



BRAINWARE UNIVERSITY

Term End Examination 2021 - 22
Programme – Master of Science in Biotechnology
Course Name – Genomics & Proteomics
Course Code - MBT205
(Semester II)

Time allotted : 1 Hrs.15 Min.

Full Marks : 60

[The figure in the margin indicates full marks.]

Group-A

(Multiple Choice Type Question)

1 x 60=60

Choose the correct alternative from the following :

- (1) Genome refers

| | |
|-----------------------------------|------------------------------|
| a) Total gene pool of an organism | b) Total mRNA of an organism |
| c) Only DNA of a diploid cell | d) Only proteins |
- (2) Name the phenomenon which shows the lack of correlation in genome size and genetic complexity.

| | |
|---------------|--------------------|
| a) Histogram | b) Karyogram |
| c) Dendrogram | d) C-value paradox |
- (3) The most important tools of genomics are

| | |
|-------------------------------|-------------------------|
| a) Microarray and informatics | b) Microarray and BLAST |
| c) BLAST and FASTA | d) FASTA and PCR |
- (4) A character or trait is the direct function of

| | |
|------------|---------|
| a) Gene | b) RNA |
| c) Protein | d) rRNA |
- (5) Most of the eukaryotic nuclear genome has

| | |
|-------------------|----------------|
| a) Repetitive DNA | b) Unique DNA |
| c) GC island | d) Single copy |
- (6) What is the genome size of yeast?

| | |
|-----------|------------|
| a) 12 kb | b) 120 kb |
| c) 330 kb | d) 1000 kb |
- (7) Human has a _____ genome.

| | |
|------------------|------------------|
| a) About 100 kb | b) About 500 kb |
| c) About 1000 kb | d) About 3000 kb |
- (8) What is alphoid DNA?

| | |
|-------------------|----------------------------|
| a) Large size DNA | b) DNA found at centromere |
|-------------------|----------------------------|

- c) Unique DNA sequence
d) Repetitive DNA
- (9) Exons are
a) Non coding regions of genome
b) Coding regions of genome
c) Repetitive regions of genome
d) All of these
- (10) Human genome contains about
a) 10-20k genes
b) 30-40k genes
c) 50-80k genes
d) More than 100k genes
- (11) The largest genome is belonging from which organism?
a) E. coli
b) Homo sapiens
c) T4
d) Carsonella ruddii
- (12) DNA sequence is the linear order of _____
a) Nucleotides
b) Neucleosides
c) Amino acids
d) Glucose moieties
- (13) Maxam-Gilbert used which of the following chemical to sequence a DNA molecule?
a) ddNTP
b) dNTP
c) Base modifiers
d) Base analogues
- (14) Chain-termination is a type of _____
a) Sequencing
b) Vector generation
c) Antibiotic production
d) Gene manipulation
- (15) Which type of DNA cleavage is done in the Maxam Gilbert method?
a) Edge
b) Interstitial
c) Base-specific
d) Gene-specific
- (16) The Klenow fragment is basically a
a) DNA polymerase
b) RNA polymerase
c) Gyrase
d) Nuclease
- (17) Prior to get electrophoresed in sequencing gel, DNA is
a) Separated
b) Denatured
c) Renatured
d) Degraded
- (18) NGS is based on the Principles of
a) Sanger sequencing
b) Maxam-Gilbert sequencing
c) MALDI-TOF
d) ESI-MS
- (19) NGS relies on which of the following technique?
a) PFG electrophoresis
b) SDS PAGE
c) Capillary electrophoresis
d) Native PAGE
- (20) Which one of the following is not belonging from NGS?
a) Pyrosequencing
b) Ion torrent semiconductor sequencing
c) Illumina techniques of sequencing
d) Dideoxy method of sequencing
- (21) Which of the following techniques is used to immobilize/amplify a ssDNA primer binding region (known as an adapter) which has been conjugated to the target sequence (i.e. the sequence that is to be sequenced) on a bead.
a) Emulsion PCR
b) Nested PCR
c) Hot-start PCR
d) All of these
- (22) Advanced genome annotation includes the study of
a) Polymorphic DNA markers
b) Gene model structure
c) Transcripts
d) All of these

