

# Tutorial letter 101/3/2016

**Medical Epidemiology**

**BMI2602**

**Semesters 1 & 2**

**Department of Life and Consumer Sciences**

**IMPORTANT INFORMATION:**

This tutorial letter contains important information  
about your module.

BAR CODE

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# 1 INTRODUCTION

Dear Student

Welcome to Biomedical Sciences and in particular this module BMI2602, Medical Epidemiology. This module is offered in the Department of Life and Consumer Sciences and your lecturer is Prof John Dewar. I would like to take this opportunity to wish you success with your academic year.

I would also like to encourage you to register on **myUnisa**. 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, I am available to assist you. My contact details are listed in section 3: Lecturer(s) and contact details in this tutorial letter.

## 1.1 Study Material

These include:

- Tutorial Letter 101
- BMI2602 Study guide

Some of this tutorial matter may not be available when you register but will be posted to you as soon as possible. Note that this is also available on *myUnisa* ("Official Study Material" Tab).

Tutorial letter 101 is just one of the tutorial letters you should be receiving during the year.

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 OF AND OUTCOMES FOR THE MODULE

## 2.1 Purpose

Qualifying students are able to know, understand and apply the principles and theory relating to medical epidemiology, the discipline involved in the monitoring of disease outbreaks.

## 2.2 Outcomes

The student should be able to:

- define, describe and apply concepts of epidemiology to understand disease transmission and occurrence in populations and what measures are used to record the incidence of disease

- recognise different data sources and study designs that can be applied to study the impact of diseases on populations and how this data can be used to solve problems related to disease
- appreciate the mathematics required to conduct research into epidemiology, especially with regard to recognising trends in disease patterns and the interpretation of results
- describe how bias, confounding and interaction can impact on the interpretation of causal associations and how these factors can be accounted for when analysing epidemiologic studies
- understand that both environmental and genetic factors can influence the incidence of disease, and how epidemiological studies can be used to assess the role each of these factors in specific diseases in particular
- understand the cycle of infectious diseases

### 3 LECTURER(S) AND CONTACT DETAILS

#### 3.1 Lecturer(s)

Lecturer: Prof John Dewar

Telephone number: +27 11 471 3112 (during office hours 8:00 – 16:00)

Email address: [dewarj@unisa.ac.za](mailto:dewarj@unisa.ac.za)

Postal address:  
The Lecturer (BMI2602)  
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

Department of Life and Consumer Sciences

Telephone number (Departmental Secretary): +27 11 471 2230

Fax number: +27 11 471 2796

#### 3.3 University

Should you need to contact the university about matters not related to the content of this module, consult the publication *myStudies @ 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](mailto:info@unisa.ac.za)

International students are urged to make use of the email address [info@unisa.ac.za](mailto:info@unisa.ac.za) [study-info@unisa.ac.za](mailto:study-info@unisa.ac.za) queries related to application and registration.

[assign@unisa.ac.za](mailto:assign@unisa.ac.za) for assignment enquiries

[exams@unisa.ac.za](mailto:exams@unisa.ac.za) for examination enquiries

[despatch@unisa.ac.za](mailto:despatch@unisa.ac.za) for study material enquiries

[finan@unisa.ac.za](mailto:finan@unisa.ac.za) for student account enquiries

[myUnisaHelp@unisa.ac.za](mailto:myUnisaHelp@unisa.ac.za) for assistance with *myUnisa*

[myLifeHelp@unisa.ac.za](mailto: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**.

### **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:

BMI2602-15-S1 (for semester 1)

OR

BMI2602-15-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 *My studies @ 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.
- Go to the **learning units** and read **learning unit 0**.

If you are studying mainly from print, you can read Tutorial Letter 101 and learning unit 0 in your printed study pack.

### **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 *myStudies @ Unisa* brochure, which is part of your registration package, lists all the services offered by the Unisa Library.

## **4 MODULE-RELATED RESOURCES**

### **4.1 Prescribed books**

The title of your prescribed textbook is:

Gordis, L. 2014. *Epidemiology*. 5th edition. Philadelphia: Saunders Elsevier. (ISBN: 978-1-4557-3733-8).

Please refer to the list of official booksellers and their addresses in the *myStudies @ Unisa* brochure.

Prescribed books can be obtained from the University's official booksellers. If you have difficulty in locating your book(s) at these booksellers, please contact the Prescribed Book Section at Tel: 012 429-4152 or e-mail [vospresc@unisa.ac.za](mailto:vospresc@unisa.ac.za).

