CBSE EXAMINATION PAPER-2026

BIOLOGY

(Solved)

Time allowed : 3 hours | Maximum Marks : 82

General Instructions :

Read the following instructions carefully and follow them :

i. This question paper contains **39 questions.** All questions are **compulsory.**

ii. This question paper is divided into **5 sections.**

iii. **Section A** – questions number **1 to 2** are case based questions

iv. **Section B** – questions number **3 to 18** are multiple choice questions

v. **Section C** – questions number **19 to 26** are very short answer

vi. **Section D** – questions number **27 to 33** are short answer

vii. **Section E** – questions number **34 to 39** are long answer

viii. There is no overall choice given in the question paper. However, an internal choice has been provided in few questions.

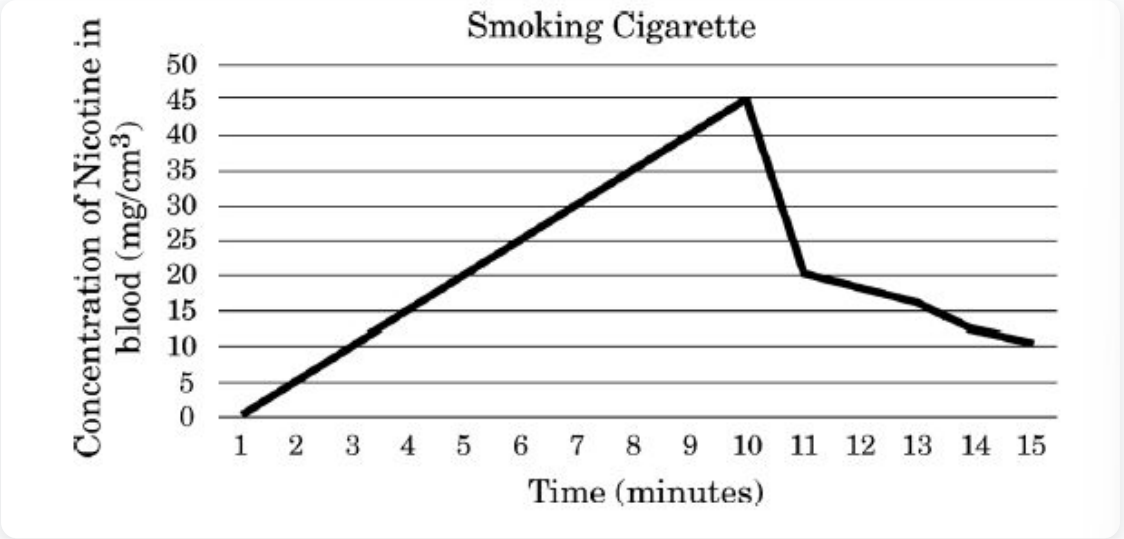
ix. Use of calculator is NOT allowed.

Section A

Question 1.

Read the following passage and answer the question that follow :

The data below shows the concentration of nicotine smoked by a smoker taking 10 puffs/minute



(1) With reference to the above graph, explain the concentration of nicotine in the blood at 10 minutes.

[1 Marks]

(2) How will this affect the concentration of carbon monoxide and haem-bound oxygen at 10 minutes ?

[1 Marks]

(3) To which class of compounds does nicotine belong ? Name one other drug from the same class.

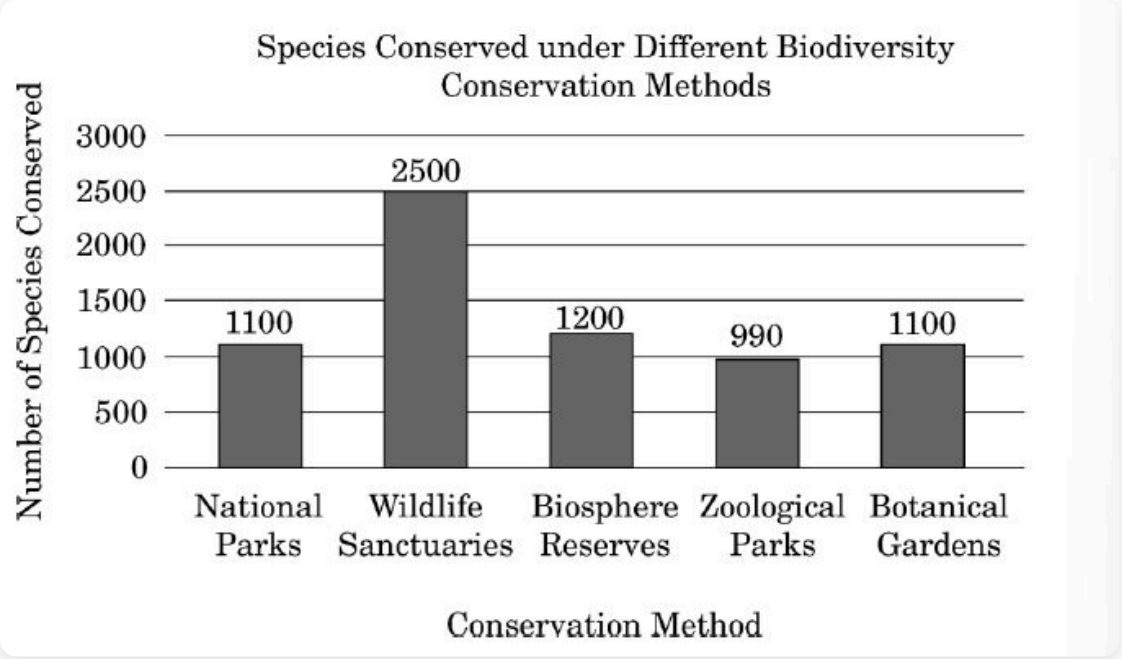
[2 Marks]

