**The Structure Of DNA** (p. 190 – 197)

**I. Transformation**

 **1. In 1928, what did Frederick Griffith want to develop for pneumonia?**

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 **2. The strain of bacteria that caused pneumonia grew into \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ colonies on**

 **culture plates; harmless bacteria produced colonies with \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ edges.**

 **3. Circle the letter of each sentence that is true about Griffith’s experiment.**

 a. Mice injected with bacteria from smooth colonies died.

 b. Mice injected with bacteria from rough colonies died.

 c. Mice injected with heat-killed bacteria from smooth colonies died.

 d. Mice injected with a mixture of bacteria from smooth and rough colonies died.

 **4. What result from Griffith’s experiment suggested that the cause of pneumonia was not a**

 **chemical poison released by the disease-causing bacteria?**

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 **5. What hypothesis did Griffith form from the results of his experiments?**

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 **6. Define the term transformation.**

 Transformation –

 **7. In 1944, what did Oswald Avery determine to be the transforming factor of pneumonia?**

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_

**II. Viral Genes & DNA**

 **1. Despite Avery’s findings, what did many scientists think was genetic material?**

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 **2. Define the term bacteriophage.**

 Bacteriophage –

 **3. What happens when a bacteriophage infects a bacterial cell?**

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 **4. Which molecules in the T2 bacteriophage contain :**

 Phosphorus : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Sulfur : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 **5. List the three steps of the 1952 Hershey-Chase Experiment.**

 1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 **6. What results did Hershey & Chase observe?**

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 **7. Hershey & Chase concluded that the genetic material was : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**

**III. A Winding Staircase**

 **1. Define the term nucleotides.**

 Nucleotides –

 **2. What are the three main components of a nucleotide?**

 1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 **3. What is the name of the sugar making up DNA?** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 **4. List the four different nitrogenous bases of DNA.**

 1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 **5. What makes up the backbone of DNA?**

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**IV. Discovering DNA’s Structure**

 **1. In 1949, what did Edwin Chargaff discover about nitrogenous bases?**

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 **2. What shape of DNA did Rosalind Franklin and Maurice Wilkins discover in 1952?**

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 **3. In 1953, how did James Watson & Francis Crick describe the structure of DNA?**

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 **4. A purine of one DNA strand is paired with a pyrimidine of the opposite strand.**

 Circle One : True False

 **5. Complete the complementary base pairing of the following DNA strand.**

 A T T C T G C T A G G C T T A G G A C A T T A

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