Which of the above group belongs to the plant kingdom?

    A. A. II, I, IV, VII  C. IV, V, VI, VII
    B. B. I, IV, V, VII  D. I, II, III, IV

22. Under which of the above group dicots and monocots are classified?

    A. A. IV  B. V  C. II  D. VII

23. Which one of the following is true about kingdom Monera?

    A. They have separate nucleus  C. Many of them are multicellular.
    B. Reproduces asexually  D. All can make their own food

24. Protista that cause bioluminescence in the seas and oceans when they produce a greenish light

    *A. Trypanosoma*  *B. Rhizopus*  *C. Dinoflagellates*  *D. Candida*

25. Which of the following plant phyla correctly match with its characteristics?

A. Bryophyta__true root, stem and leave C. Gymnosperme_produce flower

B. Ptrediophyta_ have vascular tissue D. Angiosperm produce naked seed plant

26. Spermatophytes includes:

A. Bryophytes and Pteridophyta C. Bryophytes and Angiosperms

B. Pteridophyta and Gymnosperm D. Gymnosperms and Angiosperms

27. Grade 9 students went to the field to collect some plants and group into monocots and dicots. Then they collected bean, wheat, barley, pea, grasses, mango and maize. Which of the following plants did they group in dicots?

A. Wheat, pea and grasses C. barley, bean and maize

B. Pea, bean and mango D. mango, bean and grasses

28. The following are lists of animals given to grade 12 students to select only arthropods.

Insecta, Annelida, Diplopoda, Chilopoda, Nematoda, Crustacean, Mollusca

Which of the following option students classify as arthropoda?

A. insecta, annelida, diplopod and Chilopoda

B. insecta, crustacean, diplopoda and Chilopoda

C. mollusca, crustacean, diplopod and Chilopoda

D. nematoda, annelida, mollusca and chilopoda

29. Which of the following organisms is vertebrate animal?

A. Lizard B. Ascaris C. Earth worm D. Snail

Question number 30 is based on the following structures of plants.

1. Seed 2. Rhizoids 3.Vascular tissue 4. Flower 5. Cone

30. The structure that perfectly fit into Gymnosperms is:

A. 1, 3, 4 B.1, 3, 5 C.1, 2, 4 D. 1, 3, 5

31. From the following given animal phyla which one is evolutionary dead end and have no other close living relatives?

A. Porifera B. Annelida C. Nematoda D. Coelenterate

32. Which one of the following animal phyla has no body plan (asymmetrical)?

A. Chordates B. Nematoda C. Coelenterate D. Porifera

33. One of the following is not the structure of bony fishes?

A. bony skeleton B. opercula C. heterocercal tail D. round shaped scale

34. Which of the following comprises only higher mammals

A. Cows, Elephants, Monkeys, Humans

B. Kangaroos, Cows, Elephants, Humans

C. Rats, Koala bear, Kangaroos, Opossum

D. Koala bear, Cows, Elephants, Kangaroos

35. For a substance to easily pass across the cell membrane by simple diffusion, which of the following properties should it possesses?

A. Large size

B. Positive charge

C. Ability to dissolve in lipids

D. Negative charge

36. Lichen is correctly described as?

A. association between roots of a plant and some fungi

B. relation of ants with the stem of some trees

C. association between algae and fungi

D. parasitic relationship between fungi and some higher plants

37. Which of the following phylum of the animal kingdom is correctly matched with the characteristics they possess?

A. Nematoda = have flattened body

B. Platyhelminthes = have round body.

C. Mollusca = have stinging cells

D. Annelida = have segmented body.

38. Which of the following is **incorrect** about characteristics of a plant that belongs to one of the four plant divisions?