Question 2.

Read the following passage and answer the questions that follow:

India is one of the megadiverse countries housing around 8·1 per cent of global species diversity, although its land area is only 2·4 per cent of the world's land area. Many of the species are highly threatened due to human activities like deforestation, mining and habitat fragmentation. Laws like Wildlife (Protection) Act, 1972 were enacted by the Government of India to preserve our biological wealth. Various conservation measures are being implemented to save the threatened species.

The following bar graph shows the number of species conserved under different biodiversity conservation methods.



(1) Which method conserves the highest number of species ? Is it ex situ or in situ conservation

[1 Marks]

(2) Which other methods shown in the diagram are opposite to the one identified by you in question (a) ? How are these two conservation approaches different ?

[2 Marks]

(3)

Write two features of Biodiversity hotspots

[1 Marks]

Section B

Question 3.

Foetal ejection reflex in human female triggers the release of which hormone ?

[1 Marks]

(A) hCG from placenta

(B) Oxytocin from foetal pituitary gland

(C) Progesterone from corpus luteum

(D) Oxytocin from maternal pituitary gland

Question 4.

Which of the following is not a functional unit of an ecosystem ?

[1 Marks]

(A) Decomposition

(B) Energy flow

(C) Productivity

(D) Stratification

Question 5.

Match Column I with Column II and select the correct option

[1 Marks]

	Column I		*Column II*
a.	Primers	i.	β-galactosidase
b.	Insertional inactivation	ii.	To separate and purify products
c.	Bioreactor	iii.	Chemically synthesized oligonucleotides
d.	Downstream processing	iv.	Large scale production of specific product of activity of microbes

(A) a-iii, b-i, c-iv, d-ii

(B) a-iii, b-i, c-ii, d-iv

(C) a-i, b-iii, c-iv, d-ii

(D) a-i, b-iv, c-ii, d-iii

Question 6.

Golden rice is a promising transgenic crop. When released for cultivation, it will help in

[1 Marks]

(A) Herbicide tolerance

(B) Pest resistance

(C) Reduction of Vitamin A deficiency in humans

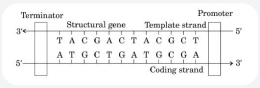
(D) Producing petrol-like fuel

Question 7.

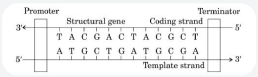
Four different transcription units are shown below. Choose the option with the correct image

[1 Marks]

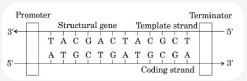
(A) Option C



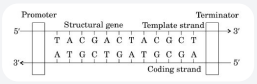
(B) Option D



(C) Option B



(D) Option A



Question 8.

Appearance of antibiotic-resistant bacteria is an example of evolution due to

[1 Marks]

(A) Anthropogenic action

(B) Artificial selection

(C) Divergent evolution

(D) Adaptive radiation

Question 9.

Identify the statements that correctly describe Darwin’s Theory of Evolution

(i) Overproduction of organisms leads to competition.

(ii) Variation is inherited and causes evolution.

(iii) Acquired characters are inherited

(iv) Survival depends on favourable traits

(v) New species arise due to accumulation of favourable variations

[1 Marks]

(A) (i), (ii), (iv) and (v) are correct

(B) (ii), (iii) and (iv) are correct

(C) All are correct

(D) Only (i) and (iv) are correct

Question 10.

Which of the following is not a symptom of Ascariasis ?

