

## **ICSE Biology Answer Script (Standard Level)**

Maximum Marks: 80

Time: 2 hours

### **Answers:**

#### **Section A (40 Marks)**

Q1.

1. A

2. B

3. B

4. A

5. D

Q2.

1. Anthocyanin

2. Chromosome

3. Nephrons

4. Demography

5. Carbon dioxide

Q3.

1. Cell wall

2. Urea

3. Bowman's capsule

4. Air pollution

5. Heredity

Q4.

False – Phloem helps in the translocation of food in plants.

False – Mitosis results in the formation of two daughter cells.

True

True

True

Q5.

(i) D

(ii) C

(iii) A

(iv) B

(v) E

Q6.

1. Provides shape and protection; regulates entry and exit of substances.
2. To increase the surface area for absorption.
3. It receives blood from glomerulus and filters out waste materials.
4. Sudden change in genetic material; Example: albinism.
5. Hearing loss; disturbance in sleep and communication.

### Section B (40 Marks)

Q7.

1. Osmosis is the movement of water molecules from a region of higher concentration to a region of lower concentration through a semi-permeable membrane. Eg: Root hair absorbing water.
2. Mitosis: 2 cells, identical, same chromosome number, somatic cells.  
Meiosis: 4 cells, genetically different, half chromosome number, gametes.
3. Autosomes are non-sex chromosomes (44 in humans), sex chromosomes determine gender (2 in humans: XX or XY).
4. Causes: Industrial waste, sewage.  
Control: Waste treatment, laws.

Q8.

1. Nephron consists of Bowman's capsule, glomerulus, tubules. Function: filtration, reabsorption, secretion.

2. Demonstration using a potato osmoscope or root hair in hypertonic solution shows water movement.

3. Tall (TT) x Dwarf (tt). F1: All Tt (tall). F2: TT, Tt, Tt, tt.

Genotypic Ratio: 1:2:1

Phenotypic Ratio: 3:1

Q9.

i) A - Cell Wall, B - Chloroplast, C - Nucleus, D - Vacuole

Differences: Plant cells have cell walls and chloroplasts; animal cells do not.

ii) A - Kidney, B - Ureter, C - Bladder, D - Urethra

Functions: Kidney - filtration; Bladder - storage of urine.

iii) Parents: TT x tt

Genotypic Ratio: 1 TT : 2 Tt : 1 tt

Phenotypic Ratio: 3 Tall : 1 Dwarf

Q10.

(a) Air pollution is caused by vehicles, industries, and burning fossil fuels. Consequences: respiratory diseases, global warming, acid rain.

(b) Population explosion: Rapid increase in population.

Problems: Shortage of food, unemployment, pollution, inadequate healthcare.

Control: Education, family planning, awareness, laws.