ADDIS ABABA CITY ADMINISTRATION EDUCATION BUREAU
GRADE EIGHT MODEL EXAM
BIOLOGY EXAMINATION
2012/ 2020

Number of Items: 64 **Time Allowed: 1 Hour**

1. Which of the following sub - disciplines of biological sciences studies about the functions of living organisms and their parts?
   A. Physiology
   B. Genetics
   C. Cytology
   D. Zoology

2. Which one of the following statements is the contribution of biology to the society?
   A. Reduce the rate of useful traditional practices
   B. Increasing agricultural productivity
   C. under evaluating the effect of deforestation
   D. Introducing bad farming practices

3. Which organism is correctly matched with its structure of locomotion?
   A. Euglena - cilia
   B. Bacterium - flagellum
   C. Amoeba - cilia
   D. Paramecium - pseudopodia

4. Which cellular part of a paramecium is important for absorption of soluble nutrients?
   A. Pellicle
   B. Gullet
   C. Cytoplasm
   D. Anal pores

5. A technological innovation derived from knowledge of human eye is
   A. car.
   B. airplane.
   C. camera.
   D. submarine.

6. Which device is used to observe objects that are too small to be seen clearly with naked eye?
   A. Camera
   B. Telescope
   C. Stethoscope
   D. Microscope

7. Which of the following is the function of coarse adjustment knob?
   A. Moves the tube up and down and produce rough focus of the image
   B. Moves the tube up and down by very small amount and produce a sharp focus of the image
   C. Supports the glass slide and contains the specimen being observed
   D. Adjusts the amount of light passing through the stage and illuminates the specimen

8. A plant organ that mainly involved in transpiration and gaseous exchange is the
   A. root.
   B. leaf.
   C. stem.
   D. flower.

9. Which one is the highest level of organization in multicellular organisms?
   A. Cell
   B. Tissue
   C. Organism
   D. Organ

10. Compared to plant cells, animal cells
   A. have chlorophyll.
   B. are smaller in size.
   C. have cell wall.
   D. have large vacuole.

11. A grade 7 student observed onion epidermal cells under a microscope. He put two drops of iodine solution closer to one side of the cover slip, and left to diffuse for some minutes. Then he observed the cell under low power objective. Which one is true about his observation?
   A. The cells observed irregular in shape.
   B. The stain enlarges the size of the cell.
   C. The stain makes the cells easily observable.
   D. The cells observed flat and circular in shape.

12. Which one is an example of long bones?
    A. Rib
    B. Finger
    C. Scapula
    D. Humerus

13. Which one of the following is correct about the process of fertilization in humans? It is the process
    A. that occurs before the development and release of an egg.
    B. in which a male gamete fuse with the egg cell to form a new cell.
    C. during which adolescents reach sexual and reproductive maturity.
    D. of removing unfertilized dead eggs with blood through the vagina.

14. How HIV/AIDS reduce productivity of an individual? By
    A. increasing incomes of the family
    B. reducing number of orphans and widows
    C. reducing a person's ability to work
    D. decreasing separation of family

15. A kind of moving joints that allows movement back and forth in a single direction is the
    A. hinge joint.
    B. socket joint.
    C. gliding joint.
    D. pivot joint.

16. Which one of the following is true about muscles? The contraction of
    A. skeletal muscles is involuntary.
    B. skeletal muscles is faster than other muscles.
    C. cardiac muscles is voluntary control.
    D. smooth muscles account for the heart beat.

17. Suppose a student collects the following plants from a field.

I.	Moss	IV.	Rose
II.	Maize	V.	Conifer
III.	Fern	VI.	Eucalyptus

If the student wants to classify the above plants into gymnosperms and angiosperms, which numbers represent angiosperms?

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

18. What is the function of petals in flowering plants? To

A. attract insects
B. protect the flower
C. support the stigma
D. support the anther

19. Which of the following farm animal has 150 days of pregnancy period?

A. Horses
B. Cow
C. Camel
D. Sheep

20. Compared to human stomach, the stomach of a ruminant

A. is capable of digesting cellulose.
B. has three chambers.
C. digest proteins in the reticulum.
D. has one chamber.

21. Which of the following is true about fruit? It

A. is developed from ovule.
B. is developed from ovary.
C. consists of radical and plumule.
D. consists of epicotyls and hypocotyls.

22. Which one of the following is true about the process of fertilization in plants? It

A. occurs when male gametes fused each other.
B. is the fusion of pollen grain and ovule on the stigma.
C. usually occurs when female gametes fused each other in the ovary.
D. is the union of male and female gametes in the ovary.

