
2005

Part: I

Question: 1 ii-iii

Part: II

Section: A

Question: 2 – 6 iv-v

Section: B

Question: 7 – 9 v-vii

2005

Part I

Question: 1

1. Mention one significant difference between each of the following:

[5]

- a. Heart wood and sap wood

Answer:

See topics on 'heart wood and sap wood'.

- b. Active absorption and Passive absorption

Answer:

See topics on 'Active' and 'Passive'.

- c. Mitral valve and Semilunar valve **

- d. Haemoglobin and Leghaemoglobin **

2. Answer the following:

[2½]

- a. What is pulvinus? **

- b. Name the area of the retina which has the brightest vision

- c. Which epithelium lines the fallopian tube?

- d. Name the first formed category of photosynthetic organisms. **

3. Fill in the blanks: **

[2½]

- a. In childhood growth is controlled by _____ hormone.

- b. Translocation of food takes place from source to _____

- c. _____ joins a muscle to a bone

- d. The loss of body parts in self defence is called _____

- e. _____ connects the cavity of the middle ear with the pharynx

4. Explain briefly:

[5]

- a. Photolysis

- b. Pollinium

- c. Vivipary



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- d. Micturition
 - e. Sarcomere

5. State the contribution of the following scientists: **

$[2\frac{1}{2}]$

- a. Robert Koch
- b. Edward Jenner
- c. Hansen
- d. John Otto
- e. Funk

6. Elaborate the following:

$[2\frac{1}{2}]$

- a. ABA

Answer:

'Abscissic Acid'

- b. CNS

Answer:

'Central Nervous System'

- c. EEG

Answer:

'Electro Euephalo Graph' '

- d. AIDS

Answer:

'Applied Immuno Deficiency Syndrome'

- e. ERV

Answer:

'Expiratory Reseve Volume.'

Part II

Section A

Question 2

1. Give the anatomical (internal structure) differences between a dicot stem and a monocot stem.

[4]



Answer:

See topics on 'Dicot and monocot stem'.

2. Give an account of the different types of soil water. [4]

Answer:

See topics on 'In soil'.

3. State the importance (one point) and one deficiency symptom of the following in our body: ** [2]
- a. Folic Acid
 - b. Phosphorus

Question 3

1. Describe the structure of arteries veins and capillaries. Explain the way in which each of these is adapted for its function. [4]
2. Give an account of the 'Mass Flow Hypothesis' for translocation of solutes. [4]
3. Give the meaning of the following: [2]
- a. Digestion
 - b. Assimilation

Question 4

1. Give a schematic representation of non – cyclic photophosphorylation showing both the photosystems. [4]

Answer:

See topics on 'Non cyclic'.

2. Describe the structure of a myofibril of a striated muscle. ** [4]
3. Give four points to show the importance of vegetative propagation. ** [2]

Question 5 **

1. Describe the mechanism of inspiration and expiration in man. [4]
2. Draw a labeled diagram of the vertical section of the human eye. [4]
3. [2]
- a. What is ageing?
 - b. Give two functions of the ammonia fluid

Question 6 **

1. [4]
- a. Draw a labeled diagram of chloroplast as seen under an electron microscope



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- b. Name the three major photosynthetic pigments [4]
2. Describe the events that take place between pollination and fertilization in plants. [4]
3. Name the hormones associated with the following: [2]
- a. The only gaseous plant regulator
 - b. A growth inhibitor in plants
 - c. Resorption of water from the urine in the distill convoluted tubule
 - d. Rise in blood calcium

Section B

Question 7

4. Explain the DDT resistance of mosquitoes to pesticides. ** [4]
1. What are the symptoms of Diabetes mellitus? [4]

Answer:

See topics on 'Diabetes mellitus'.

2. Define: [2]
- a. Genepool

Answer:

This consist all genes of a population.

- b. Genetic Erosion

Answer:

It is the loss of genes from the gene pool.

Question 8

1. What is genetic counseling? [4]

Answer:

A number of lethal diseases caused by defective genotypes and Karyotypes have been recorded in human population. With the increase of human population these disorders are also adding up to the genetic load of future generation.

Thus man is making all round efforts for improving inborn qualities of human race to have better healthy progeny. This involves genetic counseling. Eugenic measures involve improving the genetic quality of the individuals as eugenics means good germplasm.

Through genetic counseling common people can be educated about the causes and dangers of hereditary diseases and their effects. They can predict the characteristics of future generation and can help in planning parenthood, e.g., Rh negative women can be warned to marry an Rh negative man or not to have children if otherwise.



They can predict the possibility of transmitting chromosomal abnormalities to the offspring and producing infecting offspring's (hemophilia, sickle shaped anemia etc.) by studying pedigree charts. Suspected errors can be identified and can be prevented by voluntary abortions.

5. Give the characteristics of the Cro – Magnon man

[4]

Answer:

See topics on 'Cro-Magnon Man (Homo sapiens fossils)'

2. What are protobionts? **

[2]

Question 9

1. Write short notes on:

[4]

- a. DNA finger printing

Answer:

See topics on 'DNA finger printing'

- b. Cryopreservation

Answer:

See topics on 'Cryopreservation'.

- c. Haemophilia

Answer:

See topics on 'Hemophilia'.

- d. Green manure

Answer:

See topics on 'Manure'.

2. What are the activities of Community Health Services

[4]

Answer:

See topics on 'Community health'.

6. Give the differences between B cells and T cells

[2]

Answer:

See topics on 'Cell mediated'.

Question 10 **

1. Describe Lederberg's Replica Plating experiment to show the genetic basis of adaptation. [4]

2. Give an account of chromosomal aberrations (mutations). [4]

3. What is a pacemaker? [2]

** Out of syllabus. Answer will be provided up on request.

