Roll Number		

SET B

INDIAN SCHOOL MUSCAT
FIRST PRE-BOARD EXAMINATION
BIOLOGY

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

16.01.2020 Max.Marks: 70

General Instructions:

1. There are a total of 27 questions and five sections in the question paper. All questions are compulsory.
2. Section A contains question numbers 1 to 5, multiple choice questions of one mark each.
   Section B contains question numbers 6 to 12, short answer type I questions of two marks each.
   Section C contains question numbers 13 to 21, short answer type II questions of three marks each.
   Section D contains question number 22 to 24, case-based short answer type questions of three marks each.
   Section E contains question numbers 25 to 27, long answer type questions of five marks each.
3. There is no overall choice in the question paper. However, internal choices are provided in two questions of one mark, one question of two marks, two questions of three marks and all three questions of five marks. An examinee is to attempt any one of the questions out of the two given in the question paper with the same question number.
4. Make your Handwriting legible

SECTION – A

1. Purpose of tubectomy is to prevent 1
   A] Coitus B] Egg formation C] Fertilisation D] Embroyonic development of human
2. Common cold differs from Pneumonia in that: 1

   A] Pneumonia is communicable disease whereas the common cold is a nutritional deficiency disease

   B] Pneumonia can be prevented by a live attenuated bacterial vaccine whereas common cold has no effective vaccine

   C] Pneumonia is caused by a virus while the common cold is caused by the bacterium *Haemophilus influenzae*

   D] Pneumonia pathogen infects alveoli whereas the common cold affects nose and respiratory passage but not the lungs.

   OR

   Which one of the following is not a property of cancerous cells whereas the remaining three are?

   A] They compete with normal cells for vital nutrients

   B] They do not remain confined in the area of formation

   C] They divide in an uncontrolled manner

D] They show contact inhibition.

3. Enzymes that cleaves nucleic acids within the polynucleotide chain is known as 1

A] Endonuclease B] Exonuclease C] Arylsulphates D] Phosphodiesterase

OR

It is pathogen of dicot plants and used as vector

A] *Melodygyne incognitia* B] *Agrobacterium tumifaciens* C] *Salmonella typhi*

D] *Aspegillus niger*

4. The first genetically modified engineered human insulin was launched on 5th July, 1983 by an American company named 1

A] Hoechst B] Biotech C] Eli Lilly D] Columbus

5. Chipko movement is concerned with 1

A] Forest conservation B] Plant Breeding C] Conservation of natural resources

D] Project Tiger

SECTION B

6. State the law that explains the ratio 3:1 obtained in F_2 generation of a monohybrid cross and who proposed it. 2

7. A population of amoeba lives in a pond. On summer the pond dries up. How will the amoeba respond to this change? What will happen to them if it rains in the next season? 2

OR

Classify the following into monoecious and dioicous plants.

Date palm, cucurbits, Papaya, Chara

8. i) From the statement given, name the species in human evolution. 2
   a) They used hides to protect their bodies with the brain capacity of 1400 cc
   b) They ate fruits and hunted animals with stones.
   ii) Which two primates that lived on earth 15 mya.

9. Name two alcoholic drinks produced in each of the following ways. (i) by distillation and (ii) without distillation. 2

10. What is palindrome in a DNA? Give an example. 2

11. Why do clownfish and sea anemone pair up? What is this relationship called ? 2

12. Why Saprophytes are called so? Give two examples of saprophytes. 2

SECTION C

13. 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

14. The relationship of organisms in terms of number, energy and biomass at different trophic levels can be graphically represented by Ecological pyramids. Bring out the limitations of ecological pyramids. 3

15. State Hardy- Weinberg equilibrium. And what are the factors disturbing this equilibrium. 3

OR

Write two salient features of *Tyrannosaurus* and mention why they were disappeared.

16. In a certain mammal, erect ears are dominant over drooping ears. In a cross between the two types, out of the four offspring produced in the F_2 generation, three had erect ears and one had drooping ears. What were the genotypes of the parents? (You may represent the dominant gene as E) 3

OR

If you are given a tall pea plant, how would you find out its genotype? Explain.

