

Practical Molecular Biology

Question Bank

2022-2023

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Multiple Choice Questions

1) DNA which is the seat of all the hereditary characters is chiefly found in

- a) Mitochondria b) Chloroplast c) Nucleus

2) Nucleic acid are long chain polymers of

- a) Nucleoside b) Phosphoric acid c) Nucleotides

3) Watson and Crick have proposed a model for the structure of DNA molecule is

- a) Mono helical b) Double helical c) Penta helical

4) Which one of the following bases is not found in DNA ?

- a)Thymine b) Adenine c) Uracil

5) The nitrogen bases of one polynucleotide chain is joined to complementary chain by

- a) S- bond b) H- bond c) N- bond

6) Who demonstrate the gene transformation experiments ?

- a) Griefith b) Watson and Crick c) Chargaff

7) Which micro-organism is used in gene transformation experiments ?

- a) a) E- Coli b) Diplococcus pneumonae c) Azatobacter

8) How many C- atoms are attached with a deoxyribose pentose sugar ?

- a) 2 b) 4 c) 5

9) Which is one of the following attachment is not correct?

a) A=T b) T=A c) A=G

10) Who demonstrated that DNA replicates in a semi-conservative manner ?

a) Meselson & Stahl b) Jacob & Monad c) Watson & Crick

11) The two polynucleotide chains of the parent DNA molecule separate due to breaking of

a) S- bond b) H- bond c) O- bond

12) RNA is genetic material of

a) Bacteria b) Viruses c) Microbes

13) Clover leaf structure of RNA is

a) r-RNA b) t- RNA c) m-RNA

14) Ribosomal RNA is found in

a) Mitochondria b) Ribosomes c) Chloroplast

15) Which type of RNA transfer information from DNA in nucleus to ribosome's

a) m-RNA b) t - RNA c) r-RNA

16) Which RNA is serving as molecular adaptor during protein synthesis?

a) m-RNA b) t - RNA c) r-RNA

17) The codons contain the information coding for one amino acid consist of

a) Two nucleotide b) Four nucleotide c) Three nucleotide

18) Nucleosome is composed of

- a) Histone b) DNA+ Histone c) RNA

19) Okazaki fragments in DNA replication are joined by

- a) Polymerase b) Ligase c) Endonulease

Describe / Explain following questions

(Short answer questions)

- 1) Griffiths transformation experiment
- 2) Structure of Double helical model of DNA
- 3) Structure of deoxyribose pentose sugar
- 4) Ribose pentose sugar
- 5) Structure of cytosine nitrogen bases
- 6) Structure of thymine nitrogen bases
- 7) Structure of guanine nitrogen bases
- 8) Structure of adenine nitrogen bases
- 9) Nucleotides and nucleosides
- 10) Repetitive DNA (Satellite DNA)
- 11) Replication of DNA (conservative)
- 12) Replication of DNA (Semi-conservative)
- 13) Replication of DNA (dispersive)
- 14) Nucleosomes model

- 15) Structure of Ribosomal RNA (rRNA)
- 16) Structure of Messenger RNA (mRNA)
- 17) Structure of Transfer RNA (tRNA)
- 18) Concept of gene
- 19) The central dogma
- 20) Transcription
- 21) Translation
- 22) RNA polymerase
- 23) Concept of operon
- 24) The structural gene
- 25) The operator gene
- 26) The promoter gene
- 27) The regulator gene
- 28) The genetic code is triplet code
- 29) Codons and anticodons
- 30) Initiation codons
- 31) Termination codons
- 32) The wobble hypothesis

Describe / Explain following questions

(Long answer questions)

- 1) Fine structure of gene
- 2) Mechanism of DNA replication
- 3) Types of RNA
- 4) Lac operon
- 5) Regulation of Protein synthesis