



TECHNICAL UNIVERSITY OF MOMBASA
Faculty of ENGINEERING & TECHNOLOGY

DEPARTMENT OF MEDICAL SCIENCES
FACULTY OF APPLIED AND HEALTH SCIENCES
CMLS 12 M MID ENTRY

AML 1208: CLINICAL CHEMISTRY II

END OF SEMESTER EXAMINATIONS

SERIES: DECEMBER 2013

TIME: 2 HOURS

INSTRUCTIONS:

1. This paper consists of Two sections, Answer all questions in A and B.
2. This paper consists of Eight printed pages

SECTION A

1. Abnormal urine color be
 - A. Pale yellow
 - B. Redbrown
 - C. Colour less
 - D. Amber

2. Fixed specific gravity is commonly seen in
 - A. Liver disease
 - B. Diabetic inspidus
 - C. Diabetes mellitus
 - D. Severe Renal damage

3. Normal urine sediment may contain the following except.
 - A. Few sperm cell in male patients
 - B. White blood cells casts
 - C. 3 pus cells per high power field in males
 - D. 5 pus celss per high power field in males

4. Which part of the nephron most water is being absorbed:
 - A. Proximal convoluted tubulues
 - B. Loop of henle
 - C. Bourman's capsule
 - D. Distal convoluted tubules

5. Sodium levels in the blood can increase due to
 - A. Surgery or severe accident
 - B. Severe vomiting
 - C. Treating with anti diuretics
 - D. Effects on drugs

6. Acid-base balance can be brought by the following except:
 - A. Metabolic alkalosis
 - B. Respiratory alkalosis
 - C. Metabolic acidosis
 - D. Dabetes mellitus.

7. Blood vessels carrying blood out of the glomenulus
 - A. Efferent arteriole
 - B. Afferent arteriole
 - C. Inferior vena cava
 - D. Aorta

8. Liver disorder can be investigated by:
- A. Serum or plasma creatinine
 - B. Serum or plasma potassium
 - C. Serum or plasma sodium
 - D. Serum or plasma albumin
9. Over production of bilirubin may be due to in the body
- A. Typhoid infection
 - B. Renal failure
 - C. Severe plasmodium infection
 - D. Brucellosis
10. Water loss from the body can be brought about by
- A. Sweating
 - B. Taking some fluids
 - C. Inspired air
 - D. Eating of food.
11. Urine deposit may contain the following amino-acid crystals except:
- A. Thiamine
 - B. Cystine
 - C. Leucine
 - D. Tyrosine
12. Low potassium levels may be obtained due to:
- A. Poor vein puncture
 - B. Metabolic and respiratory alkalosis
 - C. Sample left for long time without plasma or serum being separated
 - D. Whole blood refrigerated before it is centrifuged
13. Main anions found in the body are:
- A. Chloride
 - B. Bicarbonate
 - C. Lithium
 - D. Magnesium.
14. Factors affecting the enzyme activities includes
- A. Pressure
 - B. Temperature
 - C. Working area
 - D. Humidity

15. Hepatitis is a common disease of
- A. Liver
 - B. Spleen
 - C. Heart
 - D. Pancrease
16. Physiological factors affecting the urine specific gravity includes:
- A. Streneous exercise
 - B. Phyclonephritis
 - C. Cytitis
 - D. Glumerulo nephritis
17. If urine can not be examined immediatly, it can be preserved in
- A. Flouride
 - B. ED TA
 - C. Thymol
 - D. Heparin
18. Pressure of ketones in urine may be due to the following conditions except
- A. Carbohydrates starvation
 - B. Severe diahoea
 - C. Persistent vomiting
 - D. Diabelles inspidus
19. Which one of the following is not a plasma protein.
- A. Urobilinogen
 - B. Fibrinogen
 - C. Albumum
 - D. Unobilinogen
20. The liver functions includes:
- A. Respiration
 - B. Reproduction
 - C. Carbohydrate metabolism
 - D. Non of the above
21. Serum or plasma albumin levels can be measured to investigate
- A. Cardiac failure
 - B. Bone diseases
 - C. Liver disease
 - D. Anaemia

22. Quantitative chemical testing in urine involves

- A. Proteins
- B. Cells
- C. Casts
- D. Bacteria

23. A reduced plasma or serum creatinine may be caused by:

- A. Renal disease
- B. Diet
- C. Dehydration
- D. Muscle wasting

24. Reduction in plasma or serum total proteins may be due to:

- A. Decrease in body needs
- B. Hemoconcentration following shock, severe vomiting and diarrhoea
- C. Malabsorption in chronic pancreatitis
- D. Increase intake of proteins

25. Detoxification of drugs and toxic substances is done through

- A. Hydrolysis
- B. Proteolysis
- C. Osmosis
- D. Oxidation.

26. Urine sediment can contain the following which one is not a crystal found in urine

- A. Hyaline
- B. Calcium oxalate
- C. Triple phosphate
- D. Cystine

27. Glycogenesis can only take in the presence of

- A. Insulin
- B. Glucagon
- C. Phosphorylase
- D. Hexokinase

28. Serum Alkaline phosphatase enzyme can be measured in serum or plasma to determine the diseases of

- A. Pancreas
- B. Renal
- C. Heart
- D. Small intestines

29. Epithelial cells can be

- A. Transitional
- B. Waxy
- C. Hyaline
- D. Old waxy

30. Urobilinogen includes the ----- characteristics of a urine

- A. Bacterial
- B. Chemical
- C. Physical
- D. Quantitative

31. Urinalysis is normally performed in the laboratory for

- A. Leisure
- B. Make money
- C. Routine medical examination
- D. Make the laboratory technician busy.

32. Chemical characteristics of urine during analysis includes:

- A. PH
- B. Proteins
- C. Crystals
- D. Casts

33. Cells in urine includes the following except

- A. White blood cells
- B. Sperm cells
- C. Bilirubin
- D. Red blood cells

34. Schistosomiasis is examined by analysis of

- A. Mid-stream urine
- B. First morning sample
- C. Terminal Urine sample
- D. Random or spot urine sample.

35. The concentration and dilution of urine in the Kidney is controlled by:
- A. ADH hormone
 - B. Glucagen hormone
 - C. Insulin hormone
 - D. HCG hormone
36. Which one of the following is not part of a nephron.
- A. Medulla
 - B. Bowman's capsule
 - C. Distal convoluted tubule
 - D. Loop of henle
37. Which one of the following urine preservatives is not the best to preserve urine for bacterial culture:
- A. Boric acid
 - B. Hydrochlonic acis
 - C. Formaldehyde
 - D. Thymol
38. Urine specimen containers should be:
- A. Made of glass or plastic
 - B. Having wide mouth and unsterile
 - C. Small
 - D. Unscrewed
39. Which one of the following can not affect the color of urine
- A. Concentration of urine
 - B. Dyes
 - C. Foods
 - D. Taking a lot of fruits
40. Which of the following is not a physical appearance of urine
- A. P.h
 - B. Colour
 - C. Foam
 - D. Turbidity

SECTION B ANSWERS ALL QUESTIONS.

1. Discuss Urinalysis (20marks)
- 2a) Define the word electrolyte and give examples as used in clinical chemistry. (5marks)
- b) Briefly describe bence-jones proteins. (5marks)
- c) Explain the chemical composition of urine sample. (10marks)
- 3.a) List any 10 constituents of urine sediments. (10marks)
- b) Describe the process of urine formation in the nephrons. (10marks)