



**INDIAN SCHOOL SOHAR**  
**SECOND TERM EXAM-2014**  
**BIOLOGY**

**STD XII**  
**3.12.14**

**Marks:70**  
**Time:3Hrs**

**General Instructions:-**

- (i) This question paper consists of five sections **A, B, C, D and E**. 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, Section **D** contains **1** 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 30-40 words and section **E** in 80-120 words each.
- (v) Wherever necessary, the diagrams drawn should be neat and properly labeled.

**SECTION-A**

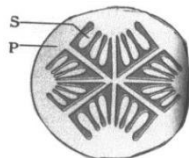
- 1. Name the type of interaction seen between:-
  - (i) The fig tree and the wasp      (ii) Sea anemone and the clown fish. (1)
- 2. Why are 'Ti' plasmid preferred by biotechnologist? (1)
- 3. How has man exploited Cry protein to his benefit? (1)
- 4. Why is mother's milk considered very essential for new born infants? (1)
- 5. Name the phenomenon and the cell responsible for the development of a new individual without fertilization as seen in honey bees. (1)

**SECTION-B**

- 6. Fill in the blanks from P to S in the given table. (2)

| Disease    | Causative agent             | Symptom   |
|------------|-----------------------------|---|
| P) -----   | <i>Entamoebahistolytica</i> | Q) -----  |
| Filariasis | R) -----                    | Chronic inflammation of lymphatic vessels.        |
| Typhoid    | S) -----                    | Sustained high fever, weakness, loss of appetite. |

- 7. Convergent evolution and divergent evolution are the two concepts explaining organic evolution. Explain each one with the help of an example. (2)
- 8. (a) Name the floral parts that develop into 'S' and 'P' in the given figure. (2)  
(b) Give the function of the part labeled 'S' and 'P'.

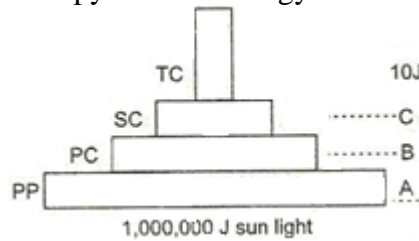


- 9. Baculoviruses and ladybird are excellent candidates for integrated pest management in an ecologically sensitive area. Explain giving reasons. (2)

**OR**

IARI has released several varieties of crops plants that are biofortified. Give two examples of such crops and their biofortification.

10. The figure given below represents an ideal pyramid of energy. (2)



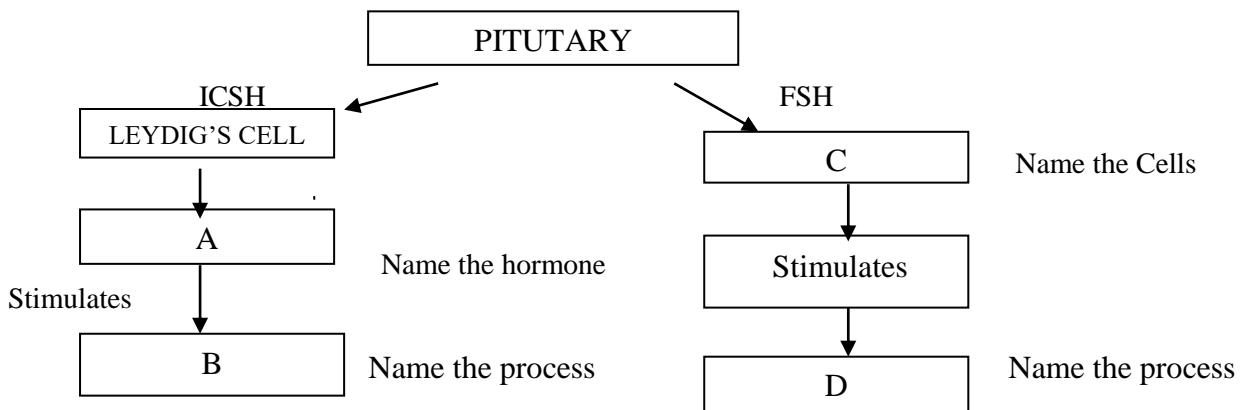
- (a) What is the amount of energy available at A, B and C?
- (b) Pyramid of energy is always upright. Give reason.

**SECTION-C**

- 11. (a) It is unfortunate that in our society women are often blamed for giving birth to female children and have been ostracized because of this false notion. How is sex determined in human beings? (3)
- (b) Mention any autosomal genetic disorders.
- 12. (a) Wind pollination is quite common among abiotic pollinations. List four characteristic features of wind pollinated flowers. (3)
- (b) Why does a plant breeder employ the technique of emasculation and bagging?
- 13. Enumerate the different steps involved in the construction of recombinant DNA in detail. (3)
- 14. (a) How did Eli Lilly Company go about preparing the human insulin? (3)
- (b) How is the insulin thus produced different from that produced by the functional human insulin gene?

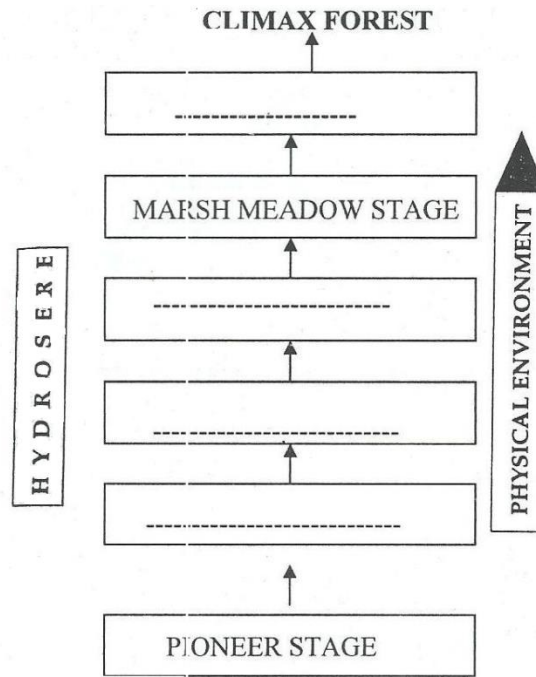
**OR**

- (a) How is a transgenic tobacco plant protected against *Meloidogyne incognitia*?
- (b) Explain the procedure of making such plants.
- 15. (a) Given below is an incomplete chart showing influence of hormones on gametogenesis in males. (3)
- Observe the flow chart carefully and fill in the blanks A, B, C and D.



