CBSE EXAMINATION PAPER-2026

BIOLOGY

(Solved)

Time allowed : 3 hours | Maximum Marks : 83

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 questions that follow : The process of copying genetic information from template strand of DNA into RNA is called transcription. It is mediated by RNA polymerase. Transcription takes place in the nucleus of eukaryotic cells. In transcription, only a segment of DNA and only one of the strands is copied into RNA.

(1) Why is the strand of DNA with 3'→ 5' polarity transcribed and not the other strand of 5'→ 3' polarity

[1 Marks]

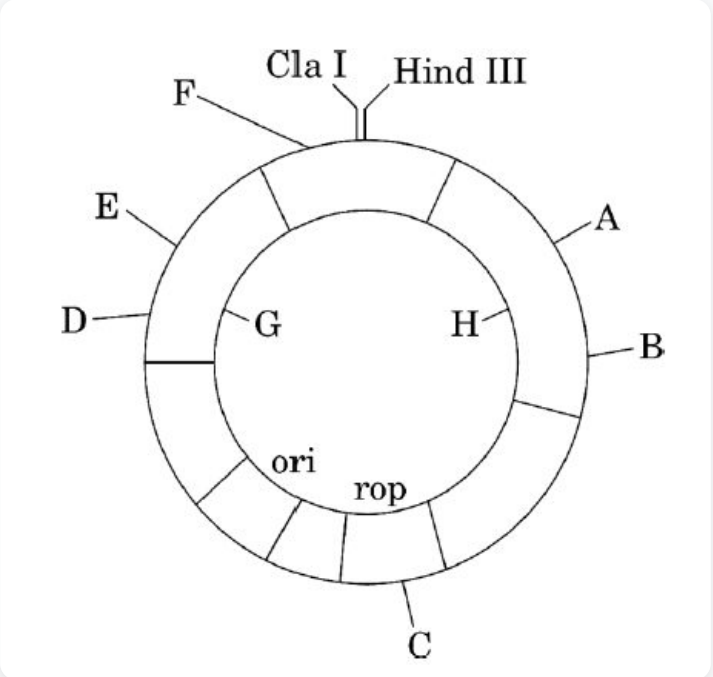
(2) Why is hn RNA required to undergo splicing

[1 Marks]

(3) Why is only one strand of the DNA transcribed ? Give two reasons.

[2 Marks]

Question 2. Read the following passage and answer the questions that follow : We know that plasmids and bacteriophages are the most commonly used vectors in biotechnology experiments. If we can link an alien piece of DNA to the plasmid DNA, the alien DNA can be multiplied equal to the copy number of the plasmid. Engineered vectors are used these days. Study the diagram of the E. coli cloning vector pBR322 and answer the questions that follow:



(1) Why are plasmids and bacteriophages used as cloning vectors?

[1 Marks]

(2) Name the two restriction sites each in the two genes you have identified as selectable markers.

[2 Marks]

(3)

(i) Identify :

(a) The gene in the cloning vector that controls the copy number of the vector.

(b) The restriction site – C in the 'rop' gene

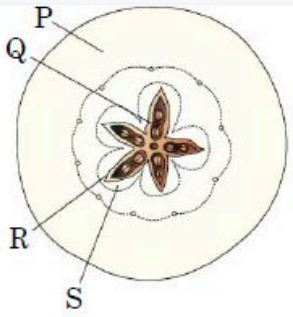
[1 Marks]

Section B

Question 3.

Identify the parts P, Q, R, S in the figure given below and select the option in the correct order.

[1 Marks]



	P	Q	R	S
(A)	Seed	Thalamus	Mesocarp	Endocarp
(B)	Thalamus	Seed	Endocarp	Mesocarp
(C)	Seed	Thalamus	Endocarp	Mesocarp
(D)	Thalamus	Seed	Mesocarp	Endocarp

(A) A

(B) B

(C) C

(D) D

Question 4.

The foetal ejection reflex in human triggers the release of _____hormone from _____. Fill in the blanks by choosing right option.

[1 Marks]

(A) human chorionic gonadotropin, placenta

(B) progesterone, corpus luteum

(C) oxytocin, maternal pituitary

(D) oxytocin, foetal pituitary

Question 5.

A DNA molecule is 160 base pairs long. It has 30% Guanine. How many Adenine bases are present in this DNA molecule ?

[1 Marks]

(A) 192

(B) 48

(C) 96

(D) 64

Question 6.

