



**RAJARATA UNIVERSITY OF SRI LANKA
FACULTY OF APPLIED SCIENCES**

**B.Sc. in Applied Sciences
First Year – Semester I Examination – March 2021**

FDN 1203 – GENERAL BIOLOGY

Index No.

Time: Two (02) hours

Answer ALL questions in section A and two (02) questions from section B.

SECTION A

**Underline the most suitable answer.
No marks will be given for multiple choices.**

1. The basic unit of life is
 - a) the organ.
 - b) the organ system.
 - c) the cell.
 - d) the tissue.

2. Choose the statement that is **NOT** included in the Cell Theory.
 - a) Cells do not contain hereditary molecules.
 - b) All organisms are composed of cells.
 - c) Cell is the smallest unit of life.
 - d) Cells arise only by division of previously existing cells.

3. The cell is considered as a self-contained unit because,
 - a) it can carry out all vital biological processes.
 - b) it is the basic unit of life.
 - c) it is protected by a cell wall.
 - d) it has a cell membrane.

4. Select the **FALSE** statement. Eukaryotic cells
 - a) are highly evolved cells.
 - b) lack a membrane bound nucleus.
 - c) show great variations in shape and size.
 - d) are composed of protoplasm and plasma membrane.

5. Both animal and plant cells have a
 - a) cell wall.
 - b) nucleus.
 - c) chloroplast.
 - d) large central vacuole.
6. What is **NOT** a constituent of plasma membrane?
 - a) Lipid
 - b) Vitamin
 - c) Protein
 - d) Carbohydrate
7. In plant cells, the neighboring cell walls are held together by
 - a) middle lamella.
 - b) primary cell wall.
 - c) secondary cell wall.
 - d) plasmodesmata.
8. Thilakoids can be found in
 - a) mitochondria.
 - b) ribosome.
 - c) chloroplast.
 - d) golgi body.
9. Mitochondria
 - a) serve as a site of protein production.
 - b) carry out photosynthesis.
 - c) synthesize ATP.
 - d) give protection to the cell.
10. What is the **FALSE** statement about lysosome?
 - a) Lysosome contains digestive enzymes.
 - b) Lysosome is a single membrane bound vesicle.
 - c) Lysosome occurs in eukaryotic cells.
 - d) Lysosome serves as the energy store of the cell.
11. Ribosomes
 - a) are the sites of protein synthesis.
 - b) are encased by two membranes.
 - c) are the places that command all metabolic activities in the cell.
 - d) contains a mixture of digestive enzymes.

12. Underline the **FALSE** statement regarding the nucleus of the animal cell.
- a) Nucleus is the largest and most easily seen organelle within the cell.
 - b) Large amount of DNA is packed in the nucleus.
 - c) Nucleus consists of large and small subunits.
 - d) Nucleus is typically located in the central region.
13. Select the most suitable word for the blank.
 are included in Kingdom Fungi.
- a) Plants
 - b) Animals
 - c) Algae
 - d) Mushrooms
14. What is the **FALSE** statement about viruses?
- a) Viruses can be seen only through electron microscope.
 - b) They are unable to grow and reproduce outside living cells.
 - c) They have ribosomes and mitochondria.
 - d) They possess a protein coat.
15. Halophiles
- a) can be found in hot water springs.
 - b) live in oxygen poor environments.
 - c) occur in sea water.
 - d) can live in intestinal tract of some animals.
16. What is the **FALSE** statement about Kingdom Protista? All organisms in kingdom Protista
- a) are eukaryotic organisms.
 - b) contain chlorophyll a.
 - c) can produce their own food.
 - d) contain chlorophyll c.
17. Members of Kingdom fungi
- a) Have chlorophyll a.
 - b) are heterotrophic organisms.
 - c) can produce their own food.
 - d) are prokaryotic organisms.
18. This is an example for non-vascular plant.
- a) Coconut
 - b) Jack fruit
 - c) Fern
 - d) Mango

19. Underline the open seeded plant
- a) Coconut
 - b) Cycas
 - c) Lemon
 - d) Banana
20. In monocot plants
- a) veins are net like.
 - b) root system is fibrous.
 - c) vascular bundle is arranged in rings.
 - d) floral parts are usually in multiples of 4 or 5.
21. Kingdom Animalia consists of
- a) prokaryotic organisms.
 - b) heterotrophic organisms.
 - c) organisms that contain a protein coat.
 - d) organisms that share both living and non-living characteristics.
22. Which of the following phyla does not contain invertebrates?
- a) Platyhelminthes
 - b) Nematoda
 - c) Annelida
 - d) Reptilia
23. All members of Phylum Nematoda are
- a) pore bearers.
 - b) radially symmetrical animals.
 - c) dorso – ventrally flattened animals.
 - d) known as round worms.
24. “Cnidocytes” can be seen in the members of the
- a) Phylum Porifera
 - b) Phylum Cnidaria
 - c) Phylum Platyhelminthes
 - d) Phylum Nematoda
25. Leech belongs to
- a) Phylum Nematoda.
 - b) Phylum Platyhelminthes.
 - c) Phylum Annelida.
 - d) Phylum Porifera.

