



SUPPLEMENTARY EXAMINATION

PROGRAM : **BACHELOR OF BIOKINETICS**
MODULE NAME : **BIOKINETICS 2**
MODULE CODE : **BIK 01Y2**
DATE : **9 JANUARY 2018**
DURATION : **THREE (3) HOURS**
TOTAL MARKS : **150 MARKS**

EXAMINERS : **MS L VAN ROOY & PROF L LATEGAN**
MODERATOR : **PROF B SHAW**
NUMBER OF PAGES : **FOUR (4) PAGES**

INSTRUCTIONS TO CANDIDATES:

MAKE SURE THAT YOU HAVE THE COMPLETE PAPER.

ANSWER ALL THE QUESTIONS.

COMPLETE SECTIONS A AND B IN SEPARATE BOOKLETS

SECTION A IS CHRONIC DISEASE AND WELLNESS.

SECTION B IS SPORTS INJURIES AND ORTHOPAEDIC CONDITIONS.

SECTION A: CHRONIC CONDITIONS AND WELLNESS [75 MARKS]

QUESTION 1

[15]

1.1 Define the following terms:

1.1.1 Claudication (1)

1.1.2 Heart rate (2)

1.1.3 Apical pulse (2)

1.1.4 Distress (1)

1.1.5 Optimal stress (2)

1.1.6 Syncope (1)

1.1.7 Hypertrophic cardiomyopathy (2)

1.1.8 Prodromal (1)

1.2 List three benefits of the relaxation response. (3)

QUESTION 2

[10]

2.1 List the seven (7) dimensions of wellness. (7)

2.2 List the six (6) stages of the Transtheoretical Model for Health Behaviour Change.
(6 x ½ mark = 3)

QUESTION 3

[20]

3.1 Identify the ten (10) components of the medical history. Note: point form will not be accepted. (10 x ½ mark = 5)

3.2 Identify the following landmarks of electrode placement for an ECG:

3.2.1 RF (right foot) (1)

3.2.2 V2 (1)

3.2.3 V3 (1)

3.2.4 Left arm (1)

3.2.5 V6 (1)

3.3 Indicate whether the following is within the norm and provide the normative values. (10)

3.3.1 LDL-C = 3.0 mmol/l (2)

3.3.2 HDL-C = 0.8 mmol/l (2)

3.3.3 TC = 4.8 mmol/l (2)

3.3.4 HR = 89 bpm (2)

3.3.5 BMI = 26 kg/m² (2)

QUESTION 4

[30]

Steven is a 40-year-old male carpenter. He currently has no membership at a health facility but does try to engage in at least 30 minutes of physical activity on all days of the week.

Blood pressure: 128/82 mmHg

Heart rate: 76 bpm

*Rate pressure product: 9 728 mmHg*bpm*

Glucose: 4.2 mmol/l

Cholesterol: 4.5 mmol/l

- 4.1 Determine whether this patient is high, moderate or low risk based on the CAD Risk Stratification by the ACSM (2016). (1)
- 4.2 List three (3) relative and absolute contraindications that would prevent this patient from doing any exercise testing. (6)
- 4.3 Although Steven does not smoke, he has a family history of lung disease. You decide to do a pulmonary/lung function test and it shows up as normal. Draw and label what you expect this graph to look like. (6)
- 4.4 Provide two (2) purposes for doing health-related physical testing with this patient. (2 x ½ mark = 1)
- 4.5 Explain the FITT principle and the components of an exercise programme (12 x ½ marks = 6). Include at least two (2) examples under each component, relevant to the case study (8 marks). (14)
- 4.6 Provide this patient with relevant advice to increase his physical activity levels over and above the prescribed programme you have given him. (2)

SECTION B: SPORTS INJURIES & ORTHOPAEDIC CONDITIONS [75 MARKS]

QUESTION 1

[5]

Describe the different types of traumatic injuries commonly found in sport and use applicable examples to substantiate your answer.

QUESTION 2

[5]

Explain the use of cold in treating sports injuries.

QUESTION 3

[10]

Explain the different types of muscle contraction used in the rehabilitation of sports injuries.

QUESTION 4

[55]

Describe the following injuries or conditions in terms of traumatic or overuse, anatomical damage (pathology), symptoms and possible causes:

- 4.1 Whiplash (10)
- 4.2 Spondylolysis (7)
- 4.3 Patellofemoral pain syndrome (10)
- 4.4 Sever's disease (8)
- 4.5 Shoulder impingement syndrome (10)
- 4.6 Tennis Elbow (10)

TOTAL: 150 MARKS