

STD XI  
26 /11/15

INDIAN SCHOOL SOHAR  
SECOND TERM EXAM-2015-16  
BIOLOGY

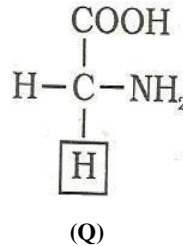
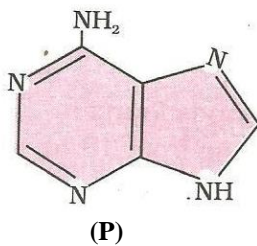
Marks: 70  
Time: 3hrs

**General Instructions:-**

- (i) This question paper consists of four sections A, B, C, D. Section A contains 5 questions of 1 mark each, Section B is of 5 questions of 2 marks each, Section C is of 12 questions of 3 marks each and Section D is of one question of 4 marks and Section E is of 3 questions of 5 marks each.
- (ii) All questions are compulsory.
- (iii) There is no overall choice. However, an internal choice is provided in one question of 2 marks, one question of 3 marks and all questions of 5 marks weightage. Attempt only one of the choices in such questions.
- (iv) Questions of section A are to be answered in one word or one sentence each, section B in approximately 20-30 words each, section C in 30-50 words each and section D in 80-120 words each.
- (v) Wherever necessary, the diagrams drawn should be neat and properly labeled.

**SECTION-A**

1. How are viroids different from viruses? (1)
2. Write the floral formula of an actinomorphic, bisexual, hypogynous flower with five united sepals, five free petals, five free stamens and two united carpels with superior ovary and axile placentation. (1)
3. Identify the given organic compounds P and Q found in living tissues. (1)



4. How does the term thecodont differ from diphycodont? (1)
5. At night and early morning we can observe droplets of water near the tip of grass blades. Across what does this phenomenon take place and why? (1)

**SECTION-B**

6. A spirometry analysis of a person revealed the following results: (2)  
TV: 450ml, IRV: 2450ml, ERV: 1075ml, RV: 1105ml,  
(a) Calculate the VC (vital capacity) of the person.  
(b) Give the significance of these respiratory volumes and capacities.
7. Give the antagonistic effect of the following PGRs. (2)  
(a) Auxin and cytokinin (b) Abscisic acid and gibberellins.

**OR**

Given below are the role of four elements as plant nutrients. Name the elements

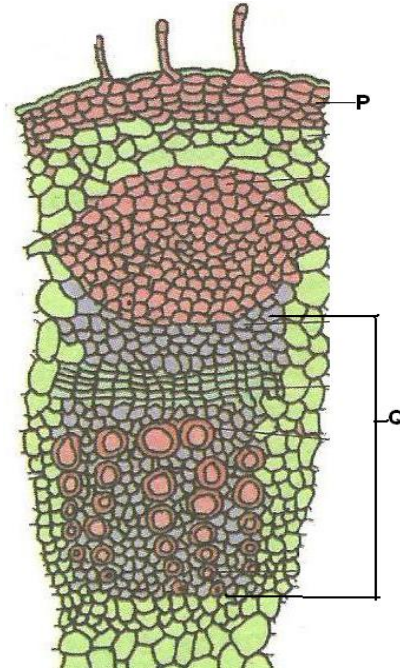
- |  |                                     |
|--|-------------------------------------|
| (a) constituent of the ring structure of chlorophyll | (b) helps in pollen germination     |
| (c) photolysis of water                              | (d) Opening and closing of stomata. |

8. Give a diagrammatic view of the cell cycle indicating the formation of two cells from one cell. (2)

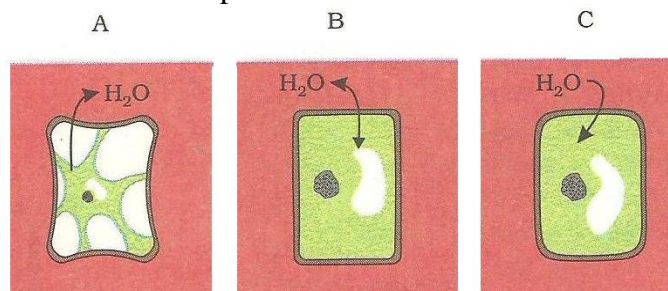
9. The following are structures associated with different systems of cockroach. Mention their location and function: (i) malpighian tubules, (ii) phallomere. (2)
10. Fungi are divided into different classes. What forms the basis for their classification? (2)

