



**JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY**  
**SCHOOL OF EDUCATION**  
**UNIVERSITY EXAMINATION FOR THE DEGREE OF MASTER OF EDUCATION**  
**(SPECIAL NEEDS EDUCATION)**  
**1<sup>ST</sup> YEAR 1<sup>ST</sup> SEMESTER 2013/2014 ACADEMIC YEAR**  
**KENDU LEARNING CENTRE**

---

**COURSE CODE: EDU 804**

**COURSE TITLE: COMPUTER APPLICATIONS IN RESEARCH**

**EXAM VENUE:**

**STREAM: (Med ECDE)**

**DATE: 29/04/14**

**EXAM SESSION: 2.00 – 5.00 PM**

**TIME: 3.00 HOURS**

---

**Instructions:**

- 1. Answer All questions in section A and ANY TWO (2) questions IN SECTION B**
- 2. Candidates are advised not to write on the question paper.**
- 3. Candidates must hand in their answer booklets to the invigilator while in the examination room.**

**Section A; Answer all Questions (Total 30 marks)**

**CASE**

There has been an argument between you and your friends about life in the city being more expensive than life in the suburbs. As a statistician you have pondered on this question for some time and would want to present practical proof to your friends as they seem to argue from individual random observations, conjecture and rumours.

1. Discuss at least 5 variables and how they can be measured to use for this problem (5 Marks)

*cont*

You decide to conduct a study that compares the cost for a restaurant meal in a major city to the cost of a similar meal in the suburbs outside the city. You collect meal cost per person data from a sample of 50 city restaurants and 50 suburban restaurants and arrange the 100 values in two ranked sets as follows:

City Cost Data									
13	21	22	22	24	25	26	26	26	26
30	32	33	34	34	35	35	35	35	36
37	37	39	39	39	40	41	41	41	42
43	44	45	46	50	50	51	51	53	53
53	55	57	61	62	62	62	66	68	75

Suburban Cost Data									
21	22	25	25	26	26	27	27	28	28
28	29	31	32	32	35	35	36	37	37
37	38	38	38	39	40	40	41	41	41
42	42	43	44	47	47	47	48	50	50
50	50	50	51	52	53	58	62	65	67

2. Choose appropriate way to group the data (at least 7 groups) and (5 MARKS)
3. Create a representative Histogram, not necessarily to scale (5 Marks)
4. Decide on appropriate Hypothesis and using alpha at  $\alpha = 0.05$  describe how you would use SPSS to solve the original problem (10 Marks)
5. List 5 input devices you may use in this problem. (5 Marks)

**Section B; Answer any THREE questions (10 Marks Each)**

1. A manufacturer of cat food was planning to survey households in the Kisumu to determine purchasing habits of cat owners. Among the questions to be included are those that relate to
  - i. Where cat food is primarily purchased.

- ii. Whether dry or moist cat food is purchased.
- iii. The number of cats living in a household.
- iv. Whether the cat is pedigreed.
  - 1. Describe the population. (1 marks)
  - 2. For each of the four items listed, indicate whether the variable is categorical or numerical. (2 marks)
  - 3. If it is numerical, is it discrete or continuous? (2 marks)
  - 4. Develop 3 categorical questions for the survey. (3 marks)
  - 5. Develop 2 numerical questions for the survey. (2 marks)

2. Discuss any five auto tools you that are useful to you when writing your research report that are found on the REFERENCES tab of all Microsoft Word Software version 2007 and above (10 marks)

3. Answer the following questions

a. Assume the following table is in Excel from cell A1

VALUE	$X_i$	$Y_i$
1	2	1
2	0	3
3	-1	-2
4	5	4
5	7	3

Show how you would write the formula in excel to calculate (you are allowed to use steps)

i.  $\sum_{i=1}^5 X_i$  (2 Mark)

ii.  $\sum_{i=1}^5 X_i Y_i$  (3 Marks)

iii.  $\sum_{i=1}^n (X_i - Y_i)$  (5 Marks)

4. There are five major phases of the research process. Briefly explain the role of computers in each of the following phases

- (i) Conceptual phase
- (ii) Design and planning phase
- (iii) Empirical phase
- (iv) Report Writing phase
- (v) Dissemination phase

(10 marks)

5. You are asked to assist a moving company owner to develop a more accurate method of predicting the labour hours needed for a moving job by using the volume of goods (in

cubic feet) that is being moved. The manager has collected the following data for 36 moves and has eliminated the travel-time portion of the time needed for the move.

Hours	Feet	Hours	Feet
24.00	545	25.00	557
13.50	400	45.00	1,028
26.25	562	29.00	793
25.00	540	21.00	523
9.00	220	22.00	564
20.00	344	16.50	312
22.00	569	37.00	757
11.25	340	32.00	600
50.00	900	34.00	796
12.00	285	25.00	577
38.75	865	31.00	500
40.00	831	24.00	695
19.50	344	40.00	1,054
18.00	360	27.00	486
28.00	750	18.00	442
27.00	650	62.50	1,249
21.00	415	53.75	995
15.00	275	79.50	1,397

Using least squares method and SPSS or Excel describe how you will solve the said problem (10 Marks)

END