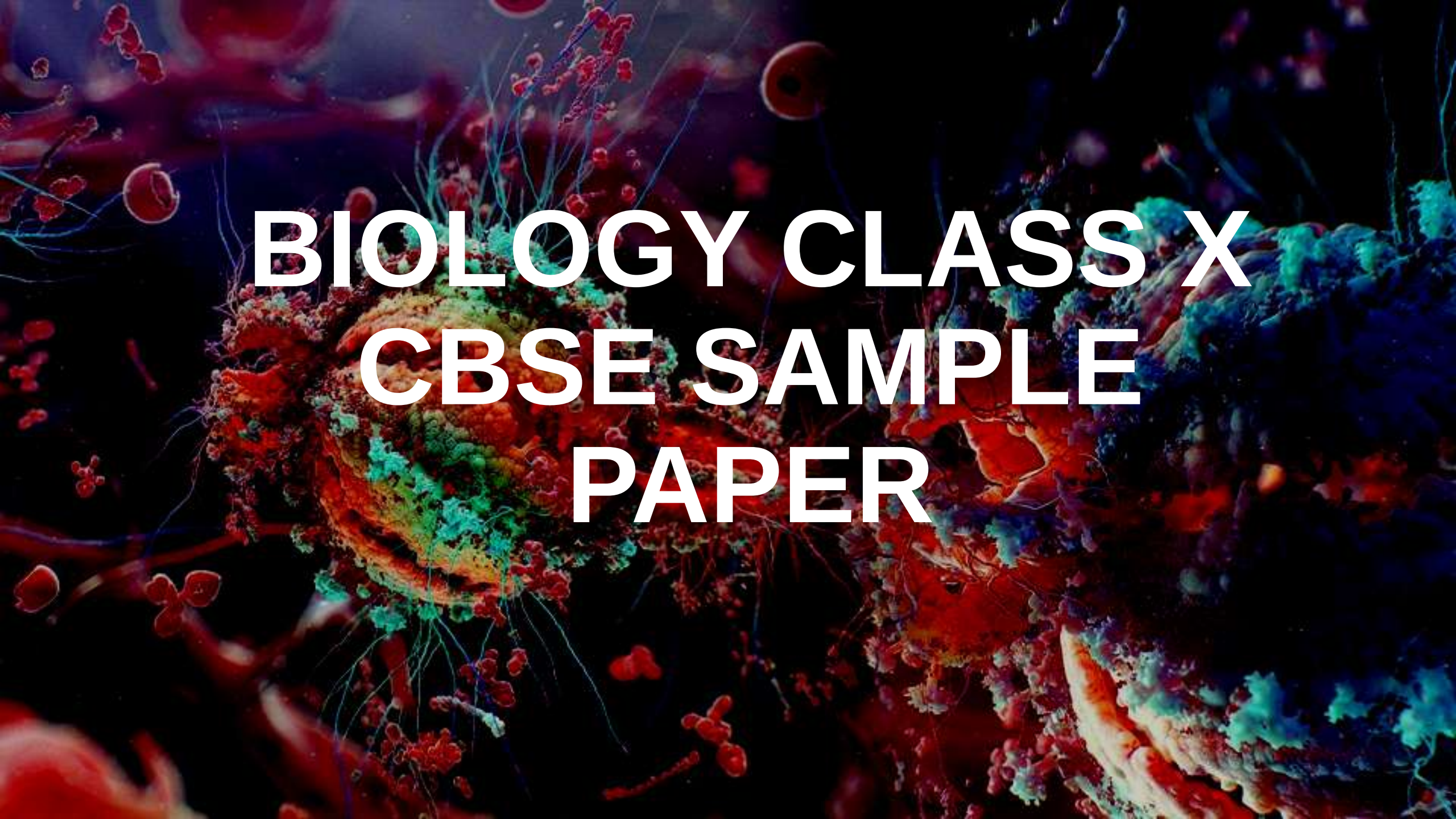
BIOLOGY CLASS X
CBSE SAMPLE
PAPER

SECTION A (7 MARKS)

TYPES OF QUESTIONS	MARKS	QUESTION NO.	BASIS OF LEARNING
MCQS	1 EACH	8,9,10,11,12	OBSERVATION IDENTIFICATION
ASSERTION AND REASONING	1 EACH	18,19	UNDERSTANDING APPLICATION REASONING BASED

SAMPLE QUESTION

Q 10. If a tall pea plant is crossed with a pure dwarf pea plant then, what percentage of F1 and F2 generation respectively will be tall?

(a)25%, 25%
(b)50%, 50%
(c)75%,100%
(d) 100%, 75%

SAMPLE QUESTION

Q18. Assertion: Height in pea plants is controlled by efficiency of enzymes and is thus genetically controlled.
Reason: Cellular DNA is the information source for making proteins in the cell.

(a)Both A and R are true and R is the correct explanation of A
(b)Both A and R are true and R is not the correct explanation of A
(c)A is true but R is false
(d)A is False but R is true

SECTION B (8 MARKS)

TYPE OF QUESTIONS	MARKS	QUESTION NO.	BASIS OF LEARNING
VERY SHORT ANSWER	2 EACH	22,23,24,26	UNDERSTANDING APPLICATION

SAMPLE QUESTION

Q23. Patients whose gallbladder are removed are recommended to eat less oily food. Why?

ANS. Gallbladder stores bile which helps in emulsification of lipids (1mark). In the absence of stored bile, emulsification of fats will be negligible/ affected/ less (1mark) and thus fat digestion will be slow. Hence there are such diet restrictions.

