37. Metabolism, growth and development are some characteristics of organism. What is meant by each of them? (AL 2021)

(a) Metabolism

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(b) Growth

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(c) Development

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38. One of the characteristic features of living organism is irritability. What is known as irritability? (AL 2020)

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39. Define reproduction.

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40. What is heredity?

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41. State what is evolution.

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42. State few characters exist in non living entities

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Live Biology

Biology

NEW SYLLABUS

English Medium

UNIT 01

Introduction to Biology

Importance of Biology

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Competency 1.0. : **Conducts investigations from a biological prospective**
Competency Level 1.1.1 : **Elaborates on the nature, scope and importance of with reference to challenges faced by mankind**
Number of Periods : **02**

Learning Outcomes : States the importance of learning biology
: States the issues and challenges pertaining to biology

Suggested Teaching- Learning Process

- Provide/quote suitable sources to gather information regarding nature, scope and the importance of biology.
  Instruct the students to gather information on issues pertaining to biology from different sources.
- Advise students (groups) to categorize the information in accordance with the given areas.
  1. Biological diversity
  2. Human body and its functions
  3. Plant life
  4. Natural resources and management
  5. Sustainable food production
  6. Diseases, and their causes
  7. Addressing legal and ethical issues
- Assign students to construct a concept map on the importance of studying biology

Assessment and Evaluation

- Assess student's concept map based on the following criteria:
- Accuracy of the subject matter
- Relevant examples
- Inter links in the concept map
- Time management

Competency Level 1.1.2 : Reviews the nature and the organizational patterns of the living world
Number of Periods : **03**

Learning Outcomes :

- briefly discusses diversity of organisms in size, shape, form and habitat using appropriate examples
- discusses how organisms differ from each other using appropriate examples
- states characteristic of organisms
- constructs the hierarchical level of organization with suitable examples
- emphasizes the cell as the basic structural and functional unit of life
- appreciates all kinds of organisms and their interactions

Suggested Teaching- Learning Process

- Use power point presentations or diagrams or specimens and other sources to highlight the diversity of organisms.
- Explain the following characteristics of organisms with examples.
  - Order and Organization
  - Metabolism

27. Which of the following shows an arrangement with increasing order of complexity?
(1) Cell, organelle, organ (2) Tissue, cell, organism
(3) Community, ecosystem, biosphere
(4) Community, population, biome (5) Bacterial cell, viral particle, eukaryotic cell

28. Which of the following is/are characteristic of living organisms?
(1) Organic structure (2) responsiveness to stimuli (3) To maintain homeostasis
(4) Arrangement of the body with many hierarchical levels (5) All of the above

29. Basic structural and functional unit of life is
(1) macromolecules (2) organelles (3) cell (4) tissue (5) organ (AL 2019)

30. Which of the following level is not considered as a level of organization of living matter?
(1) Cell (2) Population (3) Species (4) Ecosystem (5) Biosphere

31. Some of the characteristics of living beings are given below. Among those, which features is not shown by an individual animal.
(1) Irritability (2) Evolution (3) Reproduction (4) Heredity (5) Adaptation

32. Which of the following is a correct sequence of levels in life's hierarchy, proceeding downward from an individual animal?
(1) brain, organ system, nerve cell, nervous tissue (2) organ system, nervous tissue, brain
(3) organism, organ system, tissue, cell, organ
(4) nervous system, brain, nervous tissue, nerve cell
(5) organ system, tissue, molecule, cell

33. Two characteristics that can be seen only in living organisms are
(1) adaptation and growth. (2) movement and irritability.
(3) change with time and development. (4) metabolism and heredity.
(5) synthesis and decomposition. (A/L 2023/02)

34. According to which criteria that the organisms show diversity.

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35. What are main characters that distinguish living organisms from non living? (A/L 2011)

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36. Write down the levels of organization of living matter in the correct order. (A/L 2009)

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19. State the three main methods by which food production can be sustainably maintained. (AL 2021)

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20. State an importance of plants

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21. State non communicable diseases

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22. State communicable diseases

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23. What is stand by CKDu

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24. What are possible reasons for CKDu in Sri Lanka

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25. State few circumstances that use DNA finger printing.

