THE OPEN UNIVERSITY OF SRI LANKA

FACULTY OF EDUCATION

DEPARTMENT OF SECONDARY AND TERTIARY EDUCATION

POSTGRADUATE DIPLOMA IN EDUCATION PROGRAMME - 2018/2019

FINAL EXAMINATION (PHASE I)- 2019

STP8303/ESP2103 – MEASUREMENT AND EVALUATION IN EDUCATION

DURATION – THREE (03) HOURS

Date: 01st February 2020 Time: 9.30 a.m. – 12.30 p.m.

**Answer <u>All</u> Questions in Part I and any <u>three (03)</u> questions from Part II.**

**Normal calculators (Not Scientific) could be used for basic mathematical calculations.**

## <u>Part I</u>

01. Differentiate the concepts "assessment" and "evaluation".

02. Citing examples, explain the **six (06)** levels of cognitive domain.

03. What is the content validity of a question paper.

04. Citing an example explain in brief what is meant by a 'behavioural objective'?

05. What are the principal stages in the process of educational evaluation?

06. i. What is the 'skewness' of the distribution of marks?

    ii. Explain using a diagram the positive skewness of a distribution.

07. Write **five (05)** aspects that should be considered in preparing a table of specification.

08. i. Explain what is meant by norm tables.

    ii. Name **two (02)** different types of norms and describe one of them briefly.

## Part II

09. (A) i. What do you mean by an essay type test? (02 marks)

ii. Write **three (03)** advantages and **three (03)** disadvantages of an essay type test. (06 marks)

iii. Suggest ways and means to minimize disadvantages of an essay type test. (02 marks)

iv. Write an essay type question and convert it into a structured essay test item. (02 marks)

v. Write **two (02)** advantages of that conversion. (02 marks)

(B) i. What do you mean by an objective type test? (02 marks)

ii. Name **four (04)** types of items in objective type tests and give an example for each type. (04 marks)

10. (A) i. Describe what is meant by affective development. (02 marks)

ii. Explain why it is difficult to measure affective development. (04 marks)

iii. Citing two examples justify the importance of evaluating affective development in the teaching learning process. (04 marks)

(B) i. Discuss the difference between 'attitudes' and 'interests'. (02 marks)

ii. Explain **four (04)** characteristics of an 'attitude'. (04 marks)

iii. Name **two (02)** techniques used in the measurement of attitudes and citing an example, explain one of them. (04 marks)

11. (A) i. What is 'Z-score'? (02 marks)

ii. Calculate the 'Z-score' corresponding to a raw mark 60 of a distribution in which arithmetic mean is 40, and standard deviations are 15.0.

(02 marks)

iii. Carefully study the scores of a student in three subjects and the other details given in the table below. Complete missing marks.

| Subject | Score of the student | Mean of the class | Standard deviation of the class. | Z-score | McCall's scale marks | Hull's scale marks |
|---|---|---|---|---|---|---|
| Mathematics | 45 | 50 | 10 | A | B | C |
| First Language | 60 | 70 | D | 2.00 | E | F |
| English | G | 46 | 12 | H | I | 64 |

(09 marks)

iv. Comment on the relative performance of the student in the three subjects.

(02 marks)

(B) i. Explain what is meant by a socio-metric test, citing an example.

(03 marks)

ii. Write **two (02)** uses of a socio-metric test.

(02 marks)

12. (A) i. What are the measures of central tendency?

(02 marks)

ii. Explain why the mean is the best measure of central tendency for achievement scores.

(03 marks)

(B) Following are the marks obtained by 40 students in a class at a year end examination.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 93 | 37 | 26 | 50 | 41 | 65 | 14 | 81 |
| 58 | 41 | 31 | 61 | 38 | 59 | 28 | 43 |
| 45 | 20 | 44 | 18 | 46 | 11 | 55 | 70 |
| 80 | 25 | 53 | 07 | 88 | 44 | 38 | 60 |
| 30 | 19 | 65 | 28 | 47 | 53 | 75 | 40 |

i. Prepare a frequency distribution for the above set of marks taking (37-48) as one of the class intervals.

(02 marks)

ii. Calculate the mode and median of this distribution.

(03 marks)

iii. Considering the assumed mean of the above set of marks to be in the class interval (37-48), calculate the arithmetic mean.

(05 marks)

iv. Calculate the standard deviation of the distribution of marks.

(05 marks)

13. (A) i. Explain the terms 'correlation' and correlation coefficient'

(04 marks)

ii. What is meant by perfect positive correlation.

(02 marks)

iii. Write **three (03)** uses of correlation coefficient.

(03 marks)

(B) i. Marks obtained by 10 students for the subjects Mathematics and Science at a year end examination are given below.

| Student / Subject | A | B | C | D | E | F | G | H | I | J |
|---|---|---|---|---|---|---|---|---|---|---|
| Mathematics | 55 | 46 | 48 | 55 | 49 | 47 | 44 | 58 | 47 | 46 |
| Science | 58 | 44 | 42 | 51 | 47 | 49 | 50 | 52 | 51 | 51 |

i. Calculate the Pearson's product moment correlation coefficient for above marks.

(09 marks)

ii. Interpret the value obtained for the correlation coefficient.

(02 marks)

14. (A) i. State **three (03)** characteristics of a normal probability curve.

(03 marks)

ii. Explain how the normal probability curve is used for grading marks.

(02 marks)

(B) Marks obtained by 2500 students in an examination are distributed according to the normal probability curve. The arithmetic mean and the standard deviation of the distribution are 40 and 15 respectively.

i. Find the number of students who scored between 35 and 55 marks.

(05 marks)

ii. If the best 10% of the students are expected to be given A grade, what is the minimum mark required to obtain an A grade?

(05 marks)

iii. If 65% of the students are to be passed the examination, calculate the cut-off mark for passing the examination.

(05 marks)

## Some important formulas / වැදගත් සූත්‍ර කිහිපයක් / சில முக்கிய சூத்திரங்கள்

$$\rho = \left[1 - \frac{6\sum D^2}{N(N^2-1)}\right]$$

$$A.M_{(\overline{x})} = \left(A + \frac{i\sum fd}{N}\right)$$

$$SD_{(\sigma)} = i\sqrt{\frac{\sum fd^2}{N} - \left(\frac{\sum fd}{N}\right)^2}$$

$$\gamma_{xy} = \frac{\sum XY}{\sqrt{(\sum X^2)(\sum Y^2)}}$$

$$\gamma_{xy} = \frac{\sum(x - \bar{x})(y - \bar{y})}{\sqrt{\sum(x - \bar{x})^2 \times \sum(y - \bar{y})^2}}$$

$$\gamma_{xy} = \frac{n\sum xy - (\sum x)(\sum y)}{\sqrt{[n\sum x^2 - (\sum x)^2][n\sum y^2 - (\sum y)^2]}}$$