

CBSE Board Class XII Biology Board Paper 2013

Time: 3 hrs

Total Marks: 70

General Instruction:

(i) All questions are compulsory.

- (ii)This question paper consists of four Sections A, B C and D. Section A contains 8 questions of one mark each, Section B is of 10 questions of two marks each, Section C is of 9 questions of three marks each, and Section D is of 3 questions of five marks each.
- (iii)There is no overall choice. However an internal choice has been provided in **one** question of **2** marks, **one** question of **3** marks and all the **three** questions of **5** marks weight age. A student has to attempt only one of the alternatives in such questions.

(iv) Wherever necessary, the diagrams drawn should be neat and properly labelled.

SECTION A

1.	An anther with malfunctioning tapetum often fails to produce viable			
	male gametophytes. Give any one reason.	[1]		
2.		[1]		
3.	Name the enzyme and state its property that is responsible for continuous			
	and discontinuous replication of the two strands of a DNA molecule.	[1]		
4.	Identify the examples of convergent evolution from the following:	[1]		
	(i) Flippers of penguins and dolphins			
	(ii) Eyes of octopus and mammals			
	(iii) Vertebrate brains			
5.	Write the importance of MOET.	[1]		
6.	Why is the enzyme cellulase needed for isolating genetic material from plant cells			
	and not from the animal cells?	[1]		
7.	Name the type of biodiversity represented by the following:	[1]		
	(a) 50,000 different strains of rice in India.			
	(b) Estuaries and alpine meadows in India.			
8.	Write the equation that helps in deriving the net primary productivity of an			
	ecosystem.	[1]		
CECTION D				
SECTION B				
9.	Geitonogamous flowering plants are genetically autogamous but functionally			
	cross-pollinated. Justify.	[2]		

10. When and where do chorionic villi appear in humans? State their function.	[2]
11. In a cross between two tall pea plants, some of the offsprings produced were	
dwarf. Show with the help of Punett square how this is possible.	[2]



[2]

[2]

[2]

nat is such a response called?

- e it?
- 13. Name two commonly used bioreactors. State the importance of using a bioreactor. [2]
- 14. Write the function of adenosine deaminase enzyme. State the cause of ADA deficiency in humans. Mention a possible permanent cure for a ADA deficiency patient.
 [2]
- 15. Expand the following and mention one application of each:[2](i) PCR(ii) ELISA

OR

- (a) Mention the difference in the mode of action of exonuclease and endonuclease.
- (b) How does restriction endonuclease function?
- 16. Name any two sources of e-Wastes and write two different ways for their disposal. [2]
- 17. Why the pyramid of energy is <mark>alw</mark>ays <mark>upr</mark>ight? Explain.
- 18. Explain why very smal<mark>l an</mark>imal<mark>s a</mark>re ra<mark>rel</mark>y fo<mark>und</mark> in polar region.

SECTION C

 19. Draw a diagram of the microscopic structure of human sperm. Label the following parts in it and write their functions. (a) Acrosome (b) Nucleus (c) Middle piece 	[3]
20. With the help of any two suitable examples explain the effect of anthropogenic	
actions on organic evolution.	[3]
21.	[3]
(a) Why is human ABO blood group gene considered a good example of multiple alleles?	
(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.	
22. Describe the structure of a RNA polynucleotide chain having four different	
types of nucleotides.	[3]
23. Differentiate between inbreeding and outbreeding in cattle. State one advantage	
and one disadvantage for each one of them.	[3]
24.	[3]
(a) Why are the fruit juices bought from market clearer as compared to those made at home?	
(b) Name the bioactive molecules produced by <i>Trichoderma polysporum</i> and <i>Monascus purpureus</i> .	



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(a) Why are transgenic animals so called?	[3]
(b) Explain the role of transgenic animals in	
(i) Vaccine safety and	
(ii) Biological products with the help of an example each.	
26. How have human activities caused desertification? Explain.	[3]
OR	
How does algal bloom destroy the quality of a fresh water body? Explain.	
27. Explain mutualism with the help of any two examples. How is it different	
from commensalism?	[3]

SECTION D

28.

- (a) Draw a diagrammatic sectional view of a mature anatropous ovule and label the following parts in it:
 - (i) that develops into a seed coat.
 - (ii) that develops into an embryo after fertilization.
 - (iii) that develops into an endosperm in an albuminous seed.
 - (iv) through which the pollen tube gains entry into the embryo sac.
 - (v) that attaches the ovule to the placenta.
- (b) Describe the characteristics features of wind pollinated flowers.

OR

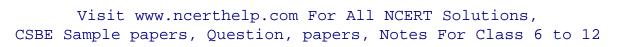
- (a) Draw a diagrammatic sectional view of the female reproductive system of human and label the parts,
 - (i) where the secondary oocytes develop
 - (ii) which helps in collection of ovum after ovulation.
 - (iii) where fertilization occurs.
 - (iv) where implantation of embryo occurs.
- (b) Explain the role of pituitary and the ovarian hormones in menstrual cycle in human females.
- 29. Describe the asexual and sexual phases of life cycle of *Plasmodium* that causes malaria in humans.

OR

[5]

[5]

- (a) What is plant breeding? List the two steps the classical plant breeding involves.
- (b) How has the mutation breeding helped in improving crop varieties? Give one example where this technique has helped.
- (c) How has the breeding programme helped in improving the public nutritional health? State two examples in support of your answer.



[5]



- 30. A child suffering from Thalassemia is born to a normal couple. But the mother is being blamed by the family for delivering a sick baby.
 - (a) What is Thalassemia?
 - (b) How would you counsel the family not to blame the mother for delivering a child suffering from this disease? Explain.
 - (c) List the values your counselling can propagate in the families.

