GREENLAWNS SCHOOL, WORLI

TERMINAL EXAMINATION: 2017-18

BIOLOGY

Std: X Marks: 80

Date: / /2017 Time: 2 hrs

Answer to this paper must be written on the paper provided separately. You will **not** be allowed to write during the first **10** minutes. This time is to be spent in reading the Question paper. **Section I** is compulsory. Attempt **any four** questions from **Section II**.

SECTION I (40 Marks)

*Attempt **all** questions from this Section*

Question 1

(a) Name the following: [5]

i. A specific part of chromosome that determine hereditary characteristics.
ii. Movement of ions from the region of lower concentration to higher concentration by using energy (ATP).
iii. The defect of the human eye caused due to the uneven surface of the cornea.
iv. Hormone which controls absorption of water from kidney tubules.
v. The accessory gland in human males whose secretion serves as a lubricant.

(b) Mention if the following statements are True or False. If false rewrite the wrong statement in its correct form: [5]

i. Low humidity in the atmosphere results in decrease in the rate of transpiration.
ii. Out of nine types of chlorophyll, chlorophyll ‘a’ and ‘b’ are most abundant.
iii. Cochlea of the ear is concerned with the sense of balance.
iv. Glucagon converts glucose into glycogen.
v. Vas deferens transports sperms into urethra.

(c) Give one point of difference between the following on the basis of what is given in the brackets: [5]

i. Cretinism and myxoedema (symptoms)
ii. Nervous control and hormonal control (speed)
iii. Turgidity and flaccidity (cause)
iv. Genotype and phenotype (meaning)
v. Cobalt chloride paper and goat’s bladder (use)

(d) Explain the following terms: [5]

i. Graffian follicle
ii. Ganglion
iii. Variation
iv. Synapse
v. Bleeding

(e) Give scientific reasons for the following: [5]

i. Fresh water fish cannot survive in sea water.
ii. We see clearly at the central region of retina.
iii. Adrenaline is also known as emergency hormone.
iv. The chances of pregnancy to occur are most favourable on or about the 14th day of the menstrual flow.
v. When you enter into a dark room from bright, you cannot see things for a few second.

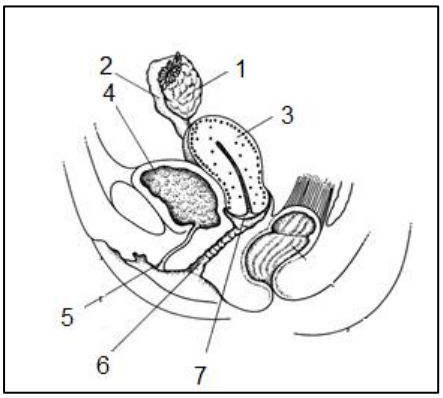
(f) Fill in the blanks: [5]

i. Fertilisation of human egg by the sperm normally occurs in the _____
ii. In mammals, the female is homozygous while the male is _____
iii. _____ are regarded as complete photosynthetic units of plants.
iv. In Nerium, the stomata is _____
v. The part of the brain where the respiratory centre is located is _____

(g) State the location and function of the following: [5]

i. Thyroid
ii. Ovary
iii. Thylakoid
iv. Hydathodes
v. Lacrimal gland

(h) The figure given below represents the vertical view of the human female reproductive system:



i. Label the parts 1 to 7. [3½]
ii. What happens to the uterus if fertilisation takes place? [½]
iii. What happens to the uterus if fertilisation has failed to take place? [½]
iv. What is Oogenesis? [½]

SECTION II (40 Marks)

*Attempt any **four** questions from this section*

Question 2

(a) With respect to human eye explain:

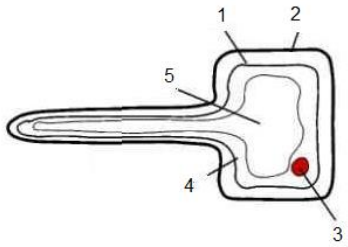
i. How is the image formed on the retina? [1]
ii. How is the amount of light entering the eye controlled? [½]
iii. What type of lens is used for the correction of 'Long sight' defect? [½]
iv. With the help of a ray diagram show the defect of the eye and then its correction after use of lens. [3]

(b) In a homozygous pea plant, axial flowers (A) are dominant over terminal flowers (a). [5]

i. What is the phenotype and genotype of the F1 generation if a plant bearing pure axial flowers is crossed with a plant bearing pure terminal flowers?
ii. Draw a Punnett square board to show the gametes and offsprings when both the parent plants are heterozygous for axial flowers.
iii. What is the phenotypic and genotypic ratio of the above cross?
iv. State Mendel's Law of Dominance.
v. Name two genetic disorders commonly seen in human males.

