

PENANG SANGAM HIGH SCHOOL

YEAR 13 BIOLOGY - WORKSHEET 4

1. Okazaki fragments, formed during replication, are joined together by the enzyme (notes on DNA Replication)

- A. primase.
- B. DNA ligase.
- C. DNA gyrase.
- D. RNA polymerase.

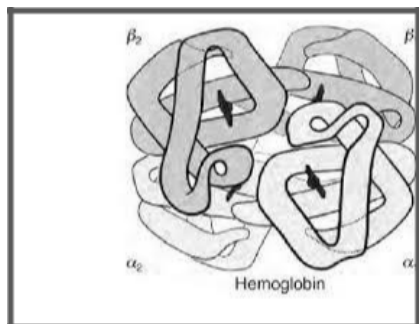
2. In protein synthesis, the first codon in all mRNA strands is the start codon, which also codes for the amino acid (refer to the table on names of amino acids)

- A. isoleucine.
- B. tryptophan.
- C. methionine.
- D. glutamic acid.

3. Resistance to penicillin in *Staphylococcus* bacteria results from (study the 3 types of distribution curve)

- A. artificial selection.
- B. disruptive selection.
- C. stabilising selection.
- D. directional selection.

4. **Haemoglobin** is formed by four polypeptide chains, each of which has a globular tertiary structure of its own. Thus haemoglobin has a (notes on the structures of proteins would help)



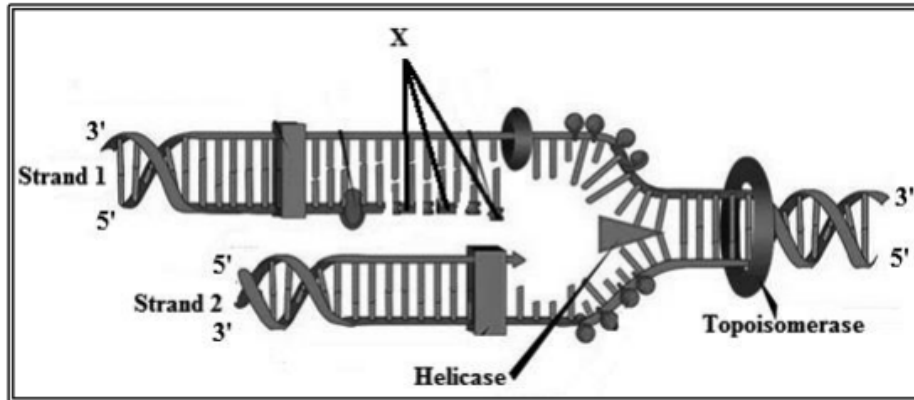
- A. Primary structure
- B. Secondary structure
- C. Tertiary structure
- D. Quaternary structure

5. Polyploidy in plants can be due to (follow notes on euploidy)

- A. meiosis
- B. deletion
- C. substitution
- D. non disjunction

6. A section of DNA has 30% adenine base. Calculate the percentages of guanine and thymine present in this section. (hint:Chargaffs Rule) **(2 marks)**

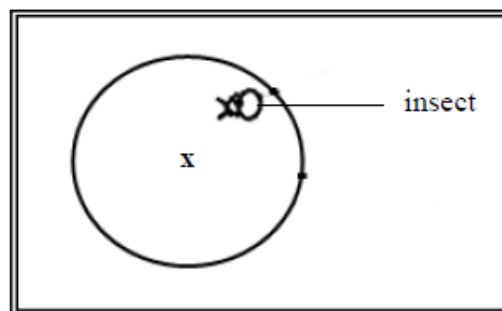
7. Study the diagram of replication given below to answer the questions that follow. (Make reference to notes on DNA Replication)



(i) Name X in the diagram. **(1 mark)**

(ii) Explain the effect of X on the synthesis of Strand 1. **(2 marks)**

8. An insect was viewed under the microscope, as shown in the diagram below. (Refer to Lab 1)



Explain how the student would bring the insect into the centre of the field of view (marked x) **(2 marks)**
