



## ICSE - Class 9 – Biology – Concise Selina Solution

### Chapter 1 - Introducing Biology

#### Question A

1. Choose the most appropriate option in the following statements.

- (a) Palaeontology is the study of  
(i) embryos (ii) blood  
(iii) classification (iv) fossils
- (b) Clones of animals are being produced through the practice of  
(i) genetics (ii) ecology  
(iii) embryology (iv) biotechnology

#### Solution A

- (a) (iv) fossils  
(b) (iv) biotechnology

#### Question B.1

Name the following branches of biology:

- (a) Application of biological processes in technologies.  
(b) Science of growing fruits and vegetables.  
(c) Study of prehistoric forms of life.  
(d) Study of causes of immunity (resistance to or defence against diseases).  
(e) Study of fishes.

#### Solution B.1

- (a) Biotechnology  
(b) Horticulture  
(c) Palaeontology  
(d) Immunology  
(e) Ichthyology



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## Question B.2

Fill in the blanks:

- Bioengineering deals with making artificial \_\_\_\_\_.
- \_\_\_\_\_ is the entire DNA sequence of an organ.
- Silk is produced by rearing \_\_\_\_\_.
- Evolution deals with the study of \_\_\_\_\_ and \_\_\_\_\_ of organisms.
- Organisms which draw food from the host body are called \_\_\_\_\_.
- Animals which give birth to young ones are known as \_\_\_\_\_.
- \_\_\_\_\_ is called the Father of Medicine.

## Solution B.2

- limbs, joints
- Genome
- silkworms
- origin, descent
- parasites
- Jeevaj* (viviparous)
- Hippocrates

## Question B.3

Match the branches of biology in Column A with the respective areas of study in Column B.

Column A	Column B
Ichthyology	Viruses
Ornithology	Fishes
Ecology	Birds
Virology	Cells
Herpetology	Diseases
Palaeontology	Fossils



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Cytology	Snakes
Pathology	Environment

## Solution B.3

Column A	Column B
Ichthyology	Fishes
Ornithology	Birds
Ecology	Environment
Virology	Viruses
Herpetology	Snakes
Palaeontology	Fossils
Cytology	Cells
Pathology	Diseases

## Question B.4

Name any two borderline sciences which are connected with Biology.

## Solution B.4

- (1) Biotechnology
- (2) Bioengineering

## Question B.5

Name the respective sub-divisions of Biology which deal with the study of insects, birds, fungi and heredity.

## Solution B.5

- (1) Insects - Entomology
- (2) Birds - Ornithology
- (3) Fungi - Mycology

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(4) Heredity - Genetics

### Question B.6

Name some professions other than medicine which require a basic knowledge of biology.

### Solution B.6

- (1) Biotechnologist
- (2) Teacher
- (3) Bacteriologist
- (4) Druggist
- (5) Dentist
- (6) Entomologist

### Question C.1

What is Biology? Name and define its three major branches.

### Solution C.1

Biology is the study of living beings, all plants and animals including humans.

The three major branches of Biology in terms of major kinds of organisms are:

1. Botany: The study of plants is called botany.
2. Zoology: The study of animals is called zoology.
3. Human Biology: The study of human as a living organism and his relationship with other living organisms is called human biology.

### Question C.2

How does biology help us in leading a healthier life?

### Solution C.2

The knowledge of biology has greatly helped us in the field of human health. It helps us to understand the cause of many diseases. We are able to identify various micro-organisms that cause diseases in man. We can study their mode



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of living and the different ways in which they spread diseases. The understanding of disease-causing microorganisms has led to the development of new drugs, both natural and synthetic drugs that can kill these organisms.

### Question C.3

A farmer and a housewife may have never studied biology, yet both of them know some of its general principles through experience. State any two principles which they know.

### Solution C.3

A farmer, although has never studied biology, knows by his experience how to increase his produce. He knows how to plough and plant crops and select good quality seeds for sowing. He is also familiar with various methods of irrigation. He knows the technique of cross-breeding and removing weak and unwanted plants and cultivating improved varieties at the right time.

A housewife, by using her experience knows which fruit or vegetable to grow and for how much time. She also knows the nutritional values of various foodstuffs. A housewife adopts various principles of maintaining hygiene at home. She knows to tame some useful animals like cow, goat and dog for her maximum benefit.

### Question C.4

Distinguish between the following pairs of sciences:

- (a) Zoology and Entomology
- (b) Genetics and Embryology
- (c) Phycology and Mycology
- (d) Space Biology and Exobiology
- (e) Biotechnology and Bioinformatics
- (f) Embryology and Immunology
- (g) Ichthyology and Pisciculture

### Solution C.4

- (a) Zoology is the study of animals, whereas Entomology is the study of insects.



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- (b) Genetics is the science of transmission of body characteristics from parents to offspring, whereas Embryology is the study of formation and development of embryos of plants and animals.
- (c) Phycology is the study of algae, whereas Mycology is the study of fungi.
- (d) Space Biology is the study of survival problems of living things in outer space, whereas Exobiology is the study of life elsewhere in the universe.
- (e) Biotechnology is the use of living cells or micro-organisms in industry and technology, whereas Bioinformatics is the management and analysis of biological information stored in databases.
- (f) Embryology is the study of formation and development of embryo of plants and animals, whereas Immunology is the science that deals with the phenomena and causes of immunity (resistance to or defence against diseases).
- (g) Ichthyology is the study of fishes, whereas Pisciculture is the technique of growing fish.

## Question D.1

Do you think Biology can help in further increasing the yield of food? If so, how?

## Solution D.1

Yes, Biology can help in further increasing the yield of food. New varieties of plants and new breeds of cattle, poultry, etc. are being developed with the knowledge of biology. The science has also increased our knowledge of diseases of plants and animals, and how to cure them. All these efforts are helping us to produce more food in fields, dairies and poultry farms.

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