

**BHARATIYA VIDYA BHAVANS V.M. PUBLIC SCHOOL**  
**SAMPLE PAPER-7**  
**SUBJECT –BIOLOGY**

The following instructions are to be read carefully

1. All questions are compulsory.
2. The question paper consists of 26 questions. Question no.1-5 is of 1 mark each, question no.6-10 is of 2 marks each, question no.11-22 is of 3 marks each, question no. 23 is of 4 marks and question no.24-26 is of 5 marks each.
3. There is no over all choice. However an internal choice has been provided in one question of 2 marks, one question of 3 marks, and all the three questions of 5 marks weightage. A student has to attempt only one of the alternatives in such Questions.

Q1. Identify the type of Asexual reproduction.



- Q2. Name the phenomenon and one bird where the female directly develops into a new organism.
- Q3 A child suffering from Down's syndrome. Mention the cause of abnormality?
- Q4. State the importance of SCP.
- Q5. Very small animals are rarely found in the polar regions. Give reason.
- Q6. What are called 'molecular Scissors'
- Q7 A person is suffering from Amoebiasis. Mention the pathogen that causes it and one organ of the body that gets affected. Give three symptoms and one mode of its transmission.
- Q8. Why is the introduction of genetically engineered lymphocytes into an ADA deficiency patient not a permanent cure? Explain and suggest a possible permanent cure.

OR

What is meant by RNAi (RNA interference). Explain.

- Q9 .Pranay suffered from measles at the age of 10 years. There are rare chances of his getting infected by the same disease for the rest of his life. Give reasons for the same and what is this response of body called technically?
- Q10. Who suggested that DNA replication was semi-conservative. Name the scientist who experimentally proved this and how?
- Q11 .Why are tropics more diverse than the temperate region?
- Q12, As a part of the breeding programme, different wild varieties, cultivated species, and other relatives of Paddy plant were collected and preserved.
- a) Name the process.
  - b) What is the advantage of this process?
- Q13. The following equation represents the growth of a population  $\frac{dN}{dt} = rN \left( \frac{K-N}{K} \right)$
- a) Name the type of growth exhibited by the population.

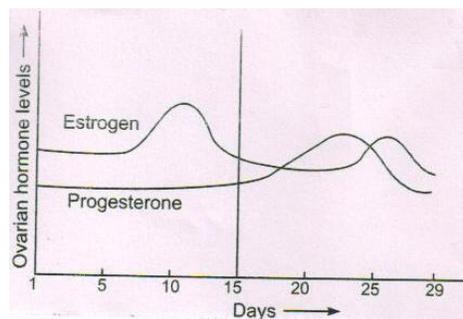
- b) What does r and K stand for ?  
 c) Specify the conditions under which this type of growth is observed ?

OR

Distinguish between the following

- a) Grazing food chain and Detritus food chain  
 b) Primary and secondary productivity

- Q14. A pregnant human female was advised to undergo MTP. It was diagnosed by her doctor that the foetus she is carrying has developed from zygote formed by an XX-egg fertilized by Y-carrying sperm. Why was she advised to undergo MTP?
- Q15. What is acclimatization ? Give an example.
- Q16. What is the function of tapetum ? Where is it found.
- Q17. In a particular plant species majority of the plants bear purple flower. Very few bear white flower plants. No intermediate colour is observed. If you are given a plant bearing purple flower, how will you ascertain that it is a pure breed for the trait ? Explain.
- Q18. Where and why do we use Taq polymerase enzyme when it works exactly as DNA polymerase?
- Q19. (a) From which plant are cannabinoids obtained ? Name any two cannabinoids. Which part of the body is affected by these substances ?  
 (b) How do cellular barriers and cytokine barriers provide innate immunity in humans?
- Q20. A dihybrid heterozygous round yellow seeded garden pea (Pisum sativum) was cross with a double recessive plant.  
 (a) What type of cross is this?  
 (b) Work out the genotype and phenotype of the progeny.  
 (c) What principle of Mendel is illustrated through the result of this cross?
- Q21. What is protoplast? Name the two enzymes used in producing protoplast. Describe the steps in producing a somatic hybrids from protoplast.
- Q22. (a) Read the graph given below and correlate the uterine events that take place according to hormonal levels on.



- (i) 6 -15 days  
 (ii) 16 -25 days  
 (iii) 26 -28days (if ovum is not fertilized )
- (b) Specify the sources of the hormones mentioned in the graph.

OR

A sperm has just fertilized a human egg in the fallopian tube. Trace the events that the fertilized egg will undergo up to the implantation of the blastocyst in the uterus.

Q23 Conserving natural resources is the need of hours. Organic farming is one of the way of conserving natural resources as it allows maximum utilization of the resources. Ramesh Chandra Dagar, a farmer in Sonnipat, Hariyana is just doing this.

- (a) What is meant by integrated organic farming ?
- (b) List the different activities that can possibly be included inorganic farming .
- (c) Describe how these activities can be integrated .
- (d) Indicate the value shown by Mr. Dagar ?

Q24.a) How does microspore mother cell develop into mature pollen grain in angiosperm?  
b) Describe the structure of a mature pollen grain and draw a labeled diagram of its two-celled stage.

OR

- a) Explain the changes the primary oocyte undergoes while in different follicular stages before ovulation.
- b) Give the schematic representation of spermatogenesis in human

Q25 (a) Who explained the transforming principle? How did the scientist perform the experiment to explain the principle?

- (b) How was the biochemical nature of the transforming material determined? Explain.

OR

- (a) Describe the process of synthesis of fully functional m-RNA in eukaryotic cell.
- (b) How is this process of m-RNA synthesis different from that in prokaryotes?

Q.26. Where do transcription and translation occur inside a living cell? Briefly describe the three steps involved in the process of translation.

OR

Two blood samples A & B picked up from the crime scene were handed over to forensic department for genetic finger printing. Describe how the technique of genetic finger printing is carried out. How will it be confirmed whether the samples belonged to the same individual or two different individuals.

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