

PREBOARD EXAM (2024-2025)

BIOLOGY

GRADE – X

Maximum Marks:80

Time allowed: Two hours

Answer to this Paper must be written on the paper provided separately.

You will not be allowed to write during first 15 minutes. This time is to be spent in reading the question paper. The time given at the head of this Paper is the time allowed for writing the answers.

Section A is compulsory. Attempt any four question from Section B.

The intended marks for questions or parts of questions are given in brackets []

SECTION A

(Attempt all question from this Section.)

1. Choose the correct answer to the question from the given options. [15]

(i) The loop of Henle lie in

- (a) Renal Cortex (b) Renal Medulla
(c) Renal Pelvis (d) Renal Artery

(ii) Assertion: (A) The foetus respire but does not breath.

Reason : (R) The maternal blood supplies oxygen to the foetus through placenta.

- (a) A is True and R is False (b) A is False and R is True
(c) Both A and R are True (d) Both A and R are False

(iii) During ventricular Systole the atrioventricular valves (P) And semilunar valves (Q).....

- (a) P close, Q open (b) P close, Q close
(c) P open, Q close (d) P open, Q close

(iv) The onset of mensuration in human female is called

- (a) Menopause (b) Ovulation
(c) Menarche (d) Oogenesis

(v) While studying the stages in the ovulation of man a well- developed chin is observed in

- (a) Homo habilis (b) Homo sapiens
(a) Homo erectus (b) Australopithecus

(vi) Assertion : (A) Rods and Cones are photoreceptors in the sclera of eyeball.

Reason : (R) Rods are sensitive to dim light.

- (a) Both A and R are true (b) Both A and R are false
(c) A is true and R is false (d) A is false and R is true

(vii) A pair of corresponding chromosomes of the shape, size and one from each parent is called

- (a) Autosomes (b) Analogous chromosomes
(c) Allosome (d) Homologous chromosomes

(viii) Four friends P, Q, R, S were discussing the examples of genetic disorders. The examples they quoted were as follows:

P. Colour blindness and Malaria

Q. Albinism and Cholera

R. Haemophilia and Colour blindness

S. Haemophilia and Albinism

(a) P&Q

(b) P&R

(c) R&S

(d) Q&S

(ix) A Neurotransmitter stored at the terminal end of the axon.

(a) Iodopsin

(b) Acetylcholine

(c) Vitreous humour

(d) Rhodopsin

(x) Which of the following statements is incorrect?

(a) for every hormone there is a gene.

(b) for production of every enzyme there is a gene

(c) for every protein there is a gene.

(d) for every molecule of fat there is a gene.

(xi) In Nerium the stomata are present in

(a) lenticles

(b) Sunken pits

(c) hydathodes

(d) cobalt paper

(xii) Birth rate is the number of live births per thousand persons in 1 year

(a) 1 year

(b) 10 year

(c) 2 year

(d) 20 year

(xiii) After ovulation in females the structure which is formed by the ruptured follicle is called

(a) Corpus albicans

(b) Graafian follicle

(c) Corpus callosum

(d) Corpus luteum

(xiv) Assertion (A) We Urinate more in summer.

Reason : (R) Sweat glands are more active in Summer.

(a) A is true and R is False

(b) A is False and R is True

(c) Both A and R are True

(d) Both A and R are false

(xv) Purity of Gametes is linked to :

(a) law of dominance

(b) law of factor

(c) law of segregation

(d) law of assortment

2. (i) Name the following.

[5]

(a) A gaseous plant hormone which promotes ripening of fruits.

(b) Expansion of DDT.

(c) The difference of characters between individuals of the same species due to difference in their genetic constitution

(d) A solution whose concentration is greater than that of the cell sap.

(e) Pollutants that cannot be decomposed by the microorganisms.

(ii) Choose the odd one out from the following terms and name the category to which the others belong.

