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BRAINWARE UNIVERSITY

Term End Examination 2023
Programme – B.Sc.(MLT)-2020/B.Sc.(MLT)-2021
Course Name – Applied Clinical Biochemistry
Course Code - BMLT403
(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) Select the main hormone secreted by the Thyroid gland
 - a) T4
 - b) T3
 - c) (a) and (b) Both
 - d) TSH
- (ii) Identify what Otorrhea related to
 - a) leakage of CSF from ear
 - b) leakage of CSF from urine
 - c) leakage of CSF from nose
 - d) leakage of CSF from brain
- (iii) Select at which spinal vertebral interspaces level lumbar puncture is not performed?
 - a) L1-L2
 - b) L2-L3
 - c) L3-L4
 - d) L4-L5
- (iv) Serum alkaline phosphatase levels are increased in _____. Select the correct option
 - a) Osteorthritis
 - b) Dentinogenesis imperfecta
 - c) Rheumatoid arthritis
 - d) Paget's disease
- (v) Identify which option ALPP isozymes relate to
 - a) intestinal
 - b) tissue
 - c) germ cell
 - d) Placenta
- (vi) Select which of the following is the nonfunctional plasma enzymes increased in alcoholic subjects
 - a) Alkaline phosphatase
 - b) Acid Phosphatase
 - c) Lactate dehydrogenase
 - d) Gamma-glutamyltransferase
- (vii) Pick which of the following enzyme is a sensitive marker of alcoholic liver disease?
 - a) Alanine transaminase
 - b) Aspartate transaminase
 - c) Alkaline phosphatase
 - d) Gamma-Glutamyltransferase

- (viii) The PCR technique was developed by _____. Identify the correct option to fill the gap
- a) Automated PCR machines are called thermal cyclers
 b) A thermostable DNA polymerase is required
 c) Millions to billions of desired DNA copies can be produced from microgram quantities of DNA
 d) All of the these
- (ix) Primers used for the process of polymerase chain reaction are _____. Select the correct option.
- a) Single-stranded RNA oligonucleotide
 b) Single-stranded DNA oligonucleotide
 c) Double-stranded RNA oligonucleotide
 d) Single-stranded DNA oligonucleotide
- (x) Pick the option which correlates the best with random access analyzer
- a) Removal of parts easy
 b) Most versatile analyzer
 c) Air bubbles separate samples
 d) No carry over effect of sample
- (xi) Predict the name which is significantly increased in obstructive jaundice, biliary cirrhosis or metastatic carcinoma
- a) Alpha 2 ALP
 b) Apha 1 ALP
 c) pre beta ALP
 d) none of tese
- (xii) if NADH/NAD⁺ ratio is high then predict what condition perfectly matched with serum LDH
- a) Low concentration
 b) High condition
 c) No change in LDH concentration
 d) Significantly decreased in time interval
- (xiii) Choose the perfect match with the option - CK1, CK2, CK3
- a) MM,BB,MB
 b) BB,MB,MM
 c) MB,MM,BB
 d) MB,BB,MM
- (xiv) Predict the unit of absorbance which can be derived from Beer Lambert's law?
- a) L mol⁻¹ cm⁻¹
 b) L gm⁻¹ cm⁻¹
 c) cm
 d) no unit
- (xv) Select which of the following is the combination of Apoenzyme and Coenzyme
- a) Prosthetic group
 b) Holoenzyme
 c) Enzyme-subst complex
 d) Allosteric enzyme

