

Section 1 - Pg Diploma - Bioinformatics

1) What is a cytogenetic map?

- A) Map of a chromosome
 - B) Map of a protein
 - C) Map of a DNA
 - D) Map of a RNA
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2) The following one of the mutations occurs without exposure of the external agents

- A) Point mutations
 - B) Analogous mutations
 - C) Induced mutations
 - D) Spontaneous mutations
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3) The first DNA based genome to be sequenced is

- A) E.coli pBR 32
 - B) Bacteriophage QX174
 - C) E.coli pBR 35
 - D) Bacteriophage QX171
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4) Which is the following referred as "primary source of energy"

- A) Lipids
 - B) Carbohydrate
 - C) Vitamins
 - D) Protein
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5) The following base changes in DNA is an example for transition

- A) A-to-C
 - B) G-to-C
 - C) A-to-G
 - D) C-to-A
-

6) Which amino acid begins the synthesis of all proteins?

- A) Thymine
 - B) Proline
 - C) Methionine
 - D) Glycine
-

7) Central Dogma of biology

- A) DNA-Protein-RNA
 - B) DNA-RNA-Protein
 - C) RNA-DNA-RNA
 - D) RNA-Protein-DNA
-

8) In eukaryotes, DNA is primarily found in

- A) cell membrane
 - B) lysosome
 - C) nucleus
 - D) nucleolus
-

9) How many chromosomes are in a parent cell for humans?

- A) 26
 - B) 23
 - C) 43
 - D) 46
-

10) Which is a repository for the 3-dimensional structure data for large biomolecules?

- A) Swiss-Prot
 - B) NCBI
 - C) PDB
 - D) EMBL
-

11) The definition of the cell is not applicable for the following

- A) Virus
 - B) Algae
 - C) Bacteria
 - D) Fungi
-

12) Which of the following is NOT required for protein synthesis once transcription has been finished?

- A) DNA
 - B) Ribosomes
 - C) tRNA
 - D) mRNA
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13) Which one of the following tool is used to predict the three-dimensional structure of a protein?

- A) Modeller
 - B) ChemSketch
 - C) AutoDock
 - D) Gromacs
-

14) Which statistical model used to describe the evolution of an invisible process of hidden states and a visible process of observable symbols

- A) Hidden Markov models
 - B) Online Mendelian Inheritance in Man
 - C) Genetic-linkage maps
 - D) NCBI-Entrez Map viewer
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15) The following type of polymerase enzyme is used for DNA synthesis in bacteria

- A) Polymerase IV
- B) Polymerase I
- C) Polymerase II
- D) Polymerase III

16) All the enzymes are considered as the following

- A) carbon based acids
 - B) nitrogen based acids
 - C) proteins
 - D) oxygen based acids
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17) DNA Replication is

- A) Unpaired
 - B) Semiconservative
 - C) Selective
 - D) Conservative
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18) The total number of chromosome present in human cell

- A) 21 pairs
 - B) 22 Pairs
 - C) 23 Pairs
 - D) 24 Pairs
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19) The following method uses sequencing of genomic DNA

- A) Structural genomics
 - B) Proteomics
 - C) Transgenesis
 - D) Functional genomics
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20) Gene Locator and Interpolated Markov Model ER (GLIMMER) is used in

- A) Finding genes in Prokaryotic DNA
- B) Finding genes in Animal DNA
- C) Finding genes in Prokaryotic RNA
- D) Finding genes in Eukaryotic DNA

21) Nucleotides have three characteristic components

- A) a nitrogenous (nitrogen-containing) base + a Sulphur + phosphate
 - B) a nitrogenous (nitrogen-containing) base + a pentose + phosphate
 - C) a nitrogenous (nitrogen-containing) base + a pentose + Sulphate
 - D) a phosphorus (Phosphorus-containing) base + a pentose + phosphate
-

22) Agarose is a

- A) Lipid
 - B) Polysaccharide
 - C) Protein
 - D) Monosaccharide
-

23) The sugar present in RNA is

- A) phosphate
 - B) ribose
 - C) uracil
 - D) deoxyribose
-

24) The study of all the proteins coded by the genome is called

- A) Genome
 - B) Proteomics
 - C) Protein formation
 - D) Proteome
-

25) The substrate concentration that produces _____ velocity is called _____ constant

- A) Half maximum, Michealis
- B) Half maximum, Rate
- C) Half maximum, Equilibrium
- D) Full, enzyme

26) Chemotrophs derive their energy from

- A) Trap and use sunlight
 - B) Oxidation of a fuel
 - C) Organic nutrients
 - D) Carbon from CO₂
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27) The human genome is made up of

- A) All of our DNA
 - B) All of the DNA and RNA in our cells
 - C) None of the above
 - D) All of our genes
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28) DNA annotation is

- A) Identifying the location of RNA
 - B) Identifying the synthesis of protein
 - C) Identifying the amino acid sequence
 - D) Identifying the location of genes
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29) Who discovered DNA structure

- A) Robert Koch
 - B) Jhonson and Crick
 - C) Crick brothers
 - D) Watson and Crick
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30) Which of the features below will help you to distinguish a prokaryotic cell from a eukaryotic cell?

