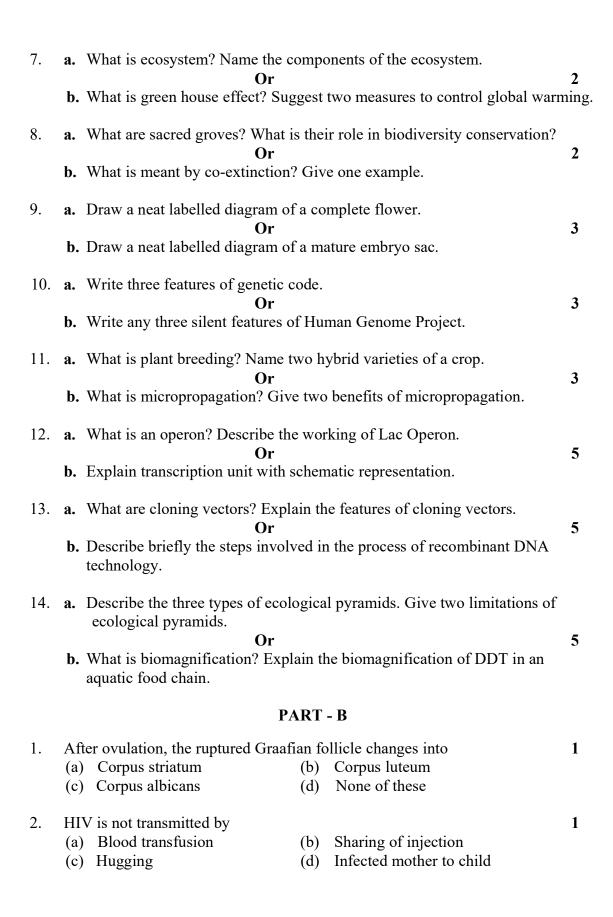
2022 **BIOLOGY**

Total marks: 70 Time: 3 hours

General instructions:

- Approximately 15 minutes is allotted to read the question paper and revise the
- All questions are compulsory. Marks are indicated against each question. ii)
- iii) The question paper consists of two parts Part A and Part B. Each part contain 14 questions.
- *Internal choice has been provided in some questions.* iv)
- Write the answers of Part A and Part B in separate answer books. Marks shall not be awarded if the answers of both the Parts are written in one answer book nor marks awarded if answers of Part A are written in the answer book of Part B and vice-versa.
- N.B: Check to ensure that all pages of the question paper is complete as indicated on the top left side.

	PART - A							
1.	Gemmules are found in (a) Penicillin(c) Hydra	(b) (d)	Amoeba Sponge	1				
2.	Pollen grains that are light and non (a) wind(c) insects	-stick (b) (d)	y are usually carried by water birds	1				
3.	In replication, the discontinuously enzyme? (a) DNA polymerase (c) DNA ligase	(b) (d)		h 1				
4.	The capacity to generate a whole p (a) Totipotency (c) Somatic hybridization	lant fi (b) (d)	Biofortification	1				
5.	The Earth Summit (Convention on (a) Rio de Janeiro 1992 (c) Johannesburg 1992		Rio de Janeiro 2002	1				
6.	 a. Differentiate between microspo Or b. Write two points of differences 			2				



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3.	(a)	relimb of frog and forelimb of hu Homologous organs Vestigial organs	(b)	is an example of Analogous organs Rudimentary organs	1	
4.	(a)	obar gas contains mainly CH4 and CO2 CH4 and H2	(b) (d)		1	
5.	(a)	nich mammal excretes concentra Kangaroo rat Squirrel	(b)	rine to conserve water? Camel Polar bear	1	
6.		marries a haemophilic male. Or		een man and great apes on the basis of	2	
7.		Draw a well labelled diagram of an antibody molecule. Or What is biological nitrogen fixation? Which organism fixes atmospheric nitrogen in the root of legumes?				
8.		What is biopiracy? How are industrialised nations exploiting the bioresources? Or What is biotechnology? Give two applications of biotechnology.				
9.		Briefly describe sex determination in honey bee. Or Write three embryological evidences that support evolution.				
10.		What are 'cry' proteins? Name an organism that produce it. How has man exploited this protein to his benefit? Or 3				
11.	a.	Why do lepidopterans die when What adaptation help parasites t Or With the help of a suitable diagracurve.	o sus	tain?	3 h	

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5

12. **a.** Explain the process of fertilization with diagram.

Or 5

b. What is ART? Suggest some methods to assist infertile couples to have children.

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13. **a.** Explain in detail, incomplete dominance and multiple alleles with examples.

b. Describe Oparin-Haldane theory on origin of life.

14. **a.** What is innate immunity? Explain the four types of barriers of innate immunity.

b. What are antibiotics? Who discovered penicillin? Name the source from where antibiotic penicillin has been derived. Write two properties of antibiotics.
