Practical Molecular Biology

Question Bank

2022-2023

Abdullah Abubaker Shareef

Abdullah.shareef@su.edu.krd

**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) Griffith b) Watson and Crick c) Chargaff

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

a) a) E- Coli b) Diplococcus pneumonia c) Azotobacter

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 attachments 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

1. Bacteria b) Viruses c) Microbes

13) Clover leaf structure of RNA is:

1. 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) Endonuclease

**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