23. Which of the following statement is correct about the structure and function of a leaf?
    A. Most of food production takes place on mesophyll tissue.
    B. Gas exchange on the leaf occurs through the midrib.
    C. The leaf is protected from insects and pests by stomata.
    D. Transpiration takes place through the leaf blead.

24. A symbiotic relationship between organisms of different species in which both organisms benefit is
    A. mutualism.
    B. predation.
    C. parasitism.
    D. commensalism.

25. Which type of soil has the highest water holding capacity?
    A. Loam soil
    B. Clay soil
    C. Sandy soil
    D. Loam and sandy soil

26. Unlike dicotyledons, monocotyledons
    A. have flowers as their reproductive organs.
    B. have two food storage structures in the seed.
    C. are diverse in numbers of species.
    D. have vegetative body parts.

27. What makes insects to be the most diverse groups of animals? Their
    A. body size
    B. ability to fly
    C. ability to live in different habitats
    D. ability to feed all kinds of plants

28. Which insect involve incomplete metamorphosis in its life cycle?
    A. Fly
    B. Honey bee
    C. Butterfly
    D. Grass hopper

29. A method of preventing soil erosion by planting of trees on a land is
    A. afforestation.
    B. contour plowing.
    C. terracing.
    D. crop residue cover.

30. How are Tsetse flies affect humans? By
    A. being vectors of *Trypanosomiasis*
    B. damaging crops in the farm
    C. being very greedy eaters
    D. causing disease to cattle

31. Driving herd of cattle back and forth across affected areas is a traditional controlling method of
    A. maize stalk borer.
    B. armyworm.
    C. tsetse flies.
    D. grass hopper.

32. A Grade 8 student wants to carry out a simple experiment on photosynthesis. He put a plant in complete darkness for 72 hours. Finally, he tested the presence of starch in the leaf using iodine solution and found a negative result. What do you conclude from the experiment?
    A. Light is required to make starch.
    B. Starch can be formed in the absence of light.
    C. Glucose in the leaf cells is temporarily stored in the form of starch.
    D. Oxygen is formed as a byproduct in photosynthesis.

33. Which of the following characteristic is specific to social insects?
    A. Complete metamorphosis
    B. Vectors of a disease
    C. Formation of large colonies
    D. Incomplete metamorphosis

34. What is the role of drone bee?
    A. Mating with several worker bees
    B. Receiving honey and pollen from field bees
    C. Making wax and honey
    D. Mating with the queen bee

35. Compared to traditional beehive, modern beehive
    A. has removable frames and easy to inspect.
    B. decreases the productivity because of no re-using of comb.
    C. damages bees during honey harvest.
    D. yields more bees wax but less honey.

36. Which one of the following events is occurred in the process of photosynthesis?
    A. Light energy is used to power conversion of oxygen into glucose.
    B. Organic compounds are converted into inorganic compounds.
    C. More amount of oxygen is consumed in the process.
    D. Light energy is absorbed and splits water molecules.

37. What is habitat? It is the
    A. interaction between an organism and its environment.
    B. place where an organism lives and reproduces.
    C. group of individuals of the same species in an area.
    D. group of individuals of different species in an area.

38. Suppose you are assigned to study the distribution of a grass species by using a quadrate in a playing field of your school. What factors should you consider to do this study?
    A. Distribution of same species
    B. Number of grass
    C. Shape and size of the quadrate
    D. Food availability

39. Suppose you wants to collect and preserve plants from your village. You removes the plant whole from the ground. Then you washes it to remove the soil and makes sure that the roots are not damaged. Which of the following is the next step of this activity?
    A. Labelling
    B. Cutting
    C. Mounting
    D. Pressing

40. If a grass is eaten by mouse, the mouse is also eaten by the snake and finally the sake is eaten by hawk, what do you call such feeding relationship of organisms in an area?
    A. Food chain
    B. Parasitism
    C. Food web
    D. Mutualism

41. Which one is the importance of biology to the development of Ethiopia? To
    A. get low yield and quality of crops
    B. introduce harmful agro - chemicals to the environment
    C. reduce the impact of negative human activities on the environment
    D. destruct natural products

42. Suppose a girl and her friend has already decided not to make sex because of fear of school dropout, HIV/AIDS and unwanted pregnancy. One day her friend violated the decision to have sex with her. But she refused to accept his question and told him that she is not ready for that yet. She told him that she may terminate their relationship for unlimited time because of his action. Which of the following life skills is most likely that the girl developed?
    A. Communication
    B. Problem - solving
    C. Creativity
    D. Self - assertiveness

43. What is the use of binocular? It is used to
    A. measure blood pressure.
    B. measure body temperature.
    C. study smaller objects.
    D. observe distant objects.