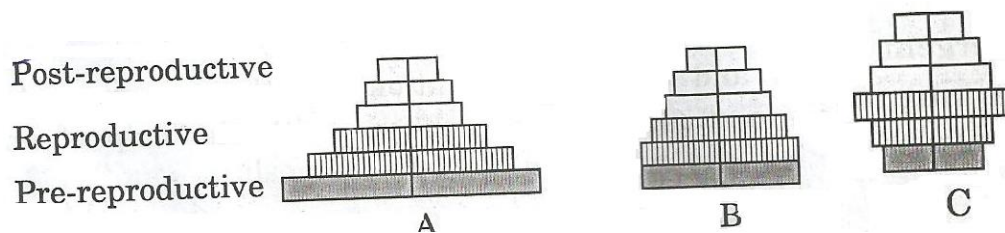
- (b) How are ZIFT and GIFT different from intra uterine transfers?
- 16. How did Hershey and Chase differentiate between DNA and protein in their experiment while proving that DNA is the genetic material? (3)
- 17. (a) The sewage is treated in STPs before it is discharged into natural water bodies. Explain the biological treatment of sewage. (3)
- (b) BOD of two samples of water A and B were 120 mg/L and 400mg/L respectively. Which sample is more polluted and why?
- 18. Name the microbe from which the following products are obtained and mention their role in human welfare: (a) Cyclosporin A, (b) Statins, (c) Streptokinase. (3)

19. (a) Succession is another aspect of community response to environment over time. Complete the developmental stages of plant succession during hydrosere. (3)



(b) Secondary succession is faster than primary succession. Give reason.

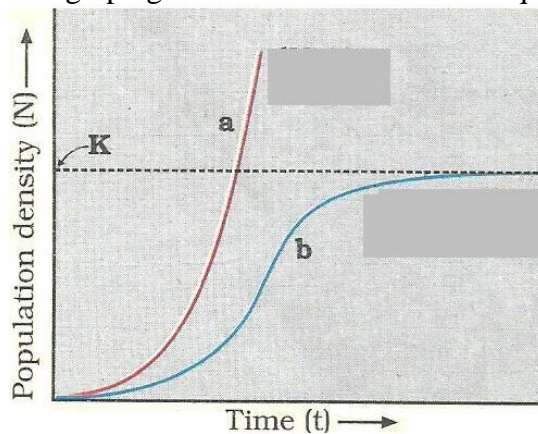
20. Study the three different age pyramids for human population given below and answer the following questions. (3)



- (a) Write the names given to each of these age pyramids.  
 (b) What does an age pyramid depict?  
 (c) Mention the pyramid which is ideal for human population and why?

**OR**

Study the population growth curves in the graph given below and answer the questions which follow:



- (a) Identify the growth curves 'a' and 'b'.  
 (b) Give the equation for 'a' and 'b'.  
 (c) Which curve is considered to be more realistic and why?

21. Amazonian rain forest has the greatest biodiversity on earth. List the hypothesis proposed by ecologists to account for the enormous biological biodiversity. (3)

22. HGP was called a mega project launched in 1990. List the important goals of HGP. (3)

#### SECTION-D

23. The truth today is that, we will be adding tons of CFC's and carbon to the atmosphere. Tonight the earth will be a little hotter, the water more acidic and the fabric of life more threadbare. (4)

(a) List two human activities leading to the above state.

(b) Enumerate two expected effects of these human activities.

(c) As individuals, mention two steps that you would take to minimize this, in order to ensure the well-being of our future generations.

#### SECTION-E

24. (a) Outline the salient features of Carbon cycling in an ecosystem. (5)

(b) Suggest two deleterious effects of the following human activities on man and his environment.

(i) Agro-chemicals to the aquatic system

(ii) Deforestation.

#### OR

(a) The accelerated rates of species extinctions that the world is facing now are largely due to human Activities. Explain, the four major causes of biodiversity losses.

(b) A particular species of wild cat is endangered. In order to save them from extinction, which is a desirable approach *in situ* or *ex situ*? Justify your answer and give one difference between the two approaches.

25. (a) Explain the process of aminoacylation of tRNA. Mention its role in translation. (5)

(b) Describe 'initiation' and 'termination' phases of protein synthesis.

(c) What are untranslated regions? Give its significance.

#### OR

Using Punnett square, trace through two generations, the details of a dihybrid cross between a true breeding pea plant homozygous for axial violet flowers with terminal white flowers (aaVV).

(a) Give the phenotypes and phenotypic ratio of F<sub>2</sub> generation.

(b) List the Mendelian generalizations that can be derived from the above cross.

26. (a) With the help of a labeled diagram, explain the structure of a typical angiosperm ovule. (5)

(b) Mention the fate of all the components of the embryo sac after fertilization.

#### OR

(a) Draw a labeled diagram of the sectional view of human ovary showing different stages of oogenesis.

(b) After implantation a structural and functional unit develops between foetus and the maternal body. Name the unit and mention the role played by it.

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