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SET A



INDIAN SCHOOL MUSCAT FIRST PRELIMINARY EXAMINATION BIOLOGY

CLASS: XII
17.01.2019

Sub. Code: 044

Time Allotted: 3 Hrs
Max. Marks: 70

General Instructions:

1. All questions are compulsory.
2. The question paper consists of four sections A, B, C and D.
3. Internal choice is given in all the sections. A student has to attempt only one of the alternatives in such questions.
4. Section–A contains 5 questions of 1 mark each.
5. Section–B has 7 questions of 2 marks each.
6. Section–C is of 12 questions of 3 marks each
7. Section–D has 3 questions of 5 marks each.
8. Wherever necessary, the diagrams drawn should be neat and properly labeled.

SECTION A

- | | | |
|---|--|---|
| 1 | A male honeybee has 16 chromosomes whereas its female has 32 chromosomes. Give one reason. | 1 |
| 2 | Breast fed babies are more immune to diseases than the bottle fed babies. Why? | 1 |
| 3 | How can an alien piece of DNA made to multiply in a host cell? | 1 |
| 4 | State the principle used in ELISA? | 1 |
| 5 | What is the relationship between egret and grazing cattle? Why? | 1 |

OR

How is competition avoided in Nature? Give example.

SECTION B

- | | | |
|---|---|---|
| 6 | How does geitonogamy differ from xenogamy in plants? | 2 |
| 7 | Categories the following pairs of examples as convergent or divergent evolutions: (a) Eyes of octopus and mammals. (b) Wings of butterfly and birds. (c) Tuber of sweet potatoes and potato. (d) Thorns in bougainvillea and tendrils in cucurbits. | 2 |
| 8 | Monocistronic structural genes in eukaryotes have interrupted coding sequences, Explain. How are they different in prokaryotes? | 2 |

- 9 A person shows unwelcome immunogenic reactions while exposed to certain substances. (a) Name this condition. (b) What common term is given to the substances responsible for this condition? (c) Name the cells and the chemical substances released which cause such reactions. 2
- 10 Why are proteins synthesized from Spirulina called Single celled Proteins? What is the significance of such a protein? 2

OR

Lactic Acid Bacteria (LAB) is commonly used in the conversion of milk into curd. Mention any two other functions of LAB that are useful to humans.

- 11 How are transgenic animals made useful in chemical safety testing and studying diseases? 2
- 12 What characteristic features are seen in Ecological succession? 2

SECTION C

- 13 Explain the structure of microsporangium. 3
- 14 Explain free nuclear endosperm development. 3

OR

Mention any three differences between spermatogenesis and oogenesis.

- 15 What will be the genotype and phenotype of the offspring if a colour blind man marries a carrier woman? Show the cross. 3

OR

How do histones acquire positive charge?

- 16 Explain the role of S and P in the experiments conducted by Hershey and chase? 3

OR

Explain the mechanism of sex determination in honeybees.

- 17 Evolution is the change of gene frequencies in a population in response to changes in environment in the time scale of years and not centuries. Justify the statement with reference to DDT. How does the theory of Hugo de varies support this? 3
- 18 List the advantages of Apiculture, if it is located near a place of commercial flower cultivation. Name the most common species of bee which is reared in India. 3

OR

How does primary sludge differ from activated sludge? Give the composition of biogas produced in the sewage treatment plant.

- 19 What are statins? Name the microorganism that produces this substance. How is it medically important? 3

- 20 How do mycorrhizae function as biofertilisers? Explain with example. Name one cyanobacteria that can be used as a biofertiliser. 3
- 21 How is Biotechnology used to produce Bt cotton? Explain. 3
- 22 How is *Agrobacterium tumefaciens* used in rDNA technology? Explain what and how are other pathogens are used for the purpose. State two other methods by which host organism can be transformed. 3
- 23 a) Taking one example each of habitat loss and fragmentation, explain how the two are responsible for biodiversity loss. b) Explain two different ways of biodiversity conservation. 3
- 24 What are the contribution of Ahmed Khan in Bangalore and Ramesh Chandra Dagar in Sonapat? 3

SECTION D

- 25 Describe the development of male gametophyte in angiosperms. 5
- OR**
- What is placenta? What is its role? Justify Placenta as an endocrine tissue.
- 26 People have been actively participating in the efforts for the conservation of forests. (i) Name the award instituted in respect of Amrita Devi to promote such efforts. (ii) Name the movement launched to protect the trees by hugging them. (iii) Name the step Government of India has undertaken in 1980.s to work closely with the local communities for protecting and managing forests. 5
- OR**
- a) Alien species are highly invasive and are a threat to indigenous species. Substantiate this statement with any three examples.
- b) Give two example of mutualistic relationship.
- 27 What is a point mutation? Illustrate using the example of Sickle cell anaemia. Give the genotypes of a carrier and a sickle celled person. 5

OR

Explain the role of RNA polymerase in transcription in bacteria.

End of the Question Paper