

# ATOMIC ENERGY CENTRAL SCHOOL No 4 RAWATBHATA

## Model paper (Half yearly Exam) 2015

### Subject – Biology

Time: 3Hrs

Class – XII

M.M. 70

### General Instruction:-

- 1) All questions are compulsory.
- 2) This question paper consists of four sections A, B, C and D. section 'A' consists of 8 question of one mark each. Section 'B' is of 10 questions of 2 marks each, section 'C' is of 9 questions of 3 marks each and section 'D' is of 5 marks each.
- 3) There is no overall choice. However an internal choice has been provided in one questions of 2 marks one question of 3 marks and all questions of 5 marks. Attempt only one choice in all such questions.
- 4) Wherever necessary, the diagrams drawn should be neat and properly labeled.

### SECTION "A"

1. What do you mean by life span?
2. In which type of plants autogamy and geitonogamy both prevented?
3. Expand; (i) MTP, (ii) ET
4. Define: Linkage and Recombination.
5. Differentiate between : Introns and Exons.
6. What do you mean by adaptive radiation?
7. Acquired Immunity is related to which type of blood cells?
8. Which period is called as Green Revolution? And why?

### SECTION "B"

9. Find out what the various components of the medium used for propagation of an explants *in vitro* are?
10. Explain what is meant by metastasis.
11. Define homologous and analogous structure with suitable example from plants.
12. If the sequence of one strand of DNA is written as follows:  
5' –ATGCATGCATGCATGCATGCATG –3'  
Write down the sequence of complementary strand in 5'→3' direction.
13. How is sex determined in human beings?
14. Define and design a test-cross.
15. **Amniocentesis for sex determination is banned in our country. Is this ban necessary? Comment.**
16. Draw a labeled diagram of sperm.
17. Arrange the following terms in the correct developmental sequence:  
Pollen grain, sporogenous tissue, microspore tetrad, pollen mother cell, male gametes.

18. Distinguish between asexual and sexual reproduction. Why vegetative reproduction is also considered as a type of asexual reproduction?

OR

Why the Human Genome Project is called a mega project?

### SECTION "C"

19. How did Hershey and Chase differentiate between DNA and protein in their experiment while proving that DNA is the genetic material?

20. Explain antibiotic resistance observed in bacteria in light of Darwinian selection theory.

21. What is meant by the term 'breed'? What are the objectives of animal breeding?

22. What are the various public health measures, which you would suggest as safeguard against infectious diseases?

23. Write cause and symptoms of Haemophilia and Sickle-cell anaemia.

24. A wide range of contraceptive methods are presently available, describe any six categories of contraceptive methods.

25. (a) What is parturition? Which hormones are involved in induction of parturition?

(b) Write the function of: Corpus luteum, Acrosome.

26. What is self-incompatibility? Why does self-pollination not lead to seed formation in self-incompatible species?

OR

What do you mean by Outbreeding devices? Explain any three Outbreeding devices in flowering plants.

27. Explain why meiosis and gametogenesis are always interlinked?

### SECTION "D"

28. (a) What is meant by emasculation? When and why does a plant breeder employ this technique?

(b) What is apomixis and what is its importance?

OR

What is spermatogenesis? Briefly describe the process of spermatogenesis, with labeled diagrams.

29. Describe the dihybrid cross and explain law of independent assortment.

OR

(a) Explain the function of the : Promoter, tRNA , mRNA

(b) List two essential role of ribosome during translation.

30. Write five preventive and control of alcohol and drugs abuse among adolescence.

OR

(a) Explain what is meant by biofortification?

(b) Write any three variety develop for disease resistance for various crop.

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