Tutorial Letter 101/3/2018

CLINICAL PATHOLOGY II
BMI2606

Semesters 1 and 2

Department of Life and Consumer Sciences

This tutorial letter contains important information about your module.
1 INTRODUCTION

Dear Student

Welcome to the biomedical sciences and particularly haematology! I hope that you will have an enjoyable and fruitful academic year. This module is offered in the Department of Life and Consumer Sciences and your lecturer for this module is Mr M H Mkhombo. I would like to take this opportunity to wish you success with your academic year.

We would also like to encourage you to register on myUnisa. Please check this site regularly for updates, posted announcements and additional resources uploaded throughout the semester. Rapid communications throughout the semester(s) have been made possible through myUnisa. You can use the myUnisa site to submit assignments and we strongly recommend that you submit your assignment online as this will ensure that you receive rapid feedback and comments, access your official study material, have access to the Unisa Library functions, ‘chat’ to your lecturers or to fellow students and participate in online discussion forums and obtain access to all manner of learning resources.

If at any stage while you are studying you have any questions or require assistance with problems, we are available to assist you. Our contact details are listed in section 3: Lecturer(s) and contact details in this tutorial letter.

Tutorial matter may include the following:
Tutorial Letters 101 and 201

Some of this tutorial material may not be available when you register. If this is the case, this tutorial material will be posted to you as soon as possible. Please note that tutorial matter is also available on myUnisa. PLEASE read the instructions in this tutorial letter carefully and prepare Assignments 01 and 02 ONLY for the semester for which you are REGISTERED. Once you have completed and submitted the assignments you can use the questions in the other assignments as practice or in preparation for the exam. It is very important that your first assignment reaches Unisa on or before the due date. Students who have not submitted this assignment by the due date will not be allowed to write the examination.

2 PURPOSE AND OUTCOMES

2.1 Purpose

This introductory course deals with the fundamentals of pathology. We will be applying and adapting the disciplines of biochemistry, microbiology, molecular biology, physiology, immunology and genetics as foundation studies to investigate changes in human cells that affect various aspects of health and disease in humans. Qualifying students are able to know, understand and apply the basic principles and theory relating to clinical biochemistry/pathology. The purpose of this module is to enable you, the individual learner, to identify, apply and analyse laboratory investigations, practices, processes and principles of clinical biochemistry to solve clinical problems involving health and diseases.

2.2 Outcomes

After completion of this module, you will be able to:

- have an appropriate knowledge and understanding of how fluids, nutrients and immune cells move around the body.
understand the basis of diseases caused as a result of malnutrition and nutritional deficiencies.

understand some of the causes and complications of illnesses that arise from environmental exposure to harmful agents.

describe acute and chronic inflammation and state the conditions in which they occur.

explain how wounds heal and repair itself.

describe how the innate and acquired immune system works to protect the body against infectious agents.

describe the inheritance of autosomal dominant and recessive genetic diseases in addition to the inheritance patterns of X-linked disorders.

discuss the formation of tumours (neoplasms) and the prognosis of recovery.

3 LECTURER(S) AND CONTACT DETAILS

3.1 Lecturer(s)

Lecturer: Mr M H Mkhombo
Telephone number: +27 11 471 2237 (during office hours 8:00 – 16:00)
Email address: mkhommf@unisa.ac.za

Postal address:
The Lecturer
Department of Life and Consumer Sciences
Private Bag x6
Florida
1710

NOTE: You may enclose more than one letter in an envelope, but do not address enquiries to different departments (e.g. Despatch and Library Services) in the same letter. This will cause a delay in the replies to your enquiries. Please write a separate letter to each department and mark each letter clearly for the attention of that department. Letters to lecturers may not be enclosed together with assignments. Always write your student number and the module code at the top of your letter.

3.2 Department

The Department of Life and Consumer Sciences is located in the Calabash Building, Unisa Science Campus, Roodepoort, Johannesburg. The Departmental telephone number is +2711 471 2230 and the Departmental fax number is +2711 471 2796.

3.3 University

Should you need to contact the university about matters not related to the content of this module, consult the publication study @ unisa, which you received with your study material. This brochure contains information on how to contact the university (e.g. to whom you can write for different queries, important telephone and fax numbers, addresses and details of the opening and closing times of particular facilities).
You can also make use of the following contact routes:

**Unisa website** http://www.unisa.ac.za & http://mobi.unisa.ac.za

**Email** (general enquiries) info@unisa.ac.za

International students are urged to make use of the email address info@unisa.ac.za for queries related to application and registration.

assign@unisa.ac.za for assignment enquiries

exams@unisa.ac.za for examination enquiries

exams@unisa.ac.za for study material enquiries

finan@unisa.ac.za for student account enquiries

myUnisaHelp@unisa.ac.za for assistance with myUnisa

myLifeHelp@unisa.ac.za for assistance with myLife email accounts

**SMS** 32695 – South Africa only

You will receive an auto response SMS with the various SMS options. The cost per SMS is R1.00.

**Fax** 012 429 4150

**NOTE:** Whenever you contact the university, whether in writing or telephonically, always mention the **module code and your student number**.

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**myUnisa webpage (Unisa’s online campus)**

Access to the myUnisa website requires a computer that is linked to the internet (internet access is available to you at provincial libraries, internet cafés and Unisa regional telecentres, see myUnisa for a list of these places in your area). You should also note that some of these centres allow free internet access on presentation of your student card.

Go to: https://my.unisa.ac.za/portal/

For module-specific information, log in and click on:

BMI2606-18-S1 (for semester 1)

OR

BMI2606-18-S2 (for semester 2)

With the aid of myUnisa, you will ultimately be able to use the internet to perform all study-related functions which are now normally done by telephone, regular postal service or personal visits to the campus.

If you have online access, you should do the following to get started with this module:

- Go to myUnisa (http://my.unisa.ac.za)
- Log in with your myUnisa login details. If you are not sure how to do this, consult the publication *study @ unisa*. You should have received this with your study material. Alternatively, use the link to access the publication.
- Once logged in, you will see a link to the module code. If this is not at the top of your screen, click on ‘More sites’ and select it from the drop-down menu.
- Once you are in the site for this module, read the welcome message.
- Now click on **Additional Resources**, then on the subfolder **Tutorial Matter**, and then on **Tutorial Letter 101**. Read this letter carefully.
- Take particular note of the online links listed in **section 4.3, Electronic Reserves (e-Reserves)**.

You will find that this module requires you to use the internet to access information on aspects of virology. Please take careful note of details of published articles and online links and the information in the associated online articles. **NOTE:** you will be required in your assignments to accurately refer to articles that you access online.
Library

Unisa Library login
You will be required to provide your login details, i.e. your student number and your myUnisa password, in order to access the library’s online resources and services. This will enable you to:

- Request library material.
- View and renew your library material.
- Use the library’s e-resources.

The study @ unisa brochure, which is part of your registration package, lists all the services offered by the Unisa Library.

4 RESOURCES

4.1 Prescribed books

There is no prescribed textbook for this module.

Please refer to the list of official booksellers and their addresses in the Unisa brochure, study @ unisa.

If you have difficulty in locating an appropriate textbook at the Unisa Booksellers, please contact the Unisa Prescribed Book Section at Tel: 012 429-4152 or e-mail vosprec@unisa.ac.za.


4.2 Textbooks

The prescribed textbook for BMI2606, which you will be using in conjunction with the online material or study guide, is:


The textbook is an introductory guide to pathology. This course will focus on general pathology and you with a basic knowledge of pathology in humans. The online study material will guide you in what you need to learn. You will need to study all the recommended reading sections and any other sections that may be mentioned in the study guide. If you find a topic particularly interesting, you are more than welcome to do further reading about it.

Please note that if you purchase the latest edition of the textbook, you may find that the pages in the study guide do not directly correlate to the pages in this latest edition of the textbook. However, I am sure that you will find it easy to locate the relevant section, rather than the specific pages, in the newer textbook.

In the study guide I will refer to the textbook as Finlayson and Newell.
4.3 Electronic reserves (e-reserves)

As indicated on the previous page, you will be required to make use of the internet to access information relating to this module. This is an important learning activity for you as you consider future studies, for example at the Honours level. Thus, please will you enthusiastically adopt this method of learning and include details of your online learning as references at the end of your assignment 2 answers.

An important site to start with for this module is: http://www.hopkinsmedicine.org/pathology/fellows/summer%20course/schedule.html

This site describes pathology lectures provided to you

Note that announcements will be posted on myUnisa as and when required.

Please access the following online sites that will provide a base of knowledge for you. In addition, please then access more recent online sites to update and extend your knowledge of this module.

Please note that there is not a formal study guide for this module. Thus, in addition to independent study by you, please read up on and around the study unit areas as outlined below. Please locate these study areas within your textbook as well as according to online links that you may identify. Please then adopt this knowledge and apply it to answering the assignment questions and then continue to add to your knowledge as you prepare for the examination.

4.4 Library services and resources information

For brief information, go to www.unisa.ac.za/brochures/studies

For detailed information, go to http://www.unisa.ac.za/library. For research support and services of personal librarians, click on "Research support".

The library has compiled a number of library guides:

- finding recommended reading in the print collection and e-reserves – http://libguides.unisa.ac.za/request/undergrad
- requesting material – http://libguides.unisa.ac.za/request/request
- postgraduate information services – http://libguides.unisa.ac.za/request/postgrad
- finding, obtaining and using library resources and tools to assist in doing research – http://libguides.unisa.ac.za/Research_Skills
- how to contact the library/finding us on social media/frequently asked questions – http://libguides.unisa.ac.za/ask

5 STUDENT SUPPORT SERVICES

Important information appears in your study @ unisa brochure.
6 STUDY PLAN

Use your study @ unisa brochure for general time management and planning skills. This is a semester module over 15 weeks and requires 120 hours of study time. This means that you will have to study 8 hours per week for this module. The following is a recommended time schedule which can be used as a guideline for studying this module. Below this time schedule please see an example of a study plan.

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading and re-reading study guide</td>
<td>10</td>
</tr>
<tr>
<td>Reading relevant chapters in the prescribed textbook</td>
<td>35</td>
</tr>
<tr>
<td>Completing study guide activities</td>
<td>10</td>
</tr>
<tr>
<td>Studying for and completing the Assignments</td>
<td>20</td>
</tr>
<tr>
<td>Studying for examination</td>
<td>40</td>
</tr>
<tr>
<td>Final revision</td>
<td>5</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>120</strong></td>
</tr>
</tbody>
</table>

Week | Activity (each week represents 8 hours of study time) |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Read through your study material (your tutorial letter) and, if you have one, skim through a textbook and identify the relevant chapters in the text. Start accessing articles online. This exercise allows you to gain an overall picture of the module.</td>
</tr>
<tr>
<td>2</td>
<td>Read through your textbook, using your study guide, and identify all key areas.</td>
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<tr>
<td>3</td>
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<tr>
<td>4</td>
<td></td>
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<tr>
<td>5</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Complete and submit Assignment 1. Please allow sufficient time for the assignment to reach Unisa before the due date.</td>
</tr>
<tr>
<td>7</td>
<td>Begin with your in-depth study of the initial study units. Please prepare study notes whilst reading and learning the material.</td>
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<tr>
<td>8</td>
<td>Start to complete your Assignment 2</td>
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<tr>
<td>9</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Complete and submit Assignment 2. Depending on how you will submit the completed assignment, please note that you should allow sufficient time for the assignment to reach Unisa before the due date.</td>
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<tr>
<td>11</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Begin with your in-depth study of later study units. Please prepare study notes while reading and learning the material.</td>
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<tr>
<td>13</td>
<td></td>
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<tr>
<td>14</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Revision and preparation for the exam.</td>
</tr>
</tbody>
</table>

7 PRACTICAL WORK AND WORK-INTEGRATED LEARNING

There are no practicals for this module.
8 ASSESSMENT

8.1 Assessment criteria

Type here

8.2 Assessment plan

Summary as to how your final mark will be calculated

Formative assessment:
Assignment 01 (10% of year mark) 
Assignment 02 (90% of year mark) 

Year mark (30% of final mark)

Summative assessment:

Examination mark (70% of final mark)

8.3 Assignment numbers

8.3.1 General assignment numbers

Assignments are numbered consecutively per module, starting from 01.

8.3.2 Unique assignment numbers

Each semester consists of two assignments.

SEMESTER 1
Assignment 01: 851313
Assignment 02: 537434

SEMESTER 2
Assignment 01: 770987
Assignment 02: 586826

8.4 Assignment due dates

SEMESTER 1
Assignment 01: 16th March 2018
Assignment 02: 26th April 2018

SEMESTER 2
Assignment 01: 17th August 2018
Assignment 02: 21st September 2018

8.5 Submission of assignments

Both the assignments are compulsory and must be submitted on or before the stipulated due date. To receive quicker, online feedback and comments on your assignments submit your assignment electronically. If you intend to post your assignment, please complete and post it at least a week before the due date to ensure that we receive it in time. Please note that FAILURE TO SUBMIT ASSIGNMENT 01 WILL RESULT IN YOUR NOT BEING ALLOWED ADMISSION
TO THE EXAMINATION. In exceptional circumstances, only a valid medical certificate associated with a valid long-term illness will be considered as a reason for the late submission of an assignment. In such a case, please notify the lecturer well in advance. Note that if no arrangements were made, the assignment will not be marked. Please attach the medical certificate at the back of your assignment and ensure that you have certified copies of such a certificate.

For detailed information and requirements with regard to assignments, see the brochure entitled study @ unisa, which you received with your tutorial material.

Note: Prepare only the assignments for the semester for which you are registered.

Assignments may not be submitted by fax or email. You may submit written assignments and assignments completed on mark-reading sheets either by regular postal service or mobile MCQ submission or electronically via myUnisa. Make a copy of your assignment for your own reference and if the original is lost at any stage during the submission process.

Unisa is implementing onscreen marking of assignments to help you receive quicker feedback on your assignments. This will not be the case for all your modules, however, most modules from the Department of Life and Consumer Sciences can be marked in this way.

To allow us to mark your assignment onscreen, you need to do the following:

1. Convert your electronic assignment to PDF format.
2. Submit the PDF document (your assignment) via myUnisa (online).

For guidance on how to submit an assignment via myUnisa, see section 8.4 of this tutorial letter or the study @ unisa brochure.

8.6 The assignments

Assignments are seen as part of the learning process for this module. As you complete the assignment, study the textbook, consult other resources, discuss the work with fellow students or tutors or do research - you are actively engaged in learning. Looking at the assessment criteria (e.g. the action words and the mark allocation) given for each assignment will help you to understand what is required of you more clearly.

There are TWO assignments for this module for each semester. You will find the assignments for:

   Semester 01 (January to June) in Appendix A, and
   Semester 02 (July to December) in Appendix B of this tutorial letter.

The due dates are given with each assignment in Appendix A and B.

The first assignment of each of your courses is compulsory. You will qualify for examination admission for a course only if you submit the first assignment by the due date. If more than one assignment is set for a course, all the assignments for that course will be taken into consideration when calculating your year mark. Thus, to ensure a good year mark that contributes to improving your final mark, submit all your assignments in time.
8.7 Other assessment methods

Not applicable

8.8 The examination

Use your study @ unisa brochure for general examination guidelines and examination preparation guidelines.

This module is offered in a semester period of fifteen weeks. This means that if you are registered for the first semester, you will write the examination in May/June 2018 and the supplementary examination will be written in October/November 2018. If you are registered for the second semester you will write the examination in October/November 2018 and the supplementary examination will be written in May/June 2019.

For examination admission it is compulsory for you to hand in the first assignment for this module. It is also to your own advantage to do the assignments in order to test your understanding of the subject, and to establish how well prepared you are for the examination. You need to obtain a minimum of 40% in your examination to be able to pass. If you do not obtain at least 40% in the exams, you will fail even if the combination of year and exam mark is more than 50%. You will also need a minimum of 40% in the examination to obtain admission to a supplementary examination.

You require a final mark of 50% to pass this module. Please see the examples below:

- Exam mark below 40% will result in your failing this module.

- Exam mark 40% and Year mark 50% (combination of your first and second assignment marks) = A final mark of 43% - you will be allowed to write a supplementary exam.
  Calculated as:
  \[ 40 \times 70\% \times 0.70 = 28\% \]
  \[ 50 \times 30\% \times 0.30 = 15\% \]

- Exam mark 50% and Year mark 60% = A final mark of 53% - you will pass this module
  Calculated as:
  \[ 50 \times 70\% \times 0.70 = 35\% \]
  \[ 60 \times 30\% \times 0.30 = 18\% \]

As you can see from these examples it is important to obtain a minimum of 40% for your exam, as well as submitting both your assignments and work hard to obtain a good year mark to ensure that you pass the module.

You will have the opportunity to give an account of your studies in a two-hour examination paper (per module). You will be informed by letter of the dates, places and venues of the examinations. Examination guidelines, posted on myUnisa will give you pointers as to how to prepare for the examination. Revision should be done thoroughly before the examination. Contact us immediately, preferably by direct email, if you encounter any problems. Students can also refer to the study @ unisa brochure for general examination guidelines and examination preparation guidelines. The examination paper is a two (2) hour examination and consists of questions such as those requiring you to provide definitions of terms, draw labelled diagrams as well as answering short and longer essay questions.

You will be informed later by letter of the dates, places and venues of the two-hour examination required per module. Exam guidelines, posted on myUnisa will give you pointers on how to
prepare for the examination. Revision should be completed before the examination and you should contact us immediately by email if you encounter any problems. Students can also refer to the study@unisa brochure for general examination guidelines and examination preparation guidelines.

The examination paper is a two (2) hour examination and consists of questions such as those requiring you to provide definitions of terms, draw labelled diagrams and/or answering short and longer essay questions.

9 FREQUENTLY ASKED QUESTIONS

The study@unisa brochure contains an A-Z guide of the most relevant study information.

10 SOURCES CONSULTED

Not applicable.

11 IN CLOSING

Not applicable

12 ADDENDUM

Appendix A – Assignments for the first semester
Appendix B – Assignments for the second semester

Plagiarism

It is incumbent of all of us to behave ethically and so I would seriously remind you of a major problem regarding unethical behaviour in education, namely plagiarism.

Plagiarism is the act of taking words, ideas and thoughts of others and passing them off as your own. It is a form of theft which involves a number of dishonest academic activities. The Disciplinary code for students (2004) is given to all students at registration. You are advised to study the Code, especially sections 2.1.13 and 2.1.4 (2004:3-4). Also read the University's Policy on (Copyright infringement and plagiarism).

Avoiding Plagiarism

We cannot place enough emphasis on the seriousness of plagiarism. Please do not plagiarise – it is a form of THEFT. If plagiarism is detected, lecturers cannot determine if the student has learnt the subject material and so it is very difficult to assign a mark. In this case, the assessor must ask the question: “Who is being assessed, the student who prepared the assignment or the author of the plagiarised text?”

Ideally, the student should understand and learn the subject matter and write an assignment answer on this material in his/her own words. If, for whatever reason, this is difficult for the student to achieve, we recommend that the student answer the question by:

- Writing down subject material from the text
- Remembering to place this quote within inverted commas
- Ending the quote by supplying a correct reference of the author of this quoted material
- providing a few personal sentences that indicate that the student has reflected on this material.

Note: This latter reflection indicates that the student has read, understood and can place the answer in an academic, personal, social, research. etc context.
APPENDIX A: FIRST SEMESTER COMPULSORY ASSIGNMENTS

Department of Life and Consumer Sciences

CLINICAL PATHOLOGY II – BMI2606

Semester code: 01

Assignment 01
Due Date: 16th March 2018
Unique assignment number: 851313

INSTRUCTIONS

1) Use the mark-reading sheet provided to answer these questions.

2) Fill in all your personal details on the mark-reading sheet.

3) Indicate the correct answer clearly by shading in the appropriate number on the mark-reading sheet with an HB pencil.

4) If more than one number is shaded in any answer, NO marks will be awarded for that question.

1. The following organelles are present in animal cells except_____.
1. nucleus
2. mitochondria
3. cell wall
4. lysosomes

2. Transport of molecules across the cell membrane against concentration gradient is by_____.
1. passive diffusion
2. facilitated diffusion
3. active transport
4. bulk transport
3. Cells from which tissue type are specialized to transmit electrical impulses from one body region to another?
   1. Epithelial.
   2. Connective.

4. Causes of necrosis includes all EXCEPT ________.
   1. injury
   2. cancer
   3. infection
   4. macrophages

5. Apoptosis begins when
   1. the cell is injured.
   2. a “death receptor” on the cell membrane receives the signal to die.
   3. caspases become activated.
   4. killer enzymes tear up the cytoskeleton.

6. What promotes vasodilation in acute inflammation?
   1. histamine, prostaglandins, nitric oxide.
   2. histamine, prostaglandins, chemokines.
   3. cytokines.
   4. chemokines, cytokines, histamine.

7. Hypoxia is deficiency of oxygen which causes cell injury by reducing aerobic oxidative respiration. Which of the following is not a cause of hypoxia?
   1. Severe blood loss.
   2. Ischemia (reduced blood flow).
   3. Hypercholesterolemia.

8. Whether a cell injury is irreversible depends on?
   1. Proportion and type of cells affected.
   3. Ability of tissue to regenerate.
   4. All the answers are correct.

9. Which of the following is not one of the five cardinal signs of inflammation?
   1. Discolouration.
   2. Swelling.
10. The two principal body fluid compartments are
   1. Sodium and potassium.
   2. Intracellular and extracellular.
   3. Potassium and intracellular.
   4. Extracellular and sodium.

11. The pressure generated by a greater concentration of proteins in the plasma is known as_______.
   1. hydrostatic
   2. atmospheric
   3. oncotic
   4. osmotic

12. Plasma does not contain_______.
   1. erythrocytes
   2. antibodies
   3. serum albumin
   4. serum globulin

13. Tissue fluid is also known as_______.
   1. lymph fluid
   2. plasma fluid
   3. interstitial fluid
   4. neurotic fluid

14. An increase in interstitial fluid is called oedema. As oedema increases, it compresses the surrounding capillaries resulting in which of the following?
   1. Decreases capillary hydrostatic pressure.
   2. Increases capillary hydrostatic pressure.
   3. Decreases interstitial oncotic pressure.
   4. Increases capillary oncotic pressure.

15. Dehydration is primarily a loss of_______.
   1. interstitial and intravascular water
   2. interstitial and intravascular sodium
   3. intracellular and interstitial water
   4. intracellular and interstitial sodium

TOTAL MARKS: (2x15) = [30]
Assignment 02

Due Date: 26th April 2018

Unique assignment number: 537434

INSTRUCTIONS

1) Type your assignment on a computer. You may print on ordinary white paper and not necessarily the Unisa typing paper provided. Please use 1.5 spacing and Arial or a similar font of 11 or 12 pitch. Leave a line open between questions. If you are not able to type your assignment on a computer, use a black or blue pen and please write neatly.

2) If you want to submit a hard copy of this assignment, use the assignment cover and envelope provided. When stapling your answers inside the cover, staple only in the top left-hand corner.

3) Your student number is the number just below your address. This number must be filled in on the assignment cover and must also be quoted in all correspondence with the university.

4) Answer all questions as briefly and clearly as possible in your own words.

5) Number your answers correctly.

QUESTION 1

1.1 Describe the three main types of protein filaments that form part of the eukaryotic cytoskeleton: (6)

1.2 Describe the two main signaling pathways that trigger the apoptotic caspases cascade in mammalian cells. (4)

1.3 Write down the types of tissue necrosis. (6)

1.4 Explain the basic function of the lymphatic system and its role in tissue drainage. (4)
QUESTION 2 [20]

2.1 Write short notes on generalised oedema. (6)

2.2 Differentiate between an exudate and a transudate (4)

2.3 Discuss the effects of vitamin A deficiency on humans, and describe the symptoms of this deficiency. (6)

2.4 Discuss the effects of excessive cold or heat on the body. (4)

QUESTION 3 [18]

3.1 Describe the symptoms of liver damage in chronic alcoholics? (5)

3.2 Distinguish between lymphocytes and granulocytes and give examples each. (6)

3.3 What are cytokines and give three examples of cytokines. (4)

3.4 Discuss the three main classes of T-cells. (3)

QUESTION 4 [20]

4.1 Describe the activation of T cytotoxic cells. What role does CD8 play? (4)

4.2 Describe class I and class II MHC. (4)

4.3 What are the components of reticuloendothelial system? (3)

4.4 Describe the role of the spleen in the immune system, discuss the differences between the red pulp and white pulp of the spleen. (5)

4.5 Describe the four types of hypersensitivity reactions due to excessive immune responses. (4)

QUESTION 5 [16]

5.1 Describe type III and type IV hypersensitivity reactions. (4)

5.2 List the four types of Primary immunodeficiencies. (4)

5.3 Describe the signs and symptoms of TB. (5)

5.4 Describe what is meant by malunion, fibrous union and pseudarthrosis of bones. (3)

QUESTION 6 [18]

6.1 Outline the most common portals of entry of transmissible infectious diseases. (5)

6.2 Describe two autosomal disorders, cystic fibrosis and Marfan syndrome. (6)

6.3 Explain what lyonisation is and why it is necessary. (3)

6.4 Distinguish between benign and malignant tumours. (4)
QUESTION 7

7.1 Name two examples of tumour suppressor genes. (2)

7.2 Explain Knudson’s “two hit” hypothesis and how this is related to inherited retinoblastoma. (5)

7.3 Describe the three most common types of carcinomas. (3)

7.4 Describe how the stage of the cancer influences the chance of recovery. (3)

TOTAL MARKS: 125
APPENDIX B: SECOND SEMESTER COMPULSORY ASSIGNMENTS

Department of Life and Consumer Sciences

CLINICAL PATHOLOGY II – BMI2606

Semester code: 02

Assignment 01
Due Date: 17th August 2018
Unique assignment number: 770987

INSTRUCTIONS

1) Use the mark-reading sheet provided to answer these questions.

2) Fill in all your personal details on the mark-reading sheet.

3) Indicate the correct answer clearly by shading in the appropriate number on the mark-reading sheet with an HB pencil.

4) If more than one number is shaded in any answer, NO marks will be awarded for that question.

1. The cell membrane is composed of______.
   1. proteins
   2. lipids
   3. cellulose
   4. protein and lipids

2. Which of the following is NOT ONE of the four major types of tissues?
   1. Epithelial
   2. Connective
   3. Nervous
   4. Scar
3. Special enzymes are released during necrosis from_________.

   1. lysosomes
   2. vacuoles
   3. cytoplasm
   4. Golgi bodies

4. Apoptosis is classified as:

   1. Programmed cell death.
   3. Accidental cell death.

5. Which cellular organelles are involved in the initiation of the intrinsic pathway of apoptosis?

   1. Endoplasmic reticulum.
   2. Lysosomes.
   3. Mitochondria.
   4. Peroxisomes.

6. Suppurative or purulent inflammation is characterised by?

   1. Inflammation of the lining of body cavities.
   2. Large amounts of pus.
   3. Extravascular fluid.
   4. Oedema.

7. In which of the following type of necrosis there is a preservation of general tissue architecture?

   1. Coagulative.
   2. Liquefactive.
   3. Colliquative.

8. In high altitudes, our body adapt by producing more erythrocytes what type of adaptive response is this?

   1. Metaplasia.
   2. Hypertrophy.
   3. Hyperplasia.
   4. Atrophy.

9. Which of the following refers to increased cell and organ size as a principle adaptive response?

   1. Metaplasia.
   2. Hypertrophy.
   3. Hyperplasia.
   4. Atrophy.
10. The pressure generated by the pumping of the heart is known as_______.