A. Pteridophyta – the plant is seedless but has vascular tissue

B. Bryophyta – the plant is seedless and non-vascular

C. Gymnosperm – the plant has no vascular tissue but produces seeds

D. Angiosperm - the plant produces seeds that are enclosed in an ovary

39. What happens if an animal cell is kept in very concentrated salt solution?

A. The cell becomes plasmolysed

B. The cell become shrink

C. Salts move out of the cell

D. Water molecules move into the cell

40. All of the following diseases are caused by smoking cigarette. Except?

A. Cirrhosis of the liver

B. Coronary heart disease

C. Lung disease

D. Stroke

41. Which of the following is the role of hydrochloric acid secreted by the wall of the stomach?
    A. Breaks down carbohydrates into smaller sugar molecule.
    B. Creates a suitable environment for the action of pepsin.
    C. Facilitates the digestion of lipids in the stomach.
    D. Controls the action of sphincter muscles at the entrance of stomach.
42. Which of the following practices helps to keep the hygiene of human breathing structures?
    A. Doing exercise every morning
    B. Decreasing sugar level in the diet
    C. Cleaning oral cavity
    D. Sneezing and coughing into the air
43. Why is double circulation so important for warm blooded animals such as human being?
    A. Because it carries blood directly from the lungs to the body cells.
    B. Because it supplies fully oxygenated blood to all body cells.
    C. Because it increases the pumping efficiency of the heart.
    D. Because it supplies deoxygenated blood to all body cells.
44. What is the adaptive advantage of hemoglobin?
    A. It keeps the blood pH constant.
    B. It increases the capacity of the blood to carry oxygen.
    C. It prevents bacteria from attacking the blood.
    D. It helps the blood to clot
45. The main role of the platelets in human blood is?
    A. In the clotting mechanism
    B. In the carriage of carbon dioxide
    C. In the carriage of oxygen
    D In the production of antibodies
46. Which of the following statement is true about the main function of valves within the circulatory system? Used to:
    A. Prevent blood from moving in the wrong direction.
    B. Prevent blood from moving too rapidly.
    C. Stop circulation whenever necessary.
    D. Permit blood to circulate rapidly.
47. Which of the following statements is correct about blood transfusion? Blood group B can be donated to:
    A. B, AB and receives from group B
    C. A, B and receive from group B

B. O and receive from group B D. B, AB and receive from group AB

48. How high altitudes affect our breathing system? At high altitude
    A. The level of oxygen is high, as our breathing rate decreases.
    B. The level of oxygen is low; as a result, our breathing rate increases
    C. The number of red blood cells decreases, as available oxygen decreases
    D. The number of red blood cells increases, as available oxygen increases
49. Which of the following functions of blood vessels is true?
    A. Arteries always carry oxygenated blood
    B. Pulmonary vein carries deoxygenated blood from the lung to the heart
    C. Veins always carry deoxygenated blood
    D. Umbilical vein carries oxygenated blood from placenta to the fetus
50. **This item is based on the following table which shows the different classes of phylum**

    **Arthropoda with the number of body parts they possess.**

| No | Class | Body parts |
|---|---|---|
| 1 | Insecta | Head, thorax and abdomen |
| 2 | Arachnida | Abdomen and cephalothorax |
| 3 | Crustacean | Abdomen and cephalothorax |

51. Which classes of the phylum Arthropoda is correctly matched with the number of body parts they are made?
    A. 1 and 3 C. only 1
    B. 2 and 3 D. 1,2 and 3
52. Which of the following organisms in class Mammalia produce fully developed young, which are nourished by milk from the mammary glands?
    A. Marsupials C. Monotremes
    B. Placental D. Egg laying
53. What is the best term that expresses the movement of substances in cells against their concentration gradient?
    A. Active transport C. Osmosis
    B. Passive transport D. Diffusion