Question 3

(a) The given diagram is of a root hair. Observe and answer the questions that follow:

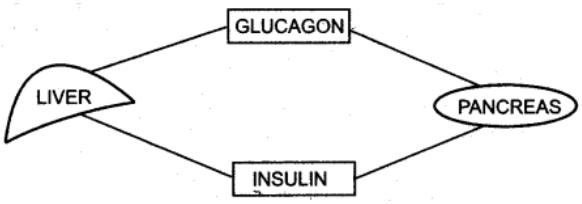


i. Name the parts 1 to 5. [2½]
ii. What role is played in the uptake of water into the root hair by the parts numbered 1, 2 and 5? [2½]
iii. What would happen if living cells of a plant were placed first in a strong solution of cane sugar and then in water? [1]
iv. What is osmosis? Of what use is osmosis to the growing plant? [1]

(b) Draw a neat and well-labelled diagram of the chloroplast. [3]

Question 4

(a) Study the diagram given below and then answer the questions that follow:

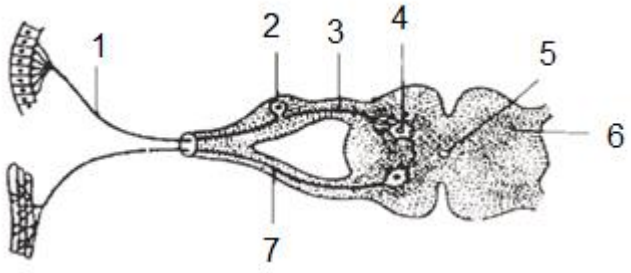


i. Name the cells of the pancreas that produce (1) glucagon (2) insulin. [1]
ii. State the main function of (1) glucagon (2) insulin. [1]
iii. Why is pancreas referred to as an exo-endocrine gland? [1]
iv. Why is insulin not given orally but is injected into the body? [1]
v. What is the technical term for the cells of the pancreas that produce endocrine hormones? [½]
vi. Where in the body is the pancreas located? [½]

(b) Why did Mendel select pea plants for his experiments? [2]
(c) Expand – ACTH and NADP. [2]
(d) State two advantages of transpiration to plants. [1]

Question 5

(a) The diagram given below depicts the cross-section of the spinal cord. Study the same and answer the questions that follow:

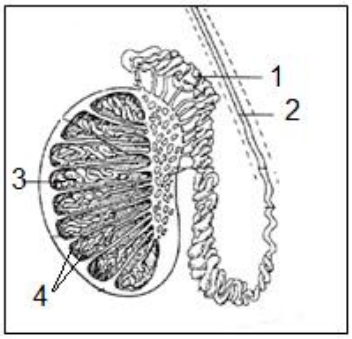


i. Name the process that is being depicted. [½]
ii. Name the parts labelled 2, 5 and 6. [1½]
iii. Name the cells in contact with the part labelled '1'. [½]
iv. What is the function of the parts labelled 3, 4 and 7? What is the technical term given to the pathway represented by 3, 4 and 7? [2]
v. How does the arrangement of cells in the spinal cord differ from that in the brain? [½]

(b) List the events taking place in the photochemical phase of photosynthesis. [2]
(c) State four general properties of hormones. [2]
(d) Account for the leaves of certain plants roll up on a bright sunny day. [1]

Question 6

(a) The diagram given below shows a longitudinal section of testis. Observe and answer the following questions:



i. Label the parts 1 to 4. [2]
ii. State the functions of parts 1, 2 and 3. [3]
iii. What is the role played by inguinal canal? [1]

(b) Explain the mechanism of closing and opening of stomata. [2]
(c) Arrange in logical sequence: Internal ear, auditory canal, tympanum, pinna, oval window, ear ossicles. [1]
(d) Distinguish between aqueous and vitreous humour. [1]

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