This book also ought to be available at any of the official Unisa booksellers. If not, you can order it yourself on the Internet from:

<http://amazon.com>

<http://www.kalahari.net>

<http://www.exclusivebooks.com>

Second hand books are available at the following Web sites: <http://www.amazon.com> or <http://www.fetchbooks.com>. Please note that if you have access to an older edition of the prescribed textbook, please refer to the contents page of the study guide and then correlate this with the appropriate section in the textbook.

### **4.2 Recommended books**

Any modern epidemiology textbooks

### **4.3 Electronic Reserves (e-Reserves)**

There are no e-Reserves for this module. Announcements will be posted on *myUnisa* as and when required.

## **5 STUDENT SUPPORT SERVICES FOR THE MODULE**

Important information appears in your *myStudies @ Unisa* brochure.

## **6 MODULE-SPECIFIC STUDY PLAN**

Use your *myStudies @ 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.

<b>ACTIVITY</b>	<b>HOURS</b>
Reading and re-reading study guide	10
Reading relevant chapters in the prescribed textbook	35
Completing study guide activities	10
Studying for and completing the assignments	20
Studying for examination	40
Final revision	5
<b>TOTAL</b>	<b>120</b>

Please see an example below of how you can schedule your study plan:

Week	Activity (each week represents 8 hours of study time)
1	Read through your study material (you study guide and tutorial letter) and skim through your text book and identify the relevant chapters. This exercise allows you to gain an overall picture of the module.
2	
3	Read through your textbook, using your study guide, and identify all key areas.
4	
5	
6	Complete and submit Assignment 1. 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.
7	Begin with your in-depth study of the initial study units. Please prepare study notes whilst reading and learning the material.  Start to complete your Assignment 2
8	
9	
10	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.
11	
12	Begin with your in-depth study of later study units. Please prepare study notes while reading and learning the material.
13	
14	
15	Revision and preparation for the exam.

## 7 MODULE PRACTICAL WORK AND WORK-INTEGRATED LEARNING

There are no practicals for this module.

## 8 ASSESSMENT

### 8.1 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

} Examination mark (70% of final mark)

} Final mark

### 8.2 General assignment numbers

Assignments are numbered consecutively per module, starting from 01

#### 8.2.1 Unique assignment numbers

##### SEMESTER 1

Assignment 01: 755368

Assignment 02: 654246

##### SEMESTER 2

Assignment 01: 873389

Assignment 02: 701126

#### 8.2.2 Due dates for assignments

##### SEMESTER 1

Assignment 01: 10<sup>th</sup> March 2016

Assignment 02: 11<sup>th</sup> April 2016

##### SEMESTER 2

Assignment 01: 8<sup>th</sup> August 2016

Assignment 02: 12<sup>th</sup> September 2016

### 8.3 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 specifically 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 *myStudies @ 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 this way.

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

### 1. Convert your electronic assignment to PDF format.

How do I create a PDF document from any other document format (e.g. MS Word, MS Excel etc.)?

By quickly downloading FREE software (namely PrimoPDF), you can create a PDF document from any type of document you can print. Follow these easy steps:

- i. Go to the Internet to the following website: <http://www.primopdf.com/index.aspx>
- ii. Download the PrimoPDF software by clicking on the **DOWNLOAD FREE** prompt. Follow the instructions for installing the software.
- iii. To create a PDF document from your assignment, go to your assignment on your PC and instead of printing your assignment to an actual printer, choose PrimoPDF as printer. To do this, click on the **Microsoft Office Button**  (or 'File' button for older versions of Microsoft), and then click **Print**. Then, choose from the drop-down list the printer which in this case should be **PrimoPDF**.
- iv. You will now receive a pop-up message. Click the "**Create PDF**" button. Indicate in the "**Save as:**" pop-up where you want to save the PDF assignment on your PC.
- v. The PDF version of your assignment will now appear for your viewing.

**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 *myStudies @ Unisa* brochure.

## 8.4 Assignments

Assignments are seen as part of the learning process for this module. As you complete the assignment, please study the reading text, consult other resources, discuss the work with fellow students or tutors or do research - you are actively engaged in learning.

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

- **Semester 01** (January to June) in **Appendix A**, and
- **Semester 02** (July to December) in **Appendix B**.

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

You will be provided with a mark-reading sheet for Assignment 01. Assignment 02 is a written assignment, **please ensure that you answer the questions in your own words, and do not copy directly from your textbook as this is plagiarism and marks will be deducted for plagiarism.** The information available in your study guide and prescribed textbook is sufficient to answer most of the questions in the assignment. We advise you to consult other textbooks and peer-reviewed literature from the library to improve your understanding of the different topics.

Both assignments are compulsory and must be submitted on or before the respective due dates. Failure to submit Assignment 01 will result in you not being admitted to the examination for the module. As seen in the “Assessment plan” section, both assignments are significant to your year mark and so if you do not submit Assignment 02 your year mark will be very low and you could, therefore, fail the module even if you pass your exam.

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

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

## 9 OTHER ASSESSMENT METHODS

Not Applicable.

## 10 EXAMINATION

Use your *myStudies @ 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 2015 and the supplementary examination will be written in October/ November 2015. If you are registered for the second semester you will write the examination in October/November 2015 and the supplementary examination will be written in May/June 2016.

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% for your exam and if you do not obtain at least 40%, 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:

$$40 \times 70\% (0.70) = 28\%$$

$$50 \times 30\% (0.30) = 15\%$$

- Exam mark 50% and Year mark 60% = A final mark of 53% - you will pass this module

Calculated as:

$$50 \times 70\% (0.70) = 35\%$$

$$60 \times 30\% (0.30) = 18\%$$

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 *myStudies @ 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.

## 11 FREQUENTLY ASKED QUESTIONS

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

## 12 SOURCES CONSULTED

Not Applicable

## 13 CONCLUSION

Good luck and enjoy your studies.

## 14 ADDENDUM

Appendix A – Assignments for the first semester

Appendix B – Assignments for the second semester

## APPENDIX A: FIRST SEMESTER COMPULSORY ASSIGNMENTS

Department of Life and Consumer Sciences

Epidemiology

BMI2602

Semester code: 01

### Assignment 01

**DUE DATE: 10<sup>th</sup> March 2016**

**Unique assignment number: 755368**

### INSTRUCTIONS

- 1) Assignment 01 contains only multiple-choice questions (MCQ). 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**. If more than one number is shaded in any answer, NO marks will be awarded for that question.
- 4) See the "*my Studies @ Unisa*" booklet for more detailed information on filling in mark reading sheets

**Assignment 1: Multiple choice questions**

2 x 10 = [20]

The purpose of this assignment is to familiarise yourself with the study material content by means of techniques designed to **improve your study skills**. **Take note** that you will have to consult your **textbook** as well as the study guide to answer Assignment 01.

After reading the sections in your study guide, answer the questions below.

1. Diseases that are always present in a community, usually at a low, more or less constant, frequency are classified as having a/an ..... pattern.
  1. pandemic
  2. epidemic
  3. endemic
  4. incubation
  5. syndemic pattern
  
2. In 1995 in a community of 10, 000 individuals there were 1000 deaths from all causes. The community also had a SARS outbreak in this year with 350 people becoming infected (200 males and 150 females). During 1995 50 people died from tuberculosis, 35 of them females. What was the annual mortality rate for this population in 1995?
  1. 350 per 100, 000
  2. 50 per 1,000
  3. 35 per 1,000
  4. 100 per 1,000
  5. 10 per 1,000
  
3. A review of the ten leading causes of death in the USA in 1900 compared to 2009 showed a decrease in the following causes EXCEPT.....
  1. cancer
  2. diphtheria
  3. kidney disease
  4. pneumonia
  5. stroke
  
4. Disease severity includes the following EXCEPT.....
  1. cell transformation
  2. cell entry
  3. death
  4. asymptomatic infection
  5. relative survival rate
  
5. Immunization is an example of .....
  1. a primary prevention strategy
  2. a secondary prevention strategy
  3. a tertiary prevention strategy

6. Edward Jenner .....
1. was the first person to explain the etiology of smallpox
  2. proved that smallpox was spread through contaminated water
  3. was the first person to vaccinate someone against the smallpox virus
  4. was the first person to describe how smallpox is transmitted within a population
  5. proved that smallpox is caused by the smallpox virus
7. The following terms are associated with the incubation period following infection EXCEPT.....
1. quarantine
  2. sensitivity
  3. variable time range
  4. log of time
  5. symptom-free
8. The following terms are associated with the natural history of disease EXCEPT.....
1. symptoms
  2. diagnosis
  3. incidence rate
  4. treatment
  5. death
9. When a large portion of the population is immune to a particular disease, this portion of the population provides protection for people who are not immune to the disease. This is called .....
1. the incubation period
  2. vaccination
  3. the cohort effect
  4. disease inhibition
  5. herd immunity
10. Terms associated with mortality and other measures of disease impact include the following EXCEPT .....
1. years of potential life lost
  2. mortality rate
  3. case-fatality rate
  4. proportionate mortality
  5. accident rate

**TOTAL MARKS [20]**

**END OF ASSIGNMENT 01**

**Department of Life and Consumer Sciences**

**Epidemiology**

**BMI2602**

**Semester code: 01**

**Assignment 02**

**DUE DATE: 11<sup>th</sup> April 2016**

**Unique assignment number: 654246**

**INSTRUCTIONS**

- 1) Preferably type your assignment on a computer. Please use 1,5 spacing and Arial or a similar font of 11 or 12 pitch. Leave a line open between questions. We will not mark a typed assignment that does not comply with these requirements. If you could not type your assignment, use a black or blue pen and please write neatly.
- 2) 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.
- 5) Formulate the answers in your **OWN WORDS** and do not copy directly from your **textbook, as this is plagiarism and marks will be deducted for plagiarism.**
- 6) Number your answers correctly.

The purpose of this assignment is to work through the study material content and to introduce you to answering essay type questions (as you will come across similar types of questions in your exam). **Take note** that you will have to consult your **textbook** as well as the study guide to answer Assignment 02.

### Question 1

[20]

- 1.1 What ethical considerations need to be taken into account when conducting randomised trials?
- 1.2 Edwards Jenner performed the first vaccination against smallpox. How did he go about performing the vaccination and testing it? Were his actions ethical and explain why his actions may or may not have been ethical?

### Question 2

2 x 10 = [20]

Define or explain the following epidemiological terms:

- a) epidemiology
- b) epidemic
- c) endemic
- d) pandemic
- e) incubation period
- f) carrier
- g) etiology
- h) herd immunity
- i) person years
- j) mortality

### Question 3

[20]

Discuss emerging and re-emerging infectious diseases and pathogens, including nosocomial infections.

### Question 4

[20]

Discuss the identification of the roles of genetic and environmental factors in disease causation.

### Question 5

[20]

Discuss communicable disease linkages and strategies to prevent and control epidemics.

**Question 6****[20]**

Discuss epidemic curves that describe characteristics of common-source and propagated epidemics.

**Question 7****[20]**

Discuss in detail how epidemiologists design and conduct studies to elucidate the etiology of and the risk factors for human disease. In your answer, describe, with examples, the following: cohort studies; case-control studies; risk estimation; inference derivation; and causal inference including bias, confounding and interaction.

**Question 8****[20]**

Discuss epidemics that have occurred in your community and the immediate and long-term responses of the public health officials to the epidemics.

**Question 9****[20]**

Discuss with examples statistical and mathematical methods used to assist epidemiologists.

**TOTAL MARKS [180]****END OF ASSIGNMENT 02**

## APPENDIX B: SECOND SEMESTER COMPULSORY ASSIGNMENTS

Department of Life and Consumer Sciences

Epidemiology

BMI2602

Semester code: 02

### Assignment 01

**DUE DATE: 8<sup>th</sup> August 2016**

**Unique assignment number: 873389**

### INSTRUCTIONS

- 1) Assignment 01 contains only multiple-choice questions (MCQ). 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**. If more than one number is shaded in any answer, **NO** marks will be awarded for that question.
- 4) See the *myStudies @ Unisa* booklet for more detailed information on filling in mark reading sheets.

**Assignment 1: Multiple choice questions**

2 x 10 = [20]

The purpose of this assignment is to familiarize yourself with the study material content by means of techniques designed to **improve your study skills**. **Take note** that you will have to consult your **textbook** as well as the study guide to answer Assignment 01.

After reading the sections in your study guide, answer the questions below.