54. The germ theory of disease states that
    A. communicable diseases are caused by germs
    B. genetic diseases are caused by micro organisms
    C. living things arise from non-living matter through time.
    D. humans will eradicate germs from the world through artificial intelligence
55. Rotaviruses, Salmonella, Escherichia coli, Giardia or Amoeba are human parasite known to cause
    A. Gastroenteritis/watery diarrhea B. malaria C. tetanus D. cholera
56. Identify the **correct** statement about the cell membrane
    A. Organisms which lack a cell wall also have no cell membrane.
    B. It breaks down heavy molecules into simple molecules that cannot harm the cell.
    C. It controls all activities of the cell.
    D. It controls the passage of substances such as carbon dioxide, oxygen and water
57. Athlete's lung respires faster than the usual breath per minute because breathing faster helps their cells in all of the following except.
    A. A. obtain more oxygen C. remove more $CO_2$
    B. D. produce more urine D. facilitates more ATP production
58. The levels of ecological organization consisting a group of ecosystems that share similar climates and typical organisms is termed as
    A. ecosystem B. biome C. community D. population
59. When we breathe air **out** of our lungs:
    A. Ribs drop and move inward.
    B. The diaphragm contracts and flattens from its normal domed shape.
    C. The intercostal muscles contract.
    D. The volume of chest (thorax) is increased
60. Which of following mineral ions are **incorrectly** matched with its function in our body?
    A. Iodine_ is vital to make haemoglobin found in our red blood cells
    B. Calcium_ used to make bones and teeth hard and strong.
    C. Iron_ prevents the deficiency disease called anaemia.
    D. Sodium_ is used for proper functioning of the nervous system
61. What characteristics of sponges categories them as one of the animal phyla?
    A. being heterotrophs and lack of cell wall
    B. being multicellular and the ability of their adults to move
    C. being prokaryote and autotroph
    D. being vertebrates and lack of cell wall
62. The most intelligent invertebrates are the octopi and squid of Mollusca. This is due to the well-developed
    A. Gills B. Visceral mass C. Brain D. Shells
63. Identify the type of carbohydrate that is insoluble in water and have no sweet taste.
    A. Sucrose B. Glycogen C. Galactose D. fructose

64. Which of the following part of human circulatory system carry **deoxygenated** blood?
    A. left ventricle B. right ventricle C. pulmonary vein D. coronary artery
65. Which of the following parts of human circulatory system is **correctly matched** with its function?
    A. lymphocytes-used to clot the blood C. blood plasma transports nutrients and $CO_2$
    B. left atrium – pumps blood to the lung D. Capillaries –return blood to the heart.
66. The chemical digestion of proteins is started in the stomach by pepsin as that of fats is started
    A. in mouth by renin C. in duodenum by lipase
    B. in stomach by lipase D. in ileum by erepsin
67. Why do we need to provide a scientific name to organisms?
    A. to increase the complexity of science in this era.
    B. to ensure the superiority of the Latin language over the others
    C. C.to add some more names to organisms
    D. to solve problems associated with common names.
68. Identify the correct statement about the study of cells or organisms under a light microscope
    A. stained cells can be both live and dead
    B. an image formed at the eyepiece lens is greatly magnified, upside and right to right
    C. stains are chemicals added to slide tissues to make the cells easier to see
    D. Staining increases the size of the specimen than it resolves it
69. Which of the following is **incorrect** about breathing rate of people with excess weight?
    A. They have a problem to breathe deeply
    B. They have a problem to breathe faster
    C. it is difficult for their diaphragm to lower properly
    D. they have a reduced vital lung capacity
70. The great resolution power of an electron microscope over that of light microscope lies on its
    A. use of beam of electrons C. recent invention
    B. use of beam of light D. use of a longer wave length
71. The resolution power of human eye, light microscope and an electron microscope respectively are
    A. 300nm, 0.1mm, 0.3nm C. 0.1mm, 300nm and 0.3nm
    B. 0.3nm, 0.1mm, and 300nm D. 0.1mm, 0.3nm and 300nm
72. Which of the following chamber of human heart have much thickest wall and pump the blood throughout your body?
    A. Left ventricles C. Right ventricles
    B. Right atria D. Left atria

