

CBSE Question Paper - 2010
BIOLOGY (Theory)
Class – XII

Time allowed: 3 hours

Maximum Marks: 70

SECTION A

1. Mention the site where syngamy occurs in amphibians and reptiles respectively. 1
2. How is snow – blindness caused in humans? 1
3. Name one autosomal dominant and one autosomal recessive Mendel an disorder in Humans. 1
4. How is the action of exonuclease different from that of end nuclease? 1
5. India has more than 50,000 strains of rice. Mention the level of biodiversity it represents. 1

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6. Mention the information that the health workers derive by measuring BOD of a water Body.

1

7. Name the enzyme involved in the continuous replication of DNA strand. Mention the Polarity of the template strand.

1

8. Of springs derived by asexual reproduction are called clones. Justify giving two Reasons.

1

SECTION B

9. Mention the role o ribosome's in peptide –bond formation .How does ATP facilitate it?

2

10. How do copper and hormone releasing IUDs act as contraceptives? Explain.

11. If you squeeze a seed of orange you might observe many embryos of different sizes. How is it possible? Explain.

2

12. A recombinant DNA is formed when sticky ends of vector DNA and foreign DNA join. Explain how the sticky ends are formed and get joined.

2

13. (i) Mention the number of primers required in each cycle of polymerase chain Reaction (PCR) . Write the role of primers and DNA polymerase in PCR.

2

(ii) Give the characteristic feature and source organism of the DNA polymerase Used in PCR.

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14. Define the term 'health' Mention any two ways of maintaining it. 2

2

OR

Why does a doctor administer tetanus antitoxin and not a tetanus vaccine to a child injured in a roadside accident with a bleeding wound? Explain.

2

15. Giving two reasons explain why there is more species biodiversity in tropical latitudes Than in temperate ones.

2

16. Name an upload drug and its source plant. How does the drug affect the human body?

2

17. Mention the major cause of air pollution in metro cities. Write any three ways by which it Can be reduced.

2

18. How did Eli Lilly synthesize the human insulin? Mention one difference between this Insulin and the one produced by the human pancreas.

2

SECTION C

19. (I) write the characteristic features of anther, pollen and stigma of wind pollinated Flowers.

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- (ii) How do flowers reward their insect pollinators? Explain. 3
20. (i) Why are grasshopper and *Drosophila* said to show male heterogamity? Explain. 3
- (ii) Explain female heterogamity with the help of an example. 3
21. In a series of experiments with streptococcus and mice F. Griffith concluded that R-strain bacteria had been transformed. Explain. 3
22. (a) How does the Hardy-Weinberg's expression ($p^2+2pq+q^2=1$) Explain that genetic equilibrium is maintained in a population? 3
- (b) List any two factors that can disturb the genetic equilibrium. 3
23. Mention the name of the causal organism, symptoms and the mode of transmission Of the disease Amoebiasis 3
- 24 (i) Mention the property that enables the explants to regenerate into a new plant. 3
- (ii) A banana herb is virus – infected. Describe the method that will help in Obtaining healthy banana plants from this diseased plant. 3
25. Mention the product and its use produced by each the microbes listed below: 3
- (i) Streptococcus

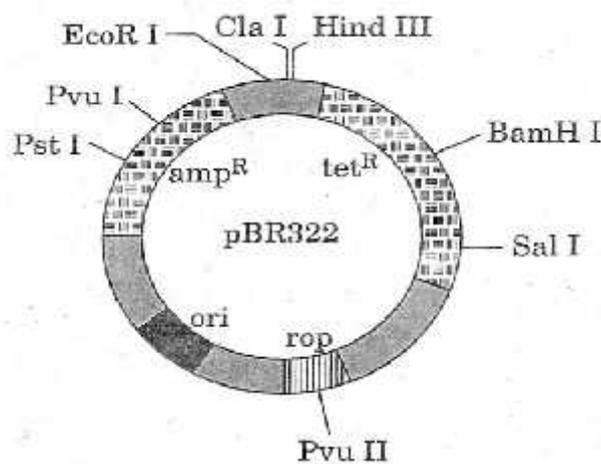
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- (ii) Lactobacillus
- (iii) Saccharomyces cerevisiae
26. (i) name the organism in which the vector shown is inserted to get the copies of the desired gene.
- (ii) Mention the area labeled in the vector responsible for controlling the copy Number of the inserted gene.
- (iii) Name and explain the role of a selectable marker in the vector shown.

3



OR

Name the insect pest that is killed by the products of cryIAC gene. Explain how the

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gene makes the plant resistant to the insect pest.

3

27. How do organisms like fungi, zooplanktons and bears overcome the temporary short-lived climatic stressful conditions ? Explain.

3

SECTION D

28. Describe in sequence the events that lead to the development of a 3 – celled pollen grain from microspores mother cell in angiosperms.

5

OR

(a) Give a schematic representation showing the events of Spermatogenesis in human male.

(b) Describe the structure of a human sperm.

3+2

29. (a) state the law of independent assortment.

(b) Using punnett square demonstrate the law of independent assortment in a

Dihybrid cross involving two heterozygous parents.

1+4

OR

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How did Alfred Hershey and Martha Chase arrive at the conclusion that DNA is the Genetic material?

5

30. (a) Why are herbivores considered similar to predators in the ecological context

Explain.

(b) Differentiate between the following interspecific interactions in a population :

- (i) Mutualism and competition
- (ii) Commensalism and Amensalism

5

OR

(a) Trace the succession of plants on a dry bare rock.

(b) How does phosphorus cycle differ from carbon cycle?

4+1

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