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MOST IMPORTANT QUESTIONS

ICSE
Class X – Biology
Most Important Questions

Name the following:

1. The exchange of chromatid parts between the maternal and the paternal chromatids of a pair of homologous chromosomes during meiosis. [1M]
2. The physical expression of genes in an individual. [1M]
3. The process of uptake of mineral ions against the concentration gradient using energy from cell. [1M]
4. The process of conversion of ADP into ATP during photosynthesis. [1M]
5. Phase of cardiac cycle in which the auricles contract. [1M]
6. The structural and functional unit of the kidney. [1M]
7. The fluid which provides protection and nourishment to the cells of the brain. [1M]
8. The structure formed by the villi of the embryo and the uterus of the mother. [1M]
9. The statistical study of human population. [1M]
10. Chemical substances produced by microorganisms which kill or inhibit the growth of other microorganisms. [1M]

Choose the correct answer from each of the four options given below:

1. The mineral ion needed for the formation of blood clot is: [1M]
   A. Potassium
   B. Sodium
   C. Calcium
   D. Iron
2. A plant cell may burst when: [1M]
   A. Turgor pressure equalises wall pressure.
   B. Turgor pressure exceeds wall pressure.
   C. Wall pressure exceeds turgor pressure.
   D. None of the above

3. A single highly coiled tube where sperms are stored, gets concentrated and mature us known as: [1M]
   A. Epididymis
   B. Vas efferentia
   C. Vas deferens
   D. Seminiferous tubule
4. Chromosomes get aligned at the centre of the cell during: [1M]
   A. Metaphase
   B. Anaphase
   C. Prophase
   D. Telophase
5. Cretinism and Myxoedema are due to [1M]
   A. Hypersecretion of thyroxine
   B. Hypersecretion of growth hormone
   C. Hyposecretion of thyroxine
   D. Hyposecretion of growth hormone
6. After mitotic cell division, a female human cell will have [1M]
   A. 44 + XX chromosomes
   B. 44 + XY chromosomes
   C. 22 + X chromosomes
   D. 22 + Y chromosomes
7. Pulse wave is mainly caused by the [1M]
   A. Systole of atria
   B. Diastole of atria
   C. Systole of the left ventricle
   D. Systole of the right ventricle
8. A plant is kept in a dark cupboard for 48 hours before conducting any experiment on photosynthesis to [1M]
   A. Remove starch from the plant.
   B. Ensure that starch is not translocated from the leaves.
   C. Remove chlorophyll from the leaf of the plant.
   D. Remove starch from the experimental leaf.

9. A reflex arc in man is best described as the movement of stimuli from [1M]
   A. Receptor cell, sensory neuron, relaying neuron, effector muscles
   B. Receptor cell, efferent nerve, relaying neuron, muscles of the body
   C. Receptor cell, spinal cord, motor neuron, relaying neuron
   D. Receptor cell, synapse, motor neuron, relaying neuron
10. Salk's vaccine is used to build immunity against [1M]
   A. Tuberculosis
   B. Poliomyelitis
   C. Malaria
   D. Typhoid

In each set of terms given below, there is an odd one and cannot be grouped in the same category to which the other belong. Identify the odd term in each set and name the category to which the remaining belong.

1. Cell wall, large vacuole, plastid, centrosome. [1M]
2. Thymine, cytosine, adenine, pepsin. [1M]
3. Cortisone, somatotropin, adrenocorticotropic hormone, vasopressin. [1M]
4. Urethra, uterus, urinary bladder, ureter. [1M]
5. Transpiration, photosynthesis, phagocytosis, guttation. [1M]
6. Sneezing, coughing, blinking, typing. [1M]
7. Haemophilia, colour blindness, albinism, night blindness. [1M]
8. Saliva, bile, sweat, tears. [1M]
9. Malleus, pinna, incus, stapes. [1M]
10. Cresol, DDT, Lime, Mercurochrome, Bordeaux mixture. [1M]

State the exact location of the following structures:

