

- A. There are a **Total of 26 Questions** and **Five Sections** in the Question Paper. All questions are **Compulsory**.

- B. **Section A** contains question number **1 to 5**, **Very Short Answer** type questions of **One Mark** each.
- C. **Section B** contains question number **6 to 10**, **Short Answer Type I** questions of **Two Marks** each.
- D. **Section C** contains question number **11 to 22**, **Short Answer Type II** questions of **Three Marks** each.
- E. **Section D** contains question number **23**, **Value-Based Question** of **Four Marks**.
- F. **Section E** contains question number **24 to 26**, **Long Answer Type** questions of **Five Marks** each.
- G. There is no overall choice in the question paper, however, an **Internal Choice** is provided in **One Question** of **Two Marks**, one question of **Three Marks** and all **Three Questions** of **Five Marks**. An examinee is to attempt any one of the questions out of the two given in the question paper with the same question number.

Section A

1

Are clones genetically and morphologically similar to parent ?

[1]

2

List two uses of cloned genes in molecular diagnostics.

[1]

3

What would happen to a population when birth rate decreases and death rate increases ?

[1]

4

Name artificial methods of vegetative propagation.

[1]

5

Name any two types of cells that act as 'cellular barriers' to provide innate immunity in humans.

[1] Like. Share. Bookmark. Download. Make Notes. Print - Your Favourite Questions. Join www.zigya.com

6 Study, Assignments, Solved Previous Year Papers . Questions and Answers. Free Forever.

In the whiptail lizards only the females are born generation after generation. There are no males. How is this possible ?

[2]

7

Mention the phenomenon of pleiotropy by giving an example.

[2]

8

Name the following:

(a) The semi-dwarf variety of wheat is high-yielding and disease-resistant.

(b) Any one inter-specific hybrid mammal.

[2]

9

Explain with the help of a suitable example the naming of a restriction endonuclease.

[2]

OR

State how *Agrobacterium tumefaciens* has been made a useful cloning vector to transfer DNA to plant cells.

[2]

10



Identify the type of the given ecological pyramid and give one example each of pyramid of number and pyramid of biomass in such cases.

[2]

Section C

11 Like. Share. Bookmark. Download. Make Notes. Print - Your Favourite Questions. Join www.zigya.com

[3] Study, Assignments, Solved Previous Year Papers . Questions and Answers. Free Forever.

12

List the number of base pairs in :
(i) lambda bacteriophage
(ii) E.coli and
(iii) haploid content of human DNA.

[3]

13

Write the importance of MOET.

[3]

14

A team of students are preparing to participate in the interschool sports meet. During a practice session you find some vials with labels of certain cannabinoids.
(a) Will you report to the authorities? Why?
(b) Name of a plant from which such chemicals are obtained.
(c) Write the effect of these chemicals on human body.

[3]

15

Explain the significance of satellite DNA in DNA fingerprinting technique.

[3]

16

Explain J-Shaped pattern of population growth.

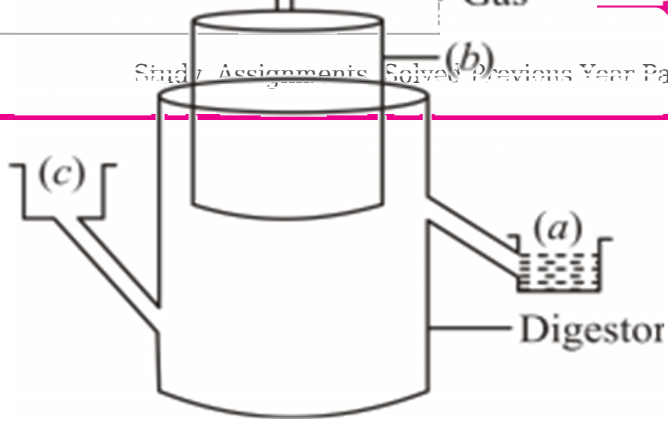
[3]

OR

Discuss role of predators in an ecosystem.

[3]

17



The diagram above is that of a typical biogas plant. Explain the sequence of events occurring in a biogas plant. Identify a, b and c.

[3]

18

Write a note on Biological Oxygen Demand (B.O.D.).

[3]

19

State the medicinal value and the bioactive molecules produced by *Streptococcus*, *Monascus* and *Trichoderma*.

[3]

20

Name the hormones secreted by the following structures?

1. Corpus luteum
2. Leydig cells
3. Hypothalamus
4. Pituitary

[3]

21

Make a table showing characters of pea selected by Mendel.

[3]

22

Many plant and animal species are on the verge of their extinction because of loss of forest land by indiscriminate use by the humans. As a biology student what method would you suggest along with its advantages that can protect such threatened species from getting extinct?

Like, Share, Bookmark, Download, Make Notes, Print Your Favourite Questions. Join www.zigya.com

Section D

23

(a) As a senior biology student you have been asked to demonstrate to the students of secondary level in your school, the procedure(s) that shall ensure cross-pollination in a hermaphrodite flower. List the different steps that you would suggest and provide reasons for each one of them.

(b) Draw a diagram of a section of a megasporangium of an angiosperm and label funiculus, micropyle, embryo sac and nucellus.

[4]

Section E

24

Explain the following terms briefly

(a) Single cell proteins (b) Biopatent (c) Bioethics (d) Biopiracy (e) Genetically modified food.

[5]

OR

What is PCR? List the three main steps. Show the steps with a diagrammatic sketch.

[5]

25

Describe ecological role of biodiversity.

[5]

OR

Draw a flow diagram showing typical food chain with energy flow and cycling of materials. Give a few examples of food chains.

[5]

26

Give a brief summary of Darwin's theory of evolution and evidences in favor of it and its drawbacks.

[5]

Study, Assignments, Solved Previous Year Papers . Questions and Answers. Free Forever.

(a) Name the primates that lived about 15 million years ago. List their characteristic features.

(b) (i) Where was the first man-like animal found?

(ii) Write the order in which Neanderthals, *Homo habilis* and *Homo erectus* appeared on earth.

State the brain capacity of each one of them.

(iii) When did modern *Homo sapiens* appear on this planet?

[5]