

CANDIDATE NUMBER.....



"Investing in Africa's Future"

**COLLEGE OF HEALTH, AGRICULTURE AND NATURAL
SCIENCES**

DEPARTMENT OF HEALTH SCIENCES

SLS103: CLINICAL PATHOLOGY

END OF SECOND SEMESTER FINAL EXAMINATIONS

APRIL/MAY 2018

LECTURER: MR G. MALUNGA

DURATION: 3 HOURS

INSTRUCTIONS

1. Write your candidate number on the space provided on top of each page
2. Answer **all** questions in sections A on the question paper.
3. Answer **all** questions in section B on separate answer sheets provided.
4. Answer any **3** questions in section C on separate answer sheets provided
5. The mark allocation for each question is indicated at the end of the question
6. Credit will be given for logical, systematic and neat presentations in sections B and C



CANDIDATE NUMBER.....

SECTION A : MULTIPLE CHOICE [40MARKS]

- Answer all questions by encircling the correct response T for TRUE or F for FALSE for each statement in all the questions
- Each correct response is allocated half mark

1. The following substances are reabsorbed by the renal tubular from the glomerular filtrate
T F a) Glucose
T F b) Urea
T F c) Bicarbonate ions
T F d) Creatinine
2. The following biochemical presentations are ONLY associated with liver diseases
T F a) Elevated ALT
T F b) Hypoalbuminaemia
T F c) Elevated direct bilirubin
T F d) Elevated AST
3. The following disorders are associated with renal failure
T F a) Proteinuria
T F b) Bacteriuria
T F c) Haematuria
T F d) Anuria
4. The following tests are part and parcel of the Liver Function Tests panel
T F a) Total Bilirubin
T F b) Total protein
T F c) LDH
T F d) Albumin
5. Acute renal failure can be diagnosed by the following test/s
T F a) Serum creatinine
T F b) Glomerular Filtration Rate
T F c) Urine protein
T F d) Urine osmolarity
6. A urine dipstick detects the following
T F a) Specific gravity
T F b) Protein
T F c) Urine crystals
T F d) Ascorbic acid



7.

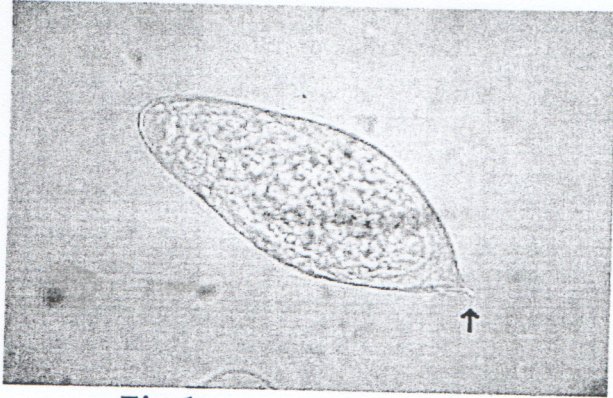


Fig 1

The diagram in Fig 1 shows a/an

- | | | |
|---|---|------------------------------|
| T | F | a) Waxy cast |
| T | F | b) Epithelial cell |
| T | F | c) Granular Cast |
| T | F | d) <i>S. haematobium</i> ova |

8. Which electrolytes exist in large quantities in the extracellular fluid

- | | | |
|---|---|---------------------|
| T | F | a) Na^+ |
| T | F | b) HCO_3^- |
| T | F | c) K^+ |
| T | F | d) Cl^- |

9. Hypokalemia can be caused by

- | | | |
|---|---|---------------------|
| T | F | a) Excess stress |
| T | F | b) Acute alcoholism |
| T | F | c) Vomiting |
| T | F | d) Hepatic disease |

10. Serum Osmolarity

- | | | |
|---|---|---|
| T | F | a) is measured in mOsmol/kg H_2O |
| T | F | b) is determined by the sum of all solutes in the serum |
| T | F | c) can be affected by [Glucose] |
| T | F | d) can be measured by an osmometer |

11. The following liver enzymes are raised in Cholestasis

- | | | |
|---|---|--------|
| T | F | a) ALP |
| T | F | b) ALT |
| T | F | c) GGT |
| T | F | d) AST |

CANDIDATE NUMBER.....

12. The following hormones regulate acid – base status of the blood
T F a) Antidiuretic hormone
T F b) Renin
T F c) Cortisol
T F d) Insulin
13. Carbon dioxide is transported in the blood in the following way/s
T F a) gaseous form
T F b) dissolved in the plasma
T F c) bound to haemoglobin
T F d) in the form of HCO_3^-
14. Samples for blood gas analysis
T F a) Must be collected in blood tubes containing an anticoagulant
T F b) Can be collected from veins
T F c) Must be sent to the laboratory on ice
T F d) Must be centrifuged before analysis
15. The following refers to CSF composition
T F a) Low molecular weight plasma proteins don't appear in CSF
T F b) Sodium and chloride are not present in CSF
T F c) It is normal to get occasional RBCs and WBCs in CSF
T F d) Levels of protein and glucose in CSF are higher than in plasma
16. Meningitis
T F a) Is only caused by *Cryptococcus Neoformans*
T F b) Is an opportunistic infection
T F c) Can be as a result of a complication of late syphilis
T F d) Causes a stiff neck
17. Clinical conditions which may be associated with ascites are
T F a) Leakage of fluid into the peritoneal cavity
T F b) Increased permeability of peritoneal capillaries
T F c) Tuberculosis
T F d) Hepatocellular carcinoma
18. The following are part of the Thyroid Function Tests panel
T F a) Free T4
T F b) Thyroid Stimulating Hormone
T F c) Total T4
T F d) Free T3



CANDIDATE NUMBER.....

19. The female hormone profile consists of the following

- | | | |
|---|---|-----------------|
| T | F | a) LH |
| T | F | b) FSH |
| T | F | c) Testosterone |
| T | F | d) Oestrogen |

20. Hyperthyroidism is caused by

- | | | |
|---|---|------------------------------|
| T | F | a) Graves' disease |
| T | F | b) Thyroiditis |
| T | F | c) Iodine - containing drugs |
| T | F | d) Pituitary disease |

SECTION B: [20 MARKS]

Answer all questions on separate answer sheets provided

1. What is the value of measuring proteins in the urine? [5]
2. State any 5 functions of electrolytes in the human body. [5]
3. What acid-base disturbances will occur if a blood sample is submitted to the laboratory incorrectly :
 - a) not sealed ?
 - b) not on ice ? [5]
4. What are the differences between transudative and exudative pleural effusions. [5]
5. State the main laboratory findings associated with
 - (a) Jaundice
 - (b) Viral hepatitis [5]



CANDIDATE NUMBER.....

SECTION C : [75 marks]

Answer any 3 questions from this section on separate answer sheets provided

1. How does the kidney make concentrated and dilute urine [25]
2. Describe how electrolytes are measured by atomic absorption spectrophotometry. [25]
3. Explain how blood pH is maintained in the body. [25]
4. Describe the laboratory analysis of pleural fluid. [25]
5. Discuss the laboratory investigations of amenorrhoea. [25]