- A) cell wall
- B) nuclear membrane
- C) cell membrane
- D) nucleus

31) The optimal working temperature of human enzymes

- A) 47° C
 - B) 52° C
 - C) 42° C
 - D) 37° C
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32) The following method is used for longer DNA molecule sequencing

- A) Sanger Sequencing
 - B) High throughput Sequencing
 - C) New Sequencing
 - D) Low throughput Sequencing
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33) Which of the following is NOT required for protein translation?

- A) mRNA
 - B) Ligase
 - C) Amino acid
 - D) Anticodon
-

34) A family of proteins called SNARES is helpful in

- A) Maintain equilibrium with its surroundings
 - B) Cell interaction
 - C) Neurotransmission
 - D) Transport across membranes
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35) At higher temperatures above 100° Celsius, enzymes are

- A) Highly reactive
- B) Inactive
- C) Unstable
- D) Active

36) The specialized function of different membranes are largely determined by the _____ they contain

- A) DNA
 - B) Lipids
 - C) RNA
 - D) Protein
-

37) Which database is a resource for the annotation of functional units in proteins?

- A) NCBI-Entrez Map viewer
 - B) Conserved Domain Database (CDD)
 - C) Online Mendelian Inheritance in Man (OMIM)
 - D) Genetic-linkage maps
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38) How many bases of nucleic acid code for a single amino acid?

- A) Three
 - B) One
 - C) Four
 - D) Two
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39) Gene mapping provides useful information about

- A) inheritance of dominant gene
 - B) inheritance of disorders
 - C) inheritance of recessive gene
 - D) inheritance of genes
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40) Changes from GGTTAG to GGATAG this is a example for the following

- A) nucleotide base deletion
- B) nucleotide base insertion
- C) silent mutation
- D) nucleotide base substitution

41) The overall shape of a bacterial cell is determined by which of the following?

- A) Cytoskeleton
 - B) Cell wall
 - C) Cell surface membrane
 - D) Nucleoid
-

42) Generally, genetic differences include the following characteristics

- A) not heritable
 - B) influenced by the environment
 - C) stable
 - D) temporary
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43) The web version of the ORF finder has limitation of query DNA sequence up to

- A) 50 kb long
 - B) 5 MB long
 - C) 50 MB long
 - D) 500 kb long
-

44) Which enzyme joins the adjacent fragments during replication

- A) Helicase
 - B) RNA Polymerase
 - C) DNA ligase
 - D) Primase
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45) Addition or deletion of a nucleotide base pair produce

- A) silent mutation
- B) nonsense mutation
- C) point mutation
- D) frame shift mutation

46) Which of the following cells are haploid?

- A) nerve cells
 - B) sex cells
 - C) body cells
 - D) somatic cells
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47) Northern Blotting technique is used for identifying

- A) cDNA
 - B) mRNA
 - C) DNA
 - D) RNA
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48) Which of the following is TRUE regarding a prokaryotic cell

- A) 100–200 μm in size
 - B) Multi-celled organisms
 - C) They have cell organelles
 - D) Lacks a defined nucleus
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49) The enzymes that occur in a number of different forms and differ each other chemically and electrophoretically is called

- A) Apo enzymes
 - B) Isoenzymes
 - C) Allosteric enzymes
 - D) Co enzymes
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50) The following is required for synthesis of any protein?

- A) all the above
- B) rRNA
- C) tRNA
- D) mRNA

Answer keys**Question Paper No: 60881_7**

1	A	26	B
2	D	27	A
3	B	28	D
4	B	29	D
5	C	30	B
6	C	31	D
7	B	32	B
8	C	33	B
9	D	34	C
10	C	35	B
11	A	36	D
12	A	37	B
13	A	38	A
14	A	39	B
15	D	40	D
16	C	41	B
17	B	42	C
18	C	43	A
19	A	44	C
20	A	45	D
21	B	46	B
22	B	47	D
23	B	48	D
24	B	49	B
25	A	50	A