

**EXTERNAL PAPER
B.O.T II EXAMS
S3 BIOLOGY**

DURATION: 1 HOUR 50 MINUTES

INSTRUCTIONS:

1. Attempt ALL questions in all sections.
2. use the answer grid for section A. Answers for section B should be written in the spaces provided.
3. untidy work may lead to loss of marks

ANSWER GRID

1	11	21
2	12	22
3	13	23
4	14	24
5	15	25
6	16	26
7	17	27
8	18	28
9	19	29
10	20	30

SECTION A

1. The following belong to the same group except,
A. Ant B. mite C. bee D. housefly

2. The term central nervous system refers to
A. the spinal cord only
B. the brain
C. sympathetic nerves
D. brain and spinal cord only

3. Bats are able to catch their prey at night by
A. sight B. Taste C. Smell D. Echolocation

4. The vitamin required for good night vision is

A. vitamin B B. vitamin A C. Vitamin C D. vitamin D

5. Which of the following has the greatest energy in a food chain?

- A. Decomposers B. primary consumers
C. Tertiary consumers D. producers

6. The organism that causes malaria is

- A. Anopheles mosquito B. Culex mosquito
C. Plasmodium D. Aedes mosquito

7. Biological control of rats would involve

- A. use of rat poison B. use of mouse traps
C. breeding cats D. clearing bushes

8. Which one of the following soil types has the highest capillarity?

- A. Loam B. Sandy C. Clay D. Sandy loam

9. Denitrifying bacteria change

- A. Ammonia into nitrates B. Nitrogen into nitrates
C. Nitrates into free nitrogen D. Nitrites into nitrates

10. Which one of the following enzymes works best at low pH?

- A. Amylase B. Maltase C. Pepsin D. Ptyalin

11. Which one of the following vitamins and minerals would be needed by a lactating mother suffering from weak teeth and bones?

- A. Vitamins K, iodine and phosphorous
B. Vitamin C, phosphorous and calcium
C. Vitamin A, calcium and iron
D. Vitamin D, phosphorous and calcium

12. The closing and opening of stomata in leaves is regulated by

- A. epidermal cells B. guard cells
C. stomatal cells D. palisade cells

13. Which of the following pairs of organs is part of the excretory system?

- A. ovaries, heart, kidneys B. brain, lungs, kidneys
C. eyes, lungs, liver D. kidneys, lungs, liver

14. Functionally, the most diversified organ in the human body is the

- A. Brain B. Stomach C. Liver D. Kidney

15. Addition of humus to a sandy soil would

- A. decrease the capillarity of the soil
- B. increase the aeration of the soil
- C. improve the water retention of the soil
- D. decrease mineral content of the soil

16. At which level of classification can organisms interbreed and produce viable offsprings?

- A. class
- B. phylum
- C. order
- D. species

17. Which of the following parts of a microscope magnify the object?

- A. eyepiece and mirror
- B. objective lens and mirror
- C. eyepiece and fine adjustment
- D. eyepiece and objective lens

18. Which of the following organisms has two nuclei?

- A. Amoeba
- B. Paramecium
- C. Hydra
- D. Trypanosome

19. The correct order in which soil particles separate from bottom to top after stirring in water a sample of top soil is

- A. Clay, sand, silt, gravel
- B. Silt, clay, gravel, sand
- C. Sand, gravel, clay, silt
- D. Gravel, sand, silt, clay

20. In honey bees, the caste produced from unfertilized eggs is the

- A. King
- B. Queen
- C. Workers
- D. Drones

21. Secondary growth in flowering plants is a function of

- A. Xylem cells
- B. Phloem cells
- C. Cambium cells
- D. Cortex cells

22. Which one of the following is a modified root?

- A. Rhizome
- B. Corm
- C. Cassava tuber
- D. Irish potato tuber

23. Which one of the following organisms lacks a gut?

- A. Tapeworm
- B. Liverfluke
- C. Snail
- D. Earthworm

24. The cell organelle for energy production is the

- A. Golgi body
- B. Nucleus
- C. Mitochondrion
- D. Ribosome

25. Which one of the following is correct about dividing cells at the tip of the plant shoot?

- A. have large vacuoles
- B. are specialized
- C. have soft cell walls
- D. have rigid cell walls

26. The following organisms are made up of cells except

- A. Amoeba
- B. Virus
- C. Yeast
- D. Tapeworm

27. Which class in phylum platyhelminthes are worms with elongated bodies divided into a series of segments found?

- A. Turbellaria B. Chondrichtheyes C. Cestoda D. Trematoda

28. Which of the following cannot be used in classification of plants?

- A. flower structure B. leaf structure
C. leaf colour D. seed type

29. Which of these methods is NOT important in maintenance of soil fertility on a given piece of land?

- A. crop rotation B. addition of organic matter
C. maintaining of vegetation cover regularly D. burning of the grass in the plot

30. The last segment of a caterpillar bears a pair of structures called

- A. prolegs B. true legs C. claspers D. ovipositors

SECTION B

31. (a)(I) To which phylum does the cockroach belong? (1 mark)

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(ii) Give a reason for your answer above (1 mark)

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(b) How is the male cockroach different from the female cockroach? (3marks)

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(c) How is the cockroach adapted to survival in its environment? (3 marks)

(d) Complete the table below:

Organism	Order
Grasshopper	
Cockroach	
Butterfly	
Bee	
Beetle	
Bean weevil	

(3 marks)

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33. (a) Define ‘chemical of life’

(2 marks)

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(b) Give three disaccharides and their constituent sugars

(6 marks)

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(c) Give two examples of polysaccharides

(2 marks)

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(d) Give three differences between disaccharides and polysaccharides

(3 marks)

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SECTION C

- 34. Outline the various types of fruit and seed dispersal (15 marks)**
- 35. (a) How is soil formed (10 marks)**
- (b) Outline the importance of living organisms in the soil (5 marks)**

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