73. Which one of the following statement best describes the main characteristics of the gymnosperms?
    A. They have flowers as reproductive organs.
    B. Their reproductive structures are found in cones.
    C. Their seeds enclosed in a fruit.
    D. Have leaves relatively broad and a network of veins.
74. Which of the following is incorrect about characteristics of a plant that belongs to one of the four plant divisions?
    A. Pteridophyta – the plant is seedless but has vascular tissue
    B. Bryophyta – the plant is seedless and non-vascular
    C. Gymnosperm –not vascular plant but produces seeds
    D. Angiosperm - the plant produces seeds that are enclosed in an ovary
75. What types of chemical reaction results in breakdown of organic polymers in to their respective subunits?
    A. Polymerization B. Dehydration C. Condensation D. Hydrolysis
76. Which of the following organism is incorrectly paired with its scientific name?
    A. Dog- *Canis familiaris* B. Domestic cat - *Felis domesticus*
    B. Housefly- *Phaseolus vulgaris* D. Wolf = *Canis simensis*
77. Which of the following statement is not correct about the red blood cells?
    A. There are more red blood cells than any other type of blood cell.
    B. They are adapted to their role in carrying oxygen around your body
    C. They are packed with special red substance hemoglobin, which picks up oxygen.
    D. They have a nucleus and form part of the body's defense system against microbes.
78. Which of the following solution is hypotonic for all the others?
    A. Distilled water C. 5 % sugar solution
    B. 10% sugar solution D. 25 % sugar solution
79. Which of the following statement is not correct about the structure of Trachea?
    A. Have a large surface area and a good blood supply
    B. The lining of our trachea secretes mucus, which collects bacteria and dust particles.
    C. It is the structure that serves as a common passage for both food and air
    D. It is the wind pipe which is made from C-shaped cartilages that support it
80. Which of the following statement is correct regarding blood vessels?
    A. Veins carry blood away from various body parts to the heart.
    B. Arteries carry the blood away from the heart to various body parts
    C. Pulmonary arteries carry oxygenated blood toward the heart
    D. Veins have much thicker wall than arteries

81. Which of the following digestive enzyme is correctly mated with its function?
    A. Erepsin: converts peptides into amino acids
    B. Trpsin- solidifies milk proteins casein
    C. Pancreatic amylase hydrolysis fats and oils into fatty acids and glycerol
    D. Lactase converts sucrose into glucose and fructose
82. In which of the following features prokaryotic cells distinguished from eukaryotic cells? They:

    A. Lack nuclei B. have genetic material C. lack cytoplasm D. have no ribosome.
83. In an experiment , measure the concentration of a polar molecule inside and outside the cell and find that the concentration of this molecule is gradually increasing inside the cell. You also measure the concentration of ATP inside the cell and find that it is dropping. Which of the following processes are you likely to be observing?

    A. Simple diffusion B. Osmosis C. Passive transport D. Active transport
84. If you realized that a given unicellular organism lacks nuclear membrane, into which kingdom it can be classified?

    A. Kingdom protista C. Kingdom animalia
    B. B. Kingdom monera D. kigdom plantae
85. The blood vessels which are used for providing a site for the exchanging of materials between the blood and body tissue are:-

    A. Capillaries B. Arteries C. Veins D. Ventricle
86. Which of the following is not the common feature of all vertebrates? They

    A. Have radial body symmetry C. have two pairs of appendages
    B. Have Endoskeleton D. have skull and notochord
87. Which of the following is the main feature of dicot plants?
    A. Their vascular bundles are in scattered form
    B. Have a broad leaves with netted venation
    C. Have narrow leaves with parallel venation
    D. Have needle shaped leaves
88. Which one of the following is wrong about the characteristic for fungi?
    A. They are eukaryotic
    B. All fungi possess a purely cellulosic cell wall
    C. They are heterotrophic
    D. They are both unicellular and multicellular

89. Choose the incorrect statement about members of kingdom–Monera?
    A. Many of them live in or on other organisms as parasites
    B. Some can synthesize their own food from inorganic solutes
    C. They are unicellular and eukaryotic organisms
    D. They are unicellular organism lacks nuclear membrane
90. From the given structural components of the heart. Which of the following parts carry oxygenated blood?
    A. Aorta B. Left ventricle C. Pulmonary artery D. Coronary vein
91. A technique of sterilizing inoculating loops by burning substances at high temperatures in the air is: -