In Pisum sativum, the flower colour may be violet (V) or white (v). What proportion of the offspring in a cross of 'VV' × 'vv' would be expected to be violet ?

[1 Marks]

(A) 100%

(B) 50%

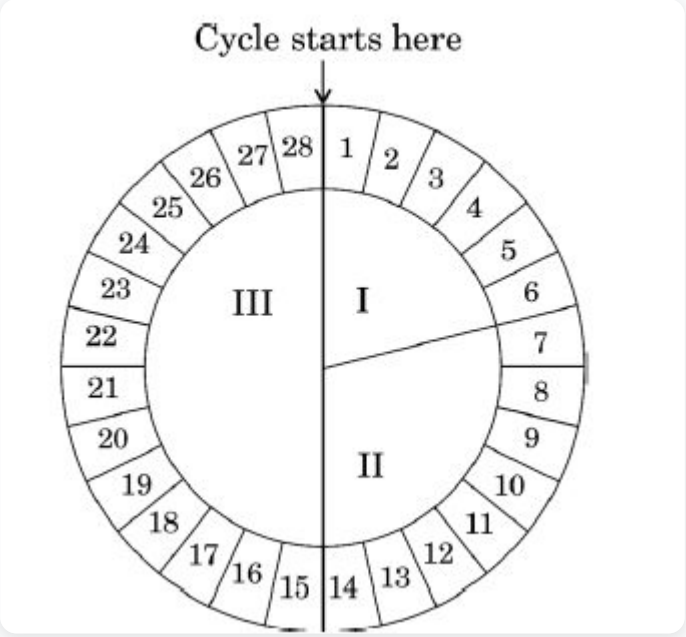
(C) 75%

(D) 25%

Question 7.

In a human female, menstrual cycle of 28 days is represented by the diagram given below. Select the correct statement related with this diagram

[1 Marks]



(A) Primary follicle of ovary matures into Graafian follicle in phase II

(B) Corpus luteum secretes progesterone in phase I, however it degenerates completely in phase III.

(C) The hormone secreted in large amounts in phase III is also responsible for maintaining pregnancy in human females

(D) Both (A) and (B).

Question 8. Arrange the following in the correct sequence of their evolution and select the correct option: (i) Seaweed (ii) Invertebrates (iii) Jawless fish

[1 Marks]

(A) (i), (ii), (iii)

(B) (i), (iii), (ii)

(C) (ii), (iii), (i)

(D) (ii), (i), (iii)

Question 9.

Monascus purpureus is a yeast used commercially in the production of which one of the following ?

[1 Marks]

(A) Citric acid

(B) Streptokinase

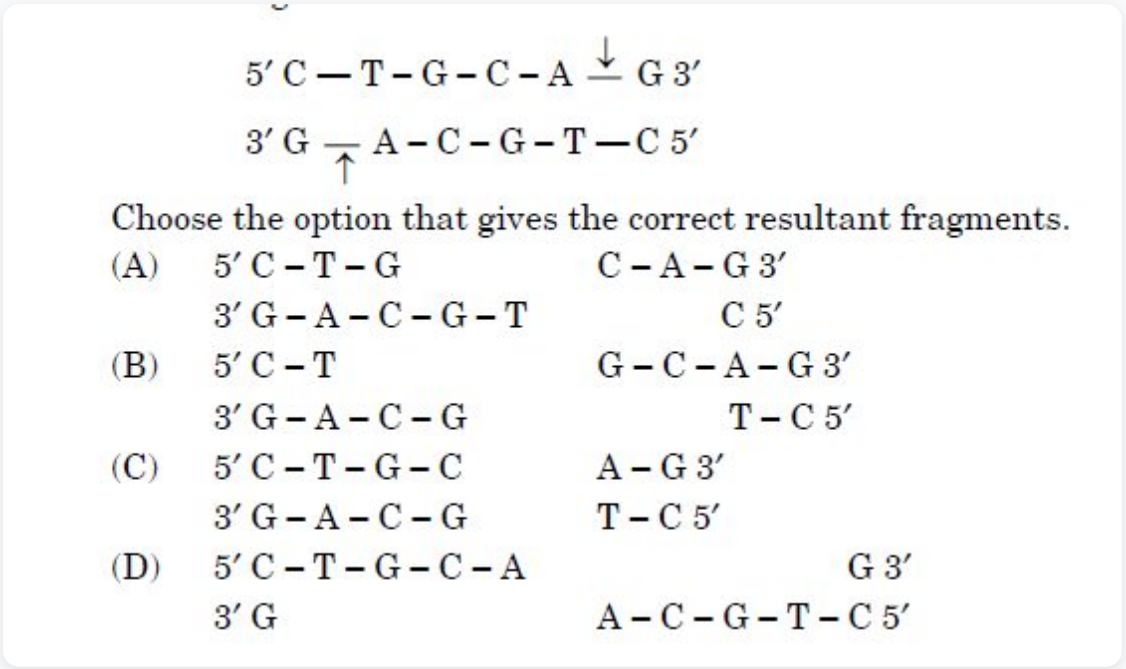
(C) Ethanol

(D) Statins

Question 10.

