

DAV PUBLIC SCHOOL DVC MTPS

HOLIDAY HOME WORK

XII SCIENCE

BIOLOGY

ASSIGNMENT NO. 1

1. Why do intermodal segments of sugarcane fail to propagate vegetatively even when they are in contact with damp soil? 1
2. Which is the first diploid single cell which begins life? 1
3. Which cells degenerate after fertilization in an embryo sac? 1
4. What makes the backbone of a DNA? 1
5. What is the function of amino acyl tRNA synthetase? 1
6. What are Okazaki fragments? How these fragments get join. 2
7. Draw a neat labeled sketch of replicating fork of DNA. 2
8. What is apomixis? How it is useful to the farmers? 2
9. How many haploid cells are present in a mature female gametophyte of a flowering plant? Name them. 2
10. Differentiate between gametogenesis and embryogenesis. 2
11. Banana crop is cultivated by farmers without showing seeds. Explain how the plant is propagated? 3
12. Draw a labeled diagram of an anatropus ovule. 3
13. Name the cell from which endosperm of coconut develops. Give the characteristic features of endosperm of coconut. 3
14. Differentiate between exons and introns. Mention their functions. 3
15. List the various steps of DNA figure printing. 3

16. What is semi-conservative DNA replication. How was it experimentally proved and by whom? 5

17. With the help of a labeled diagram depict the organization of a typical embryo sac just after double fertilization. 5

SUMMER HOLIDAY HOMEWORK

XII BIOLOGY

ASSIGNMENT NO 2

1. How does Penicillium reproduces asexually ? 1
2. What do you mean by staminate? 1
3. State the function of filiform apparatus found in mature embryo sac of an angiosperm. 1
4. How many nuclei are present in a fully developed male gametophyte of flowering plants? 1
5. Name the amino acid residues of histone proteins. 1
6. What are the functions of DNA endonuclease and exonuclease? 2
7. Draw a transcription unit and label the promoter region and coding strand. 2
8. Mention the functions of tapetum and sporogenous tissue present in an anther. 2
9. What is bagging ? How is it useful in a plant breeding programme? 2
10. Which of the following are monoecious and dioecious organisms ? 2
(a) Earthworm (b) Chara (c) Cockroach (d) Marchantia.
11. Why are large number of male gametes are produced as compared to female gametes? 3
12. List the out breeding devices of a bisexual flower which encourage the cross pollination. 3
13. Differentiate between: 3
(a) Hypocotyl and Epicotyl
(b) Coleoptile and Coleorrhiza
(c) Perisperm and Pericarp
14. List the salient features of genetic code. 3
15. Draw a labeled diagram of a t- RNA molecule. 3

16. (a) Describe the various steps of Griffith's experiment that led to the conclusion of the Transforming principle.

(b) How did the chemical nature of the Transforming principle get established? 5

17. A flower of brinjal plant following the process of sexual reproduction produces 360 viable seeds.

Answer the following questions:

(a) How many ovules are minimally involved?

(b) How many megaspore mother cells are involved?

(c) What is the minimum no. of pollen grains that must land on stigma for pollination?

(d) How many male gametes are involved in the above case?

(e) How many microspore mother cells must have undergone reduction division prior to dehiscence of anther in the above case? 5

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SUMMER HOLIDAY HOME WORK

XII BIOLOGY

ASSIGNMENT NO. 3

1. Name two organisms which are used to produce both male and female motile gametes. 1
2. Name the type of pollination as a result of which genetically different types of pollen grains of the same species land on the stigma. 1
3. Name the type of flower which favours cross pollination. 1
4. What is hn RNA? 1
5. Mention two functions of the codon AUG. 1
6. Draw a neat labeled diagram of a nucleosome. 2
7. State the dual role of deoxyribonucleotide triphosphate during DNA replication. 2
8. Although potato tuber is an underground plant part, it is considered as a stem. Give two reasons. 2
9. Write the difference between the tender coconut water and the thick , white kernel of a mature coconut and their ploidy. 2
10. Cucurbita referred to a monoecious .-Justify the statement. 2
11. Draw a diagram of a typical dicot embryo and label any four parts including the reduced suspensor. 3
12. An anther with malfunctioning tapetum often fails to produce viable male gametophyte. Give reason. 3
13. How did the chemical nature of the Transforming principal get established? 3
14. WhY Human Genome Project is called mega project? 3
15. Describe in sequence the process of microsporogenesis in angiosperm. 3
16. What are vegetative propagule? Name any four along with their examples. 5
17. What is an Operon? Who first proposed this concept? Describe the major steps involved in lac Operon. 5