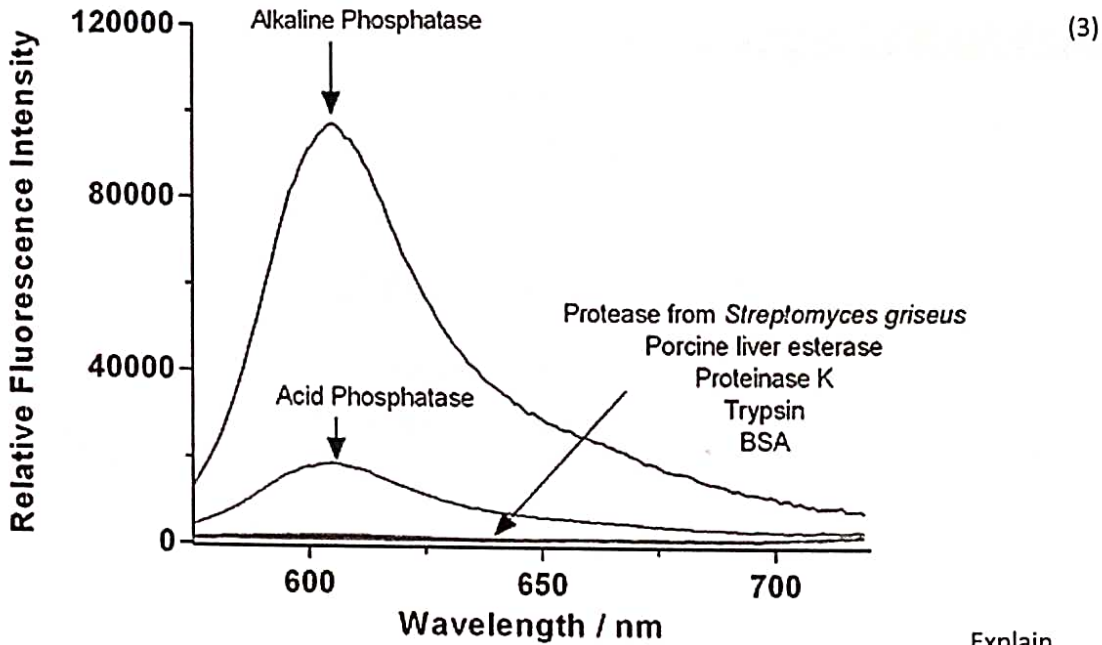
Group-B

(Short Answer Type Questions)

3 x 5=15

2. Describe about the lag curve of OGTT. (3)
3. Write a short note on hypoglycemia (3)
4. Explain the clinical significance of AST, ALT. (3)
5. Explain in which cases end point is used in diagnostic field. (3)
6. Dramatic hyperbilirubnemia with TBS>1mg/dl per hour neonate- Summarize the reason of these symptom and explain the disease mechanism (3)

OR



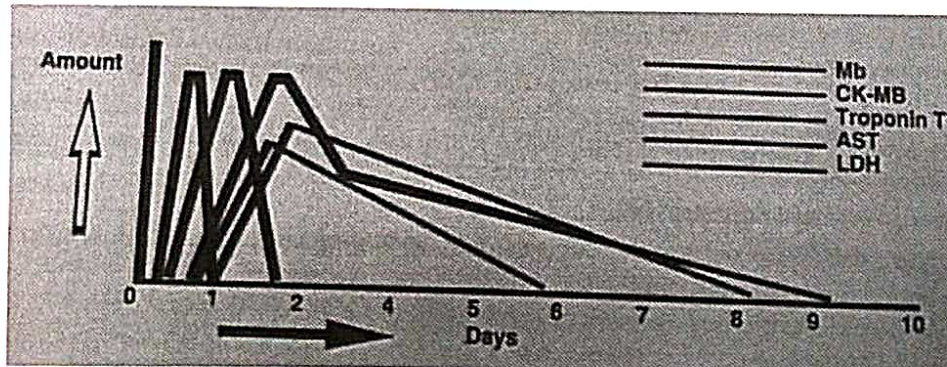
the disease progression base of this graph.

Explain

Group-C
(Long Answer Type Questions)

5 x 6=30

7. Explain the comparative biochemical study between - 1. Acute and chronic disease 2. Hepatic and biliary disease 3. Alcoholic and non-alcoholic diseases. (5)
8. A 62 years male, known hypertensive with 20 years od type 2 diabetes mellitus, was brought to the hospital in asemiconscious state with recurrent vomiting. His blood examination reveled as follows: RBS 90mg/dl, blood urea-100mg/dl, serum creatinine-6.6mg/dl, serum uricacid- 9.2 mg/dl, serum inorganic phosphate- 6mg/dl, ALP-290IU/L, serum potassium- 6mmol/L- predict the disease condition and clinical significance. (5)
9. Explain the patient prepare for a clearance test for renal function TSH, T3 & T4 (5)
10. Describe the estimation of T4 process along with schematic diagram (5)
11. Illustrate the mechanism of responsible enzyme in PKU, Alkaptonuria, LNS, G6Pd deficiency disease (5)
12. (5)



Evaluate

each of them from the graph and explain the diseases condition along with the disease progression.

OR

How to corelate NADH and LDH in Myocardial condition, represent the correct explanation (5) with graph.