    A. Pasteurization B. Autoclaving C. Dry heat sterilization D. Incineration
92. Which one is not true about compound light microscope?
    A. It has two lens
    B. Its magnification and resolution power is limited by wave length of light.
    C. Use beam of electron
    D. Use beams of light
93. Which one is true about eukaryotic cell?
    A. All eukaryotes have a cell wall.
    B. Their nucleus does not have nuclear membrane.
    C. Their genetic material is found in the nucleus.
    D. They have false nucleus
94. Which one of the following organelle and it's function is not correctly matched?
    A. Rough endoplasmic reticulum → protein synthesis
    B. Nucleus → store genetic information
    C. Mitochondria → site anaerobic respiration
    D. Ribosome → site of protein synthesis
95. Plant cells differ from animal cells. Because plant cells have ____.
    A. Mitochondria B. Nucleus C. Large central Vacuole D. Lysosome
96. Matured red blood cell have no nucleus, similarly it has no _____?
    A. Ribosome B. Endoplasmic reticulum C. chloroplast D. Mitochondria
97. A cell which placed in hypotonic solution will __?
    A. Shrink B. Shows plasmolysis C. Swell up D. No change in shape or size

98. The type of membrane which allows passage of only solvent through it is called ____?

A. Freely permeable B. Semipermeable C. Impermeable D. Carrier protein

99. Which one of the following best describes homologous or analogous structure?

A. Homologous structure has the same basic plan, but used for different function.

B. Homologous structure has different basic plan, but used for the same function.

C. Analogous structure has the same basic plan, but used for different function.

D. Analogous structure has different basic plan and different function.

100. Organism found in a given Class must be found in which of the following taxa?

A. In all species B. In all Order C. In Phylum D. In all family

101. Which one of the following is the correct written form of human scientific name?

A. Homo Sapiens B. *Homo sapiens* C. *Homo Sapiens* D. Homo sapiens

102. Which one of the following is used to describe biological symbiotic relation (mutualistic relation) between fungi and roots of plant?

A. Rhizoid B. Rhizomes C. Lichens D. Mycorrhizae

103. Suppose20% sucrose solution is isotonic to plant cell, then the cell would lose more water if it is placed in which of the following solution?

A. 5% Sucrose solution. C. 20% Sucrose solution.

B. 50% Sucrose solution. D. Neither gain, nor loss of water

104. Which one is the correct about chemical digestion of protein in the gut?

A. Protein is changed into peptide in stomach by pepsin enzyme

B. Peptone is changed into amino acid in duodenum by trypsin enzyme.

C. Protein is changed into peptone in the stomach by pepsin enzyme

D. Peptide is changed into amino acid in duodenum by Erepsin enzyme.

105. During breathing, humans take $O_2$ into the body and remove carbon dioxide from the body by means of inhalation and exhalation. Which one is not true during inhalation?

A. Diaphragm relax and have dome shape

B. Ribs move up and out ward

C. External intercostal muscle contract

D. Air pressure in the lung decreases

106. The spread and infection of microorganism controlled by means of sterilization. Which one of the following sterilization method and its function is correctly matched?

A. Heat methods of sterilization used for all material to kill microorganism.

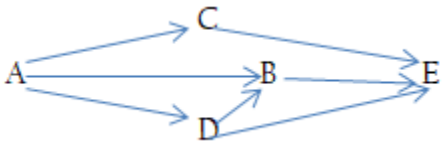
B. Antiseptics used for animate object to kill microorganism.

C. Disinfectant used for both inanimate and animate object to kill microorganism.

D. Disinfectant used for only animate object to kill microorganism.

107. Infectious disease can be transmitted from infected person to healthy person in different ways. From the following which one is not means of infectious disease transmission?

A. Contamination B. Air droplet C. Vector D. Lack of balanced diet




Based on information given in the above food web, which one is represented by letter "B"?

B. Producer B. Carnivores C. Herbivores D. Omnivores

108. If concentration of mineral found in plant cell is greater than concentration of mineral found in the soil. Then by what types of transport plant absorb mineral from the soil?

A. Passive transport B. Diffusion C. Active transport D. Osmosis