[1 Marks]

(A) Intestinal blockage

(B) Anaemia

(C) Skin ulcers

(D) Muscular pain and fever

Question 11. Every trophic level has a certain mass of living material at a particular time. What is it called

[1 Marks]

(A) Standing crop

(B) Ecological efficiency

(C) Primary productivity

(D) Standing state

Question 12.

The smallest part of DNA molecule that can be changed by point mutation is :

[1 Marks]

(A) Codon

(B) Nucleotide

(C) Gene

(D) Oligonucleotide

Question 13.

Some statements regarding drugs and alcohol are given below: (i) Adolescents are more vulnerable to peer pressure. (ii) Drug addiction leads to increased tolerance level of the receptors present in our body. (iii) Alcohol affects the central nervous system. (iv) Excessive use of drugs helps to increase energy. (v) Anabolic steroids decrease aggressiveness Choose the option with correct statement(s).

[1 Marks]

(A) Statements (i), (ii) and (iii) are correct

(B) Statements (i), (iv) and (v) are correct

(C) Only statement (iii) is correct

(D) Only statements (i) and (v) are correct

Question 14. Select the correct option for the pair of plants pollinated by water

[1 Marks]

(A) Vallisneria and Hydrilla

(B) Water lily and Parthenium

(C) Zostera and Water lily

(D) Water hyacinth and Water lily

Question 15.

Assertion (A) : Activated sludge contains large population of bacteria. Reason (R) : These bacteria help in anaerobic digestion of human waste in biogas plant

[1 Marks]

(A) Assertion (A) is false, but Reason (R) is true.

(B) Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of the Assertion (A).

(C) Assertion (A) is true, but Reason (R) is false

(D) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of the Assertion (A).

Question 16.

Assertion (A) : Ecosystems require a constant supply of energy to synthesize the molecules they require. Reason (R) : This is to counteract the universal tendency towards increasing disorderliness as per Second Law of Thermodynamics.

[1 Marks]

(A) Assertion (A) is false, but Reason (R) is true

(B) Assertion (A) is true, but Reason (R) is false.

(C) Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of the Assertion (A).

(D) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of the Assertion (A).

Question 17. Assertion (A) : DNA cannot pass through cell membrane of a bacterial cell. Reason (R) : DNA is a hydrophilic molecule

[1 Marks]

(A) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of the Assertion (A).

(B) Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of the Assertion (A).

(C) Assertion (A) is true, but Reason (R) is false.

(D) Assertion (A) is false, but Reason (R) is true.

Question 18. Assertion (A) : Repetitive sequences are stretches of DNA sequences that are thought to have no direct coding functions. Reason (R) : They shed light on chromosome structure, dynamics and evolution.

[1 Marks]

(A) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of the Assertion (A).

(B) Assertion (A) is false, but Reason (R) is true.

(C) Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of the Assertion (A).

(D) Assertion (A) is true, but Reason (R) is false.

Section C

Question 19.

A person complains of persistent itching in the groin region and scalp. The person also shows dry and scaly lesions on skin, nails, etc.

(i) Identify the disease.

(ii) Name its two causative agents.

(iii) Mention its mode of transmission.

[2 Marks]

Question 20.

A girl develops sneezing, watery eyes and difficulty in breathing every time she visits a flower garden.

(i) Identify the condition.

(ii) Name the immune component responsible for this condition.

(iii) Name the chemical released.

(iv) State one medicine used to treat such a condition

[2 Marks]

Question 21.

(i) Mention any two characteristics of Neanderthal man that lived near East and Central Asia.

(ii) Identify the following hominids with respect to human evolution :

(I) Brain capacity 900 cc, probably ate meat.

(II) First human-like with brain capacity 650 – 800 cc

[2 Marks]

Question 22.

The allele for brown eyes (B) is dominant over blue eyes (b). In a population, 36% of individuals have blue eyes.

Assuming Hardy-Weinberg equilibrium, calculate

(i) Frequency of allele B

(ii) Percentage of heterozygous individuals

(iii) Percentage of individuals that are homozygous dominant

(working to be shown)

[2 Marks]

Question 23.

What did Henking observe in his experiments on insects that led to the discovery of sex chromosome ? How did his observation contribute to our understanding of sex determination

[2 Marks]

Question 24.

