

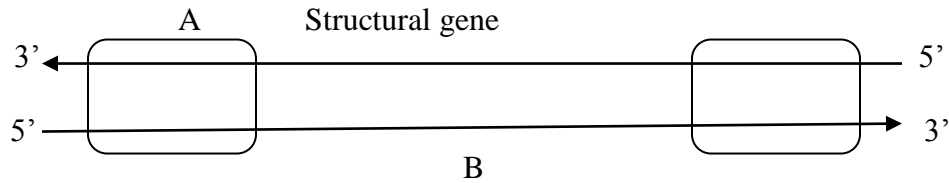
BHARATIYA VIDYA BHAVANS V.M. PUBLIC SCHOOL
SAMPLE PAPER-6
SUBJECT –BIOLOGY

The following instructions are to be read carefully

1. All questions are compulsory.
2. The question paper consists 5 questions of 1 mark each ,5 questions of 2 marks each ,12 questions of 3 marks each ,1 question of 4 marks and 3 questions 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 .

SECTION-A

Q1)Name the parts 'A' and 'B' of the transcription unit given below



- Q2)Pills are widely accepted as ideal methods of contraception by women How does it effectively prevent pregnancy?
- Q3)What is snow blindness?
- Q4)Mention how have organisms optimised their survival and reproduction in a habitat.
- Q5)Name the first transgenic cow developed and explain the improvement in the quality of the product produced by it.

SECTION-B

- Q6). Explain what is biofortification?
- Q7) A person shows a strong immunogenic reaction while exposed to certain substances. Name this condition and the common term for such substances. Mention the cell and the chemical which causes this condition.

OR

Why meristem of a plant is considered for tissue culture? What do you understand by the term tissue culture?

- Q8) Name and explain giving reasons ,the type of immunity provided to the newborn by the colostrum and vaccinations.
- Q 9) a) How do cancerous cells differ from normal cells?
b) What is the role of interferons in the treatment of cancer?

Q10) Name the type of interaction in each of the following-

- Sucker fish attached to shark
- wasp pollinating fig inflorescence
- Smaller barnacles disappeared when *Balanus* dominated the coast of Scotland
- Ascaris* lives in the intestine of man.

SECTION-C

Q11) Complete the table by identifying a, b and c

Type of Microbe	Name	Product
Fungus	<u> a </u>	Penicillin
<u> b </u>	Lactobacillus	Lactic acid
Cyano bacteria	Nostoc	<u> c </u>

Q12) Explain diagrammatically the life –cycle of malarial parasite?

Q13) Write the order in which Neanderthals, *Homo habilis* and *Homo erectus* appeared on the Earth .State the brain capacity of each one of them.

Q14) How do mycorrhizae act as biofertilizer? Explain. Name the genus of the fungi that forms mycorrhizal associations with plants and deduce their benefits?

OR

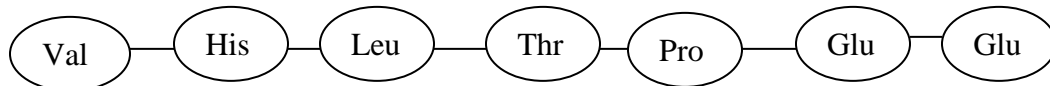
Name the source of Streptokinase, cyclosporine A and statin. What is the role of these bioactive molecule in the human body?

Q15) Draw and explain the structure of a male reproductive unit.

Q16) a) Draw a pyramid of numbers of a situation, where a large population of insects feed upon a very big tree. The insects in turn are eaten by small birds, which in turn are feed upon by big birds.

b) Differentiate giving reasons between the pyramid of energy of the above and the pyramid of number that you have drawn.

Q17). The aminoacid composition of a portion of β chain of Haemoglobin is shown below;



The codon for the sixth aminoacid is GAG. The sixth codon GAG mutates to GAA as a result of mutation ‘A’ and to GUG as a result of mutation ‘B’. Haemoglobin structure did not change as a result of mutation ‘A’ whereas it became sickle shaped as a result of mutation ‘B’. Explain giving the reason how is this possible.

Q18) a) Name the muscular and glandular layers of human uterus.

b) Which one of these layers undergoes cyclic changes during menstrual cycle? Explain why.

c) Name the hormone essential for the maintenance of this layer.

Q19) Name the genes that constitute an operon ,How does Lac operon get “switched on” in presence of Lactose

- Q20) Distinguish between Corona radiata and Zona pellucida
Q21) MOET is considered to be a successful program in cattle breeding. Explain the steps involved in carrying out this program in cows.
Q22) (a) What is adaptive radiation explain giving an example?
(b) Can we call human evolution as adaptive radiation? Justify your statement.

SECTION-D

- Q23) As an active member of an awareness group regular programmes are conducted to sensitise public against alcoholism – a serious health hazard in your locality.
i) How do you make the public aware towards this curse? Explain
ii) What values would you try to inculcate in them ?

SECTION-E

- Q24a) Diagrammatically show the stages in the development of megaspore mother cell to from a mature embryo sac in angiosperms.
b) Why is this type of embryo sac development called as monosporic.?

OR

Ram is an adolescent who accidentally addicted to drug. His parents took him to a counselor. If he is your friend how will you motivate him to avoid drug. Why adolescent is more prone to drug addiction?

- Q 25. a) Alien species are highly invasive and a threat to species diversity. Substantiate this statement with suitable examples from both plants and animals.
b) List two criteria to determine a hotspot of biodiversity.
c) Name two hotspots of biodiversity in India.

OR

- a) What causes the depletion of Ozone in the stratosphere? Explain the role of UV Rays and the chemical in its depletion.
b) How does this depletion affect human life?

- Q26. Why is haemophilia categorized as a Mendelian disorder? Write the symptoms and explain the cause of the disease. How does it differ from sickle celled anemia ?

OR

- i) Write what DNA replication refers to.
ii) State the properties of DNA replication model.
iii) List any three enzymes involved in the process along with their functions.