



## Class 12 Biology | Molecular Basis Of Inheritance

MCQ WORKSHEET • 15 questions • Choose one correct option • Suggested time: 25 minutes

**1. In double-stranded DNA, adenine is 30%. Guanine is**

- A. 30% B. 40% C. 20% D. 10%

**2. DNA strands run in opposite directions, described as**

- A. Parallel  
B. Identical in sequence  
C. Unconnected  
D. Antiparallel

**3. A nucleosome contains DNA wrapped around a**

- A. Histone octamer B. Cellulose fibre  
C. Lipid micelle D. Ribosome

**4. Semiconservative replication means each daughter DNA has**

- A. Only one strand total  
B. Two old strands  
C. Two entirely new strands always  
D. One old and one new strand

**5. DNA polymerase extends a growing DNA strand in the**

- A. Both directions equally  
B. Direction from protein to RNA  
C. 5' to 3' direction  
D. 3' to 5' direction

**6. Short fragments on the lagging strand are joined by**

- A. Helicase B. Peptidase  
C. RNA polymerase D. DNA ligase

**7. If the template is 3'-TAC-5', the RNA codon is**

- A. 5'-UAC-3' B. 5'-AUG-3'  
C. 5'-TAC-3' D. 5'-ATG-3'

**8. The enzyme synthesising RNA from DNA is**

- A. DNA ligase  
B. RNA polymerase  
C. Reverse transcriptase necessarily  
D. Protease

**9. Removal of introns from primary RNA is called**

- A. Translation B. Splicing  
C. Charging D. Replication

**10. Several codons coding for one amino acid illustrates code**

- A. Degeneracy  
B. Non-universality in every organism  
C. Ambiguity  
D. Overlapping reading

**11. Which codon generally initiates translation?**

- A. UAA B. UGA C. AUG D. UAG

**12. During translation, the adaptor carrying an amino acid is**

- A. tRNA B. rRNA only C. Histone D. DNA

**13. In the lac operon, lactose acts as an inducer by**

- A. Changing all structural genes  
B. Inactivating the repressor  
C. Blocking RNA polymerase permanently  
D. Destroying the operator

**14. Without lactose, the lac repressor normally binds the**

- A. tRNA anticodon B. Operator  
C. Terminator protein D. Ribosome

**15. DNA fingerprinting exploits variation in**

- A. Repetitive DNA sequences  
B. All ribosomal proteins  
C. The universal genetic code alone  
D. Every person's chromosome number

**ANSWER KEY — check after completing all 15 questions**

**1.C 2.D 3.A 4.D 5.C 6.D 7.B 8.B 9.B 10.A 11.C 12.A 13.B 14.B 15.A**

Original exam-style practice • Reference notes: [www.physics.guru/cbse-practice-papers/](http://www.physics.guru/cbse-practice-papers/) • Not an official paper

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