

**TECHNICAL UNIVERSITY OF MOMBASA**

***Faculty of Applied & Health Sciences***

DEPARTMENT OF MEDICAL SCIENCES

DIPLOMA IN MEDICAL LABORATORY SCIENCES

(DMLS)

**AML 2309: CLINICAL CHEMISTRY III**

SPECIAL/SUPPLEMENTARY EXAMINATIONS

**SERIES:** JUNE/JULY 2016

**TIME:** 2 HOURS

**INSTRUCTIONS:**

* Answer All questions

***This paper consists of Eight printed pages.***

**SECTION A**

1. In colorimetric analysis, the blank reagent is important because it:
2. Has a known concentration
3. Help to zero the colorimeter
4. Monitor the potency of reagents
5. Monitor the accuracy of technique
6. The following is a non-essential amino-acid
7. Leucin
8. Glutamate
9. Histidine
10. Tryptophan
11. An essential amino acid is one that
12. Facilitates metabolism of other proteins
13. Must be obtained from exogenous sources
14. Is found in all proteins
15. Produced by help of hormones
16. The following are the several reactions that protein simple molecules undergo as part of the body’s metabolic processes include:
17. Precipitation
18. Deamination
19. Transamination
20. Proteosis
21. The ultimate product of amino-acid metabolism is:
22. Creatinine
23. Creatine
24. Uric acid
25. Urea
26. In aliphatic amino acids, the carboxyl and amino groups are attached to
27. The carbon atom next to the carboxyl group
28. A different carbon atom
29. To each other
30. A benzene ring
31. Which of the following statement is true
32. Aliphatic amino-acids have a benzene ring in their structure
33. Amino-acids cannot be raised in plasma to a level that the renal function is compromised
34. Aromatic amino acids posses a benzene ring in its structure.
35. In renal amino aciduria, amino acids are metabolized in the kidney
36. Alkaptonuria is associated with
37. Acute pacreatitis
38. Poisoning
39. Incomplete fat metabolism
40. Homogentisic acid excretion
41. Ferric chroride reats with phenylpyruvate in urine to produce a green colour in what condition
42. Alkaptonuria
43. Phenylketonuria
44. Proteinuria
45. Aminoaciduria
46. Heating stool suspensions before carrying out occult test
47. Activate the reaction
48. Activates the enzymes involved
49. Inactivate enzymes
50. Provides optimal temperatures for the reaction
51. Trypsin is responsible for:
52. Conversion of trypsinogen to trypsin
53. Breakdown of peptides
54. Breakdown of proteins
55. Conversion of starch to maltose
56. Stool can be hard
57. Because it is just has to be hard
58. Lack of ADH
59. Infection of Schistosoma Mansoni
60. Because of skatole and indole group
61. 5% sodium hydrogen carbonate is employed in
62. Okokit
63. Haematest
64. Tryptic activity test
65. Occult test
66. Saliva contains the following except
67. Mineral salts
68. Ptyalin
69. Mucin
70. Maltose
71. The endocrine function of the pancrease is production of:
72. Bilirubin
73. Cholecystokinin
74. Amylase
75. Glucagon
76. Anuria may be due to the condition below:
77. Hypofunction of ADH
78. Extreme cold
79. Hereditary cause
80. Incompartible blood transfusion
81. If both [OH-] and [H+] of a solution are equal, the PH is
82. 7
83. Below 7
84. > 7
85. 14
86. Proteins are made up of chains of
87. Amines
88. Albumin
89. Globulins
90. Amino acid residues
91. Mention the pre-analytical errors in the laboratory
92. Use of contaminated specimen container
93. Poor microscopy skills
94. Untimely results
95. Wrong wavelength
96. The following are machines usually set in a clinical chemistry laboratory except
97. Flow cytometer
98. Incubator
99. Spectrophotometre
100. Haemocytometre
101. The following is false about spectrophotometry
102. Spectrophotometric analysis usually use the beer-lambert’s law
103. A good spectropotometre is one that is highly sensitive and can measure of 10-5m
104. Lambert’s law states that the intensity of ray of monochromatic light decreases with increasing concentration of the absorbing medium
105. In the electromagnetic spectrum, ultra violet region ranges between 200 – 400mm wavelength which is very essential in absorption of substance
