R. I. C. S. E.

FIRST PRELIMINARY EXAMINATION 2014-2015

SET A

STD. : X
SUB. : BIOLOGY
DATE: - -
MARKS: 80
TIME : HRS.

SECTION – A

(Attempt all questions from this Section)

QI.A) Name the following: [5]

i. Blindness due to cornea becoming opaque due to U.V. radiations.

ii. The part of the brain where respiratory centre is located.

iii. Mature egg contained in a cellular sac.

iv. The site of erythropoiesis in adults.

v. The process of passing out of urine from the body.

B) Fill in the blanks: [5]

i. The spindle fibres are made up of __________.

ii. ________ do not take part in sexual determination.

iii. ________ is the metallic ion involved in the opening & closing of stomata.

iv. Acrosome of sperm releases an enzyme ________ which dissolves the ovary wall.

v. ________ is the extraordinary increase in the number of leucocytes.

C) State true or false; If false, rewrite the wrong statement, by changing the first or the last word only: [5]

i. The part of the ear associated with balance is the cochlea.

ii. Testes descend in the scrotum through the vas deferens.

iii. Transformation of cartilage into bones is called osteoporosis.

iv. The act of giving birth is called parturition.

v. Cones enable us to see 3 primary colours.

D) **State one difference in each of the following with respect to the aspect stated within the brackets:** [5]

i. Mitosis & Meiosis (Chromosome number)
ii. Cranial & Spinal nerves (total number in adults)
iii. Tubectomy & Vasectomy (parts operated)
iv. Transpiration & Translocation (materials transported)
v. Identical & Fraternal Twins (How they are formed)

E) **Define the following:** [5]

i. Vaccination
ii. Mutations
iii. Oogenesis
iv. Alleles
v. Ultrafiltration

F) **The first pair in the following list indicates the kind of relationship that exists between both the items; rewrite & complete the 2nd pair on a similar basis:** [5]

For Example: Ear : Hearing :: Eye : Sight

i. Mitosis : 2 Cells :: Meiosis : ____________
ii. AB Blood Group : AB Antigen :: O Blood Group : _________
iii. Cochlea : Hearing :: Semi Circular Canals : _____________
iv. Neuron : Nervous System :: Nephron : _________
v. Emergency Hormone : Adrenalin :: Birth Hormone : __________

G) **Choose the odd one in each of the following: (Give reasons for your answer)** [5]

i. Insulin , Blood Sugar , Adrenalin , Thyroxine

ii. Oestrogen , Progesterone , Testosterone , Prolactin

iii. Cerebrum , Cranium , Cerebellum , Pons

iv. Phenol , Boric Acid , Iodine , Mercurochrome

v. Prothrombin , Thromboplastin , Iron , Fibrinogen

H) Arrange the following terms in a proper sequence in each group: [5]

i. Motor Neuron , Sensory Neuron , Withdrawal of hand , Prick pain sensation

ii. Epidermis , Cortex , Xylem , Endodermis , Root hair

iii. Cornea , Conjuctiva , Lens , Aqueous Humour , Vitreous Humour

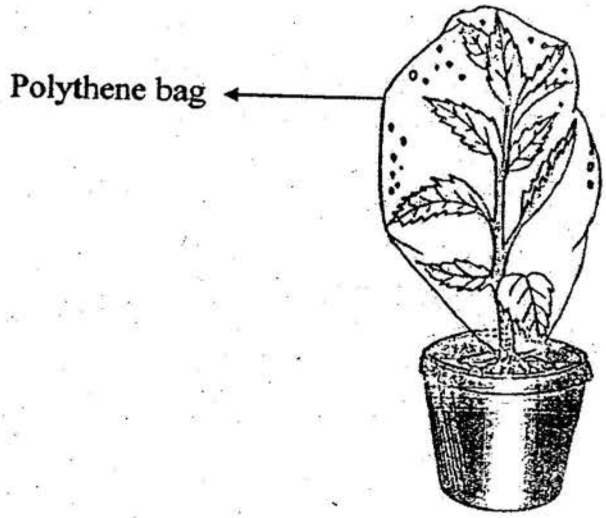
iv. Vas Deferens , Epididymis , Seminiferous tubules , Urethra , Efferent ducts

v. DNA , Chromatin , Chromosome , Nucleosome , Histone

SECTION –

(Attempt any four questions from this Section)

