CBSE EXAMINATION PAPER-2026

BIOLOGY

(Solved)

Time allowed : 3 hours | Maximum Marks : 81

General Instructions :

Read the following instructions carefully and follow them :

i. This question paper contains **38 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 25** are very short answer

vi. **Section D** – questions number **26 to 32** are short answer

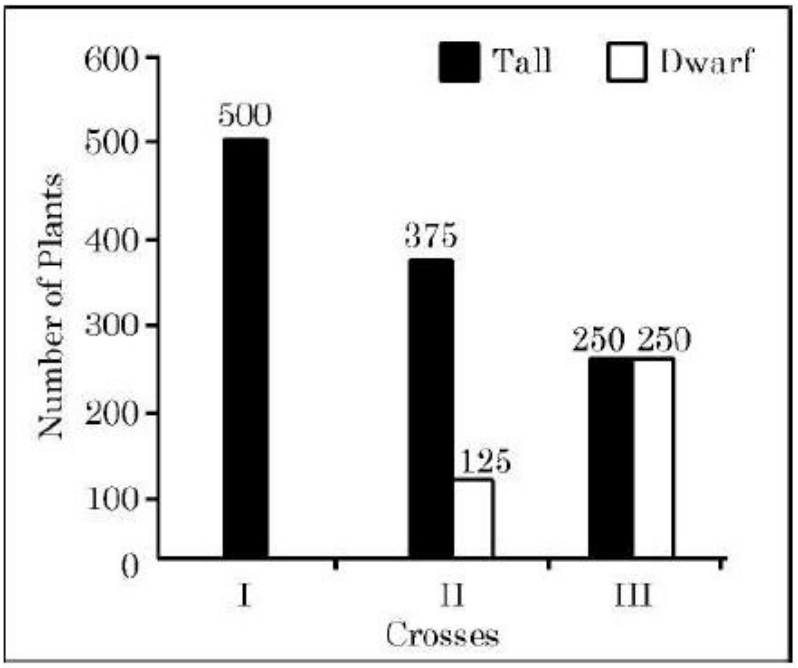
vii. **Section E** – questions number **33 to 38** are long answer

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. A student performed some crosses in plants and represented the result in the form of bar graphs as shown below. Each graph displays the phenotypic proportion of the progeny. Study the graphs and answer the questions



(1) What can you infer about the genotype of parents in crosses I and II?

[1 Marks]

(2) Which genetic cross is represented by these crosses?

[1 Marks]

(3) Looking at bar graph of cross III, identify the type of cross performed and its importance in genetics.

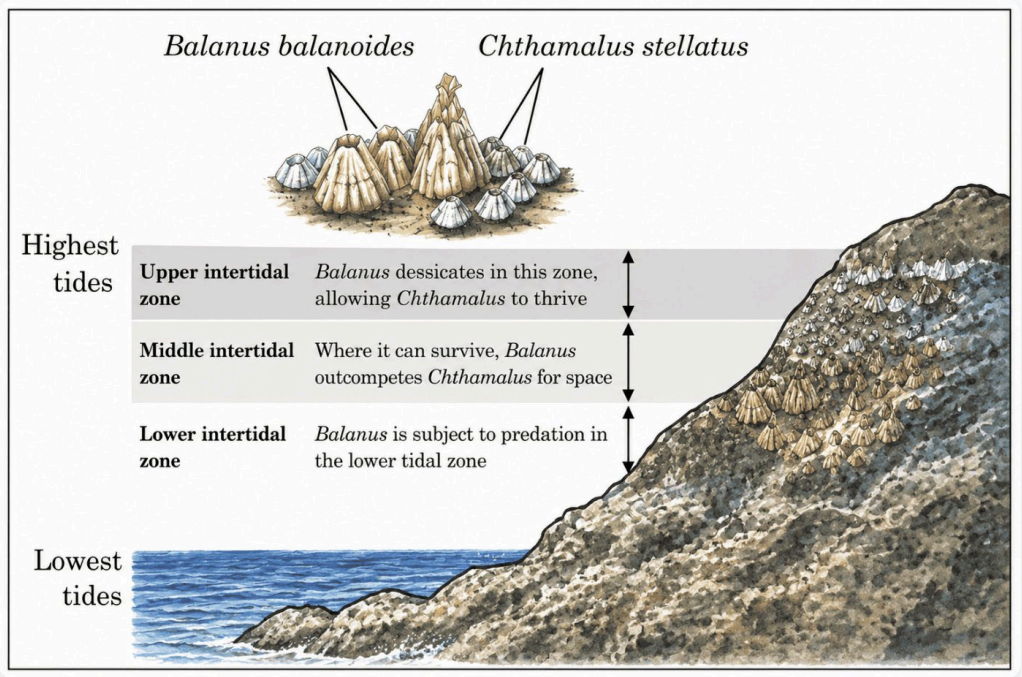
[2 Marks]

