



(University of choice)

**MAIN EXAM**  
**2021/2022 ACADEMIC YEAR**  
**YEAR ONE SECOND SEMESTER EXAMINATIONS**  
**FOR THE POST-GRADUATE DIPLOMA OF**  
**EDUCATION (PGDE)**

**COURSE: PSY 713**

**COURSE TITLE: EDUCATIONAL MEASUREMENT AND  
EVALUATION**

**DATE: 20/04/2022**

**TIME: 2:00 – 5:00 PM**

**INSTRUCTIONS TO CANDIDATES**

- Attempt Question One and any other Two Questions

This Paper Consists of 4 Printed Pages. Please Turn Over.

- a) Define the following terms as used in this course
- i. Measurement (1 mark)
  - ii. Test (1 mark)
  - iii. Assessment (1 mark)
  - iv. Evaluation (1 mark)
- b) Highlight any five differences between formative and summative evaluation in education (5 marks)
- c) The data below shows the scores of 30 B.Ed. students on a psychology test
- |    |    |    |    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|----|----|----|
| 45 | 43 | 42 | 33 | 33 | 54 | 47 | 44 | 42 | 30 |
| 59 | 45 | 36 | 18 | 13 | 52 | 49 | 44 | 27 | 26 |
| 62 | 37 | 34 | 34 | 59 | 58 | 51 | 45 | 18 | 50 |
- Explain the variability of these score distribution (8marks)
- d) State any four qualities of a good test (4marks)
  - e) Explain why social scientists (e.g. educators, psychologists) need to have at least a rudimentary knowledge of statistics? (2 marks)

**QUESTION TWO**

- a) The following data is about hours of study and grade % for six students taking B.Ed.
- |                   |    |    |    |    |    |    |
|-------------------|----|----|----|----|----|----|
| Hours of study(X) | 6  | 2  | 1  | 5  | 2  | 3  |
| Grade % (Y)       | 82 | 63 | 57 | 88 | 68 | 75 |
- i. Draw a scatter plot for the data given. (5marks)
  - ii. Use Pearson product moment coefficient of correlation to investigate the nature of relationship between the two variables. (10 marks)
  - iii. Explain any two assumptions made when calculating Spearman rxy (2 marks)
  - iv. For each of the following examples, state the highest level of measurement involved.
    - a) Number of kilogrammes that a sportsman can lift. (1 mark)
    - b) Number of students in a statistics class. (1 mark)
    - c) Number assigned consecutively to students as they complete an examination consisting of 50 items. (1 mark)

**QUESTION THREE**

- a) Outline any five differences between norm-referenced and criterion referenced assessments. (5 marks)
- b) Explain the four types of reliability that form the basis of test construction. (8 marks)
- c) The following are analyses for the first three questions of a test. Calculate the item difficulty index for each of the three questions below. (3 marks)

# QUESTION	A	B	C	D
#1	5	6	12*	7
#2	2	16*	3	9
#3	1	5	2	22*

Note: \* indicates the correct responses.

- d) State any four reasons for testing in an education enterprise (4 marks)

#### QUESTION FOUR

- a) Suggest any three extrinsic factors that can affect the reliability of test scores (3marks)
- b) State three reasons why subjective tests are preferred to objective tests in higher education (3marks)
- c) A teacher in a certain school established that a form four stream performed as follows  
30 60 25 45 78 36 50 60 75 40 54 85 80 36 48 50 90 60 32
- i. Present the data in a grouped frequency distribution table. Take  $ci = 5$  (3 marks)
- ii. Use measures of central tendency to describe the symmetry of this score distribution (8 marks)
- d) Compute the quartiles for the values below (3 marks)  
3925, 3730, 3355, 3310, 3650, 3550, 3480, 3450, 3540, 3520, 3490, 3480

### QUESTION FIVE

A clinical psychologist was interested in the relationship between number of hours of daylight and depression. The following data was collected from 10 subjects.

Person	Day light hours	Depression score
1	10.1	14
2	11.3	12
3	9.8	17
4	10.5	15
5	10.9	10
6	11.8	6
7	11.1	13
8	9.4	15
9	11.6	10
10	9.6	16

- (a) What is the appropriate correlational technique to calculate relationship for the data? Explain. (2 marks)
- (b) Draw a scatter diagram for the data. (4 marks)
- (c) Compute *both*
- i. the Pearson  $r_{xy}$  (6 marks)
  - ii. and Spearman rank correlation coefficients of correlation between the hours of daylight and level of depression. (6 marks)
- (d) What interpretation can you offer for relationship between depression and daylight from the values of the coefficients obtained in c (2 marks)