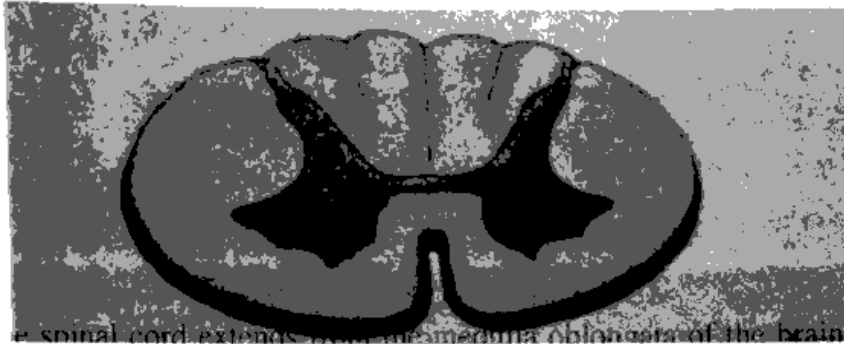
[5]

(a) Auxin, Oxytocin, Gibberellin, Cytokinin.

(b) ADH, TSH, NADPH, ACTH

- (c) Prothrombin, Thrombin, Fibrinogen, Albumin
- (d) Tonsils, Glomerulus, Spleen, Lymphnode.
- (e) Pons, Cyton, Axon, Dendrons

(iii) Given below is the transverse section of spinal cord. Read the information given the diagram and fill in the blanks: [5]



The spinal cord extends from the medulla oblongata of the brain and runs down through the whole length of the vertebral column. The spinal cord is covered by the meninges. It conducts impulses from the skin and muscles to the brain. It also conducts impulses from the brain to the muscles of the trunk and limbs. The spinal cord is a part of the (a) nervous system. The grey matter in the picture given below consists of b) while the white matter consists of c)..... The spinal cord is concerned with the (d)..... below the neck. (e)..... is the bony structure that protect the spinal cord.

(iv) Arrange and rewrite the terms in each group in the correct order so as to be in a logical sequence beginning with the term that is underlined. [5]

- (a) Tympanum, Incus, Malleus, Stapes.
- (b) Graafian Follicle, Fallopian tube, Ovum, Uterus.
- (c) Receptor, Motor neuron, Effector, Sensory neuron.
- (d) Conjunctiva, Pupil, Cornea, Lens.
- (e) Sperm, Urethra, Spermduct, Epididymis.

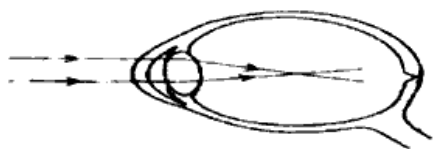
(v) Match the items given in Column I with the most appropriate ones in Column II and rewrite the correct matching pairs [5]

Column I	Column II
A. Blind spot	1. Antiseptic
B. Formalin	2. Pericardium C
C. Heart	3. Area of best vision A
D. Kidney	4. iodine solution F
E. Stapes	5. Renal tubules D
F. Starch test	

Section B

(Attempt any four question from this section)

- Question 3.** (i) How are cytons and axons arranged in the spinal cord. [1]
(ii) Mature erythrocytes in human beings lacks nucleus. Explain giving suitable reasons [2]
(iii) What are hormones? Name any two hormones secreted by pituitary gland? [2]
(iv) What is root pressure? What is its benefits to plants? [2]
(v) Given below is a diagram of depicting of defect of the human eye. [3]



- (a) Give the scientific term for the defect.
(b) Mention one possible reason for the defect.
(c) What types of lenses can be used to correct the defect?

Question 4. (i) What are the three main parts of the membranous labyrinth? [1]

(ii) Draw the diagram of Malpighian capsule [2]

(iii) Distinguish between : a) Australopithecus and modern man (Body hair) [2]

b) Homo habilis and Homo sapiens (posture)

(iv) State Mendel's Law of Dominance. [2]

(v) The diagram given is that of represent a system in the human body. [3]

Study the diagram and answer the following question :



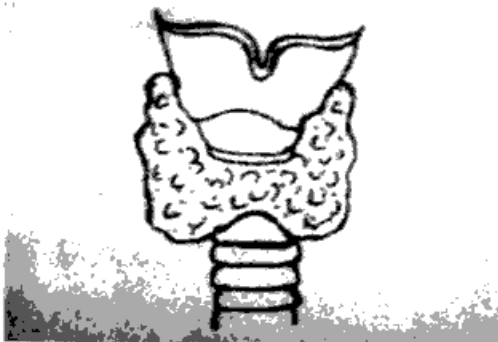
a) Identify the system.

b) Label the parts marked 5&6

c) Name the two hormones secreted by 1.

