

TERM-II

QUESTION PAPER (SAMPLE-1)

Class: XI

Subject: Biology

Time Allowed-2 Hours

Max.Marks.:35

Section-A

1*4= 4 Marks

1. A cell has 32 chromosomes. It undergoes mitotic division. What will be the chromosome number (N) during metaphase? What would be the DNA content (C) during anaphase?
2. What is Quiescent stage of Cell division?
3. Diffusion of gases occurs in the alveolar region only and not in the other parts of respiratory system. Why?
4. Sarcolemma, sarcoplasm and sarcoplasmic reticulum refer to a particular type of cell in our body. Which is this cell and to what parts of that cell do these names refer to?

Section-B

3*7=21 Marks

1. Mitosis results in producing two cells which are similar to each other. What would be the consequence if each of the following irregularities occur during mitosis?
 - a. Nuclear membrane fails to disintegrate
 - b. Duplication of DNA does not occur
 - c. Centromeres do not divide
2. Why is the RuBisCo enzyme more appropriately called RUBP Carboxylase-Oxygenase and what important role does it play in photosynthesis?
3. Chlorophyll 'a' is the primary pigment for light reaction. What are accessory pigments? What is their role in photosynthesis?
4. Different substrates get oxidized during respiration. How does Respiratory Quotient (RQ) indicate which type of substrate, i.e., carbohydrate, fat or protein is getting oxidized?

$$R.Q. = \frac{A}{B}$$

- a. What do A and B stand for?
- b. What type of substrates have R.Q. of 1, < 1 or > 1?

5. To get a carpet like grass lawns are mowed regularly. Is there any scientific explanation for this?
6. You have learnt that a characteristic feature of endocrine system is the presence of feed back loops. By this what is meant if hormone A stimulates gland 'X' to secrete hormone B, the production of 'A' could be modified when the level of B changes in our blood. An example is the relation between hormones LH and estrogen (E2). An old woman exhibits the following features. High levels of LH in blood but low levels of E2 in the blood. Another woman exhibits high level of LH in blood and also high level of E2 in the blood. Where is the defect in both these women? Provide suitable diagram to support this answer.
7. Differentiate between:
 - (a) Myelinated and non-myelinated axons
 - (b) Dendrites and axons
 - (c) Cerebrum and Cerebellum

Section-C

5*2=10 Marks

1. Briefly describe the followings:
 - a. Anaemia
 - b. Angina Pectoris
 - c. Atherosclerosis
 - d. Hypertension
 - e. Heart failure

OR

- (a) What is the role of haemoglobin in transportation of Oxygen in our body?
- (b) What do you mean by pO_2 and pCO_2 ? How do they affect transport of Oxygen?

Explain with Oxygen Dissociation Curve.

2. Explain the mechanism of formation of concentrated urine in mammals.