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: JANUARY 2020	PAPER: THEORY
DURATION: 3 HOURS	MARKS: 160

SUPPLEMENTARY / SECOND OPPORTUNITY EXAMINATION QUESTION PAPER	
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INSTRUCTIONS
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 SIX PAGES (including this front page)

SECTION A [30]

QUESTION 1 [10]

1.1 Propose FOUR routine chemistry tests that can be performed in a small Clinical Pathology Laboratory on a patient with Acute Pancreatitis (4)

1.2 Write short notes on CRP (C – Reactive Protein) (4)

1.3 It is recommended that a patient who is to undergo an occult blood test, should follow a special diet for at least 2 days. Name 2 food-types that this patient should avoid. (2)

QUESTION 2 [10]

2.0 Glucose in the extracellular fluid is strictly regulated by complex and interrelated endocrine and metabolic processes. Briefly describe the FIVE most important hormones that regulate blood glucose concentration. (10)

QUESTION 3 [10]

3.0 Discuss the laboratory findings in Diabetic Ketoacidosis

SECTION B [30]

QUESTION 4 [10]

4.0 The blood from a patient with full-blown AIDS is received. Describe the peripheral blood smear findings that would be constant with the clinical status.

QUESTION 5 [12]

5.1 Describe the characteristic morphological findings of the following:-

    5.1.1 Pelger Huet Anomaly

    5.1.2 May-Hegglin Anomaly

    5.1.3 Chediak-Higashi Anomaly (4)

5.2   What are the functions of von Willebrand factor?   (3)

5.3   Name any five red cell abnormalities seen in the peripheral blood following

       splenectomy.   (5)

QUESTION 6   [8]

6.0   Two technologists, Anna and Petrus are in the haematology laboratory in
       Otjiwarongo. They received a specimen of a 19-year male patient who complained
       of a sore throat, ear-aches, headaches and occasional fever. The clinician ordered
       a full blood count and ESR. The blood picture showed prominent reactive
       lymphocytes. The FBC results are as follows:

	Patient results
WCC	16.7×10^9/L
HB	15.9 g/dL
MCV	92.5 fl
PLTs	136×10^9/L
Neutrophils	25%
Lymphocytes	68%
Monocytes	6%
Eosinophils	1%

       Anna is convinced that the patient has AML M3 (Acute promyelocytic leukaemia)
       but however Petrus disagrees. They get into a heated argument over the diagnosis
       of which the pathologist overhears and comes in to calm the situation. He hears
       both sides of the stories and agrees with Petrus that this is not a case of AML M3.

6.1   Build a case supporting Petrus and the pathologist as to why this diagnosis is not
       AML M3.   (8)

SECTION C [30]

QUESTION 7 [14]

7.1 Identify TWO common parasites classified as trematodes. (2)

7.2 Describe the laboratory procedure used to identify the presence of the ova of the trematodes given in (a). (8)

7.3 Draw a labelled sketch of one of the ova of the trematode named in (a). (2)

7.4 Briefly explain how the sample is collected for the identification of the ova of *Enterobius vermicularis* and explain why this method is necessary. (2)

QUESTION 8 [8]

8.0 You have received a faecal specimen from a child with suspected dysentery. Give the laboratory diagnosis and expected results from:

8.1 Microscopy (2)
8.2 Culture (6)

QUESTION 9 [8]

9.0 Use a table to differentiate between *Neisseria gonorrhoeae* and *Neisseria meningitidis* by their acid production from **Glucose, Maltose, Sucrose and Lactose.**

		N. gonorrhoeae	*N. meningitides*
9.1	Glucose		
9.2	Maltose		
9.3	Sucrose		
9.4	Lactose		

SECTION D [70]

QUESTION 10 [20]

10.0 Discuss the relevant laboratory findings in Alcoholic Liver Cirrhosis. Give abnormal parameters, or groups of tests, under the following headings:

10.1 Definition of the above condition. (3)

10.2 Chemical Pathological laboratory findings. (11)

10.3 Haematological laboratory findings. (6)

QUESTION 11 [20]

11.0 You have received a cerebrospinal fluid (CSF) specimen from a 4 year old child who has been admitted to hospital with suspected meningitis. The CSF appears turbid and the cell count reveals the following: Polymorphonuclear cells: 2000; lymphocytes: nil; erythrocytes: nil. The Gram stain revealed Gram positive diplococci.

11.1 What is the most likely organism causing meningitis in this patient? (1)

11.2 Indicate the media you would inoculate and describe the incubatory conditions you would use in order to be able to successfully culture this organism? (3)

11.3 After 24 hours incubation, you obtain growth of the organism. Describe the growth characteristic features you would look for to identify this organism. (2)

11.4 Identify one important test that you would set up to confirm the identity of the organism above. (1)

11.5 Briefly describe how you would set up and interpret the test mentioned in (d) and the expected result. (5)

11.6 With regards to antimicrobial susceptibility testing of this organism: Which antibiotic disc is recommended by the clinical and laboratory standards institute (CLSI) to determine penicillin sensitivity? (1)

11.7 Propose the tests to be performed in clinical chemistry and expected results. (4)

11.8 Predict the notable white cell characteristics on a peripheral smear of this patient. (3)

QUESTION 12 [10]

12.0   Briefly describe the significance of urinary protein analysis in the diagnosis of disease.

QUESTION 13 [10]

13.0   Using Ebola as an example, briefly describe the pathogenesis of viral haemorrhagic diseases. Indicate the laboratory tests carried out and expected results.

QUESTION 14 [10]

14.0   Using relevant examples discuss the causes of female infertility.

END OF EXAMINATION

TOTAL 160 MARKS