SECTION C (6 MARKS)

TYPES OF QUESTIONS	MARKS	QUESTION NO.	BASIS OF LEARNING
SHORT ANSWER TYPE QUESTIONS [INTERNAL CHOICE IN Q29]	3 MARKS	29,33	CONCEPTUAL KNOWLEDGE AND UNDERSTANDING

SAMPLE QUESTION

Q29. The leaves of a plant were covered with aluminum foil, how would it affect the physiology of the plant?

OR

How is lymph an important fluid involved in transportation? If lymphatic vessels get blocked, how would it affect the human body? Elaborate.

ANS. No photosynthesis will occur so no glucose will be made. Also no respiration will take place as no Oxygen will be taken in. (1) No transpiration will occur so there would be no upward movement of water or minerals from the soil as there will be no transpirational pull.(1) Temperature regulation of leaf surface will be affected. (1)

OR

Lymph carries digested and absorbed fat from the intestine (1) and drains excess fluid from extracellular space back into the blood (1). Blockage of lymphatic system will lead to water retention and poor fat absorption in the body (1-any one)

SECTION D (5 MARKS)

TYPES OF QUESTIONS	MARKS	QUESTION NO.	BASIS OF LEARNING
LONG ANSWER QUESTION [INTERNAL CHOICE]	5 MARKS	35	CONCEPTUAL KNOWLEDGE AND UNDERSTANDING

SAMPLE QUESTION

Q35. (a) Why is it not possible to reconstruct the whole organism from a fragment in complex multicellular organisms? (b) Sexual maturation of reproductive tissues and organs are necessary link for reproduction. Elucidate.

OR

(a) How are variations useful for species if there is drastic alteration in the niches? (b) Explain how the uterus and placenta provide necessary conditions for proper growth and development of the embryo after implantation?

(a) The reason is that many multi-cellular organisms are not simply a random collection of cells. Specialised cells are organised as tissues, and tissues are organised into organs, which then have to be placed at definite positions in the body. Therefore, cell-by-cell division would be impractical. (2 marks)

(b) Sexual maturation of reproductive tissues is a necessary link for reproduction because of the need for specialised cell called germ-cells to participate in sexual reproduction. The body of the individual organism has to grow to its adult size, the rate of general body growth begins to slow down, reproductive tissues begin to mature. (1½ marks) A whole new set of changes in the appearance of the body takes place like change in body proportions, new features appear. This period during adolescence is called puberty. There are also changes taking place that are different between boys and girls. In girls, breast size begins to increase, with darkening of the skin of the nipples at the tips of the breasts. Also, girls begin to menstruate at around this time. Boys begin to have new thick hair growth on the face and their voices begin to crack. (1½ marks)

OR

ANS.

(a)If the niche were drastically altered, the population could be wiped out. However, if some variations were to be present in a few individuals in these populations, there would be some chance for them to survive. Variation is thus useful for the survival of species over time. (2 marks)

(b) ● The lining of the uterus thickens and is richly supplied with blood to nourish the growing embryo. (½ mark) ● The embryo gets nutrition from the mother's blood with the help of placenta. It is embedded in the uterine wall. (½ mark)

● It contains villi on the embryo's side of the tissue. On the mother's side are blood spaces, which surround the villi. (½ mark)

● This provides a large surface area for glucose and oxygen to pass from the mother to the embryo. The developing embryo will also generate waste substances which can be removed by transferring them into the mother's blood through the placenta. (1 mark)

● The child is born as a result of rhythmic contractions of the muscles in the uterus. (½ mark)

SECTION E (4 MARKS)

TYPES OF QUESTIONS	MARKS	QUESTION NO.	BASIS OF LEARNING
CASE BASED / DATA BASED WITH 2/3 SUB-PARTS [INTERNAL CHOICE IN ONE OF THE SUB PARTS]	4 MARKS	38	CONCEPTUAL KNOWLEDGE AND UNDERSTANDING

SAMPLE QUESTION

Q38. Pooja has green eyes while her parents and brother have black eyes. Pooja's husband Ravi has black eyes while his mother has green eyes and father has black eyes.

(a) On the basis of the above given information, is the green eye colour a dominant or recessive trait? Justify your answer.

(b) What is the possible genetic makeup of Pooja's brother's eye colour?

(c) What is the probability that the offspring of Pooja and Ravi will have green eyes? Also, show the inheritance of eye colour in the offspring with the help of a suitable cross.

OR

(c) 50% of the offspring of Pooja's brother are green eyed. With help of cross show how this is possible.

SAMPLE QUESTION

ANS 38. a. Yes, green eye colour is recessive (½ mark) as it will express only in homozygous condition (½ mark)
b. BB, Bb (1 mark)
c. bb*Bb (0.5mark)
Genetic cross - (1 mark) 50% of the offsprings can have green eye colour (0.5)

	B	b
b	Bb	bb
b	Bb	bb

OR

ANS.

c. Brother is heterozygous(Bb) and wife is green(bb) - (1)

Wife bb*Bb brother B

50% of the offsprings can have green eye colour as per the cross shown.(1 mark)

	B	b
b	Bb	bb
b	Bb	bb

DISTRIBUTION OF MARKS (AS PER THIS SAMPLE

CHAPTER	MARKS
LIFE PROCESSES	10
CONTROL AND CORDINATION	3
HOW DO ORGANISIMS REPRODUCE	6
HEREDITY AND EVOLUTION	6
OUR ENVIRONMENT	5
TOTAL:	30