106. The following are types of electrophoresis except
107. PAGE
108. Agarose gel electrophoresis
109. Transformation
110. Paper electrophoresis
111. Flame photometry can be applied in
112. Protein analysis
113. Spectrophotometry
114. Electrolyte analysis
115. Urinalysis
116. Quality assurance entails
117. Internal quality control
118. Performance of surgical procedures
119. Pre analytical methods
120. Deviations from target specifications
121. A levey jenning’s control chart can be simply described as
122. Simple graphical display in which the observed values are plotted versus an acceptable range of values
123. Used to chart results of a malfunction machine
124. Used instead of a calibration curve in spectrophotometry
125. Shows deviations of target
126. The volume of a 0.2M NaOH solution required to neutralize 20ml of 0.8M HCL solution is
127. 80 ml
128. 0.8ml
129. 0.016 ml
130. None of the above
131. The two common methods used to analyse gastric juice in the laboratory are
132. Barium meal
133. Augmetine inhibition method
134. Pentagstrin test
135. Histaminase method
136. The following are the functions of gastric juice except
137. Provision of intrinsic factor
138. Production of mucus
139. Promotes healing of peptic ulcers
140. Lowering of stomach PH
141. Protein fraction with the greatest anodal migration at PH 8.6 is
142. LDL
143. Albumin
144. globulin
145. - globulin
146. What is the function of gastric juice
147. To provide erythropoeitin
148. To provide intrinsic factor
149. To raise PH
150. To digest starch
151. Parenteral gastric stimulants include
152. Adrenaline
153. Insulin
154. Cortisol
155. Alcohol (70% ethanol)
156. The following statements is/are true
157. Proficiency testing is used to check the competency of a laboratory technologist
158. A daily quality control is absolutely similar to OCV
159. A daily quality control chart gives machines calibration over a period of time just like the OCV control chart.
160. A daily quality control chart can be used to determine the working ability of a machine overtime
161. One of the following cells function to secrete HCL
162. Chief cells
163. Peptic cells
164. Gastric mucosal cells
165. Parietal oxyntic cells
166. Turbidity of CSF is indicative of
167. Haemorrhage
168. Meningitis caused by bacteria
169. Viral meningitis
170. Xanthochromia
171. Structural linkage of proteins is:
172. Disulphide linkages
173. Peptide linkages
174. Glycosidic linkage
175. Covalent bonds
176. CSF total proteins normal ranges are:
177. 15 – 45mg/100ml
178. 0.15 – 45 mg/dl
179. 15 – 40 mg/dl
180. 2.5 – 8.3 mmol/l
181. CSF glucose
182. Is lower than blood glucose
183. Is higher than blood glucose
184. Is same as plasma glucose
185. Is responsible for uncontrolled hyperglyceamia
186. Rothera’s test utilizes
187. 10% ferric chroride
188. Ammonium sulphate
189. Sodium chloride
190. Salicylates
191. Machines are part of occupation in a clinical Chemistry laboratory, which one is out
192. Spectrophotometre
193. Flow cytometer
194. Microscope
195. Colorimeter
196. In assessment of prostate cancer some liver enzymes may be used in laboratory diagnosis
197. Alkaline phosphatase
198. Acid phosphatase
199. Alanine transaminase
200. Aspartate transaminase

**SECTION B**

1. Define the following terms:
2. Quality **(1 mark)**
3. Total testing process **(2 marks)**
4. Proficiency testing **(1 mark)**
5. External quality assessment **(1 mark)**
6. Outline **THREE** analytical methods done in the laboratory **(3 marks)**
7. A good quality control chart **(5 marks)**
8. a) What is occult blood? **(2 marks)**

b) Describe the various tests for pancreatic and G.I analysis. **(10 marks)**

c) State the tests available for occult blood in stool. **(5 marks)**

1. Using CSF as the sample, draw a protein calibration curve. **(20 marks)**
2. Using a method of your choice, explain the gastric juice analysis in a clinical chemistry laboratory.

**(10 marks)**