17. Explain giving one example, how co-extinction is one of the causes of loss of biodiversity. List the three other causes also (without description). 3

18. Define eutrophication. How does it help in conversion of a lake into a land? 3

19. Animal breeding involves crossing of mature male and female animals in a species. In spite of applying artificial insemination in this process, the success rate remains low. Name and explain a method to overcome this disadvantage. 3

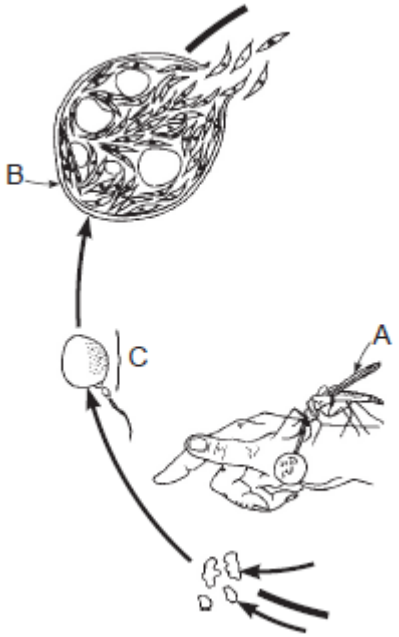
20. What is parturition? How is it induced? Which hormones are involved in induction of parturition? 3

21. A scientist wants to produce a genetically modifying organism. Suggest three basic steps in genetically modifying organism. 3

SECTION D

22. Study a part of the life cycle of malarial parasite given below. Answer the questions that 3

follow:

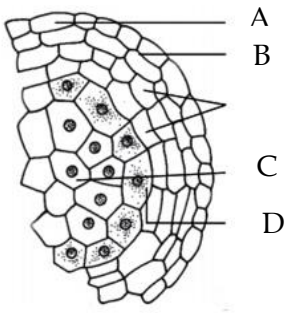


(a) Mention the roles of 'A' in the life cycle of the malarial parasite.

(b) Name the event 'C' and the organ where this event occurs.

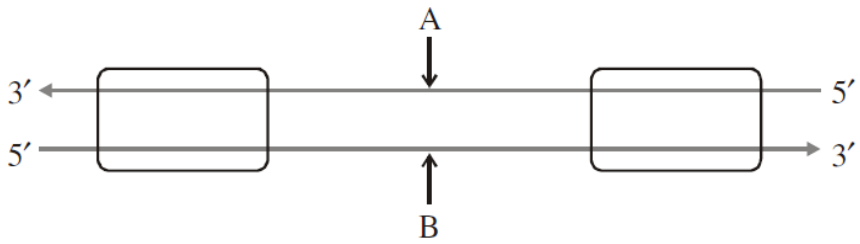
(c) Identify the organ 'B' and name the cells being released from it.

23. Observe the diagram showing an enlarged portion of microsporangium and answer the following. 3



i) Label the parts A to D.
ii) State the importance of C.
iii) What will happen if part 'D' does not function?

24. 3



(a) Identify strands ‘A’ and ‘B’ in the diagram of transcription unit given above

(b) State the functions of Sigma factor and Rho factor in the transcription process in a bacterium.

SECTION E

25. Under Polio prevention programme, infants in India were given polio Vaccines on a large scale at regular intervals to eradicate polio from the country. 5

(a) What is a vaccine? Explain how does it impart immunity to the child against the disease.

(b) With the help of an example each, differentiate between active and passive immunity.

OR

What are biofertilizers ? Describe their role in agriculture. Why are they preferred to chemical fertilizers.

26. Explain the post pollination events up to double fertilization, that occur in an angiosperm 5

OR

Give a schematic representation of oogenesis in humans. Mention the number of chromosomes at each stage. Correlate the life phases of the individual with the stages of the process.

27. How did Hershey and Chase prove that DNA is the hereditary material? Explain their experiment with suitable diagrams. 5

OR

Describe Frederick Griffith’s experiment on Streptococcus pneumoniae. Discuss the conclusion he arrived at.

End of the Question Paper