

# MSc BIOTECHNOLOGY

## SEMESTER – II (MOLECULAR BIOLOGY – II)

### INTERNAL - I

## QUESTION BANK

### MCQs

1. The central dogma was proposed by:  
A) Watson  
B) Crick  
C) Mendel  
D) Jacob  
**Answer: B**
2. The enzyme responsible for transcription is:  
A) DNA polymerase  
B) RNA polymerase  
C) Ligase  
D) Helicase  
**Answer: B**
3. Prokaryotic mRNA is generally:  
A) Monocistronic  
B) Polycistronic  
C) Non-functional  
D) Circular  
**Answer: B**
4. Actinomycin D inhibits:  
A) Translation  
B) DNA replication  
C) Transcription  
D) Splicing  
**Answer: C**
5.  $\alpha$ -Amanitin inhibits:  
A) RNA polymerase I  
B) RNA polymerase II  
C) DNA polymerase  
D) Ribosome  
**Answer: B**
6. The first step of transcription is:  
A) Elongation  
B) Termination  
C) Initiation  
D) Replication  
**Answer: C**

7. Eukaryotic mRNA is usually:  
A) Polycistronic  
B) Monocistronic  
C) Circular  
D) Double-stranded  
**Answer: B**
8. 5' capping involves addition of:  
A) Adenine  
B) Guanine  
C) Cytosine  
D) Uracil  
**Answer: B**
9. Removal of introns is called:  
A) Capping  
B) Tailing  
C) Splicing  
D) Editing  
**Answer: C**
10. tRNA carries:  
A) DNA  
B) Amino acids  
C) Lipids  
D) Sugars  
**Answer: B**
11. The genetic code is:  
A) Overlapping  
B) Ambiguous  
C) Degenerate  
D) Universal only in prokaryotes  
**Answer: C**
12. Wobble hypothesis explains:  
A) DNA replication  
B) Codon-anticodon pairing flexibility  
C) Protein folding  
D) RNA synthesis  
**Answer: B**
13. The start codon is:  
A) UAA  
B) UAG  
C) AUG  
D) UGA  
**Answer: C**
14. The stop codons are:  
A) AUG, UGG  
B) UAA, UAG, UGA  
C) AAA, GGG  
D) CCC, UUU  
**Answer: B**
15. Ribosomes are made of:  
A) DNA and protein

- B) RNA and protein
- C) Lipids and RNA
- D) Carbohydrates

**Answer: B**

16. Elongation in translation requires:

- A) ATP only
- B) GTP
- C) NADH
- D) FADH<sub>2</sub>

**Answer: B**

17. Aminoglycosides inhibit:

- A) DNA synthesis
- B) Protein synthesis
- C) Lipid metabolism
- D) Transcription

**Answer: B**

18. Post-translational modification includes:

- A) Replication
- B) Glycosylation
- C) Transcription
- D) Translation

**Answer: B**

19. The anticodon is present on:

- A) mRNA
- B) tRNA
- C) rRNA
- D) DNA

**Answer: B**

20. Translation occurs in:

- A) Nucleus
- B) Ribosome
- C) Golgi body
- D) Lysosome

**Answer: B**

# Fill in the Blanks

1. The central dogma explains flow of information from DNA to \_\_\_\_\_.  
**Answer:** Protein
2. Transcription is synthesis of \_\_\_\_\_ from DNA.  
**Answer:** RNA
3. RNA polymerase synthesizes RNA in \_\_\_\_\_ direction.  
**Answer:** 5' to 3'
4. Prokaryotic mRNA is \_\_\_\_\_ cistronic.  
**Answer:** Poly
5. Actinomycin D inhibits \_\_\_\_\_.  
**Answer:** Transcription
6.  $\alpha$ -Amanitin inhibits RNA polymerase \_\_\_\_\_.  
**Answer:** II
7. The first stage of transcription is \_\_\_\_\_.  
**Answer:** Initiation
8. Eukaryotic mRNA undergoes \_\_\_\_\_ modification at 5' end.  
**Answer:** Capping
9. Poly-A tail is added at the \_\_\_\_\_ end.  
**Answer:** 3'
10. Introns are removed by \_\_\_\_\_.  
**Answer:** Splicing
11. tRNA carries \_\_\_\_\_ to ribosome.  
**Answer:** Amino acids
12. The genetic code is \_\_\_\_\_ (one codon codes for one amino acid).  
**Answer:** Unambiguous
13. The start codon is \_\_\_\_\_.  
**Answer:** AUG
14. Stop codons do not code for \_\_\_\_\_.  
**Answer:** Amino acids
15. Ribosomes consist of rRNA and \_\_\_\_\_.  
**Answer:** Proteins
16. Translation requires energy in the form of \_\_\_\_\_.  
**Answer:** GTP
17. Wobble occurs at the \_\_\_\_\_ position of codon.  
**Answer:** Third
18. Aminoglycosides inhibit \_\_\_\_\_ synthesis.  
**Answer:** Protein
19. Glycosylation is a \_\_\_\_\_ translational modification.  
**Answer:** Post
20. Translation takes place in the \_\_\_\_\_.  
**Answer:** Cytoplasm