1. Centromere [1M]
2. Chordae tendinae [1M]
3. Chloroplast [1M]
4. Pulmonary semilunar valve [1M]
5. Corpus callosum [1M]
6. Guard cells [1M]
7. Prostate gland [1M]
8. Thyroid gland [1M]
9. Amnion [1M]
10. Organ of Corti [1M]

State the main function of the following:

1. Leydig cells [1M]
2. Corpus luteum [1M]
3. Cerebrospinal fluid [1M]
4. Lenticels [1M]
5. Placenta [1M]
6. Ureter [1M]
7. Chordae tendinae [1M]
8. Vitreous humour [1M]
9. Medulla oblongata [1M]
10. Beta cells of pancreas [1M]

Differentiate between the following pairs on the basis of what is mentioned within brackets:

1. Sperm duct and fallopian tube (function) [1M]
2. Rod cells and cone cells (pigment) [1M]
3. Red Cross and WHO (one activity) [1M]
4. Diffusion and osmosis (definition) [1M]
5. Diabetes mellitus and diabetes insipidus (reason/cause) [1M]
6. Disinfectant and antiseptic (definition) [1M]
7. Turgor pressure and wall pressure (explain) [1M]
8. Photolysis and photophosphorylation (definition) [1M]
9. Bowman's capsule and malpighian capsule (parts included) [1M]
10. Natality and mortality (definition) [1M]

Give the biological/technical term for the following:

1. Complete stoppage of menstrual cycle in females. [1M]
2. An alteration in the genetic material that can be inherited. [1M]
3. The removal of nitrogenous wastes from the body. [1M]
4. The number of persons living per square kilometre at any given time. [1M]
5. The process by which white blood cells engulf bacteria. [1M]
6. An antiseptic substance present in tears. [1M]
7. A solution in which the relative concentration of water molecules and the solute on either side of the cell membrane is the same. [1M]
8. Permanently open structures seen on the bark of an old woody stem. [1M]
9. Squeezing of WBCs through the walls of the capillaries into the tissue. [1M]
10. Defect of the eye where the eye lens loses flexibility resulting in long sightedness in elderly people. [1M]

Explain the following terms:

1. Reflex action [1M]
2. Photophosphorylation [1M]
3. Greenhouse effect [1M]
4. Turgor pressure [1M]
5. Natality [1M]
6. Pulse [1M]
7. Monohybrid cross [1M]
8. Diapedesis [1M]
9. Hormones [1M]
10. Synapse [1M]

Give scientific reasons for the following statements:

1. Injury to medulla oblongata leads to death. [1M]
2. Blood flows in arteries in spurts and is under pressure. [1M]
3. Carbon monoxide is highly dangerous when inhaled. [1M]
4. Balsam plants wilt during mid-day even if the soil is well watered. [1M]
5. Wooden frames of doors get jammed during the monsoon season. [1M]
6. Throat infections can lead to ear infections. [1M]
7. The wall of the ventricle is thicker than the auricle. [1M]
8. An alcoholic person walks unsteadily when drunk. [1M]
9. The pituitary gland is known as the 'master gland'. [1M]
10. Twins may or may not be identical. [1M]

Answer briefly:

1. State the Mendel's law of Independent Assortment. [1M]
2. Name the disease for which the following types of vaccines are given: [1M]
   (a) Salk's vaccine (b) BCG
3. Write any two major reasons for the population explosion in India. [1M]
4. State any two harmful effects of acid rain. [1M]
5. List any two major activities of the Red Cross. [1M]
6. Name the part of the human brain which is associated with the following: [1M]
   (a) Seat of memory (b) Coordinates muscular activity
7. Give three functions of WHO. [1M]
8. Mention any three adaptations found in plants to favour the process of photosynthesis. [1M]
9. Why does one feel blinded for a short while on coming out of a dark room? [1M]
10. Name any two microbes which cause diseases in man. In each case, give an example of disease caused by them. [1M]

Match the items in Column 'A' with those which are most appropriate in Column 'B'. Rewrite the matching pairs.

1.

