Roll Number		

SET A

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. Which one of the statements is INCORRECT about 'SAHELI' pills? 1

   A] It is a 'once a week' pill B] has a very few side effects

   C] It is formed by steroid hormones D] high contraceptive value

2. Malignant malaria is caused by 1

   A] *Plasmodium vivax* B] *Plasmodium falciparum*

   C] *Plasmodium malaria* D] *Aedis aegypti*

   OR

   The non-ionizing radiation causes cancer is

   A] X-rays B] UV rays C] Gamma rays D] magnetic resonance imaging

3. The commonly used matrix in gel electrophoresis is 1

   A] pentose sugar B] Phosphate buffer C] Agarose D] Dextrose

OR

The first transgenic cow produces milk rich in

A] Human alpha-lactalbumin B] Antitrypsin C] Cyclosporin D] lactogen

4. Mature Insulin is different from proinsulin in not having 1

A] A peptide chain B] C peptide chain C] B peptide chain D] both B and A

5. David Tilman conducted experiments on ecosystem over the period of time using outdoor plots and he inferred that 1

A] the removal of key species will destabilize the ecosystem.

B] a stable ecosystem can recover from occasional disturbances.

C] the number of species will increase when area of exploration increases.

D] ecosystem productivity will increase with increase in number of species in an ecosystem.

SECTION B

6. A population of amoeba lives in a pond. On summer the pond dries up. How will the amoeba respond to this condition? 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

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

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. Sunitha's mother adds a spoonful of curd to milk in lukewarm temperature. Why she adds curd into it and how it would benefit the process? 2

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

11. Cuckoo bird lays eggs in the nest of a crow. Name the phenomenon deduced from this act and what adaptation has evolved in this phenomenon? 2

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

SECTION C

13. After puberty, the ovary and uterus will undergo changes every month except during pregnancy. Mention the events or changes that take place during the luteal phase of human menstrual cycle. 3

14. 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.

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

17. i) What are the disadvantages of human use of insulin from other animal sources? 3
    ii) What are the concerns about transgenic insulin

18. 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 an alternative method to overcome this disadvantage. 3

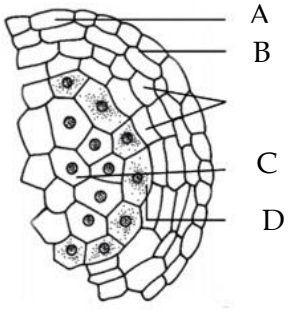
19. The relationship of organisms in terms of number, energy and biomass at different trophic levels can be graphically represented by Ecological pyramids. Bring out the limitations of ecological pyramids. 3

20. Give three hypotheses for explaining why tropics show the greatest level of species richness. 3

21. Define eutrophication. How is it involved in conversion of a lake into a land? 3

SECTION D

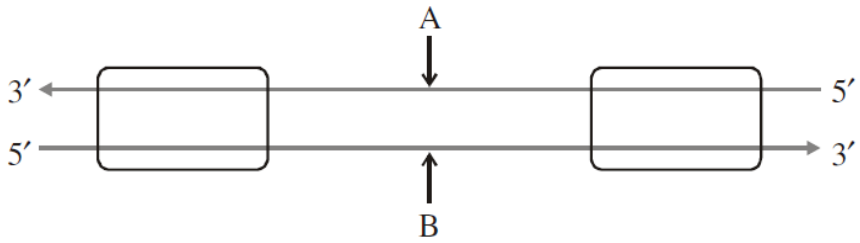
22. Observe the diagram showing an enlarged portion of microsporangium and answer the following. 3



i) Label the parts A to D.
ii) State the importance of C.

iii) What will happen if part 'D' does not function?

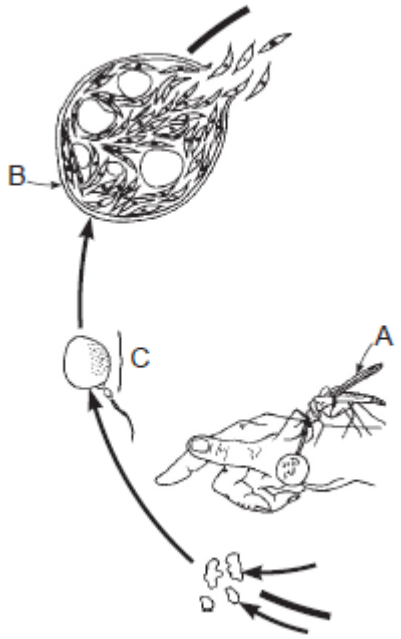
23. 3



(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.

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



(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.

SECTION E

25. 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.

26. Differentiate between incomplete dominance and co-dominance. Substantiate you answer with one example of each. 5

OR

(a) Write the contributions of the following scientists in deciphering the genetic code.

George Gamow; Hargobind Khorana ; Marshall Nirenberg ; Severo Ochoa

(b) State the importance of a Genetic code in protein biosynthesis.

27. 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?

End of the Question Paper