

Biology Question Paper For Class 12 CBSE 2015

Section-A

(1 Mark each)

- Q.1. List two advantages of the use of unleaded petrol in automobiles as fuel.
- Q.2. Retroviruses have no DNA. However, the DNA of the infected host cell does possess viral DNA. How is it possible?
- Q.3. State the cause of adenosine deaminase deficiency.
- Q.4. What is cistron?
- Q.5. How many chromosomes do drones honey bee possess? Name the type of cell division involved in the production of sperms by them.

Section-B

(2 marks each)

- Q.6. What is mutualism? Mention any two examples where the organisms involved are commercially exploited in agriculture.

OR

List any four techniques where the principle of in-situ conservation of biodiversity has been employed.

- Q.7. (a) Why are the plants raised through micropropagation termed as somaclones?
- (b) Mention two advantages of this technique.

Q.8. Explain the process of secondary treatment given to the primary effluent up to the point it shows a significant change in the level of Biological Oxygen Demand (BOD) in it.

Q.9. (a) Select the analogous structures from the combinations given below:

- (i) Forelimbs of whale and bat
- (ii) Eyes of octopus and mammals
- (iii) The tuber of sweet potato and potato.
- (iv) Thorns of bougainvillea and tendrils of Cucurbita

(b) State the kind of evolution they represent.

Q.10. A moss plant is unable to complete its life-cycle in a dry environment. State two reasons.

Section-C

(3 marks each)

Q.11. A heavily bleeding and bruised road accident victim was brought to a nursing home. The doctor immediately gave him an injection to protect him against a deadly disease.

- a. Write what did the doctor inject in the patient's body?
- b. How do you think this injection would protect the patient against the disease?
- c. Name the disease against which this injection was given and the kind of immunity it provides.

12. Explain the significance of satellite DNA in the DNA fingerprinting technique.

Q.13. What does the following equation represent? Explain.

$$p^2 + 2pq + q^2 = 1$$

Q.14. Two independent monohybrid crosses were carried out involving a tall pea plant with a dwarf pea plant. In the first cross, the offspring population had an equal number of tall and dwarf plants, whereas in the second cross it was different. Work out the crosses, and explain giving reasons for the difference in the offspring populations.

Q.15. State what is apomixis? Comment on its significance.

Q.16. State the medicinal value and bioactive molecules produced by *Streptococcus*, *Monascus*, and *Trichoderma*.

OR

What are methanogens? How do they help to generate biogas?

Q.17. Describe any three potential applications of genetically modified plants.

Q.18. How did an American company Eli-Lilly use the knowledge of r-DNA technology to produce human insulin?

Q.19. Explain co-evolution with respect to parasites and their hosts. Mention any four adaptive features evolved in parasites for their parasitic mode of life.

Q.20. Rearrange the following in the correct sequence to accomplish an important biotechnological reaction.

- a. In-vitro synthesis of copies of DNA of interest.
- b. Chemically synthesized oligonucleotides
- c. Enzyme DNA polymerase
- d. The complementary region of DNA
- e. Genomic DNA template
- f. Nucleotides provided
- g. Primers
- h. Thermostable DNA polymerase

- i. Denaturation of ds-DNA.

Q.21. With the help of flowcharts exhibit the events of eutrophication.

Q.22. Enumerate any six essentials of good, effective Dairy Farm Management Practices.

Section-D

(4 marks each)

Q.23. Your school has been selected by the department of education to organize and host an inter-school seminar on “Reproductive Health- Problems and Practices”. However, many parents are reluctant to permit their wards to attend it. Their argument is that the topic is “too embarrassing”. Put forth four arguments with appropriate reasons and explanations to justify the topic to be very essential and timely.

Section-E

(5 marks each)

Q.24. (a) List the different attributes that a population has and not an individual organism.

(b) What is population density? Explain any three different ways the population density can be measured, with the help of an example each.

OR

It is often said that the pyramid of energy is always upright. On the other hand, the pyramid of biomass can be both upright and inverted. Explain with the help of examples and sketches.

Q.25. (a) Plan an experiment and prepare a flow chart of the steps that you would follow to ensure that the seeds are formed only from the desired set of pollen grains. Name the type of experiment that you carried out.

(b) Write the importance of such experiments.

OR

Describe the role of pituitary and ovarian hormones during the menstrual cycle in a human female.

Q.26. (a) Why are colour blindness and thalassemia categorized as Mendelian disorders? Write the symptoms of these diseases seen in people suffering from them. Explain their pattern of inheritance in humans.

(b) About 8% of the human male population suffers from colour blindness while only 0.4% of the human female population suffers from this disease. Write an explanation to show how it is possible.

OR

Explain the process of transcription in prokaryotes. How is the process different in eukaryotes?

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