

Biology
ISC Board Question Paper 2009

PART – 1 (Answer All Question)

Q 1 :

(a) Give one significant difference between each of the following : 5

- (i) Absorption spectrum and Action spectrum
- (ii) Heart Wood and Sap Wood
- (iii) Tranquillizers and Sedatives
- (iv) Arteriosclerosis and Atherosclerosis
- (v) Myogenic heart and Neurogenic heart

(b) Give the exact location and function of the following : 3

- (i) Tectorial membrane
- (ii) Leydig's cells.
- (iii) Stroma
- (iv) Mast cells
- (v) Pacinian corpuscles.

(c) Answer in brief : 2

- (i) Why does skin become wrinkled in old age?
- (ii) Which part of soil water is available to plants for absorption by roots?
- (iii) What makes the apical meristem of the root sub-terminal?
- (iv) Name the enzyme which catalyses bicarbonate formation in RBCs.
- (v) Which form of phytochrome induces flowering in SDP?

(d) Fill in the blanks : (2+1/2)

- (i) The pigment in red muscle fibre is
- (ii) Amount of blood pumped by heart per minute is called

(iii) Ethylene accelerates of leaves, flowers and fruits.

(iv) The biological name of Tulsi plant is

(v) is the causative agent of Cholera.

(e) Give the contributions of the following scientists: (2+1/2)

(i) William Roentgen

(ii) Marshall Hall

(iii) Godfrey Houns field

(iv) Munch

(v) Robert Koch

(f) Elaborate the following : (2+1/2)

(i) MRI (ii) IUD (iii) SAN (iv) CNS (v) IPM

Q2: (a) Give the anatomical differences between a dicot leaf and a monocot leaf. 4

(b) Enlist the functions of mineral elements in the life of a plant. What do you mean by essentiality of an element? 4

(c) Write the differences between nastic and tropic responses. 2

Q3. (a) Describe the internal structure of the human heart. 4

(b) Explain the counter system in the nephron. 4

(c) Explain four functions of the liver. 2

Q4. (a) Give the different between cyclic and Non-cyclic photophosphorylation. 4

(b) Write the effect of cytokinins on the plant. 4

(c) Write four advantages of cross pollination over self pollination. 2

Q5. (a) Draw a neat labeled diagram of a transverse section of human ovary. 4

(b) Explain the mechanism of hearing by the human ear. 3

(c) Difference between: 3

(i). Reparative and Restorative regeneration.

(ii). Capacitation and fertilization.

Q6. (a) What is feedback mechanism ? Explain with reference to a hormone secreted from the posterior lobe of the pituitary. **4**

(b) Explain briefly the movement of water from the soil across the root to the xylem vessel. **4**

(c) Name the second and tenth cranial nerves and write one function of each. **2**

Q7: (a) Explain four measures to control population explosion. **4**

(b) Write the causative agent and main symptoms of the following diseases: **4**

(i) Tuberculosis (ii) Tetanus

(iii) Hepatitis (iv) Malaria

(c) Write two differences between benign tumour and malignant tumour. **2**

Q8: (a) Define: **4**

(i). Vestigial organs

(ii). Sympatric speciation

(iii). Mutagen (iv). Biogeography

(b) Archaeopteryx is considered a connecting link between reptiles and birds. Justify the statement by giving two characteristics of each group. **4**

(c) Give two differences between natural selection and artificial selection. **2**

Q9: (a) Write /bur characteristics that have developed during human evolution. **4**

(b) What are stem cells? Write two applications of stem cell in medical treatment. **3**

(c) Mention three basic ways to conserve plant resources. **3**

Q10 : (a) Describe the procedure of tissue culture in plants. **4**

(b) Explain natural selection on the basis of sickle-cell anaemia. **4**

(c) Give one difference between: **2**

(i) Intraspecific struggle and Interspecific struggle.

(ii) Somatogenic variation and Blastogenic variation.