



SUPPLEMENTARY EXAMINATION

PROGRAMME : HUMAN MOVEMENT STUDIES

MODULE NAME : BIOKINETICS PAPER 2

MODULE CODE : HMS 8X06

DATE : JANUARY 2017

DURATION : 3 HOURS

TOTAL MARKS : 150

EXAMINERS : MS L. VAN ROOY, PROF Y. COOPOO,
PROF B. SHAW, MS I. NOWAK

MODERATOR : PROF Y. PAUL

NUMBER OF PAGES : FOUR (4) PAGES

INSTRUCTIONS TO CANDIDATES:

MAKE SURE THAT YOU HAVE THE COMPLETE PAPER.

ANSWER ALL THE QUESTIONS.

THIS PAPER CONSISTS OF FOUR SECTIONS. PLEASE ANSWER EACH SECTION IN A DIFFERENT BOOKLET.

SECTION A – PROF Y. COOPOO (20 MARKS)

QUESTION 1

Medical History: Mr Joe Burg is a 57 year old male who previously had an unremarkable medical history. He is sedentary, and has been so for most of his life. His father had a fatal heart attack at age 58. He works as a foreman in the mining industry. He smokes 1.8 packs of cigarettes a day for the last 13 years. His height is 166cm and his weight is 122kgs. His blood pressure reading is 168/84. He drinks alcohol on a daily basis. His glucose levels are 9.4 mmol/l. He has been diagnosed with chronic fatigue syndrome.

- 1.1. List six non- pharmacological recommendations to reduce hypertension and briefly explain each factor. (6)
- 1.2. Discuss the exercise considerations for hypertensive patients. (9)
- 1.3. Describe the principles for active listening in behaviour modification that you would follow to counsel Mr Joe Burg. (5)

SECTION B – MS I. NOWAK (20 MARKS)

QUESTION 2

- 2.1. Discuss the neuroprotection strategies in the prevention of strokes. (3)
- 2.2. Describe common impairments of traumatic brain injury. (4)
- 2.3. Explain the following terms: (3)
 - a. Half-life of medication
 - b. Akinesia
 - c. Post-polio syndrome
- 2.4. Describe the similarities and differences in motor symptoms between Parkinson's disease and Multiple Sclerosis. Tabulate exercises that you would prescribe using the headings below. (10)

Exercises similar to Parkinson's disease and Multiple Sclerosis

Exercises typical to Parkinson's disease

Exercises typical to Multiple Sclerosis

SECTION C – PROF B. SHAW (30 MARKS)

QUESTION 3

Provide a comprehensive overview of Type 1 Diabetes (8 marks) and Type 2 Diabetes (22 marks). (30)

SECTION D - MS L. VAN ROOY (80 MARKS)

QUESTION 4

Discuss the risk factors for osteoporosis. (20)

QUESTION 5

Briefly discuss how you would go about testing a patient with a pacemaker by making reference to the guidelines of exercise testing. (10)

QUESTION 6

6.1. Frailty is associated with ageing. Discuss this condition under the following headings:

6.1.1. Definition of the condition. (4)

6.1.2. Response to exercise and exercise training (6)

6.1.3. An exercise programme prescription for a frail 70 year old female with pronounced kyphosis. Motivate each of your recommendations. (15)

QUESTION 7

7.1. List five (5) causes of COPD. (5)

7.2. Briefly discuss the exercise testing recommendations for COPD. (10)

7.3 Discuss ten (10) considerations to be taken into account while testing and prescribing an exercise programme for asthmatic patients. (10)

TOTAL: 150 MARKS