Given below is the restriction site of a restriction endonuclease Pst I and the cleavage sites on a DNA molecule

[1 Marks]



(A) A

(B) B

(C) C

(D) D

Question 11.

Choose a correct option that shows an interaction in which one species benefits while the other is neither harmed nor benefitted

[1 Marks]

(A) Cuscuta on hedge plants

(B) Sea anemone and clownfish

(C) Abingdon tortoises and goats in the Galapagos Island

(D) Mycorrhizal associations between fungi and roots of higher plants

Question 12.

Transgenic animals have their genetic material manipulated. Select the correct option in reference to transgenic animals

[1 Marks]

(A) Foreign RNA is present in all of their cells

(B) Foreign DNA and RNA are present in their cells

(C) Foreign DNA is present in all of its cells.

(D) Foreign RNA is present in some of its cells

Question 13.

Select the odd option in the context of convergent evolution

[1 Marks]

(A) Flying Squirrel and Flying Phalanger

(B) Flippers of Penguins and Dolphins

(C) Thorns of Bougainvillea and Tendrils of Cucurbita

(D) Eyes of Octopus and Mammals

Question 14.

Which of the following fish led to the extinction of an ecologically unique assemblage of more than 200 species of cichlid fish in Lake Victoria of East Africa ?

[1 Marks]

(A) Dogfish

(B) Nile Perch

(C) Catla Catla

(D) African Catfish

Question 15.

Assertion (A) : The embryo with 8 to 16 blastomeres is called a morula.

Reason (R) : The morula continues to divide and transform into trophoblast

[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 16.

Assertion (A) : Repetitive sequences make up a very large portion of human genome.

Reason (R) : Repetitive sequences do not have direct coding functions in the genome.

[1 Marks]

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

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

(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 false, but Reason (R) is true

Question 17.

Assertion (A) : Trichoderma species are free living fungi that are very common in the root ecosystems.

Reason (R) : They are effective bio-control agents of several plant pathogens.

[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 true, but Reason (R) is false.

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

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

Question 18. Assertion (A) : The use of chitinase enzyme is necessary for the separation of DNA from yeast cells but not in the case of Spirogyra. Reason (R) : Fungal cell wall is made up of fungal chitin.

[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 false, but Reason (R) is true

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

Section C

Question 19.

Mention the functions of each of the following :

(i) Tassels of Corn Cob

(ii) Scutellum

[2 Marks]

Question 20.

Farmers prefer apomictic seeds over hybrid seeds. Give any two reasons.

[2 Marks]

Question 21.

Define the term ‘amniocentesis’. Why has the government imposed a statutory ban in spite of its importance in the medical field ?

[2 Marks]

Question 22.

Name the lymphoid organ that acts as a large reservoir of erythrocytes. Explain its role as a lymphoid organ

[2 Marks]

Question 23.

Suggest how a virus-free healthy plant can be obtained from a diseased sugarcane plant.

[2 Marks]

Question 24.

In order to force bacteria to take up the recombinant DNA, they must be made competent. Explain how it can be achieved.

[2 Marks]

Question 25.

Differentiate between grazing food chain and detritus food chain

[2 Marks]

Question 26.

Ecological pyramids are widely accepted but they still have some limitations. Write any two limitations

[2 Marks]

Section D

Question 27.

List any three outbreeding devices that flowering plants have developed for cross-pollination and explain how they help to encourage cross-pollination.

[3 Marks]

Question 28.

Draw a labelled diagram of a ‘replicating fork’ showing the polarity. Why does DNA replication occur within such ‘fork’ ?

[3 Marks]

Question 29.

Study the given chart showing evolution of plants. Answer the following questions.

(a) Identify the plant which acts as an immediate ancestor of both ferns and conifers.

(b) Name the nearest ancestors of flowering plants.

