

ATUL VIDYALAYA
FIRST PRELIMINARY EXAMINATION 2012-2013
SCIENCE PAPER 3 – BIOLOGY[theory]

STD:XII
DATE:28/9/12

M.M:70
TIME:3 HRS

Candidates are allowed additional 15 minutes for only reading the paper. they must not start writing during this time.all working including rough work should be done on the same sheet as and adjacent to the rest of answer.answer all questions in part i and any five from part ii choosing three questions from section a and two from section b. the intended marks for each question or parts of questions are given in brackets []

Part I
(Answer all questions)

Question 1

A) Answer the following [2½]

- i) Expand IAA
- ii) Give an example of a connective tissue
- iii) What is the role of polyethylene glycol in somatic hybridisation?
- iv) Name the enzyme which plays an important role in ageing
- v) Name a plant growth inhibitor

B) Give significant contributions of the following scientists [2]

- i) Andreas Wagner
- ii) P.K.Sethi
- iii) Ivan Pavlov
- iv) Karot Koff

C) Fill in the blanks with appropriate words [2½]

- i) _____ carries blood from heart to other organs of the body
- ii) The process of inducing flowering in a plant by exposing to light is known as _____
- iii) In excess of oxygen the enzyme Rubisco participates in _____
- iv) The technique of growing plants in nutrient mist is known as _____
- v) The level of progesterone is maximum in _____ phase of menstrual cycle

D) Give the causal agents of following diseases [2½]

- i) Measles
- ii) AIDS
- iii) Typhoid
- iv) Plague
- v) Malaria

E) Give the most significant role/ function of the following [2½]

- i) SAN
- ii) T-cells
- iii) Semen
- iv) Pancreas
- v) Incomplete C-shaped rings of cartilage

G) Give reasons for the following [3]

- i) Short day plants are called long night plants
- ii) Only one sperm fertilises the ovum
- iii) Transmission of nerve impulse across synapse is slower than its conduction along the length of neuron

F) Give significant differences between the following [5]

- i) Allopatric and Sympatric Speciation
- ii) Red and White Muscle fibres
- iii) Heart Wood and Sap wood
- iv) Antibody and Interferon
- v) Tropic and Nastic Movement

Part II
Section A
(Answer any three questions)
Section - B

Question 2.

A. Describe the formation of embryo from a fertilized egg of an angiosperm

[3]

B. Explain briefly the role of Cytokinins.

[3]

C. Name and describe the method of artificial vegetative propagation employed by the gardener for:

[4]

- i) Bougainvillea
- ii) Grapevine
- iii) Guava
- iv) Citrus(lemon, orange)

Question 3.

A Draw a neat labeled diagram of a transverse section of human ovary.

[3]

B.Explain the mechanism of hearing by the human ear.

[3]

C.Difference between:

[4]

- (i). Reparative and Restorative regeneration.
- (ii). Capacitation and fertilization

Question 4.

- A) Describe the various ways by which CO_2 is transported by blood from the tissues to the alveoli. [3]
- B) Name the hormone associated with (i) the only gaseous Plant regulator [3]
(ii) a growth inhibitor in plants. [3]
- C) Explain briefly – photolysis , pollinium,vivipary, micturition and sarcomere. [4]

Question 5.

- A)Distinguish between sympathetic and parasympathetic nervous svstem [3]
- B) Define Phloem and explain its components in detail. [3]
- C) Explain the transport of food through phloem by Munch's hypothesis. [4]

Question 6

- (a) Before the proteins can enter the blood stream, they need to be processed. Describe the treatment received by protiens in the alimentary canal. [4]
- (b) Explain the stomatal movements based on $\text{K}^+ \text{K}^+$ ion transport mechanism. [4]
- (c) Define regeneration. Explain reparative regeneration. [2]

SECTION B

Answer any two questions

Question 7

- (a) Write a short note on AIDS, its transmission and control measures. [4]
- (b) What are stem cells? Why have stem cells become so important these days?[3]
- (c) Explain three causes of mental illness. [3]

Question 8

- (a) Write two uses of each of the following: [4]
 - (i) *Azadirchta*.
 - (ii) *Cinchona calisaya*.
 - (iii) *Ocimum sanctum*.
 - (iv) *Withana somnifere*.
- (b) Explain Integrated Pest Management. [4]
- (c) What is *ultrasound imaging*. Give one use of ultrasound imaging. [2]

Question 9

- (a) Give an account of the Oparin – Haldane theory of Origin of life. [4]
- (b) How can one justify that Cromagnon man could have been the direct ancestor of man of today? [4]
- (c) Write two disadvantages of using pesticides. [2]

Question 10

- (a) What are the general activities of community health services? [4]
- (b) What are the reasons for drug addiction. [4]
- (c) Write one symptom each of -
 - (i) Down syndrome.
 - (ii) Filariasis. [2]

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX