#### MANICALAND STATE UNIVERSITY OF APPLIED SCIENCES



FACULTY OF APPLIED SOCIAL SCIENCES

**PSYCHOLOGY DEPARTMENT**

 **PSYCHOMETRICS**

**CODE: HPSY413**

### SESSIONAL EXAMINATIONS

### DECEMBER 2022

**DURATION: 3 HOURS**

**EXAMINER: MR I.SIFELANI**

## INSTRUCTIONS

*1. Answer* ***question 1*** *and* ***any other 3 questions****.*

*2. Total marks* ***100****.*

***Additional material:*** *Scientific calculator, Statistical tables*

**Question 1**

The table below shows the performance of 15 students in a Psychology test.Use the table to answer question 1**.**

|  |  |  |
| --- | --- | --- |
| **Student** | **Overall % score** | **Performance on a sample of test items/questions** |
|  |  | **Item 1** | **Item 2** | **Item 3** |
| A | 100 | 1 | 1 | 1 |
| B | 92 | 1 | 0 | 1 |
| C | 90 | 1 | 0 | 1 |
| D | 90 | 0 | 1 | 1 |
| E | 87 | 1 | 1 | 0 |
| F | 79 | 1 | 1 | 0 |
| G | 75 | 1 | 1 | 0 |
| H | 65 | 0 | 1 | 0 |
| I | 64 | 0 | 1 | 0 |
| J | 62 | 1 | 1 | 0 |
| K | 59 | 1 | 1 | 0 |
| L | 55 | 0 | 1 | 1 |
| M | 50 | 0 | 1 | 0 |
| N | 48 | 1 | 1 | 0 |
| O | 40 | 0 | 1 | 0 |

**Key:** *1 stands for correct answer and 0 stands for a wrong answer*

1 a) Calculate the difficulty indexes for items 1, 2 and 3. (**9 marks)**

1. Based on the results obtained in 1(a), would you consider item 2 for inclusion in the new measure/test under construction? Justify your answer. **(2 marks)**
2. Calculate the discrimination indexes for items 1, 2 and 3 (**9 marks)**
3. Interpret the discrimination index obtained for item 2 (**2 marks)**
4. Using the discrimination indexes calculated in 1(a), which item would you consider for inclusion in the test measure under construction and why?(**3 marks)**

**Question 2**

1. (i) Calculate standard error of measurement (*SEM*) for a measure with a standard deviation of 14 and a reliability coefficient of 0.19 **(3 marks)**

(ii) What does the obtained *SEM* in a (i) mean in practical terms (**2 marks)**

1. Discuss any 4 sources of systematic error that can affect test reliability.

 (**20 marks)**

**Question 3**

Compare and contrast psychological testing and psychological assessment. (**25 marks)**

**Question 4**

Outline the steps taken when conducting psychological assessment. (**25 marks)**

**Question 5**

“The history of psychometrics is not complete without mentioning the contributions of Sir Francis Galton (1822-1911)”. Discuss. **(25 marks)**

**Question 6**

With the aid of appropriate examples, explain the following;

1. Test **(5 marks)**
2. Test translation (**5 marks)**
3. Test adaptation (**5 marks)**
4. Test standardization (**5 marks)**
5. Test norms (**5 marks)**

**FORMULAS**

*SEM*=*S*t√1-rtt

CI=obtained score $\pm $ Z(*SEM*)

*D*=$\frac{U}{n\_{u}}-\frac{L}{n\_{1}}$

*p-value***=**$\frac{number of people who answered the item correctly}{number of people who took the measure}$

**END OF EXAMINATION**