



**ST. LAWRENCE HIGH SCHOOL**



**A JESUIT CHRISTIAN MINORITY INSTITUTION**

**SOLUTION – 36**

**Class: XII**

**Sub: Biological Science**

**Date: 08.08.2020**

**Topic: Chapter 6 (Part 5) DNA Replication – Types and Meselson and Stahl's Experiment**

**F.M. : 15**

**Choose the correct option:**

**(1x15=15)**

1. The original DNA molecule is preserved intact in one daughter cell and a new double helix molecule for the daughter cell is synthesized in \_\_\_\_\_ type of replication.

a) Dispersive b) Conservative c) Semi-conservative d) None of these

**Answer : Conservative (b)**

2. The type of DNA replication proposed by Watson and Crick was for the DNA was :-

a) Semi-conservative b) Conservative c) Dispersive d) None of these

**Answer : Semi-conservative (a)**

3. The Experiment which supported semi conservative mechanism of replication was conducted by:

a) Messener b) Kornberg c) Meselson and Stahl d) Watson and Crick

**Answer : Meselson and Stahl (c)**

4. The 'heavy' DNA of Meselson's experiment contained the isotope \_\_\_\_\_ in its chemical composition.

a)  $N^{14}$  b)  $N^{15}$  c)  $N^{14}$  and  $N^{15}$  both d)  $N^{16}$

**Answer :  $N^{15}$  (b)**

5. The second generation of bacteria contains two types of DNA :-

a) 50% light and 50% intermediate b) 100% heavy c) 50% heavy and 50% light d) All of these

**Answer : 50% light and 50% intermediate (a)**

6. The single replicating unit is called :-

a) Cistron b) Replicon c) Muton d) Recon

**Answer : Replicon (b)**

7. DNA replication takes place during the \_\_\_\_\_ phase of cell division.

a)  $G_1$  b)  $G_2$  c) S d) Interphase

**Answer : S (c)**

8. Activation of deoxyribonucleotides requires the enzyme :-

a) Phosphorylase b) DNA polymerase c) Helicase d) Gyrase

**Answer : Phosphorylase (a)**

9. The enzyme which brings about nicking and resealing the DNA stand is :-

- a) Gyrase b) Helicase c) Topoisomerase d) DNA Pol

**Answer : Topoisomerase (c)**

10. The proteins which stabilize the single strands of DNA by binding to them and preventing them to form a DNA helix :-

- a) Topoisomerase b) SSBPs c) Helicase d) Gyrase

**Answer : SSBPs (b)**

11. The following is the type of DNA polymerase in eukaryotes :-

- a)  $\alpha$  b)  $\beta$  c)  $\gamma$  d) All of these

**Answer : All of these (d)**

12. In prokaryotes the following DNA polymerase enzyme is the chief enzyme for replication :-

- a) DNA pol I b) DNA pol III c) DNA pol II d) All of these

**Answer : DNA pol III (b)**

13. The enzyme which helps in proof reading in prokaryotes :-

- a) DNA pol I b) DNA pol II c) DNA pol III d) All of these

**Answer : DNA pol I (a)**

14. The repair of the newly formed DNA segment is sealed by the following enzyme in prokaryotes:-

- a) DNA ligase b) DNA polymerase c) Primase d) Topoisomerase

**Answer : DNA ligase (a)**

15. Meselson and Stahl carried out their experiment on the following bacteria :-

- a) *Bacillus* b) *E. Coli* c) *Streptococcus* d) *Vibrio cholerae*

**Answer : *E. Coli* (b)**

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