

- A. There are a **Total of 26 Questions** and **Five Sections** in the Question Paper. All questions are Study, Assignments, Solved Previous Year Papers . Questions and Answers. Free Forever.

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

Name the type of cell division that takes place in the zygote of an organism exhibiting haplontic life cycle.

[1]

2

Name the scientist who proved the spontaneous generation theory to be invalid.

[1]

3

Mention the unique flowering phenomenon exhibited by *Strobilanthus kunthiana* (neelakuranaji).

[1]

4

Write the equation that helps in deriving the net primary productivity of an ecosystem.

[1]

5

Write the equation that helps in deriving the net primary productivity of an ecosystem. Join www.zigya.com

[1]

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Section B

6

Differentiate between male and female heterogamety.

[2]

7

When and where do chorionic villi appear in humans? State their function.

[2]

8

Write the types of sex-determination mechanisms the following crosses show. Give an example of each type

(ii) Female ZW with Male ZZ

[2]

9

Name and describe the technique that helps in separating the DNA fragments formed by the use of restriction endonuclease.

[2]

10

State the relation between gross and net primary productivity.

[2]

OR

Construct an age pyramid which reflects an expanding growth status of human population.

[2]

Section C

11

Name two hormones that are constituents of contraceptive pills. Why do they have high and effective contraceptive value ? Name a commonly prescribed non-steroidal oral pill.

[3]

12

(a) Why is Study, Assignments, Solve Previous Year Papers Questions and Answers. File For ever.

(b) Work out a cross up to F₁ generation only, between a mother with blood group A (Homozygous) and the father with blood group B (Homozygous). Explain the pattern of inheritance exhibited.

[3]

13

Draw a diagram of a male gametophyte of an angiosperm. Label any four parts. Why sporopollenin is considered the most resistant organic material?

[3]

14

A DNA segment has a total of 1000 nucleotides, out of which 240 of them are adenine containing nucleotides. How many pyrimidine bases this DNA segment possesses?

[3]

15

State the Hardy-Weinberg principle.

[3]

16

Enlist the steps involved in inbreeding of cattle. Suggest two disadvantages of this practice.

[3]

OR

Identify 'a', 'b' and 'c' in the following table:

No.	Crop	Variety	Insect Pests
1.	Brassica	Pusa Gaurav	(a)
2.	Flat bean	Pusa Sem 2 Pusa sem 3	(b)
3.	(c)	Pusa Sawani Pusa A-4	Shoot and fruit borer

[3]

17

What is In Situ Conservation? Give two examples. (Paper on Questions and Answers)

[3]

18

Choose any three microbes, from the following which are suited for organic farming which is in great demand these days for various reasons. Mention one application of each one chosen.

Mycorrhiza; Monascus; Anabaena; Rhizobium; Methanobacterium; Trichoderma.

[3]

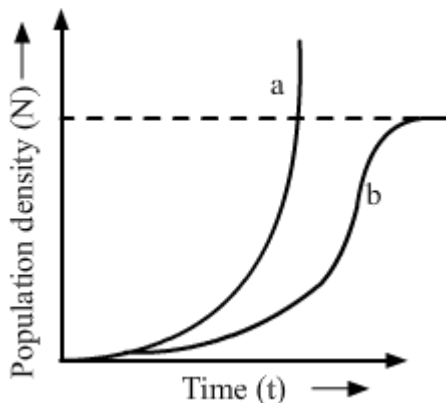
19

How is the amplification of a gene sample of interest carried out using Polymerase Chain Reaction (PCR)?

[3]

20

Study the graph given below and answer the questions that follow:



(i) Write the status of food and space in the curves (a) and (b).

(ii) In the absence of predators, which one of the two curves would appropriately depict the prey population?

(iii) Time has been shown on X-axis and there is a parallel dotted line above it. Give the significance of this dotted line.

[3]

21

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?

[3]

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22

Determine the role of biological factors in the development of a water body. Explain.

[3]

Section D

23

A large number of married couples the world over are childless. It is shocking to know that in India the female partner is often blamed for the couple being childless.

- Why in your opinion the female partner is often blamed for such situations in India ? Mention any two values that you as a biology student can promote to check this social evil.
- State any two reasons responsible for the cause of infertility.
- Suggest a technique that can help the couple to have a child where the problem is with the male partner.

[4]

Section E

24

How did Hershey and Chase established that DNA is transferred from virus to bacteria?

[5]

OR

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

[5]

25

Write name of causative agent of pneumonia. List symptoms and modes of transmission.

[5]

OR

Distinguish between B-cells and T-cells.

[5]

26

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With advancements in genetics, molecular biology and tissue culture, new traits have been

incorporated into crop plants. Explain the main steps in breeding a new genetic variety of a crop.
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[5]

OR

Explain the following terms briefly

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

[5]