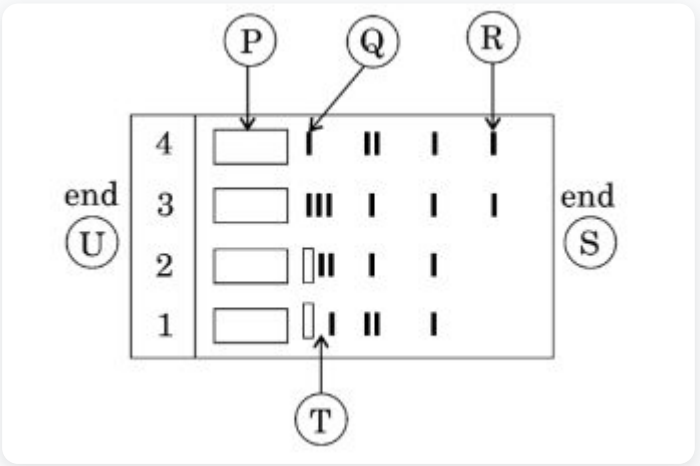
Given below is the schematic representation of the process of electrophoresis. Identify the alphabets representing the

(I) Anode end, and

(II) Lightest/Smallest DNA in matrix

(ii) What is Agarose gel and why is it used in this process ?

[2 Marks]



Question 25.

After performing gel electrophoresis, a student observes that DNA fragments are not visible.

(i) Suggest a reason for this and explain how fragments can be made visible.

(ii) Also explain how a specific DNA fragment can be collected from the gel for further use.

[2 Marks]

Question 26.

GEAC is a regulatory body under the Ministry of Environment, Forest and Climate Change in India.

(a) Write the full form of GEAC.

(b) Mention two of its important functions related to biotechnology

[2 Marks]

Section D

Question 27.

Answer the following questions:

(a) Explain the different ways by which apomictic seeds can be developed.

(b) Mention one advantage of apomictic seeds for farmers

[3 Marks]

Question 28.

(a) What is meant by translation in protein synthesis ?

(b) Explain charging of tRNA (aminoacylation of tRNA) and mention its importance in the process of translation.

[3 Marks]

Question 29.

(a) What is the carrying capacity of a species in a habitat ?

(b) Explain the growth curve that takes this capacity into account

[3 Marks]

Question 30.

In vitro fertilization (IVF) is a popular method these days that is helping childless couples to bear a child.

(a) Write the different steps that are carried out in this technique.

(b) Would you consider gamete intra fallopian transfer as a type of IVF ? Justify your answer.

[3 Marks]

Question 31.

Draw a neat diagram of a maize grain showing the internal structure and label any five parts.

[3 Marks]

Question 32.

Cow dung and water are mixed and fed into a biogas plant to allow digestion of biowastes. The person performing this process says that there is no need to provide an inoculum.

(a) Do you agree with him ? Justify your answer.

(b) What happens to the biowaste inside the digester ?

(c) Name the useful by-products obtained from this process and mention how they are used.

[3 Marks]

Question 33.

(a) Describe the experiment conducted by T.H. Morgan on Drosophila melanogaster involving eye colour and body colour.

(b) How did the results deviate from Mendelian inheritance pattern ?

(c) Explain the two genetic terms used by Morgan for his observations.

[3 Marks]

Section E

Question 34.

(i) Describe the series of experiments conducted by Frederick Griffith. Comment on the significance of the result obtained.

(ii) State the contribution of Avery, MacLeod and McCarty.

[5 Marks]

Question 35.

The following questions are based on haemophilia

(i) Work out the crosses between :

(a) Normal female and Haemophilic male

(b) Carrier female and Normal male

(c) Carrier female and Haemophilic male

(ii) Write the conclusions you draw from these crosses. Comment on the type of inheritance of the disease.

(Use : X – Normal, Xh – Haemophilic

[5 Marks]

Question 36.

(i) Explain any two basic principles/core techniques on which biotechnology is based.

(ii) Describe any three key tools used in Recombinant DNA technology.

[4 Marks]

Question 37.

‘‘Early and accurate diagnosis of diseases is vital in medical technology.’’

(i) Name the conventional methods of diagnosis and their disadvantages.

(ii) Which three diagnostic techniques have been developed through Biotechnology ? Explain how each one helps in detecting diseases.

[5 Marks]

Question 38.

Oogenesis is a discontinuous process that begins before birth and is completed after puberty.

(i) Trace the development of a gamete mother cell till its release from the ovary during ovulation.

(ii) Name the two pituitary hormones that play an important role in the process.

[5 Marks]

Question 39.

(i) Draw a labelled two-celled structure of male gametophyte of an angiosperm.

(ii) Name the three layers that surround the cytoplasm of a male gametophyte starting from innermost to outermost layer.

(iii) Which organic material makes the outermost layer ? Mention its advantage.

(iv) Why is the outermost layer of male gametophyte not continuous ?

[5 Marks]