**SECTION-C**

11. Given below is the T.S of a plant part. Identify the plant part and comment on the parts marked 'P' and 'Q'. (3)



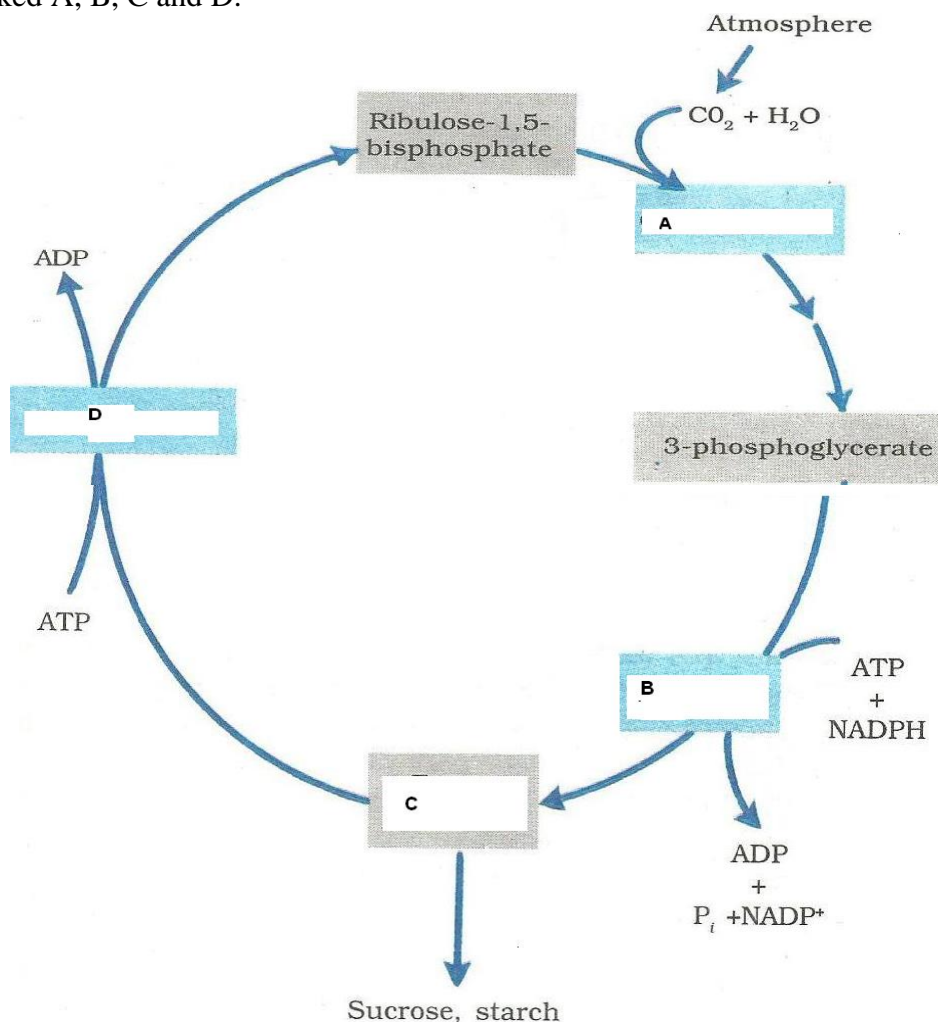
12. The Gymnosperms are plants in which the ovules remain exposed and the seeds are naked. (3)  
Explain, how the saprophytic and gametophytic phases alternate with each other?
13. (a) Enzymes are biological catalysts. Describe the catalytic cycle of an enzyme action. (3)  
(b) How does temperature and substrate concentration affect enzyme action?
14. Muscles play an active role in the movements of the body. How are they classified based on their structure and function. (3)
15. How does Scolidion differ from Exocoetus? (3)
16. Some plants require a periodic exposure to light to induce flowering. How are plants classified based on the flowering responses? Give an example. (3)
17. The given figures A, B and C show the behavior of plant cells, when placed in three different solutions. (3)  
(a) Explain the changes occurring in plant cells placed in A and B.  
(b) What is the water potential of pure water (i) at standard temperature and pressure  
(ii) if a pressure greater than atmospheric pressure is applied to it?  
(c) Why does the plant cell not burst when placed in C?



