



BIOLOGY | SAMPLE PAPER

ICSE CLASS – 10

Maximum Marks: 80

Duration: 2.0 Hrs.

General Instructions:

1. Answers to this paper must be written on the paper provided separately.
2. You will not be allowed to write during first 15 minutes. This time is to be spent in reading the question paper.
3. The time given at the head of this paper is the time allowed for writing the answers.
4. Section A is compulsory.
5. Attempt any four questions from Section B.
6. The intended marks for questions or parts of questions are given in brackets [].

Section – A

1. **Question 1: Choose the correct answers to the questions from the given options.** [15]
(Do not copy the question, write the correct answers only.)
- (i) The opening of stomata during daytime is mainly due to: [1]
- (a) Loss of water from guard cells
 - (b) Entry of potassium ions into guard cells
 - (c) Breakdown of cellulose in guard cells
 - (d) Decrease in osmotic pressure of guard cells
- (ii) Which of the following statements best defines a tissue? [1]
- (1) A group of organs working together
 - (2) A group of similar cells performing a specific function
 - (3) The smallest unit of life
 - (4) A collection of different cells without coordination
- | | |
|--------------|-----------------|
| (a) Only (2) | (b) (1) and (3) |
| (c) Only (4) | (d) (2) and (3) |
- (iii) The total number of cranial nerves in human beings is: [1]
- | | |
|--------------|--------------|
| (a) 10 pairs | (b) 12 pairs |
| (c) 31 pairs | (d) 21 pairs |

- (iv) Aruna went to a theatre to watch a movie on a bright sunny morning. As she came out of the theatre, she felt a dazzling effect and could not open her eyes. After a few minutes her vision became normal. This is due to: [1]



- (a) Accommodation of eye (b) Mutation
(c) Polarisation (d) Adaptation of eyes
- (v) The blood vessel that carries blood rich in nutrients from the intestine to the liver is the: [1]
(a) hepatic artery (b) renal vein
(c) hepatic portal vein (d) inferior vena cava
- (vi) **Assertion (A):** The ozone layer is essential for the survival of living organisms. [1]
Reason (R): Ozone absorbs most of the harmful ultraviolet radiation coming from the sun.
(a) Both A and R are true and R correctly explains A
(b) Both A and R are true but R does not explain A
(c) A is true but R is false
(d) A is false but R is true
- (vii) The pale yellow colour of normal urine is due to the pigment: [1]
(a) melanin (b) urochrome
(c) anthocyanin (d) haemoglobin
- (viii) Vitreous humour is present between: [1]
(a) Cornea and Iris (b) Iris and Retina
(c) Lens and Retina (d) Cornea and Lens
- (ix) Light energy during photosynthesis is directly used for: [1]
(a) synthesis of glucose (b) splitting of water molecules
(c) fixation of carbon dioxide (d) formation of starch
- (x) The structure where human sperms gain motility and are temporarily stored is: [1]
(a) seminiferous tubules (b) vas deferens
(c) epididymis (d) prostate gland
- (xi) The point of attachment of spindle fibres to chromosomes during cell division is the: [1]
(a) chromatin (b) centromere
(c) centrosome (d) kinetochore
- (xii) Which gland performs both exocrine and endocrine functions? [1]
(a) Thyroid (b) Adrenal
(c) Pancreas (d) Pituitary

