

MUDRA LIFE SCIENCES

VOLUME-02

PART B & C

MODEL QUESTION BANK FOR THE TOPICS:

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3. FUNDAMENTAL PROCESSES

UNIT – 1

1. The scientists involved in discovery of DNA as chemical basis of heredity when
 - (a) Hershey and Chase
 - (b) Griffith and Avery
 - (c) Avery, Macleod and McCarty
 - (d) Watson and Crick

2. One turn of DNA possesses
 - (a) One base pair
 - (b) Two base pairs
 - (c) Five base pairs
 - (d) Ten base pairs

3. Number of codons in the genetic triplet code is
 - (a) 4
 - (b) 16
 - (c) 32
 - (d) 64

4. Initiation codon for protein synthesis are
 - (a) UUU and GGG
 - (b) AAU and UAA
 - (c) AUG and GUA
 - (d) GUG and AUG

5. Termination codon for protein synthesis are
 - (a) AUU, AUG and GUU
 - (b) UGA, UAA and UAG
 - (c) UAU, UAG and UUA
 - (d) AAA, UUU and UGA

6. The two antiparallel strands of DNA are
 - (a) Equidistant and run in 5' → 3' direction
 - (b) Equidistant but run in 5' → 3' and 3' → 5' direction
 - (c) Unequal and run in opposite direction
 - (d) unequal and diverge from each other.

7. The process of multiplication of DNA from DNA is known as
- (a) Replication
 - (b) Translation
 - (c) Transversion
 - (d) Transcription
8. Formation of RNA over the template of DNA is
- (a) Replication
 - (b) Translation
 - (c) Transversion
 - (d) Transcription
9. Leading strand during DNA replication is formed
- (a) Continuously
 - (b) In short segments
 - (c) First
 - (d) Ahead of replication
10. In proof reading during DNA replication
- (a) Wrong nucleotides are inserted
 - (b) Wrong nucleotides are taken out
 - (c) Wrong nucleotide are removed and correct ones inserted
 - (d) Mutations are prevented
11. Nonsense codons take part in
- (a) Helping protein synthesis
 - (b) Termination gene message for polypeptide synthesis
 - (c) Initiating gene message for polypeptide synthesis
 - (d) Synthesis of non-protein amino acids
12. The two strands of DNA are
- (a) Similar and parallel
 - (b) Similar but antiparallel
 - (c) Complementary and antiparallel
 - (d) Complementary and parallel

13. Transcription involves
- (a) Protein synthesis over ribosomes
 - (b) Removal of worn out organelles by lysosomes
 - (c) Synthesis of RNA over DNA
 - (d) Synthesis of DNA over DNA.
14. DNA acts as template for synthesis of
- (a) DNA
 - (b) RNA
 - (c) DNA and RNA
 - (d) Protein
15. Code transfer for synthesis of polypeptide involves
- (a) DNA, tRNA, rRNA and mRNA
 - (b) mRNA, tRNA, rRNA and DNA
 - (c) tRNA, DNA, mRNA and tRNA
 - (d) DNA, mRNA, tRNA and amino acids
16. In polypeptide synthesis, amino acids brought over ribosome-mRNA complex by
- (a) rRNA
 - (b) tRNA
 - (c) DNA
 - (d) Nucleotides
17. tRNA attaches amino acid at its
- (a) 3' end
 - (b) 5' end
 - (c) Anticodon
 - (d) Loop
18. Blender experiment to prove DNA as genetic material was performed by
- (a) Hershey and Chase
 - (b) Messelson and Stahl
 - (c) Watson and Crick
 - (d) Rosalind Franklin
19. The strains of *Neurospora*, which grows on minimal medium is called
- (a) Autotroph
 - (b) Prototroph
 - (c) Auxotroph
 - (d) Heterotroph

20. For their contribution in biochemical genetics the scientists who received Nobel Pm in 1958 were

- (a) Beadle and Tatum
- (b) Beadle and Lederberg
- (c) Lederberg and Zinder
- (d) Zinder and Morgan

21. Genetic information is carried out by long chain of molecules made up of

- (a) Amino acids
- (b) Enzymes
- (c) Nucleotides
- (d) Histone proteins

22. One gene one enzyme hypothesis was proposed by

- (a) Khorana and Nirenberg
- (b) Beadle and Tatum
- (c) Bateson and Punnet
- (d) Bridges

23. A mutant strain of *Neurospora* which fails to grow on a minimal medium unless supplemented with a nutrient is called

- (a) Auxotroph
- (b) Autotroph
- (c) Heterotroph
- (d) Prototroph

24. The term triplet code and genetic code were coined by

- (a) Watson and Crick
- (b) Nirenberg
- (c) Gamow
- (d) Conrat

25. Beadle and Tatum produced mutant strain of *Neurospora* by

- (a) X-rays
- (b) UV-rays
- (c) Beta rays
- (d) Gamma rays

26. The technique of detecting and screening the nutritional mutants in *Neurospora crassa* was developed by
- (a) Mendel (b) Morgan
(c) Bateson and Punnett (d) Beadle and Tatum
27. The first codon discovered by Nirenberg and Matthaei was
- (a) GGG (b) CCC
(c) UUU (d) AAA
28. The process of transfer of genetic information for DNA to RNA/formation of RNA from DNA is
- (a) Transversion (b) Transcription
(c) Translation (d) Translocation
29. Nobel prize for one gene one-enzyme hypothesis was given to
- (a) Watson and Crick (b) Sutton and Boveri
(c) Avery et al (d) Beadle and Tatum
30. *E. Coli* labelled with ^{15}N is allowed to grow in N medium. The two strands of DNA molecules of the first generation bacteria have
- (a) Different density and do not resemble parent DNA
(b) Different density but resemble
(c) Same density and resemble parent DNA
(d) Same density but do not resemble parent DNA
31. One-gene one-enzyme hypothesis was proposed by
- (a) Jacob and Monod
(b) Beadle and Tatum
(c) Watson and Crick
(d) Gassod and Jensen

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