NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY

SSC1207

FACULTY OF APPLIED SCIENCES

BACHELOR OF SCIENCE HONOURS DEGREE EXAMINATIONS

DEPARTMENT OF SPORTS SCIENCE AND COACHING

<u>THEORY: SSC1207: TESTING AND MEASUREMENT IN SPORTS</u>

MAY 2006

3 HOURS (100 MARKS)

<u>INSTRUCTIONS</u>

Answer **four** questions only. Questions can be written in any order. Each question carries 25 marks. Where a question contains subdivisions, the mark value for each subdivision is given in brackets. Illustrate your answer where appropriate with large clearly labeled diagrams.

1.   a) Identify the fitness demand profile of a sport of your own choice and explain why each element is important.   (10 marks)
   b) Design a test battery for all the fitness elements identified above and explain the procedure for each of the test items.   (15 marks)

2. Discuss how you would ensure efficiency and good management of a testing programme?
                                                                                                                                    (25 marks)

3. a) Why would you use Cooper's test in place of a treadmill test to determine aerobic power?
                                                                                                                                    (5 marks)
   b) The Harvard Step Test is not a criterion test, how then was its validity determined?(14 marks)
   c) "A test could be reliable yet not valid, it could never be valid if it were not reliable". Using specific examples show how this statement is true.   (6 marks)

4. a) Make a comparison of the advantages and disadvantages of treadmills versus bicycle ergometers as maximal oxygen consumption (VO_{2max}) testing equipment.   (10 marks)
   b) During maximal graded exercise treadmill test protocols, how is a person taken to a "true max"?
                                                                                                                                    (5 marks)
   c) Discuss the importance of validity, reliability and objectivity in tests administered to monitor progress of athletes' performances.   (10 marks)

5.   a) Discuss three different methods which you can use to assess obesity.   (18 marks)
    b) For each of the three methods above identify its advantages and disadvantages.   (7 marks)

6. a) The following data was collected from a male athlete, during the Havard step test.
   - Duration of exercise 5 minutes
   - Pulse rate after 1 minute 80 beats in 30 sec
   - Pulse rate after 2 minute 76 beats in 30 sec
   - Pulse rate after 3 minutes 68 beats in 30 sec

(i) What does this test measure? (1 mark)

(ii) Calculate the test score. (3 marks)

(iii) Comment on the fitness of this individual. (3 marks)

b. (i) From the data given in the table 1 below calculate the BMI indices and Waist hip ratios for each of the individuals. (10 marks)

(ii) Make an evaluation of your results. (8 marks)

Table I: Athropemetric measurements of a group of college athletes aged between 20 and 25 years.

Athlete	Weight (Kg)	Height (m)	Girth	
			Waist (cm)	Hip (cm)
A	51	1.56	68	90
B	51	1.73	65	80
C	61	1.69	72.5	89.5
D	65	1.82	62.5	87.5
E	62	1.81	68	86.5
F	56	1.55	75	93
G	48	1.66	66	88
H	58	1.63	71.5	84.5
I	61	1.71	73	86
J	52	1.62	70	90
K	49	1.60	67	91
L	40	1.58	58.5	78.5
M	60	1.66	73.5	85.5
N	62	1.76	74	87.5

END OF EXAMINATION QUESTION PAPER