1. Two diseases that are spreading similarly through a community, are classified as having a/an ..... pattern.
  1. endemic
  2. epidemic
  3. syndemic
  4. pandemic
  5. incubation
  
2. In 1995 in a community of 200, 000 individuals there were 2000 deaths from all causes. The community also had a SARS outbreak in this year with 700 people becoming infected (400 males and 300 females). During 1995 100 people died from tuberculosis, 70 of them females. What was the annual mortality rate for this population in 1995?
  1. 350 per 100,000
  2. 50 per 1,000
  3. 35 per 1,000
  4. 100 per 1,000
  5. 10 per 1,000
  
3. Individuals associated with the history of epidemiology include the following EXCEPT..... .
  1. Jenner
  2. Mullis
  3. Semmelweis
  4. Snow
  5. Henderson
  
4. Modes of disease transmission include the following, EXCEPT ..... .
  1. person-to-person
  2. exposure
  3. common vehicle continuous exposure
  4. vector
  5. retroactive
  
5. Hand washing is an example of ..... .
  1. a primary prevention strategy
  2. a secondary prevention strategy
  3. a tertiary prevention strategy

6. John Snow .....
1. was the first person to explain the etiology of smallpox
  2. was the first person to vaccinate someone against the smallpox virus
  3. proved that disease was spread through contaminated water
  4. was the first person to describe how smallpox is transmitted within a population
  5. proved that smallpox is caused by the smallpox virus
7. Terms associated with the amount of disease in a population include the following EXCEPT .....
1. susceptible
  2. at risk
  3. herd immunity
  4. active surveillance
  5. immunisation coverage
8. The attack rate that occurs following exposure to a primary case is called the .....
1. post-primary attack rate
  2. primary attack rate
  3. attack rate
  4. secondary attack rate
  5. person-to-person attack rate
9. When a large portion of the population is immune to a particular disease, this portion of the population provides protection for people who are not immune to the disease. This is called .....
1. the incubation period
  2. vaccination
  3. the cohort effect
  4. herd immunity
  5. disease inhibition
10. Measurement of mortality involves the following EXCEPT .....
1. all-cause mortality rate
  2. accident rate
  3. mortality rate
  4. proportionate mortality
  5. case-fatality rate

**TOTAL MARKS [20]**

**END OF ASSIGNMENT 01**

**Department of Life and Consumer Sciences**

**Epidemiology**

**BMI2602**

**Semester code: 02**

**Assignment 02**

**DUE DATE: 12<sup>th</sup> September 2016**

**Unique assignment number: 701126**

**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. We will not mark a typed assignment that does not comply with these requirements. If you could not type your assignment, use a black or blue pen and please write neatly.
- 2) 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.
- 5) Formulate the answers in your **OWN WORDS** and **do not copy directly from your textbook, as this is plagiarism and marks will be deducted for plagiarism.**
- 6) Number your answers correctly.

The purpose of this assignment is to work through the study material content and to introduce you to answering essay type questions (as you will come across similar types of questions in your exam). **Take note** that you will have to consult your **textbook** as well as the study guide to answer Assignment 02.

**Question 1**

**[20]**

Identify and discuss factors that would cause and promote the development and spread of a new human disease.

**Question 2**

2 x 10 = **[20]**

Define or explain the following epidemiological terms:

- a) prevalence
- b) incidence
- c) mortality
- d) morbidity
- e) endemic
- f) pandemic
- g) epidemic
- h) proband
- i) carrier
- j) attack rate

**Question 3**

**[20]**

Please access reports concerning the Ebola outbreak that started in West Africa in 2013. Describe some of the daily, practical problems and precautions facing epidemiologists when they were determining features of the outbreak.

**Question 4**

**[20]**

Discuss in detail the four phases of an epidemic.

**Question 5:**

**[20]**

Describe the types of studies needed to be conducted to test a product derived from plant material? Briefly explain how you would design such a study. In your answer, please describe the following: testing of traditional medicines, trial design, masking, (double) blinding and randomised trials. Please explain why these are important components of clinical trials.

**Question 6**

**[20]**

Discuss measures used to prevent and control epidemics.

**Question 7:****[20]**

Discuss in detail how epidemiologists design and conduct studies to elucidate the etiology of and the risk factors for human disease. In your answer, describe with examples the following: cohort studies; case-control studies; risk estimation; inference derivation; and causal inference including bias, confounding and interaction.

**Question 8****[20]**

Describe important calculations that are used to monitor the progress of an epidemic.

**Question 9****[20]**

Discuss environmental factors that may contribute to the re-emergence of diseases.

**TOTAL MARKS [180]****END OF ASSIGNMENT 02**