Roll Number		

SET B

INDIAN SCHOOL MUSCAT
FINAL TERM EXAMINATION
BIOLOGY [THEORY]

CLASS: XII | Sub. Code: 044 | Time Allotted: 3 Hrs

13.11.2018 | 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 labelled.

SECTION - A

1. Pick out the ancestral line of Angiosperms from the list give below: Conifers, Seed ferns, Cycads, Ferns. 1

   OR

   Mention the type of evolution that has brought the similarity as seen in potato tuber and sweet potato.

2. Name the diagnostic test which confirms typhoid. 1

3. Who was the first to construct an rDNA? 1

4. Gause's competitive exclusion principle, where does this apply? 1

5. Why is secondary succession faster than primary succession? 1

   OR

   What is the importance of humus?

SECTION - B

6. What are the measures one has to take to prevent from contracting STDs? 2

   OR

   Explain the technique amniocentesis. How is this technique misused?

7. What is pedigree analysis, how is it useful? 2

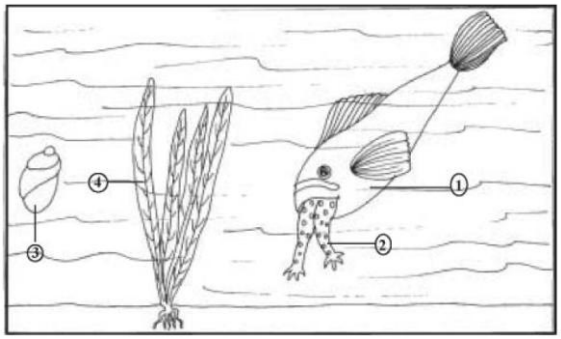
8. What is the role of histamine in inflammatory response? Name few drugs which reduce the symptoms of allergy. 2

9. Explain the adaptations that parasites have evolved. 2

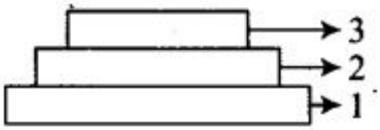
OR

What is the importance of light for organisms? How do deep sea organisms get their energy?

10. In the picture provided, what is the relationship between (1) and (2) with respect to population interaction and between (3) and (4) with respect to trophic levels. 2



11. 2



a. Label the three tiers 1, 2, 3 given in the above age pyramid.

b. What type of population growth is represented by the above age pyramid?

12. Explain the function of reservoir in nutrient cycle. List the two types of nutrient cycles in nature. 2

SECTION - C

13. A woman has certain queries as listed below, before starting with contraceptive pills. Answer them. 3
(i)What do contraceptive pills contain and how do they act as contraceptives?
(ii)What schedule should be followed for taking these pills?

14. (a) Sickle celled anaemia in humans is a result of pointmutation. Explain. 3
(b) Write the genotypes of both the parents who have produced a sickle celled anaemic offspring.

OR

Morgan carried out several crosses in Drosophila and found F2-ratios deviated very significantly from the expected Mendelian ratio. Explain his findings with the help of an example.

15. The base sequence in one of the strands of DNAis TAGCATGAT 3
(i) Give the base sequence of its complementary strand.
(ii) How are these base pairs held together in a DNA molecule ?
(iii) Explain the base complementarity rules.Name the scientist who framed this rule.

16. Why is DNA molecule considered as a better hereditary material than RNA molecule ? 3

OR

Explain the post transcriptional modifications the hn-RNA undergoes in eukaryotic cell.

17. Describe the three different ways by which natural selection can affect the frequency of a heritable trait in a population. 3

18. Suggest and describe a technique through which a virus-free healthy plant can be obtained from a diseased sugarcane plant. 3

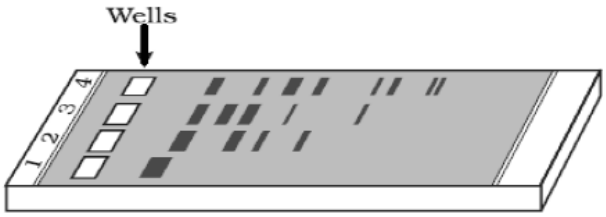
OR

Differentiate between inbreeding and outbreeding in cattle. State one advantage and one disadvantage of each one of them.

19. (a) Name the causative organisms for the following diseases: 3
(i) Elephantiasis
(ii) Ringworm
(iii) Amoebiasis
(b) How can public hygiene help control such diseases?

20. What is mutational breeding? Name a crop developed by this. How *Parbhani Kranti* have been developed? 3

21. a) How do DNA fragments migrate and resolve in a Gel electrophoresis? 3
b) How lane one is different from lane 2, 3 and 4 in the Gel electrophoresis set up?
c) How pure DNA fragments are made observable in the visible light?



22. What is a bioreactor used for? Name a commonly used bioreactor and any two of its components. 3

23. Which Ministry of Govt. of India had initiated Ganga Action Plan and Yamuna Action Plan? What are the objectives of these plans? 3

24. Gene therapy is a better alternative to the other measures taken for ADA deficiency. Why is it a better alternative . What are the other methods used earlier? How can it be done? 3

SECTION - D

25. What is an operon ? Explain the functioning of lac operon when in an open state. 5

OR

A particular garden pea plant produces only violet flowers.
(a) Is it homozygous dominant for the trait or heterozygous?
(b) How would you ensure its genotype? Explain with the help of crosses.

26. With advancement in genetics, molecular biology and tissue culture, new traits have been incorporated into crop plants. 5
Explain the main steps in breeding a new genetic variety of crop.

OR

i) The three microbes are listed below. Name the product produced by each one of them and mention their use.
(a) Aspergillus niger
(b) Trichoderma polysporum
(c) Monascus purpureus
ii) How is 'Roquefort cheese' ripened? How is it different from the other variety?

27. (a) Following are the responses of different animals to various abiotic factors. 5
Describe each one with the help of an example.
(i) Regulate

(ii) Conform
(iii) Migrate
(iv) Suspend

(b) If 8 individuals in a population of 80 butterflies die in a week, calculate the death rate of population of butterflies during that period.

OR

Draw the pyramids of biomass in sea and in a forest. Explain giving reasons why are the two pyramids different ?

End of the Question Paper