



BRAINWARE UNIVERSITY

Term End Examination 2023

Programme – B.Sc.(BT)-Hons-2020/B.Sc.(BT)-Hons-2021

Course Name – Basic Laboratory Sciences and Clinical Techniques

Course Code - GEHS401

(Semester IV)

Full Marks : 60

Time : 2:30 Hours

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question)

1 x 15=15

1. Choose the correct alternative from the following :

- (i) Trace the mordant is used in Gram staining
 - a) crystal violet
 - b) safranin
 - c) acid-alcohol
 - d) iodine
- (ii) Choose the microscopes below form images in visible light?
 - a) bright-field
 - b) dark field
 - c) fluorescence
 - d) both b and c
- (iii) Predict, Scanning electron microscopy is most often used to reveal _____
 - a) surface morphology
 - b) internal structures
 - c) both of them
 - d) none of these
- (iv) Identify which of the following is called chemical sequencing
 - a) Chip method
 - b) Sanger method
 - c) Gilbert method
 - d) Edmans method
- (v) Label the principle of sangers method follow
 - a) base specific cleavage
 - b) dNTP for chain termination
 - c) ddNTP for termination
 - d) ddNPT for initiation
- (vi) Identify from which polimerase for PCR get extracted
 - a) E. coli
 - b) Thermus Aquaticus
 - c) Homo sapience
 - d) staphylococcus
- (vii) Identify the incorrect option about Taq polynerase
 - a) used in PCR
 - b) it has higher melting point
 - c) it has lower melting point
 - d) none of these
- (viii) Trace the gel used for southern blotting
 - a) agarose gel
 - b) poly acrylamide gel
 - c) both of them
 - d) none of them

- (ix) Trace which of the following is true about SDS-PAGE?
- a) Staining with ethidium bromide allows visualization of results b) It separates proteins by charge
- c) The main ingredient in the gel is agarose d) It requires a protein-denaturing gel
- (x) Select which of the following molecules can be analyzed using a northern blot?
- a) RNA b) Carbohydrates
- c) Proteins d) DNA
- (xi) Select, in purification steps of nucleic-acids, phenol is used for
- a) deproteinization b) denaturation
- c) lowering pH d) lowering viscosity
- (xii) choose which of the following techniques would be most useful to study gene expression?
- a) Western blot b) Eastern blot
- c) Northern blot d) Southern blot
- (xiii) Discover which type of gel is used for large nucleic acids?
- a) acrylamide b) cellulose
- c) agarose d) sephadex
- (xiv) Predict the type of chromatography, the stationary phase held in a narrow tube and the mobile phase is forced through it under pressure?
- a) Column chromatography b) Planar chromatography
- c) Liquid chromatography d) Gas chromatography
- (xv) Predict which of the following cannot be used as adsorbent in Column adsorption chromatography?
- a) Magnesium oxide b) Silica gel
- c) Activated alumina d) Potassium permanganate

Group-B

(Short Answer Type Questions)

3 x 5=15

2. Infer the areas of the body appropriate for Venipuncture (3)
3. Illustrate urinary findings of Jaundice (3)
4. Construct the post mortal findings of zinc poisoning (3)
5. Name the sequential steps of Western Blotting (3)
6. Infer the use of Fluorometry in biological research (3)

OR

Differentiate Flame Photometer and Spectrophotometer (3)

Group-C

(Long Answer Type Questions)

5 x 6=30

7. Describe the process of HPLC (5)
8. Define Beer Lambert Law with its derivation (5)
9. Explain the principle of Scanning Electron Microscope (5)
10. Explain the principle of Transmission Electron Microscope (5)
11. Discriminate TLC and HPLC (5)
12. Deduce a chart considering the biochemical tests of urine (5)

OR

Deduce a short note on Phlebotomy (5)