44. Which one is a unicellular organism?
    A. Euglena
    B. Bee
    C. Jelly fish
    D. Insect

45. Which one is true about reproduction of yeasts? They are reproduced
    A. asexually by binary fission.
    B. asexually by multiple fission.
    C. both asexually and sexually.
    D. asexually by budding.

46. Which one is the importance of bacteria? They are used to
    A. recycle nutrients in the environment.
    B. produce alcoholic drinks.
    C. recycle water in the environment.
    D. preserve animal specimen.

47. Which one of the following is the primary sexual characteristics of males?
    A. Deepening of voice
    B. Growing pubic hair
    C. Production of sperm cells
    D. Having sex organs

48. Which one is correct about the function of womb?
    A. A site for pregnancy
    B. Serves as sensation tissue
    C. A site for fertilization
    D. Place for egg maturation

49. How can you help your friends living with HIV/AIDS? By
    A. discriminating from the parties
    B. showing disrespect to them
    C. showing willingness to help
    D. stigmatizing their families

50. Planting indigenous trees is more important than exotic trees. This is because they
    A. compete resources.
    B. are well adapted to the climate of an area.
    C. degrade biodiversity of a given area.
    D. pollute the environment.

51. What is the first step in growing trees?
    A. Selecting the type of trees to be planted
    B. Choosing the site of tree planting
    C. Identifying the purpose of tree planting
    D. Obtaining seeds of trees to be planted

52. A farmer brought *Cordia abyssinica* seedlings from nursery site and planted in the garden. What do you advise him to give care as the seedlings grow?
    A. Put the seedlings in the open air
    B. Sprinkle water every midday
    C. Cutting the branches every week
    D. Put the seedlings away from sunlight

53. Ruminants can further break down food by
    A. storing the cud in the stomach.
    B. regurgitating the cud.
    C. using aerobic bacteria to break down cellulose.
    D. producing secretions to digest protein in the mouth.

54. Which one of the following prevents further transmission of Anthrax?
    A. Removing bushes and under growth along streams
    B. Preventing animal dung coming into contact with water
    C. Isolating infected animals and vaccinating them
    D. Spraying infected areas with insecticides

55. All of the living organisms and non-living part of a specific area and their interaction is termed as
    A. biosphere.
    B. habitat.
    C. community.
    D. ecosystem.

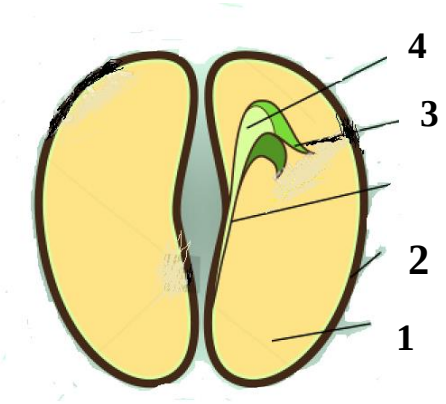
56. The following table shows types of human teeth and their functions.

No.	Types of human teeth	Functions
1	Incisors	Grinding of food
2	Canines	Tearing and piercing food
3	Premolars	Biting, cutting and gnawing of food
4	Molars	crushing and grinding of foods

Which rows in the above table show the correct type of teeth with their functions?
    A. 1 and 2
    B. 2 and 3
    C. 2 and 4
    D. 3 and 4

ITEMS 57 - 60 ARE ONLY FOR NON - BLIND CANDIDATES.

