

UNIVERSITY OF FORT HARE

HUS 511

DEGREE EXAMINATIONS

January 2019

Time: 3 HOURS

Subject: Exercise physiology and science

Marks: 100

This paper consists of 4 pages including cover page

Internal Examiner

Prof M van Gent

Mr S Mandiringana

External Examiner

Prof L van den Berg

Instructions

Please answer all questions.

Question 1**(20)**

Andiswa has joined the UFH Athletics team, specializing in 100m hurdles. She has no experience of any gymnasium training programs. Keeping this in mind please answer the following questions:

1. Describe at least five the physiological requirements of 100m hurdler, and provide sport specific assessment test for the requirements mentioned 5x2=10
2. Compile a hypertrophy gymnasium training program (table format) specific for pre-season training. 10

Question 2**(25)**

Lindiwe is a 35 years old women and she will be competing in her first Half Ironman in January 2018. She is a very good swimmer and cyclist; however her running needs serious attention. Below is her results from her VO₂ max

No.	<i>Running speed</i>	<i>Heart rate (beats/min)</i>	$\dot{V}O_2$ (ml/kg/min)
1	8	182	28.2
2	10	193	31.6
3	11	197	34.3
4	12	200	37.0
5	13	202	40.0
6	14	203	40.1
7	15	207	42.4

By making use of this information please answer the following questions:

- a) Describe the different types of aerobic endurance training according to intensity and duration, specifically for Lindiwe 5x2=10
- b) Then compile a micro cycle indicating how Lindiwe should train in order for her to improve her aerobic endurance? 5

Question 3**(20)**

The Border Basketball coach has approached you to compile a plyometric training program for his team. The players come from different clubs; some players have done plyometric training before while others have no idea what this training is. Keeping this in mind please answer the following questions

1. What type of pre-training evaluation, focussing on strength and speed abilities of the players, would you do before prescribing a plyometric training program for upper and lower body? 4x2=8

2. Please compile a plyometric micro cycle specific for Border Basketball, focussing on lower and upper body 12

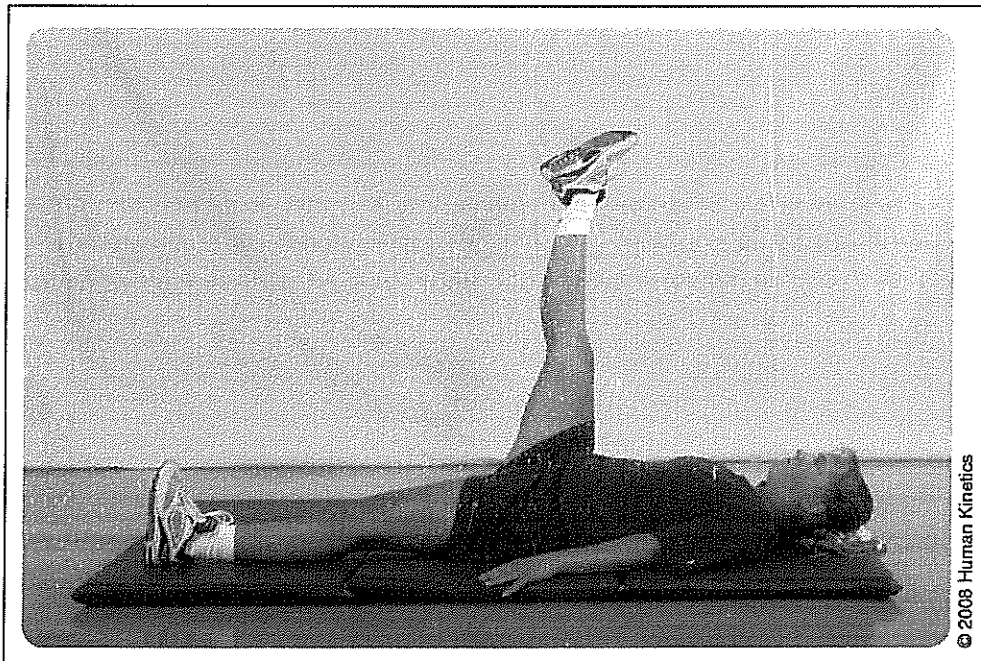
Question 4 **(15)**

Alice High School has appointed you head strength and conditioning coach for their sprinting team. By making use of your knowledge with regards to improving speed, please answer the following questions

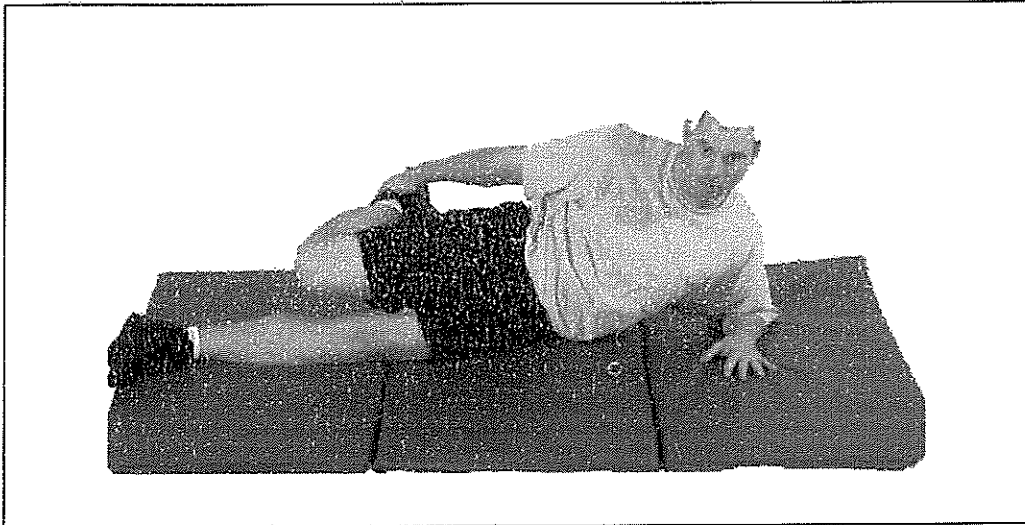
1. By making use of the various method of developing speed, please describe two sessions (with 4 exercises each) incorporation secondary training methods for speed development 4x2=8
2. Compile a training session incorporating any classical method for speed endurance development? 7

Question 5 **(20)**

1. A member of the HMS Gymnasium has read an article about Proprioceptive Neuromuscular Facilitation (PNF) Stretch. By Making use of the figure below- please explain two different techniques/ methods of PNF stretching 2x3=6



2. Below is a figure illustrating a static stretch of a specific muscle group. Please explain two examples of dynamic stretching exercise that focus on the same muscle group and what precautions should be taken for dynamic stretching 2x2=4



3. Several assessment methods of core strength and stability exist, which would influence how training program would be designed. Keeping this in mind please answer the following question
- a. Please describe one assessment /test for anti-extension stabilisers. 5
 - b. Please compile a training session, with three exercises (specific for anti-extension stabilisers) 5

END OF PAPER