Question 2. The diagram below shows the distribution of two barnacle species, Chthamalus and Balanus on a rocky sea shore. When Balanus is experimentally removed, Chthamalus expands its range in lower intertidal zone.

(1) Two different species can compete for the same resource. Give another example of it.

[1 Marks]

(2) Identify and define the ecological phenomenon demonstrated by this observation.



[1 Marks]

(3) How do species avoid competition in nature ? Explain with an example.

[2 Marks]

Section B

Question 3.

Identify the plant in which emasculation is not required for artificial hybridization.

[1 Marks]

(A) Rice

(B) Pea

(C) Papaya

(D) Wheat

Question 4.

Which of the following is not a component of immune system?

[1 Marks]

(A) Plasma Proteins

(B) Lymphocytes

(C) Red Blood Cells

(D) Bone Marrow

Question 5.

Select the option that shows correct statements:

(i) Corpus luteum secretes progesterone.

(ii) Only FSH attains a peak level in middle of cycle.

(iii) LH surge induces rupture of graafian follicle.

(iv) Luteal phase of menstrual cycle is also called proliferative phase

[1 Marks]

(A) (ii) and (iv) are correct.

(B) Only (ii) is correct

(C) Only (iv) is correct

(D) (i) and (iii) are correct

Question 6.

Select the mismatched pair :

[1 Marks]

(A) Zoological parks – Ex-situ conservation

(B) Robert Mays estimation on global species diversity – 7 million species worldwide

(C) Genetically different strains of rice in India – Less than 1000

(D) Mega diversity countries in the world – 12

Question 7. Pomato was produced by fusing protoplasts of

[1 Marks]

(A) Tomato and Potato

(B) Pomegranate and Tomato

(C) Pomegranate and Potato

(D) Pomegranate, Potato and Tomato

Question 8. In an ecosystem, different species occupy different levels and vertical distribution of species is found. This is called

[1 Marks]

(A) Stratification

(B) Layering

(C) Population

(D) Fragmentation

Question 9. Which of the following sacred groves is found in Meghalaya

[1 Marks]