linked with peptide bonds

- c) Its an alpha helix
d) Its a beta pleated sheet
- (37) Long repeat sequences are difficult to detect with which of the following techniques?
a) Ion torrent sequencing
b) Pyrosequencing
c) SoliD sequencing
d) None of these
- (38) Trypsin gold is the most widely used enzyme in MS analysis. It digest the peptide bonds after which amino acid(s)?
a) R
b) K
c) Both of these
d) None of these
- (39) Glutathione is a tripeptide of _____
a) ECG
b) DCG
c) ACG
d) BCG
- (40) Which of the following is an example of Homology and similarity tool?
a) BLAST
b) RasMol
c) EMBOSS
d) PROSPECT
- (41) Which of the following scientists created the first Bioinformatics database?
a) Dayhoff
b) Pearson
c) Richard Durbin
d) Michael.J.Dunn
- (42) The first molecular biology server expasy was in the year _____.
a) 1992
b) 1993
c) 1994
d) 1995
- (43) The identification of drugs through the genomic study is called _____.
a) Genomics
b) Pharmacogenomics
c) Pharmacogenetics
d) Cheminformatics
- (44) Proteomics refers to the study of _____.
a) Set of proteins in a specific region of the cell
b) Biomolecules
c) Set of proteins
d) The entire set of expressed proteins in the cell
- (45) The computational methodology that tries to find the best matching between two molecules, a receptor and ligand are called _____.
a) Molecular fitting
b) Molecular matching
c) Molecular docking
d) Molecule affinity checking
- (46) The stepwise method for solving problems in computer science is called _____.
a) Flowchart
b) Algorithm
c) Procedure
d) Sequential design
- (47) _____ involves isolating DNA from multiple species within an environmental niche.
a) Metagenomics
b) Genomics
c) Proteomics
d) Metabolomics
- (48) Genomics can be used in agriculture to:
a) Generate new hybrid strains
b) Improve disease resistance
c) Improve yield
d) All of these
- (49) Which of the following is an example of model organism?
a) Mangifera indica
b) Arabidopsis thaliana
c) Cocos nucifera
d) Porteresia coarctata
- (50) EcoGene is the database of:

- a) E. coli
c) Human genome
- b) S. cerevisiae
d) Rat
- (51) Model of alpha helix was proposed by_____
- a) Watson
c) Krebs
- b) Linus Pauling
d) Moorey
- (52) Which of the following is responsible for specifying the 3D shape of a protein?
- a) The peptide bond
c) Interaction with other polypeptides
- b) The amino acid sequence
d) Interaction with molecular chaperons
- (53) What is the average molecular weight of an amino acid residue in a protein?
- a) 110
c) 130
- b) 120
d) 140
- (54) Which of the following statements is true about proteins?
- a) Proteins are made up of amino acids.
c) Protein is the only nutrient that can build, repair and maintain body tissues.
- b) Proteins are essential for the development of skin, teeth and bones.
d) All of these
- (55) Which of the following statements is correct about proteins?
- a) Proteins are polymers of glucose
c) Proteins are polymers of peptide bonds
- b) Proteins are polymers of amino acids
d) Proteins are polymers of disulfide bridges
- (56) Which of the following statements is true about the complete proteins?
- a) High-protein foods that stabilize body weight
c) Foods that provide all the amino acids that the body needs
- b) Food that has a balanced amount of fat and protein
d) All of these
- (57) Which of the following disorders is caused by the deficiency of proteins?
- a) Weight loss
c) Loss in muscle strength
- b) Muscle fatigue
d) All of these
- (58) Which of the following is not the function of proteins?
- a) Helps in digesting food
c) Fights against the invading pathogens
- b) Carries genetic information
d) Helps in transporting oxygen in the blood
- (59) Which of the following statements is true about the (primary) 1° structure of proteins?
- a) The helical structure of the protein
c) Three-dimensional structure of the protein
- b) Subunit structure of the protein
d) The sequence of amino acids joined by a peptide bond
- (60) The process of protein synthesis takes place in which of the following cell organelles?
- a) Nucleus
c) Vacuoles
- b) Mitochondria
d) Cytoplasm