26. An example for Phylum Mollusca is
- a) Snail.
 - b) *Euspongia*.
 - c) Jellyfish.
 - d) Hookworm.
27. Select the **FALSE** statement about arthropods.
- a) They have a chitinous exoskeleton.
 - b) They have chitinous wings.
 - c) Their body is composed of two segments.
 - d) They have jointed appendages.
28. Select the most suitable statement for Phylum Echinodermata
- a) All members of Phylum Echinodermata are aquatic.
 - b) Echinoderms have a muscular foot for locomotion.
 - c) Echinoderms can shed off the exoskeleton.
 - d) All Echinoderms are radially symmetrical animal with water vascular system.
29. Select the **FALSE** statement about fish.
- a) Cartilaginous fishes do not have a swim bladder.
 - b) Cartilaginous fishes are egg layers.
 - c) Rays and sharks have a cartilaginous skeleton.
 - d) Bony fishes have two chambered heart.
30. Members of Class Amphibia
- a) live only in water.
 - b) have rough scaly skin.
 - c) have no limbs.
 - d) possess three chambered heart.
31. Who has a four chambered heart?
- a) Python
 - b) Cobra
 - c) Frog
 - d) Crow
32. Which is **NOT** an adaptation for flight in birds?
- a) Light porous bones
 - b) Strong breast bone called keel
 - c) High metabolic rate
 - d) Dry scaly skin

33. Who is having an opposable thumb?
- a) Dog
 - b) Gorilla
 - c) Shrew
 - d) Spiny ant eater
34. Which gas interferes with the O_2 transportation in human blood?
- a) SO_2
 - b) SO_3
 - c) NO_2
 - d) CO
35. What is **FALSE** about Organochlorines?
- a) They are released into the water ways by excess use of chemicals in agriculture.
 - b) They can accumulate through food chains.
 - c) They enter in to the environment by incomplete combustion of petrol.
 - d) They can affect nervous system.
36. Which of the following is **NOT** a way of entering CO_2 into the atmosphere?
- a) Combustion of fossil fuel
 - b) Respiration of animals
 - c) Decomposition of organic matter
 - d) Photosynthesis.
37. Which of the following disease is caused by animal excreta in polluted water?
- a) Cancer
 - b) Kidney disease
 - c) Cholera
 - d) Measles
38. What is **FALSE** about Biomes?
- a) It is the largest ecological unit.
 - b) It is a geographical area that a single species of animals or plants exists.
 - c) It has distinct climatic conditions.
 - d) Biomes are distributed on earth as broad belts.
39. Dwarf willow trees, lichens and mosses are a characteristic feature of
- a) Tundra
 - b) Taiga
 - c) Tropical Rain forest
 - d) Deciduous forest

40. In mutualism,

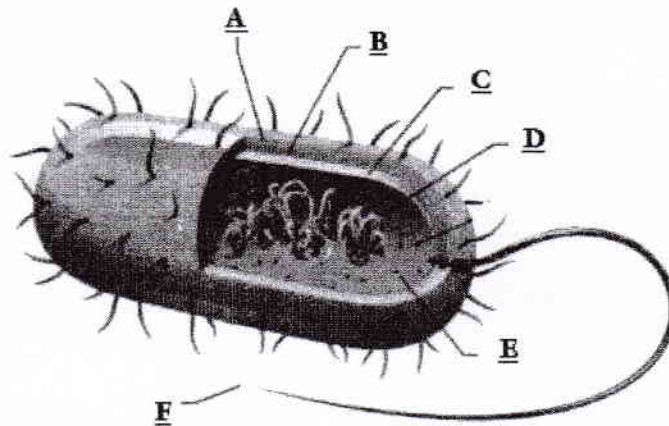
- a) both species get benefits.
- b) one species gets the benefit and neither hurts nor helps the other.
- c) one species is often physically attached to the members of the other.
- d) It is harmful to one organism and beneficial to the other.

(40 × 5 = 200 marks)

SECTION B

Answer **TWO (02)** questions only.

1. a) Identify the following diagram. Label the structures from A to F.



(50 marks)

- b) How do you differentiate living things from non-living things?

(50 marks)

2. a) Illustrate a food chain and a food web using suitable examples.

(50marks)

- b) State the autotrophic organism of the above mentioned (part a) food chain and food web.

(20 marks)

- c) State the primary and secondary consumers of the given food chain.

(20 marks)

- d) How many trophic levels are present in the given example of food chain?

(10 marks)

3. Explain the reasons for the success of arthropods in their worldwide distribution.

(100 marks)

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