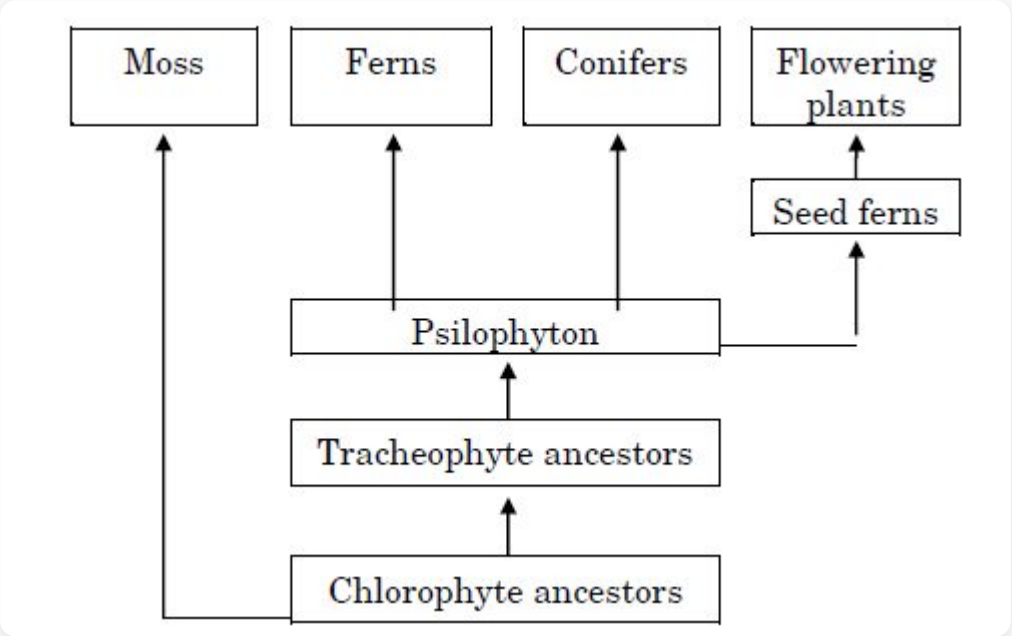
(c) Name the most primitive group of plants.

(d) Psilophyton provides common ancestry to which classes ?

(e) Name the common ancestor of psilophyton and seed ferns.

(f) Name the common ancestor of mosses and tracheophytes.

[3 Marks]



Question 30.

Mention a product of human welfare obtained with the help of each one of the following:

(a) Saccharomyces cerevisiae

(b) Propionibacterium shermanni

(c) Aspergillus niger

(d) Trichoderma polysporum

(e) Acetobacter aceti

(f) Streptococcus

[3 Marks]

Question 31.

Transgenic animals are produced by man. Explain any three ways in which such animals can be beneficial to humans.

[3 Marks]

Question 32.

Explain Gause's 'Competitive Exclusion Principle' with the help of a suitable example.

[3 Marks]

Question 33.

Explain the level of biodiversity at genetic, species and ecological levels with the help of one example each.

[3 Marks]

Section E

Question 34.

Briefly explain the events of fertilisation and implantation in an adult human female.

[5 Marks]

Question 35.

(i) Arrange the following hormones in sequence of their secretion in a pregnant woman : hCG; LH; FSH; Relaxin.

(ii) Mention the source and the functions of the above mentioned hormones.

[5 Marks]

Question 36.

Work out separate monohybrid crosses up to F_2 generation between two pea plants and two Antirrhinum plants, both having contrasting traits with respect to the colour of the flower. Comment on the patterns of inheritance in the crosses carried out in such two cases.

[5 Marks]

Question 37.

Answer the following questions:

(i) How does a chromosomal disorder differ from a Mendelian disorder ? Write one example for each.

(ii) Name the phenomenon that leads to situations like ‘XO’ abnormality in humans. Also name this genetic disorder. How are individuals with an XO chromosomal abnormality affected ? Write its symptoms as well as karyotype

[5 Marks]

Question 38.

(i) Draw the structure of an antibody molecule and label any four of its parts.

(ii) Differentiate between active and passive immunity. Write any three differences

[5 Marks]

Question 39.

(i) (a) Write the scientific names of the two species of filarial worms causing filariasis.

(b) How do they affect the body of infected persons ?

(c) How does the disease spread ?

(ii) Mention the source and the role of the following in providing defence against infection in the human body :

(a) Histamine

(b) Interferons

[5 Marks]