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1.1.2 The nature and organizational patterns of the living world

26. Which of the following represent the correct order of organization of living mater?
(1) Molecules, cells, tissues, organisms, organs, populations, communities, ecosystems, biosphere.
(2) Molecules, organelles, cells, tissues, organs, organisms, populations, communities, ecosystems, biosphere.
(3) Molecules, organelles, cells, tissues, organs, organisms, communities, populations, ecosystems, biosphere.
(4) Molecules, organelles, cells, tissues, organs, organisms, populations, ecosystems, communities, biosphere.
(5) Molecules, organelles, cells, organs, tissues, organisms, populations, communities, ecosystems, biosphere.

- Growth and Development
- Irritability and Co-ordination
- Adaptation
- Reproduction
- Heredity and Evolution
- Provide pictures with hierarchical levels of organization in organisms to students and guide them to arrange those in correct order to make a flow chart from molecules to biosphere.
  Advise students to denote the basic structural and functional unit of life on that flow chart.

Assessment and Evaluation
- Assess the flow chart of the students using the following criteria.
- Accuracy and relevance of information
- Active participation
- Time management

MCQ

1. Biology is the,
(1) study of uniformity behind life (2) study of all living organisms
(3) study of growth and differentiation of living organisms
(4) study of life as recorded by fossils
(5) study of differences among living organisms in world.

2. The field of study about function of living organisms.
(1) Biochemistry (2) Taxonomy (3) Anatomy (4) Histology (5) Physiology

3. The first organism formed on earth are considered to be
(1)heterotrophic, anaerobic eukaryotes (2) heterotropic, anaerobic prokaryotes
(3)autotrophic, anaerobic eukaryotes (4) heterotrophic, anaerobic prokaryotes
(5) autotrophic, aerobic prokaryotes (AL 2020)

4. Which of the following statements incorrect regarding some of the emerging diseases
(1) Cancer is a non communicable disease.
(2) Dengue transmitted by Aedes mosquito
(3) CKDu is caused by unknown type of microorganism
(4) Cancer is caused by abnormal cell division
(5) Heart disease cause is not fully understood yet.

5. Which of the following statements wrong.
(1) Biology is the science focused on studying living organisms.
(2) Life is complex and unique and can not explain using laws of chemistry and physics
(3) Life on earth formed around 3.5 billion years aga.
(4) There is a dynamic relation between living world and inanimate world
(5) Variety of life on earth, number of different species of plants, animals, microorganisms, the diversity of genes and different habitats are all part of biologically diverse earth

1.1.1 Nature, scope and importance of biology with reference to challenges faced by the mankind

6. Find the relationship between followings

1.	Ecology	A	Study of biological molecules
2.	Zoology	B	Study of microorganisms
3.	Anatomy	C	Study of gross structure
4.	Morphology	D	Study of inheritance
5.	Botany	E	Study of animals
6.	Physiology	F	Study of appearance
7.	Histology	F	Study of environment
8.	Biochemistry	G	Study of tissues
9.	Microbiology	H	Study of plants
10.	Genetics	I	Study of function

7. What is called as gross structure of an organism?

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8. About how many years ago did life originate on earth? (AL 2021)

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9. What was the nature of early formed life.

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10. Briefly explain these terms

    Anaerobic

    ……

    Prokaryotic

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11. What is the assumed number of species of living organisms on earth

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12. What fields of study helps to gain knowledge of structure of organisms.

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13. What are part of biologically diverse earth.

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14. How can get knowledge of structure of organs.

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15. What are natural resources.

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16. What are the possible environmental problems arise due to over exploitation of natural resources.

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17. What is sustainable food production

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18. What is the expected time period to double the current human population.

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