



**MASENO UNIVERSITY**  
**UNIVERSITY EXAMINATIONS 2013/2014**

FIRST YEAR SECOND SEMESTER EXAMINATION FOR THE  
DEGREE OF MASTER OF EDUCATION IN EDUCATIONAL  
ADMINISTRATION  
(CITY CAMPUS)

**EMA 840: RESEARCH METHODS II**

*Date: 19<sup>th</sup> December, 2013*

*Time: 9.00 – 12.00 noon*

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(CITY CAMPUS)

**EMA 840: RESEARCH METHODS II**

DATE-----TIME-----

**INSTRUCTIONS**

Answer any **FOUR** questions, **TWO** from **SECTION I** and **TWO** from **SECTION II** in separate answer booklets.

**SECTION I : Components of Research Proposal**

1. Identify and discuss **four** (4) major considerations regarding statement of the problem in a research study. **(15 Marks)**
  
2. (a) Using appropriate examples, distinguish between inclusionary and exclusionary delimitations in a research study. **(5 Marks)**  
  
(b) Elaborate on any **five** (5) possible methodological limitations in a research study. **(10 Marks)**
  
3. (a) Discuss **four** (4) key functions of literature review in a research study. **(8 Marks)**  
  
(b) In conducting a more comprehensive search of the literature, the would-be researcher should be able to “synthesize the literature.” Elaborate. **(7 Marks)**

**SECTION II: Educational Statistics**

4. (15 Marks)
5. (15 Marks)
6. (15 Marks)

**EMA 840: RESEARCH METHODS**  
**SECTION 2: EDUCATIONAL STATISTICS**

**INSTRUCTIONS:**

- Answer any **TWO (2)** questions from this section.
- A table for the area under the standard normal curve is provided.

4 (a) List the characteristics of the normal curve.

(2 marks)

(b) Assuming that a set of scores is normally distributed, match the z-scores in the right-hand column with the percentiles in the left-hand column using arrows.

| Percentiles      | Z scores ( <i>to be matched</i> ) |
|------------------|-----------------------------------|
| 84 <sup>th</sup> | -1.0                              |
| 50 <sup>th</sup> | 2.0                               |
| 16 <sup>th</sup> | -2.0                              |
| 98 <sup>th</sup> | 0.0                               |
| 2 <sup>nd</sup>  | 1.0                               |

(4 marks)

(c) Scores on the first examination in an educational statistics course were normally distributed with a mean of 12 and a variance of 4. The professor decides to grade the students such that the following z-score intervals get the following grades:

|              |   |
|--------------|---|
| Above 1.5    | A |
| 0.5 to 1.5   | B |
| -0.5 to 0.5  | C |
| -1.5 to -0.5 | D |
| Below -1.5   | F |

i. Of the 30 students in the class, how many will receive each of the five letter grades?

(5 marks)

ii. What are the four test-score cutoff points for the grading system?

(4 marks)

6) The scores for five students in two tests are given in the Table below.

| $x$ | $y$ |
|-----|-----|
| 2   | 1   |
| 3   | 3   |
| 4   | 2   |
| 5   | 5   |
| 7   | 6   |

a) Construct a scatter plot for  $y$  against  $x$ . Interpret the scatter plot.

(3 marks)

b) Calculate and interpret the coefficient of determination for the two variables.

(5 marks)

c) Regress  $y$  on  $x$  using ordinary least squares method. Write the linear equation that relates  $y$  with  $x$ .  
(5 marks)

d) Interpret the regression coefficient in the equation generated in (c).  
(2 marks)

6(a) Describe the logic of hypothesis testing.  
(4 marks)

(b) The following is a one-way ANOVA Summary Table output from SPSS. The dependent variable in the study was **Performance** and the independent variable (factor) was **Teaching Method**.

|                | Sum of Squares | df  | Mean Square | F | Sig. |
|----------------|----------------|-----|-------------|---|------|
| Between Groups | 7984           | 2   | 3992        | - | .000 |
| Within Groups  | 16154          | 394 | 41          |   |      |
| Total          | 24138          | 396 |             |   |      |

i) How many levels of the independent variable were involved in the analysis?  
(2 marks)

ii) State the null hypothesis using algebraic symbols.  
(2 marks)

iii) How many cases were involved in the analysis?  
(2 marks)

iv) Use the data in the Table to calculate the  $F$ -ratio.  
(2 marks)

v) Write a conclusion based on the outcome of the analysis (Use  $\alpha=.05$ ).  
(3 marks)