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SET 1



**INDIAN SCHOOL MUSCAT
FIRST TERM EXAMINATION
BIOLOGY**

CLASS: XII
09.05.2018

Sub. Code: 044

Time Allotted: 3 Hrs
Max. Marks: 70

General Instructions:

There are a total of 27 questions and four sections in the question paper. All questions are compulsory.

(ii) Section A contains question number 1 to 5, Very Short Answer type questions of one mark each.

(iii) Section B contains question number 6 to 12, Short Answer type I questions of two marks each.

(iv) Section C contains question number 13 to 24, Short Answer type II questions of three marks each.

(v) Section D contains question number 25 to 27, Long Answer type questions of five marks each.

(vii) There is no overall choice in the question paper, however, an internal choice is provided in one question of two marks, one question of three marks and all three questions of five marks. An examinee is to attempt any one of the questions out of the two given in the question paper with the same question number.

SECTION A

- | | | |
|---|--|---|
| 1 | Name an organism where cell division is itself is a mode of reproduction? | 1 |
| 2 | Mention the pollinating agent of an inflorescence of small dull coloured flowers with well exposed stamens and large feathery stigma. Give any one characteristic of pollen grains produced by such flowers. | 1 |
| 3 | What is the terminology for the concept of group immortality? | 1 |
| 4 | The spermatogonia of an animal contains 32 chromosomes. What will be the number of chromosomes in its: a) Primary spermatocytes b) Spermatids | 1 |
| 5 | State the fate of a pair of autosomes during gamete formation. | 1 |

SECTION B

- | | | |
|---|--|---|
| 6 | Where do signals of parturition originate in human from? Why is it important to feed the new born baby with breast milk? | 2 |
| 7 | When multiplication of species can occur with the help of asexual methods, then why the organisms adopt to sexual methods of multiplication? | 2 |

- 8 Mention the combination(s) of sex chromosomes in a male and a female bird. Which sex shows heterogamety? 2
- OR**
- A male honeybee has 16 chromosomes while female honeybee has 32 chromosomes. Give one reason.
- 9 Define external fertilization. Mention its disadvantages. 2
- 10 Mention the relationship between concentration of luteinising hormone and maintenance of endometrium in the human uterus. 2
- 11 A single pea plant in your kitchen garden produces pods with viable seeds, but individual papaya plant does not. Explain. 2
- 12 Explain co dominance with the help of one example. 2

SECTION C

- 13 (a) Name the organic material the exine of pollen grain is made up of. How is the material advantageous to pollen? 3
- (b) Still it is observed that it does not form a continuous layer around the pollen grain. Give reason.
- (c) How are “pollen banks” useful?
- 14 Explain the following phases in the menstrual cycle of a human female: 3
- (i) Menstrual phase
- (ii) Follicular phase
- (iii) Luteal phase
- 15 Identify each part in a flowering plant and write whether it is haploid (n) or diploid (2n). 3
- a) Ovary
- b) Anther
- c) Egg
- d) Pollen
- e) Male gamete
- f) Zygote
- 16 a) Identify the special characteristic in Pollen grains of water pollinated plants for protection from water. 3
- b) In a young anther a group of compactly arranged homogenous cells were observed in the centre of each microsporangium. What is the name given to these cells?
- c) What technique is employed to preserve pollen grains for future use?
- 17 What is a test cross? How can it decipher the heterozygosity of a plant? 3
- 18 What kind of gametes would be produced by the organisms having the following genotypes? 3
- a) AaBB
- b) Aabb
- c) AaBBCc

- 19 Trace the development of female gametophyte in a flower. 3
- 20 A man with blood group A married a woman with B blood group. They have a son with AB blood group and a daughter with O group. Illustrate the inheritance with suitable cross. 3
- 21 Draw a labelled diagrammatic sectional view of a human seminiferous tubule. 3

OR

- Draw a labeled diagram of the diagrammatic sectional view of female reproductive system.
- 22 Mention three strategies involved to prevent self pollination in flowers. 3
- 23 Describe the embryonic development of a zygote upto its implantation in humans. 3
- 24 Give reasons for the following: 3
- a) Human testes are located outside the abdominal cavity.
 - b) Only one sperm fertilizes an ovum
 - c) The edge of infundibulum has finger like projections called fimbriae.

SECTION D

- 25 What is triple fusion? Where and how does it take place? Name the nuclei involved in triple fusion. 5
- Mention the resultant nuclei formed from triple fusion and its fate.

OR

- Explain different types of pollination. Describe the mechanism of pollination in Vallisnaria and Zostera.
- 26 (a) Arrange the following hormones in sequence of their secretion in a pregnant woman. 5
- (b) Mention their source and the function they perform : hCG ; LH ; FSH ; Relaxin

OR

- (a) Explain the hormonal regulation of spermatogenesis in humans.
- (b) Draw the diagram of a human sperm. Label and write the functions of the components of its head.
- 27 State and explain the “law of independent assortment” in a typical Mendelian dihybrid cross. 5

OR

Explain the genetic basis of blood grouping in human population.

End of the Question Paper