(A) Jaintia hills

(B) Basta

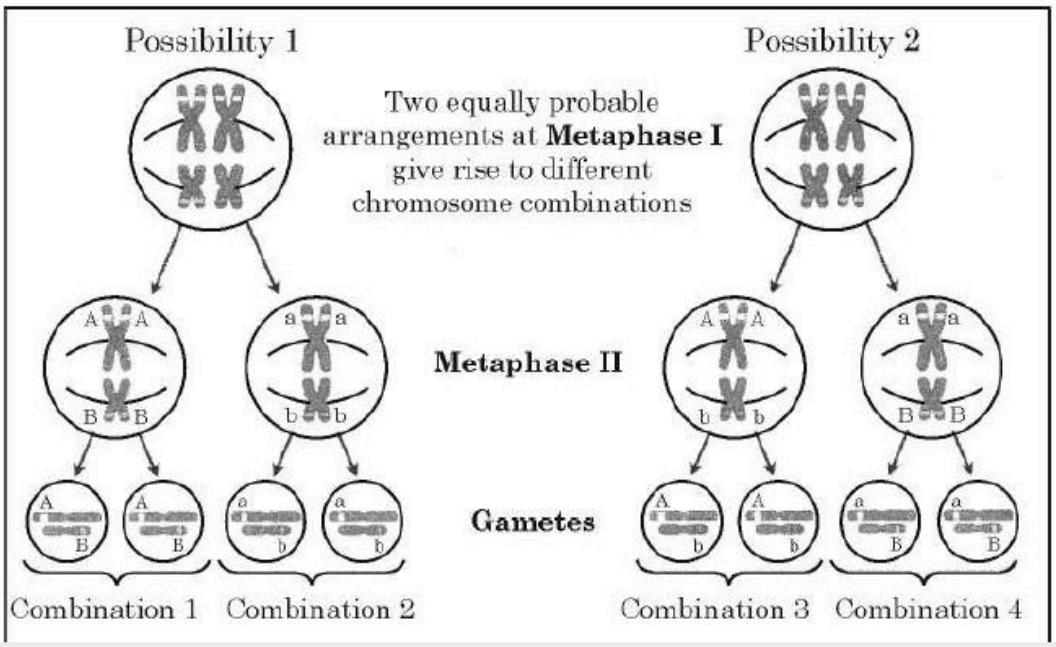
(C) Chanda

(D) Sarguja

Question 10.

In the following figure, two ways of pairing of two homologous pairs of chromosomes are shown. Which of the following phenomena is expressed

[1 Marks]



(A) Independent assortment of genes

(B) Linkage of genes

(C) Multiple alleles

(D) Incomplete dominance

Question 11. Match Column-I with Column-II and choose the correct option

[1 Marks]

	Column-I		Column-II
a.	Biolistic gun	i.	Bacterial cell
b.	Chitinase	ii.	Tumour inducing
c.	Ti	iii.	Animal cell
d.	Ca^{++}	iv.	Fungal cell
		v.	Plant cell

Options :

	a	b	c	d
(A)	i	ii	iii	iv
(B)	ii	v	i	iii
(C)	v	iv	ii	i
(D)	v	i	iv	ii

(A) A

(B) B

(C) C

(D) D

Question 12.

The idea of use and disuse of organs for evolution of organism was proposed by

[1 Marks]

(A) Charles Darwin

(B) Thomas Malthus

(C) Lamarck

(D) Hugo De Vries

Question 13.

Which of the following statements about plasmids is incorrect ?

[1 Marks]

(A) They often carry antibiotic resistant genes

(B) Plasmids have the ability to replicate within the bacterial cell

(C) Their replication is controlled by chromosomal DNA.

(D) They are autonomously replicating circular extra-chromosomal DNA

Question 14.

Which connective tissue connects ovary to pelvic wall and uterus ?

[1 Marks]

(A) Tendons

(B) Cartilage

(C) Ligaments

(D) Bone

Question 15.

Assertion (A) : The population of melanized moths increased in industrial areas after Industrial Revolution.

Reason (R) : In Industrial environment lichen covered trees were replaced by soot-covered trees offering better camouflage to dark coloured moths.

[1 Marks]

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

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

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

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

Question 16.

Assertion (A) : The milk produced by transgenic cow ‘Rosie’ was nutritionally more balanced product for human babies than natural cow milk.

Reason (R) : It was human protein enriched milk containing human alpha lactaglobulin.

[1 Marks]

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

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

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

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

Question 17.

Assertion (A) : Flocs are masses of bacteria associated with fungal filaments in secondary treatment of sewage.

Reason (R) : Flocs help in digestion of solid waste by anaerobic respiration

[1 Marks]

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

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

Question 18.

Assertion (A) : In terrestrial ecosystem much larger fraction of energy flows through grazing food chain. Reason (R) : Grazing food chain may be connected to Detritus food chain at some levels.

[1 Marks]

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

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

(a) Define Humoral immune response.

(b) Name any two types of antibodies found to give humoral immune response in humans.

[2 Marks]

Question 20.

Identify the stage of follicle where primary oocyte undergoes first meiotic division.

Also mention the products of this division

[2 Marks]

Question 21.

Study the sequence of bases in a DNA molecule that is shown below and answer the questions.

5' – GAATTC – 3'

3' – CTTAAG – 5'

(a) What are such sequences called ? Name the enzyme used that recognises such nucleotide sequences.

(b) How do these enzymes function ?

[2 Marks]

Question 22.

(a) Analyse the following two cases of sex determination in different organisms :

Case I : Males have (XO) sex chromosomes and females have two copies of same sex chromosome (XX).

Case II : Females have two different sex chromosomes (ZW) and males have two copies of same sex chromosome (ZZ).

Identify the type of heterogamety in each case, giving one example of each.

[2 Marks]

Question 23.

(i) Differentiate between a DNA and RNA nucleotide.

(ii) Name the two types of bonds present within a single nucleotide.