[5M]

Column A	Column B
(1) Allele	(a) Control of automobile exhaust
(2) Leydig cells	(b) Tourniquet
(3) Utriculus	(c) Alternate forms of genes
(4) Snake bite	(d) Dynamic equilibrium
(5) Euro IV norms	(e) Testosterone
	(f) Sudden change in genes
	(g) Static equilibrium

2.

[5M]

Column A	Column B
(1) Pituitary gland	(a) Testosterone
(2) Sulphur dioxide	(b) Calcium
(3) Seminiferous tubules	(c) Growth hormone
(4) Clotting of blood	(d) Acid rain
(5) Guttation	(e) Sperms
	(f) Global warming
	(g) Magnesium
	(h) Hydathodes

3.

[5M]

Column A	Column B
(1) Testis	(a) Kidney
(2) Poliomyelitis	(b) Water vapour
(3) Transpiration	(e) Prostate gland
(4) Clotting of blood	(d) Iron
(5) Uriniferous tubule	(e) Uterus
	(f) Gonad
	(g) Salk's vaccine
	(h) Water droplet
	(i) Calcium
	(j) TAB vaccine

4.

[5M]

Column A	Column B
(1) Potometer	(a) Antiseptic
(2) Hypothalamus	(b) Disinfectant
(3) Formalin	(c) Vasectomy
(4) Contraception in males	(d) Sudden change in genes
(5) Mutation	(e) Pituitary gland
	(f) Tubectomy
	(g) Transpiration
	(h) Thyroid gland
	(i) Alleles
	(j) Photosynthesis

5.

[5M]

Column I	Column II
(1) Pacemaker	(a) Associated with static body balance
(2) Stroma	(b) Chordae tendinae
(3) Afferent nerve	(c) Site of light reaction
(4) Prolactin	(d) Motor neuron
(5) Sacculus	(e) SA node
	(f) Stimulates production of milk by the mammary gland
	(g) Site of dark reaction
	(h) Transmits impulses from receptor organ to spinal cord
	(i) Secreted by anterior lobe of pituitary gland
	(j) Transfers impulses from spinal cord to muscles

Diagram-based questions:

1. Diagram depicting a defect of the human eye. You may be asked to identify the defect, list its causes and state the correction measures. [5M]
2. Diagrammatic representation of a part of the cross section of the root in the root hair zone. You may be asked to label the parts, list and define the processes taking place in this zone. [5M]
3. Outline of the human body showing the important glands. You may be asked to identify the glands, list the hormones secreted by these glands and the disorders caused due to the deficiency of these hormones. [5M]
4. Diagram of Ganong's photometer. You may be asked to identify the apparatus, its working, use and limitations. [5M]
5. Diagram of a developing human foetus/section of testis/ovaries/male and female reproductive system. You may be asked to label the parts and list their functions. Questions based on fertilisation may also be asked. [5M]
6. Diagrams showing the experiments on photosynthesis in green plants. You may be asked to identify and define the process, chemical equation for photosynthesis and the effect of alteration in the factors affecting photosynthesis. [5M]

7. Diagrams showing the experiments on transpiration in plants. You may be asked to identify and define the process, its significance, technical aspects of the experiment and adaptations in plants to minimise loss of water through transpiration. [5M]
8. Diagram showing the cross section of blood vessels. You may be asked to identify the blood vessels, their functions, type of blood that flows in each of these vessels and the structural differences between the blood vessels. [5M]
9. Diagrammatic representation of section of a human kidney/nephron/excretory system. You may be asked to label the parts, list details with respect to urine formation and nitrogenous wastes excreted. [5M]
10. Diagrammatic/schematic representation of the human heart. You may be asked to label the parts, list details about their structure and functions and the process of blood circulation. [5M]
11. Diagram showing the section of spinal cord. You may be asked to label the parts and list their functions. There might be a question based on synapse. [5M]
12. Diagram representing a stage during mitotic/meiotic cell division. You may be asked to identify the stage, the chromosome number at the given stage and details about the stages which follow the given stage. [5M]

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