



**NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY**

FACULTY OF HEALTH AND APPLIED SCIENCES

DEPARTMENT OF HEALTH SCIENCES

QUALIFICATION: BACHELOR OF BIOMEDICAL SCIENCES	
QUALIFICATION CODE: 50BBMS	LEVEL: 8
COURSE CODE: ICP420S	COURSE NAME: INTEGRATED CLINICAL PATHOPHYSIOLOGY
SESSION: NOVEMBER 2019	PAPER: THEORY
DURATION: 3 HOURS	MARKS: 160

FIRST OPPORTUNITY EXAMINATION QUESTION PAPER	
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INSTRUCTIONS
<ol style="list-style-type: none">1. Answer ALL the questions.2. Write clearly and neatly.3. Number the answers clearly.

PERMISSIBLE MATERIALS

1. NON PROGRAMMABLE CALCULATOR

THIS QUESTION PAPER CONSISTS OF FIVE PAGES (including this front page)

SECTION A [30]

QUESTION 1

[8]

- 1.1 A patient has nephrotic syndrome. Comment on the probable urine chemistry findings and indicate whether the other results indicated below will be increased, decreased or normal.

	Parameter	Result (↑), (↓) or (N) OR Comment
1.1.1	Urine dipstix (dry chemistry)	
1.1.2	Albumin	
1.1.3	Globulin	
1.1.4	Uric acid	
1.1.5	Urea & Creat	
1.1.6	Cholesterol	

(6)

- 1.2 Explain the reason for the cholesterol result seen in this condition. (1)
- 1.3 With which physical symptom is the patient most likely to present? (1)

QUESTION 2

[6]

A patient with a serum albumin of 20 g/L has a serum calcium of 1.80 mmol/L.

- 2.1 Calculate the corrected calcium of the patient and comment on the result. (4)
- 2.2 Explain why it is necessary to correct the calcium result. (2)

QUESTION 3

[8]

- 3.1 Briefly explain the following terms:

3.1.1 Hypothyroidism (3)

3.1.2 Hyperthyroidism (1)

- 3.2 Give examples of laboratory results in both cases. (4)

QUESTION 4

[8]

- 4.0 Briefly describe any six conditions favouring the formation of renal calculi (Kidney stones) (8)

SECTION B [30]

QUESTION 5

[12]

- 5.0 Haemolytic anaemia may be classified into four broad groups based on the defect causing haemolysis, viz. congenital intrinsic, acquired intrinsic, congenital extrinsic, acquired extrinsic.
- 5.1 Explain what is meant by 'congenital intrinsic haemolytic anaemia' (1)
- 5.2 Identify TWO conditions related to defective red cell metabolism that can be classified as a congenital intrinsic haemolytic anaemia. (2)
- 5.3 Propose a condition that can be classified as an acquired intrinsic haemolytic anaemia and name one confirmatory test for this condition. (2)
- 5.4 Predict a condition that can be classified as a congenital extrinsic haemolytic anaemia. (1)
- 5.5 Microangiopathic haemolytic anaemia (MAHA) is often seen as a feature of Disseminated Intravascular Coagulation (DIC). Deduce other clinical conditions associated with MAHA. (2)
- 5.6 Identify TWO causes of warm type autoimmune haemolytic anaemia (AIHA). (2)
- 5.7 Describe the prominent laboratory findings in warm AIHA. (2)

QUESTION 6

[8]

- 6.0 On examination of the peripheral blood smear of a patient, hypochromic, microcytic cells were noted. Discuss the possible clinical causes giving any relevant confirmatory tests. (8)

QUESTION 7

[10]

- 7.1 Propose FOUR possible specimen related causes of a falsely low red cell count that may be obtained when performing an automated full blood count. (4)
- 7.2 Giving relevant examples briefly describe the causes of thrombocytopenia. (6)

SECTION C [30]

QUESTION 8

[8]

8.0 Propose ONE test that can be used to distinguish between the following organisms and give the expected results:

8.1 *Staphylococcus epidermidis* and *Staphylococcus saprophyticus* (2)

8.2 *Bacillus cereus* and *Bacillus species* (2)

8.3 *Neisseria meningitidis* and *Neisseria gonorrhoea* (2)

8.4 *Proteus mirabilis* and *Proteus vulgaris* (2)

QUESTION 9

[12]

9.0 A fluid is drawn from a patient and is thought to be a transudate. Describe how you would confirm the diagnosis. (12)

QUESTION 10

[10]

10.0 Bacteria are known to cause invasive disease in neonates, the elderly and immunocompromised individuals. Using streptococci as an example, illustrate the mechanisms involved. (10)

SECTION D [70]

QUESTION 11

[20]

11.0 A patient is admitted to hospital with suspected Cryptococcus Meningitis. Give the possible laboratory findings on CSF and blood samples under the following headings:

11.1 Microbiological (12)

11.2 Haematological (3)

11.3 Chemical pathological (4)

11.4 Serological findings. (1)

QUESTION 12**[20]**

12.0 A patient is admitted with neck stiffness, convulsions and a history of PTB. A provisional diagnosis of TB meningitis is made. Discuss the possible CSF laboratory findings under the following headings:

- 12.1 Microbiological laboratory findings (10)
- 12.2 Chemical Pathological laboratory findings (5)
- 12.3 Haematological laboratory findings (5)

QUESTION 13**[15]**

13.0 An adult male presents at his physician with visible jaundice which he reports has been there for a few days. He does not report with any major symptoms although his body temperature is high. Briefly describe the possible causes of jaundice in this patient and propose laboratory tests which should be carried out.

QUESTION 14**[15]**

14.0 A 27 year old female patient presented at her GP in the three months with recurrent bacterial urinary tract infection due to *Klebsiella pneumoniae*. The GP prescribed different antibiotics and on completion of the treatment the patient came back complaining of the same symptoms. Critically discuss the possible reasons for recurrence of bacterial infection in this patient.

END OF EXAMINATION

160 MARKS