[2 Marks]

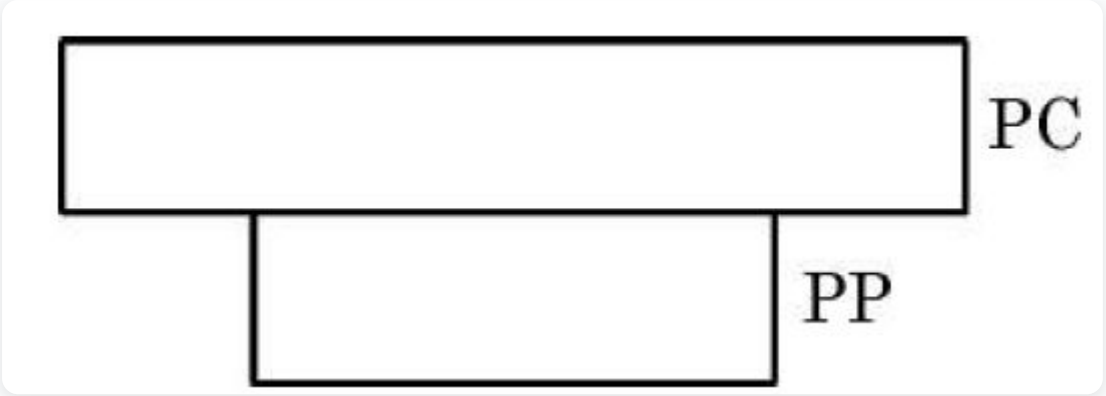
Question 24.

Given below is a pyramid found in an ecosystem, where each bar represents the standing crop available in the trophic level.

(i) Identify the kind of pyramid and with the help of an example explain the conditions where this kind of pyramid is possible in nature.

(ii) Write any two limitations of ecological pyramids

[2 Marks]



Question 25.

In an ecosystem there was loss of biodiversity due to some project in that area.

(i) How will biodiversity be affected ? (2 points)

(ii) List two major causes of loss of biodiversity

[2 Marks]

Section D

Question 26.

(a) Do all pollen grains remain viable for the same length of time ? Support your answer with two suitable examples.

(b) How are pollen grains stored in pollen banks?

[3 Marks]

Question 27.

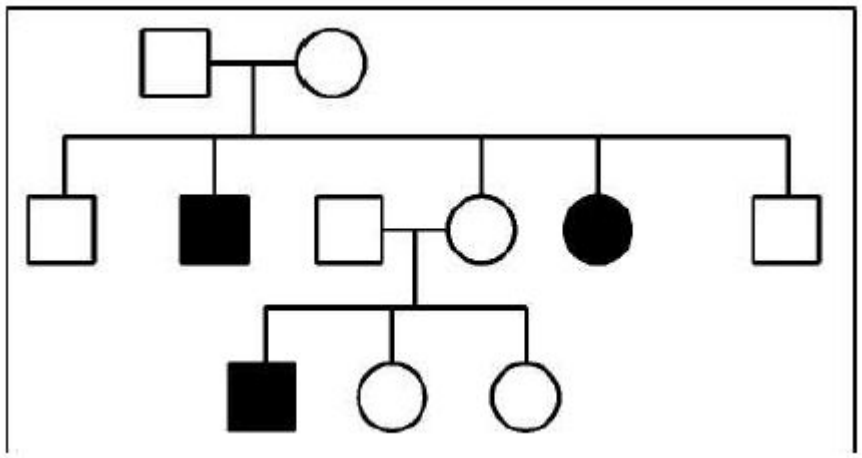
(a) What is pedigree analysis ? Mention its importance in human genetics. (2 pts.)

(b) Analyse the following pedigree and write the

(i) Pattern of inheritance.

(ii) Give one example of disease showing such an inheritance pattern

[3 Marks]



Question 28.

(a) How is Hardy-Weinberg expression $(p^2 + 2pq + q^2) = 1$ derived ?

(b) List any two factors that disturb the genetic equilibrium.

[3 Marks]

Question 29.

Draw a neat diagram of megasporangium of an angiosperm and label any six parts.

[3 Marks]

Question 30.

(a) Mention the scientific name of the source plant and the part from which opioids are extracted.

(b) How are morphine and heroin related ? Mention the effect each one of them has on human body.

[3 Marks]

Question 31.