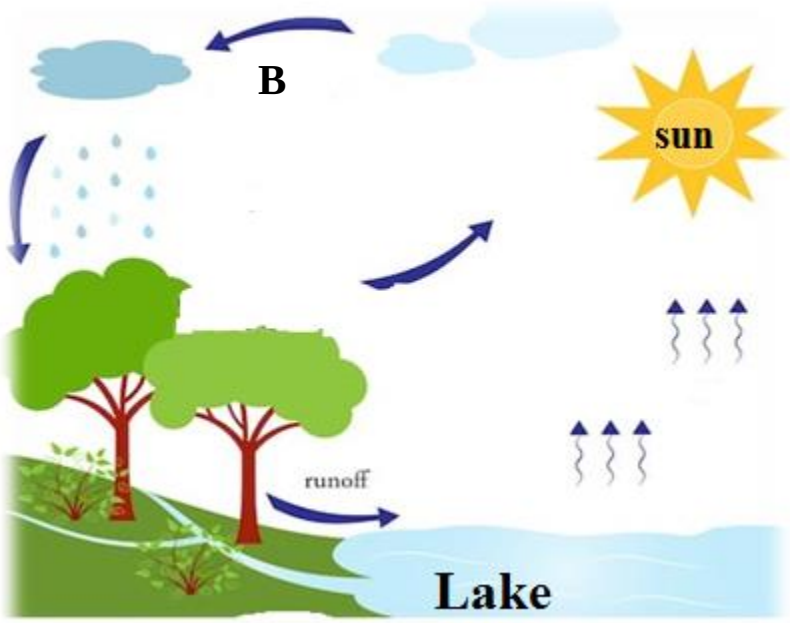
57. The following diagram shows structures of a seed.



Which of the following structures of a seed is represented by number 1?

A. Cotyledon
B. Seed coat
C. Plumule
D. Radicle

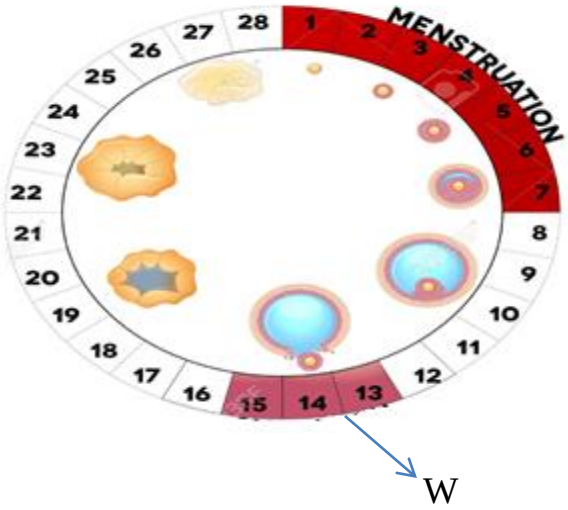
58. The following diagram of water cycle is given.



In the above diagram letter "B" indicates

A. precipitation.
B. evaporation.
C. condensation.
D. transpiration.

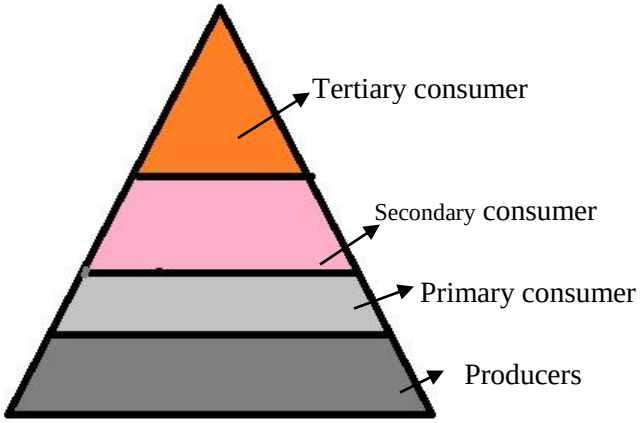
59. Consider the following diagram of menstrual cycle.



Which of the following processes is represented by letter "W" in the above diagram?

A. Menopause
B. Ovulation
C. Fertilization
D. Implantation

60. The following diagram shows pyramid of energy.



Which of the following is true about the above pyramid of energy?

A. High energy is found in each next trophic level.
B. Less energy is found in each next trophic level.
C. Energy is transferred from secondary to primary consumer.
D. Energy is neither lost nor transferred in each trophic level.

ITEMS 61 - 64 ARE ONLY FOR BLIND CANDIDATES.
START WITH NUMBER 61 ON YOUR ANSWER SHEET.

61. From the following stages of water cycle, which process changes water from vapor into liquid?
A. Precipitation
B. Transpiration
C. Evaporation
D. Condensation

62. The movement of an egg cell from the ovary to fallopian tube is called
A. fertilization.
B. menstruation.
C. ovulation.
D. menopause.

63. Which of the following is true about pyramid of energy?
A. High energy is found in each next trophic level.
B. Less energy is found in each next trophic level.
C. Energy is transferred from secondary to primary consumer.
D. Energy is neither lost nor transferred in each trophic level.

64. A structure of a seed that stores food for the germinating seedling is the
A. cotyledon.
B. seed coat.
C. plumule.
D. radicle.

THE END