OR

(a) State Blackman's Law of limiting factor

(b) Given below is the schematic representation of the biosynthetic phase of photosynthesis. Label the parts marked A, B, C and D.



18. Plants compete with microbes for the limited nitrogen that is present in the soil. Explain, how Nitrogen is biologically fixed. (3)

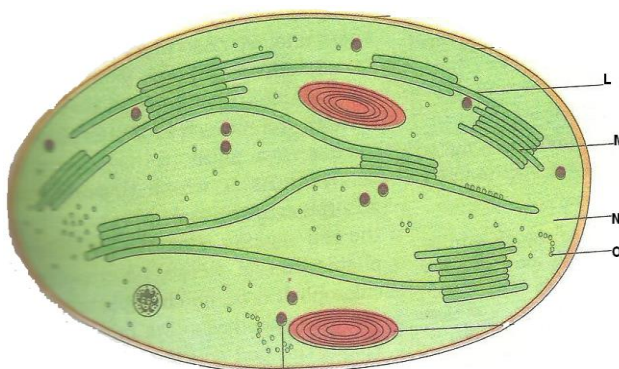
19. How do the following modifications help plants? (3)

(i) Pneumatophores

(ii) Phyllode

(c) Phylloclade.

20. (3)



(i) In the given figure label the parts marked L, M, N and O.

(ii) There is clear division of labour within the chloroplast. Justify.

21. The flow of water upward through the xylem in plants can achieve fairly high rates. How is this movement accomplished in tall trees? (3)
22. Illustrate a glycosidic bond, peptide bond and a phosphodiester bond in a polypeptide. (3)

#### SECTION-D

23. Raj, a 33 years old, was highly dedicated to his job and lived a very hectic lifestyle. He worked continuously during office time and frequently grabbed quick meals. He never had time for exercise and was overweight. He was a heavy smoker and believed that it helped him deal with stress. One day he suffered with severe chest pain and collapsed. Upon investigations doctors revealed that he had suffered from non-communicable diseases. (4)
- India's youth force is highest in the world, which is extremely determined, ambitious, tech-savvy and confident. The stress of modern day living is causing an enormous burden on healthcare globally. Experts forecast that by 2020 nearly half the deaths will occur from complications of lifestyle diseases in India. The situation demands a general growth of awareness among today's youth, shaking them from their compliances towards the self-destructive life-style they have adopted, and requires to make them realize the dangers posed by it.
- (i) List two common problems that arise due to today's lifestyle and eating habits.
- (ii) As a Biology student what advice would you recommend to lead a healthy lifestyle?
- (iii) State your vision on healthy living for 2020.
- (iv) Is smoking a stress buster. Comment.

#### SECTION-E

24. (a) Give a schematic representation of the 'Z' scheme of light reaction. (5)
- (b) Why productivity and yields are better in C4 plants?

**OR**

- (a) Schematically represent the metabolic fate of pyruvate in the mitochondrial matrix in the presence of oxygen.
- (b) How is the formation of proton gradient in respiration different from photosynthesis?
25. Meiosis ensures the production of haploid phase in the life cycle of sexually reproducing organism. Enumerate the events involved in Prophase I of meiosis. (5)

**OR**

- (a) Golgi apparatus, lysosome and vacuoles are endomembrane structures, yet they differ in their function. Comment.
- (b) Mitochondria and chloroplast said to be semiautonomous organelles. Why?
26. (a) Each kidney has nearly one million nephron. Give a diagrammatic representation of a nephron showing blood vessels, ducts and tubule. (5)
- (b) Terrestrial animals are generally either ureotelic or uricotelic, not ammonotelic. Why?

**OR**

- (a) How does proteins and butter in your food get digested and absorbed in the body?
- (b) Mention the role played by large intestine in digestion.

\*\*\*\*\*THE END\*\*\*\*\*