A farmer grew two varieties of corn crop in field A and B. He grew normal corn crops in field A and GM corn crops in field B.

He observed that corn borers attacked only in field A. To control it, spores of Bt were sprayed on field A.

(a) Name the gene in the spores responsible for control of pest.

(b) What effect will the spores of Bt have on insect pest ?

(c) How has corn plants of field B developed resistance against this pest ? Explain.

[3 Marks]

Question 32.

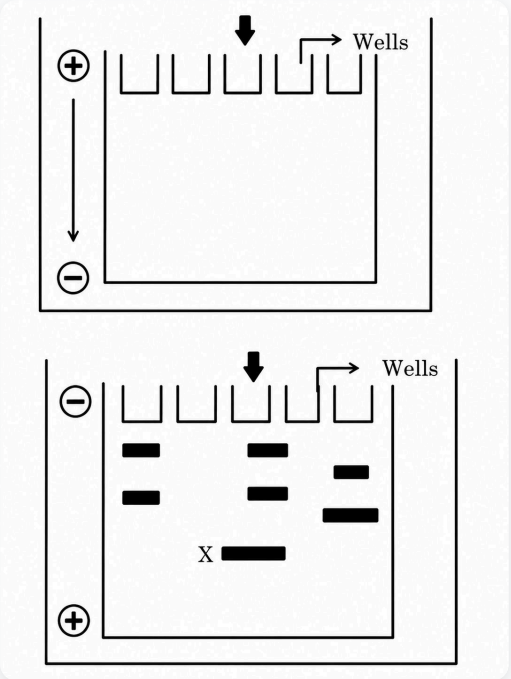
Observe the given picture carefully. A mixture of DNA with fragments ranging from 100 base pairs to 1800 base pairs were separated by electrophoresis on agarose gel with the following arrangement:

(a) What result will be obtained in staining with ethidium bromide ? Explain with reasons.

(b) The above setup was modified as shown below and a band with 100 base pairs was obtained at X.

What changes were made to the previous design to get a band at 'X'. Why did the band appear at 'X' ?

[3 Marks]



Section E

Question 33.

Trace the events from fertilization till implantation of blastocyst in human female. Also mention the site where fertilization takes place.

[5 Marks]

Question 34.

(i) Case studies of some couples are given below. They were not able to have kids even though the parents were not taking any precautions. They also do not wish to adopt a child or take the help of donors. Study these cases and suggest an appropriate Assisted Reproductive Technology that could help them.

Case I – Female – Normal Reports

Male – Normal sperms but no connection between epididymis and vas deferens.

Case II – Female – Normal eggs but Fallopian tube blocked.

Male – Normal sperms. Male reports are normal.

Case III – Female – Normal Reports.

Male – Low sperm count with less motility

(ii) Copper releasing intrauterine devices are very effective and popular contraceptive devices. Name any two copper releasing IUDs. Write two reasons that make them effective contraceptives.

[5 Marks]

Question 35.

(i) Watson and Crick's discovery of double helical structure was based on which two findings. Also mention the name of the scientists associated with these findings.

(ii) Write down the salient features of double helix structure of DNA (any three points

[5 Marks]

Question 36.

Given below is a stretch of DNA showing the coding strand of structural gene of transcription unit.

5' - ATG ACC GTA TTT TCT GTA GTG CCC GTA CTT CAG GCA TTA 3'

(i) Write the corresponding template strand and m-RNA strand that will be transcribed along with its polarity.

(ii) If GUA of transcribed mRNA is an intron, then depict the sequence involved in formation of mRNA / mature / processed hn RNA strand :

(1) In a bacterium

(2) In humans

(iii) How many amino acids the resulting polypeptide will have after the process of translation in humans

[5 Marks]

Question 37.

(i) Name the protozoan species that is responsible for causing the most serious and even fatal malarial disease.

(ii) Name the host in which the parasite completes its sexual stages and explain the changes taking place.

(iii) How does the parasite damage the human body after entering the blood stream ?

(iv) Suggest two effective preventive measures to control the spread of this disease in endemic regions

[5 Marks]

Question 38.

(i) What are bio-fertilizers ?

(ii) Name the different types of microorganisms used as biofertilizers in organic farming and explain how each contributes to soil fertility.

(iii) Write two advantages of using bio-fertilizers over chemical fertilizers

[5 Marks]