QII.A) The adjoining figure represents an experiment performed to demonstrate a certain phenomenon in plants. The set-up was kept in sunlight for about two hours. Answer the following questions: [5]



i. What is the aim of the experiment?

ii. Define the process mentioned in (i) above.

iii. What do you observe in the experiment, as an evidence of the process stated in (i) above?

iv. What precautions are taken for proper results in the experiment?

v. Suggest a suitable control experiment for comparison.

b) i) Draw a neat & labelled diagram to show the metaphase stage of mitosis, in an animal cell having 8 chromosomes. [2]

ii) Name the type of cell division that occurs during: [3]

a) Growth of shoot

b) Formation of pollen grains

c) Repair of worn out tissues

QIII.A) State Mendel's Law of Segregation.

b) A pure tall plant (TT) is crossed with a pure dwarf plant (tt). Draw Punnet squares to show F_1 generation and F_2 generation.

c) Give the phenotype of the F_2 Generation.

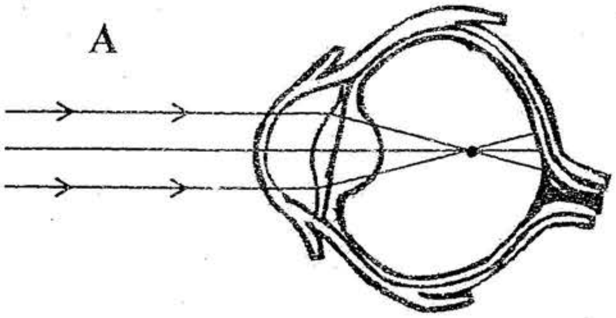
d) Give the Phenotypic and Genotypic ratios of the F_1 & F_2 Generations.

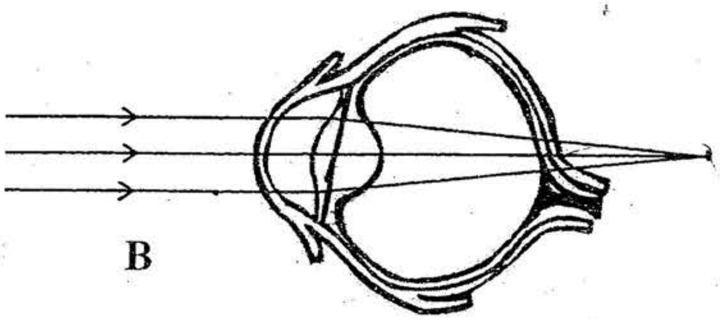
e) Name any one X-linked disease found in humans.

QIII.B) Draw a neat & labelled diagram to show the generalized structure of a nerve cell. [5]

QIV.A) The figures A & B depict two common defects in the human eye. Study the same & answer the questions that follow - [5]

A





B

i) Name the defect in fig. A & B.

ii) With the help of neat & labelled diagrams, show how these defects can be rectified.

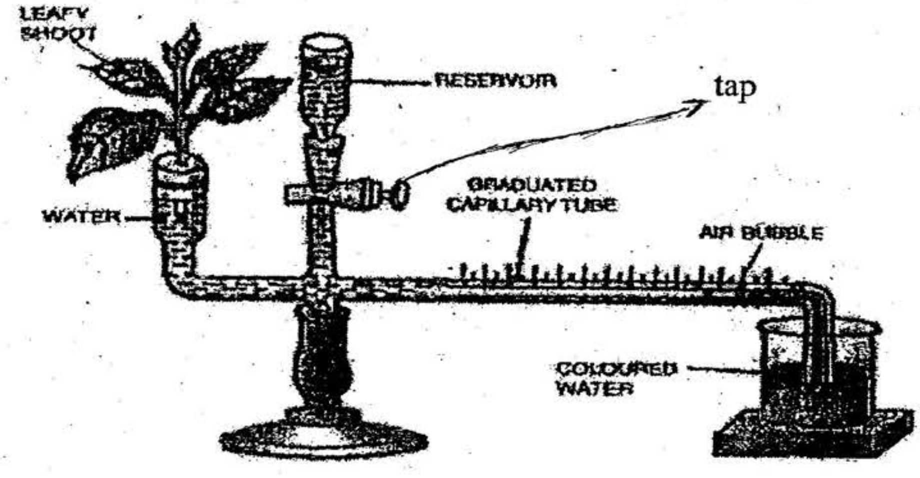
B) i) Define Osmosis. [1]

ii) Explain how roots are suited for absorption. [2]

iii) Write a balanced chemical equation to show the process of photosynthesis. [1]

iv) What is the function of Schwann Cells? [1]

QV.A) The diagram below is an apparatus used to study a particular phenomenon in plants. [5]



a) Name the apparatus. What is it used for?

b) What is the role played by the air bubble in this experiment?