(xiii)	Which of the following substances is biodegradable?		[1]
(a)	Polythene	(b)	Metal rod
(c)	Paper	(d)	Plastic
(xiv)	Alpha cells of pancreas secrete:		[1]
(a)	Glycogen	(b)	Glucose
(c)	Glucagon	(d)	Insulin
(xv)	The two cerebral hemispheres in the human brain are connected by:		
(a)	medulla oblongata	(b)	pons
(c)	corpus callosum	(d)	cerebellum
2.	Questions 2		[25]
(i)	Name the following:		
(a)	The organelle that forms the aster during cell division.		[1]
(b)	A genetic disorder in which blood does not clot.		[1]
(c)	The protective outer layer present on the epidermis of leaves.		[1]
(d)	A disorder caused due to deficiency of thyroid hormone in children.		[1]
(e)	The hormone that stimulates the release of eggs from the ovary.		[1]
(ii)	Arrange the following terms in a logical sequence, beginning with the term that is underlined:		
(a)	implantation, cleavage, <u>Fertilization</u> , gestation		[1]
(b)	digestion, assimilation, egestion, <u>Ingestion</u>		[1]
(c)	<u>Pollination</u> , fruit formation, seed formation, fertilization		[1]
(d)	<u>Stimulus</u> , response, coordination, receptor		[1]
(e)	fertilization, gamete formation, <u>Meiosis</u> , zygote formation		[1]
(iii)	Fill in the blanks with suitable words:		[5]
	The male reproductive system produces sperms in the _____ (i). These sperms mature and are stored in the _____ (ii). During copulation, sperms are transported through the _____ (iii). Fertilization occurs in the _____ (iv). The process of fusion of male and female gametes is called _____ (v).		
(iv)	Choose the odd one out and state the category to which the remaining belong:		
(a)	Urea, Uric acid, Ammonia, Bile		[1]
(b)	Insulin, Adrenaline, Thyroxine, Saliva		[1]
(c)	X-rays, UV rays, Noise pollution, Methyl isocyanate		[1]
(d)	Liver, Kidney, Skin, Pancreas		[1]
(e)	Newspaper, Glass, Plastic bottle, Polythene bag		[1]

- (v) Match Column I with Column II and rewrite the correct matching pairs: [5]

Column-I		Column-II	
(a)	Heart	(i)	Exchange of gases
(b)	Alveoli	(ii)	Purification of blood
(c)	Kidney	(iii)	Absorption of nutrients
(d)	Nephron	(iv)	Functional unit of kidney
(e)	Small intestine	(v)	Circulation of blood

Section – B

(Attempt any four questions)

3. **Question 3** [10]
- (i) Define gene. [1]
- (ii) State any two differences between homologous chromosomes and sister chromatids. [2]
- (iii) State two functions of meiosis. [2]
- (iv) What is haemophilia? State two reasons why it is more common in males. [2]
- (v) Explain the inheritance of haemophilia using a cross between a carrier mother and a normal father. [3]
4. **Question 4** [10]
- (i) Name the part of the brain that controls breathing and heartbeat. [1]
- (ii) State two functions of cerebrospinal fluid. [2]
- (iii) Differentiate between sensory neuron and motor neuron (any two points). [2]
- (iv) State two effects of damage to the cerebellum. [2]
- (v) Explain the pathway of a reflex action with the help of a neat, labelled sequence. [3]
5. **Question 5** [10]
- (i) Name the pigment that absorbs maximum light energy for photosynthesis. [1]
- (ii) State two differences between light reaction and dark reaction. [2]
- (iii) Mention two factors that affect the rate of transpiration. [2]
- (iv) State two functions of stomata other than transpiration. [2]
- (v) Explain the mechanism of opening and closing of stomata on the basis of turgor changes. [3]
6. **Question 6** [10]
- (i) How many chromosomes are present in a human somatic cell? [1]
- (ii) State two differences between mitosis and meiosis with respect to division stages. [2]
- (iii) What is cytokinesis? State two features of cytokinesis in animal cells. [2]
- (iv) Name two causes of mutation. [2]
- (v) Explain the importance of mitosis in growth and repair of tissues. [3]

7. **Question 7** [10]
- (i) Name the scientist who proposed the theory of natural selection. [1]
 - (ii) State two evidences from comparative anatomy that support evolution. [2]
 - (iii) What are vestigial organs? Give two examples in humans. [2]
 - (iv) State two harmful effects of overpopulation. [2]
 - (v) Explain Lamarck's theory of inheritance of acquired characters with a suitable example. [3]
8. **Question 8** [10]
- (i) Name the nitrogenous waste excreted by mammals. [1]
 - (ii) State two functions of the kidney. [2]
 - (iii) What is dialysis? Mention one situation when it is required. [2]
 - (iv) Name two causes of kidney failure. [2]
 - (v) Explain the process of urine formation under the following heads: [3]
 - (a) Ultrafiltration
 - (b) Selective reabsorption