   1. hydrostatic  
   2. atmospheric  
   3. oncotic  
   4. osmotic

11. Major part of the plasma consists of_______.

   1. organic substances  
   2. inorganic substances  
   3. blood cells  
   4. water

12. Plasma

   1. constitutes 45% of blood.  
   2. contains corpuscles.  
   3. contains platelets.  
   4. is fluid part of blood.

13. Oedema is the result of_______.

   1. too high a concentration of blood proteins  
   2. swollen feet  
   3. not enough lymph being returned to the circulatory system  
   4. a loss of interstitial fluid

14. Failure of the heart to pump effectively causes the following type of shock:

   1. Septic.  
   2. Hypovolemic.  
   3. Cardiogenic.  
   4. Anaphylactic.

15. Trauma to the spinal cord and resultant loss of autonomic and motor reflexes below the injury level can lead to the following type of shock.

   1. Cardiogenic.  
   2. Hypovolemic.  
   4. Obstructive.

**TOTAL MARK: (2x15) = [30]**
Assignment 02
Due Date: 21st September 2018
Unique assignment number: 586826

INSTRUCTIONS

1) Type your assignment on a computer. You may print on ordinary white paper and not necessarily the Unisa typing paper provided. Please use 1,5 spacing and Arial or a similar font of 11 or 12 pitch. Leave a line open between questions. If you are not able to type your assignment on a computer, use a black or blue pen and please write neatly.

2) If you want to submit a hard copy of this assignment, use the assignment cover and envelope provided. When stapling your answers inside the cover, staple only in the top left-hand corner.

3) Your student number is the number just below your address. This number must be filled in on the assignment cover and must also be quoted in all correspondence with the university.

4) Answer all questions as briefly and clearly as possible in your own words.

5) Number your answers correctly.

QUESTION 1

1.1 Discuss the difference between passive transport, facilitated diffusion and active transport.  
(6)

1.2 Explain what is autophagy and discuss two common types of autophagy.  
(5)

1.3 Distinguish between hyperplasia and metaplasia.  
(4)
QUESTION 2 [15]

2.1 Distinguish between serum and plasma. (2)

2.2 What is transcellular fluid and give three examples of transcellular fluid. (4)

2.3 If a patient presented with a blocked subclavian vein, would the resulting swelling (oedema) in the arm result from a transudate or an exudate? (1)

2.4 Distinguish between primary and secondary nutritional deficiencies. (4)

2.5 Describe the characteristics of kwashiorkor and marasmus? (4)

QUESTION 3 [20]

3.1 Discuss foetal alcohol syndrome. (4)

3.2 Discuss the difference between innate and acquired immunity. (6)

3.3 Describe each cell type involved in the innate immune response. (5)

3.4 Describe three humoral mediators of the innate immune system. (3)

3.5 Discuss the complement system and its role in the immune system. (2)

QUESTION 4 [20]

4.1 Describe the activation of T helper cells. What role does CD4 play? (4)

4.2 Describe the five types of immunoglobulins or antibodies. (5)

4.3 Describe the three different types of tissue rejection. (6)

4.4 Explain the difference between the afferent and efferent lymph vessels. (2)

4.5 Write down the three main groups of immune system disorders. (3)

QUESTION 5 [20]

5.1 What is an anaphylactic shock? (1)

5.2 What are autoimmune diseases? (2)

5.3 Autoimmune diseases develop for a variety of reasons. Describe some mechanisms by which autoimmune diseases occur. (6)

5.4 Discuss acute inflammation and name four possible outcomes of acute inflammation. (5)

5.5 Write down the requirements of effective healing. (6)
6.1 Discuss the difference between a germline mutation and a somatic mutation. (4)

6.3 Explain what is an X-linked disorder. (2)

6.5 What mutation results in Down syndrome? What are the clinical features of Down syndrome? (6)

6.6 Define the terms neoplasm and oncogene. (4)

6.7 Distinguish between sarcomas and carcinomas. (4)

7.1 Bcl-2 is an antiapoptotic protein. Why do increased levels of expression of Bcl-2 result in excessive cell growth? (3)

7.2 Write down the functions of p53. (3)

7.3 Write a brief description of adenocarcinoma. (3)

7.4 Discuss various cancer treatment and prevention options. (6)

TOTAL MARK: 125