



## BRAINWARE UNIVERSITY

Term End Examination 2023-2024  
Programme – B.Sc.(OTT)-2022/B.Sc.(OTT)-2023  
Course Name – Biochemistry  
Course Code - BOTTC202  
( Semester II )

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) Identify one limitation of the use colorimetric technique is
- a) The method is not very accurate  
b) The method is not very reliable  
c) The samples to be tested have to produce a colored solution  
d) None of these
- (ii) Choose a disease that can be detected with ELISA
- a) Ebola  
b) AIDS  
c) Rotavirus  
d) all of these
- (iii) Give example of an amino acid with pyrrolidine
- a) proline  
b) tyrosine  
c) tryptophan  
d) phenylalanine
- (iv) Differentiate between dispensible amino acids from other amino acids
- a) dispensible amino acid cannot be synthesized by our body  
b) dispensible amino acids may be synthesized by our body in response to biological needs  
c) dispensible amino acids have no role in metabolism  
d) dispensible amino acids amy be synthesized by our body during diseased state
- (v) Cite the location In mammalian cells for rRNA production
- a) Endoplasmic reticulum  
b) Ribosome  
c) Nucleolus  
d) Nucleus
- (vi) Genetic information of nuclear DNA is transferred to the site of protein synthesis by
- a) rRNA  
b) mRNA  
c) tRNA  
d) Polysomes
- (vii) The computed renal threshold for glucose is

- a) 180 mg/dl  
c) 140mg/dl
- (viii) Articulate the appropriate enzyme with acute pancreatitis  
a) AST  
c) GGT
- (ix) Write the correct Location where MM-CK is abundant  
a) Skeletal muscle  
c) Brain tissue
- (x) Fecal urobilinogen increase is related to  
a) Hemolytic jaundice  
c) Extrahepatic gall stones
- (xi) What is the enzyme employed for breaking down lactose?  
a) lipase  
c) amylase
- (xii) illustrate the first step in fat digestion  
a) emulsification  
c) absorption by lacteals
- (xiii) Illustrate the enzymatic action of rennin on milk protein  
a) changes caesinogen in casein  
c) caesinogen into paracaesin
- (xiv) identify the bile salts  
a) billirubin and billiverdin  
c) haemoglobin and billiverdin
- (xv) Write the pH of gastric juice  
a) 1.5-3.0  
c) 7.0-9.0
- b) 160 mg/dl  
d) 120mg/dl
- b) Amylase  
d) Lipase
- b) Cardiac muscle  
d) None of these
- b) Obstruction of biliary duct  
d) Enlarged lymphnodes
- b) pepsin  
d) lactase
- b) enzyme action  
d) storage in adipose tissue
- b) changes caesin into paracaesin  
d) paracaesin into caesinogen
- b) haemoglobin and billirubin  
d) sodium glycolate and taurocholate
- b) 5.0-6.8  
d) 6.0-8.0

### Group-B

(Short Answer Type Questions)

3 x 5=15

Answer all questions

2. Identify the step in krebs cycle where both dehydrogenation and decarboxylation takes place (3)
3. Classify renal function tests (3)
4. Explain PUFA with example (3)
5. Differentiate between Nucleotide and Nucleoside (3)
6. Evaluate the impact of optimizing washing steps and using appropriate controls on the reliability and accuracy of ELISA results. (3)

OR

Develop a plan for optimizing an ELISA assay to detect low concentrations of a target antigen with high specificity. (3)

### Group-C

(Long Answer Type Questions)

5 x 6=30

Answer all questions

7. Summarize the diagrammatic representation of TCA cycle (5)
8. In an experiment the absorbance of genomic RNA of sample A is 1.02 (260/280 ratio= 1.2) and Sample B is 3.40 (60/280 ratio= 4). Infer the result (5)

9. Discuss the function of RNA (5)
10. Illustrate the process for carbohydrate digestion in human (5)
11. Discuss the regulation of glucose metabolism in fasting condition. (5)
12. A researcher forgot to add secondary antibody when he is performing sandwich ELISA .He did not get any OD. Criticize the result (5)

**OR**

A researcher forgot to add a sample when he is performing sandwich ELISA. He did not get any results. Criticize the result (5)

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