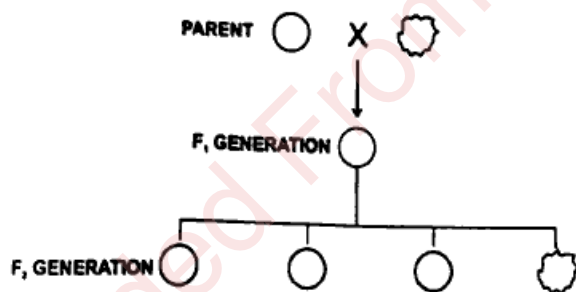
d) Mention the number and the name of the part involved in fertilization and implantation from the above diagram.

- ✓ **Question 5.** (i) Define natality. [1]
(ii) Which structure connects the two hemispheres of the cerebrum? Give its significance [2]
(iii) Glucose is not usually found in urine. Explain. [2]
(iv) State two harmful effects of acid rain. [2]
(v) An endocrine gland is shown in the figure: [3]



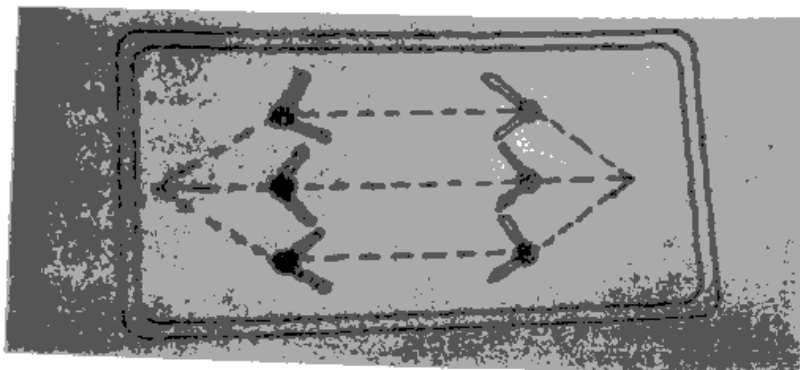
- a) Identify the gland.
b) Name the hormones produced by it.
c) Name the condition caused by the over secretion of the above hormones.

- ✓ **Questions 6.** (i) Distinguish between Fraternal and Identical Twins. [1]
ii) State two objectives of Swachh Bharat Abhiyan. [2]
(iii) Give the exact location of : a) Lenticles b) Pulmonary Semilunar Valve [2]
(iv) Mention the surgical methods of contraception in: a) Human Males [2]
b) Human Females
(v) Given below is a schematic representation of the inheritance of the shape of seeds of garden Pea.
Answer the questions that follow : [3]



- a) Which is the dominant and recessive allele of the trait?
b) What does the ratio 3:1 in F2 generation?
c) State Mendel's Law of independent assortment.

- ✓ **Question 7.** (i) Name the minerals elements required for [1]
a) Clotting of Blood
b) Synthesis of Thyroxine
(ii) Draw a neat labelled diagram to show a plant root hair and label all its parts. [2]
(iii) What will happen if a human RBC is placed inside a hypotonic solution? [2]
(iv) Briefly explain the following terms: a) Homologous Organs [2]
b) Organ of Corti
(v) The figure shows a certain stage of mitosis study it and answer the following questions [3]



- Identify the stage.
- Name the stage which follows the above.
- Name the structure which transmits characteristics from parents to offsprings.

Questions 8

- Name the three ear ossicles .
- What are two precautions to be taken when setting up the Ganong's photometer ?
- Distinguish between Pulmonary artery and Pulmonary vein.
- What are the difference between Acromegaly and Cretinism?
- Given here is the representation of type of pollution. Study the picture and answer the questions that follows

[1]

[2]

[2]

[2]

[3]



- Name the type of pollution shown in the picture.
- Name two sources of this pollution.
- Write two measure to reduce this pollution?