

14/12/12. XU Biology - pre-board. Exam.

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FIRST PREBOARD EXAMINATION 2012-13

CLASS XII - BIOLOGY

Max.Time – 3 Hrs.

Max. Marks – 70

General Instructions:

- 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 two questions of 5 marks weightage. 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 Pollen grains are well preserved as fossils. Why? 1
- 2 Colour blindness occurs in about 8 per cent of males and only about 0.4 per cent of females. Give reason 1
- 3 Some crop varieties bred by hybridization and selection, for disease resistance to Fungi and Bacterial diseases are given below. Complete the Table by labeling A and B. 1

Crop	variety	Resistance to disease
Cow pea	Pusakomal	--A-----
Wheat	-----B-----	Leaf and stripe rust, hill bunt

- 4 For delivering gene of interest, human pathogens are transformed to useful vectors. Give a suitable example for this? 1
- 5 In PCR repeated amplification of DNA is achieved by the use of an enzyme. Name the enzyme and bacteria from which it is isolated? 1

- 6 Restriction enzymes cut DNA strands with sticky ends on each strand. What is the significance of sticky ends to DNA in rDNA technology? 1
- 7 An international treaty was signed in 1987 to control emission of ozone depleting substances. What is it known as? 1
- 8 Define ecological Niche? 1

SECTION B

- 9 Why is apple called a false fruit? Which part of the flower forms the fruit? 2
- 10 What is meant by haplo-diploid sex determination? Explain with an example. 2
- 11 When a cross is made between tall plant with yellow seed (TtYy) and tall plant with green seed (Tt yy), what proportions of phenotype in the offspring could be expected to be 2
- a) Tall and Green
- b) Dwarf and Green
- 12 What is pleiotropy? Explain with an example. 2
- 13 How does the culturing of spirulina solve food problems of the growing human population? 2
- 14 What is meant by Biolistics or gene gun? 2
- 15 Draw and label the parts of a sparged stirred tank bioreactor? 2
- OR
- Draw and label the parts of a simple stirred-tank bioreactor?
- 16 DDT content in the water of a lake that supplies drinking water to the nearby villages is found to be 0.004 ppm. The pelicans of that area are reported to have 2.6 ppm of DDT. Why has the concentration increased in these birds? What possible harm would this cause to the bird population? Name the phenomenon. 2
- 17 Differentiate between detritivores and decomposers with one example for each? 2

