# First Mock Examination – December 2017

Roll No. | | | | | | | |

**Series SSR / 1** **Code No. 044/ 1 / 3**

- Please check that this question paper contains 5 printed pages.
- Code number given on the right hand side of the question paper should be written on the title page of the answer-book by the candidate.
- Please check that this question paper contains 26 questions.
- Please write down the serial number of the question before attempting it.

## BIOLOGY

Class : XII Time allowed : 3 hrs.
Date : 30-12-2017 Max marks : 70

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**General Instructions:**

1. There are a total of 26 questions and five sections in the question paper. All questions are compulsory.
2. Section A contains question number 1 to 5, Very Short Answer type questions of one mark each.
3. Section B contains question number 6 to 10, Short Answer type I questions of two marks each.
4. Section C contains question number 11 to 22, Short Answer type II questions of three marks each.
5. Section D contains question number 23, Value Based Question of four marks.
6. Section E contains question number 24 to 26, Long Answer type questions of five marks each.
7. There is no overall choice in the question paper; however, an internal choice is provided in one question of two marks, one question 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 n the question paper with the same question number

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## Section-A

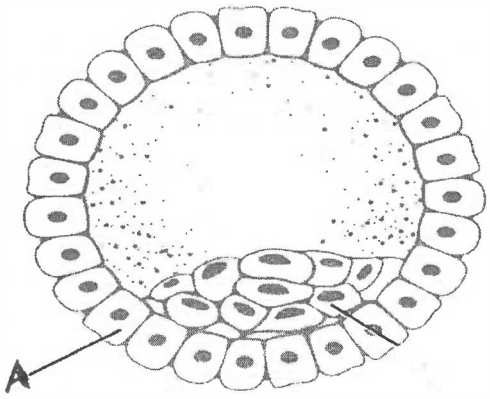
1. What is Apomixis?

2. Name the enzyme that transcribes **hn RNA** in Eukaryotes.

3. How does HIV differ from Bacterioophage?

4. Mention two uses of cloning Vector in Biotechnology.

5. Identify the figure given below,and part labeled A




## Section-B

6. Suggest four advanced ex-situ methods to conserve threatened biodiversity.

7. State the role of Oxytocin in parturition. What triggers its release from the pituitary ?

8. How e-wastes are being handled in our country? Write the correct solution for treating this waste.

9. How does a test cross help to determine the genotype of an individual?

10. Mention two applications of DNA polymorphism.

OR

How polyspermy is prevented in humans?

## Section-C

11. a ) Mention the function of Leydig cells in Human.
    b) Draw labeled diagram of T.S of Human Ovum.
    c) Mention the site of fertilization; describe how zygote develops and when it attaches to uterus?

12. What is RNA silencing? Give the example of Meloidogyne incognitia for the same.

13. Write the sources and roles of following:
    a) cyclosporin A b) statins c) SCPs

14. A Smooth seeded & Purple – flowered pea plant (SsRr) is crossed with smooth seeded & white flowered pea plant (Ssrr).
Determine the phenotypic & genotypic ratio in f1 progeny?

15. Name & explain the type of interaction in the following.

(i)Algae & fungi in ii) Head louse & humans iii) Hermit crab & sea anemone

16. Explain the structure of an anatropous ovule with a neat labeled diagram?

17. If following is the sequence of the template strand of structural gene:
CAATAGCCTAGAGAT then find out the following :
a) The sequence of mRNA formed after transcription along with its polarity.
b) The sequence of bases on the coding strand of DNA.

18. Highlight the salient features that are required to facilitate cloning into a vector.

19. Give a brief account on Active immunity and Passive immunity, What is Colostrum?

20. What is meant by writing H2L2 for an antibody? Name any four types of antibodies.

21. Describe the structure of Human Sperm cell with the help of neat labeled diagram.(Any 4 labels)

22. Species facing competition might evolve mechanism that promotes coexistence rather than exclusion. Justify this statement in light of Gause's competitive exclusion principle, citing suitable examples

**OR**

Enlist the three biological diversity with the help of suitable examples

## Section-D

23. A group of scientists are working on creating transgenic cows to produce milk with medicinal properties. But there are adverse side- effects on the cows due to this procedure. Their life span shortens; they become prone to diseases and die very early.

Answer the following questions based on the above information:

(i) What values are being neglected by the scientists in the above situation?
(ii) Should they continue with their production of transgenic cows? Give reason.
(iii) What has been the reaction of different communities and various organizations to such acts?

## Section-E

24. What role does pituitary gonadotoropins play during follicular and ovulatory phases of menstrual cycle? Explain the shifts in steroidal secretions.

**OR**

Meiotic division during Oogenesis is different from that in spermatogenesis . Explain how and why ?

25. Describe in detail the ecosystem services. Discuss the role played by biodiversity in maintenance of ecosystem services.

**OR**

(a) Explain the specificity of energy flow in the ecosystem with reference to ecological pyramids.

(b) What is standing crop?

(c) Discuss the role played by biotic factors in nutrient cycling within the ecosystem.

26. Describe the detailed structure of a eukaryotic chromosome with reference to packaging of DNA within that chromosome.

How is the packaging different from a prokaryote?

**OR**

(a) Provide genetic explanation for the observation in which the flower colour in F1 generation of snapdragon did not resemble either of two parents. However parental characters reappeared when F1 pro were selfed.

(b) State the three principles of Mendel's laws of inheritance.

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