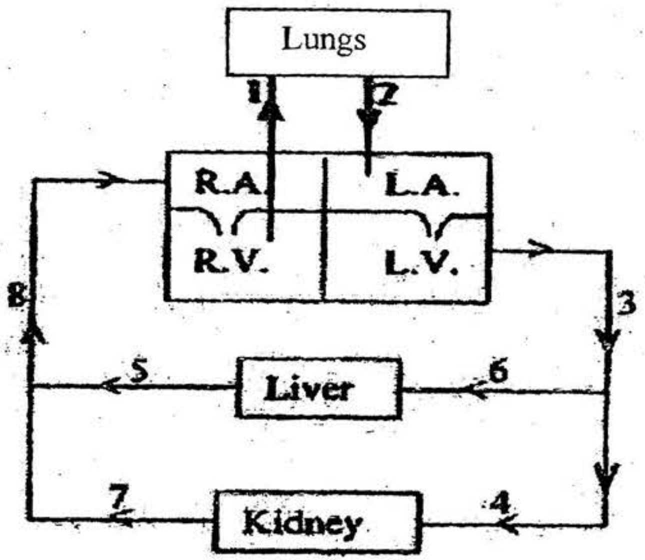
c) What is the use of the reservoir?

d) What happens to the movement of the air bubble if the apparatus is kept – (Explain with reasons)

i. In the dark.

ii. In sunlight.

B) Given below is a simple diagram of the circulation of blood in the human heart - [5]



i. Name the blood vessels marked 1 – 8.

ii. What do you mean by 'double circulation'?

iii. What do you mean by systole & diastole?

Q VI.A) Draw a neat and labelled diagram showing the structure of chloroplast. [5]

B) Give reasons for the following - [5]

i. Arteries are deep seated.

ii. Transmission in the neurons is unidirectional.

iii. Plants growing in fertilized soil are found to wilt even if the soil is adequately watered.

iv. Testis are located in the scrotal sac outside the abdomen.

v. There is no muscle layer in the capillaries.

QVII.A) With reference to photosynthesis, answer the following questions - [5]

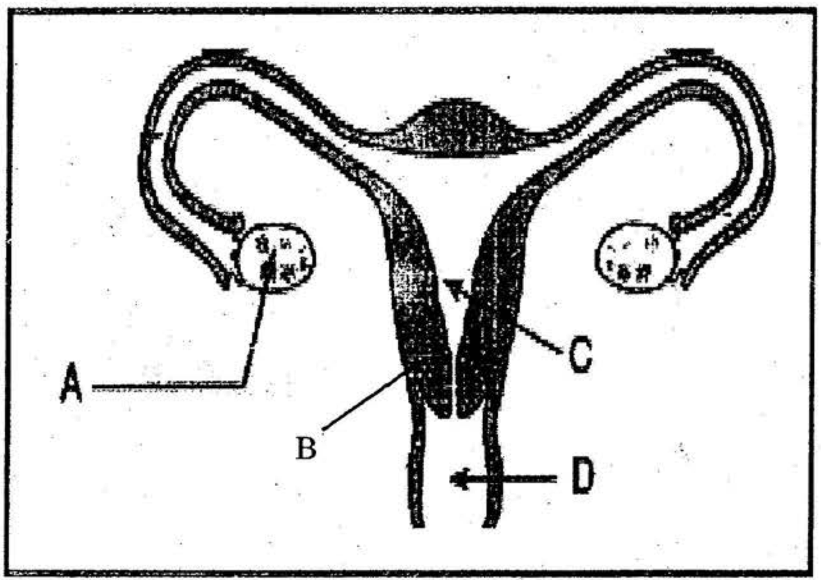
i. What is the source of O_2 in photosynthesis?

ii. What is photolysis?

iii. Which is the first stable compound formed in photosynthesis?

iv. What are the adaptations in plants to maximise photosynthesis?

B) i) Given below is the diagram of the female reproductive system of a human being. Study the diagram & answer the questions that follow - [3]



1. Name the parts A – D.
2. After how many days does an ovary release an egg?
3. How is corpus luteum formed?

ii) a) What are antibodies? [1]

b) Define Pollution. [1]

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