



**CICT PART III SECTION 6**

**RESEARCH METHODS**

**FRIDAY: 25 May 2018.**

**Time Allowed: 3 hours.**

**Answer ALL questions. Marks allocated to each question are shown at the end of the question.**

**QUESTION ONE**

- (a) Research design could be considered as the backbone of research. It is the “glue” that holds all the elements in a research project.

In relation to the above statement, describe four contents of research design. (4 marks)

- (b) Distinguish between the following types of research:

(i) “Descriptive research” and “analytical research”. (2 marks)

(ii) “Quantitative research” and “qualitative research”. (2 marks)

(iii) “Conceptual research” and “empirical research”. (2 marks)

- (c) Creative management, whether in public administration or private industry, depends on methods of inquiry that maintain objectivity, clarity, accuracy and consistency.

In reference to the above statement, explain five reasons for the significance of research. (10 marks)

**(Total: 20 marks)**

**QUESTION TWO**

- (a) Research is a careful, detailed and systematic study of a specific problem, concern, or issue to establish facts. This is best accomplished by turning the issue into a question, with the intent of the research to answer the question.

Based on the above statement, examine five characteristics of good research questions. (5 marks)

- (b) Moris Juma has just completed his Certified Information Communication Technologist (CICT) examinations. Part of the requirements by the examinations body is to undertake a research project. Moris is confused on how to identify a research problem.

**Required:**

Advise Moris Juma on five sources he could use to identify a research problem. (5 marks)

- (c) The starting point of a research is the selection of a research topic and research problem. Identifying a suitable research topic is one of the most difficult steps in research.

In relation to the above statement, analyse five criteria of identifying a suitable research topic. (5 marks)

- (d) Describe five types of quantitative research. (5 marks)

**(Total: 20 marks)**

### QUESTION THREE

- (a) Assess five reasons for the importance of interpretation of results in research methods. (10 marks)
- (b) Describe five qualities of a good research hypothesis. (5 marks)
- (c) John Mativo has just collected his research data ready for analysis.  
Advise John on two tools he could use in data analysis. (2 marks)
- (d) Discuss three factors that could influence the choice of method to use in data collection. (3 marks)
- (Total: 20 marks)**

### QUESTION FOUR

- (a) Explain the following sampling techniques as used in data collection:
- (i) Systematic random sampling. (3 marks)
- (ii) Multistage sampling. (3 marks)
- (iii) Quota sampling. (3 marks)
- (b) Examine four guidelines that you could follow while formatting your research paper using APA-Style. (4 marks)
- (c) Chapter four of a research project relates to "Data analysis and presentation of the findings".  
With reference to the above statement, outline the salient areas covered under this chapter. (7 marks)
- (Total: 20 marks)**

### QUESTION FIVE

- (a) (i) Explain the term "conceptual framework" as used in literature review. (2 marks)
- (ii) Discuss four steps that a researcher should follow while developing a conceptual framework. (4 marks)
- (b) (i) Explain the term "annotated bibliography". (1 mark)
- (ii) List four uses of annotated bibliography in research. (4 marks)
- (c) Using suitable examples in each case, evaluate four reasons for the importance of ethical considerations in research. (4 marks)
- (d) The following data was collected from Elimu Computer College relating to marks obtained by 10 students undertaking research methods paper:

<b>Student serial number:</b>	1	2	3	4	5	6	7	8	9	10
<b>Marks (%):</b>	38	40	45	53	47	43	55	48	52	49

#### Required:

- (i) The mean mark. (1 mark)
- (ii) The variance of distribution of marks. (2 marks)
- (iii) Test the hypothesis that the variance of the distribution of marks of all students is equal to 20. Test this at 5 per cent level of significance. (2 marks)
- (Total: 20 marks)**
- .....

# VALUES OF THE CHI-SQUARE DISTRIBUTION

df	.10	.05	.025	.010	.005	.001
1	2.706	3.841	5.024	6.635	7.879	10.83
2	4.605	5.991	7.378	9.210	10.60	13.82
3	6.251	7.815	9.348	11.34	12.84	16.27
4	7.779	9.488	11.14	13.28	14.86	18.47
5	9.236	11.07	12.83	15.09	16.75	20.52
6	10.64	12.59	14.45	16.81	18.55	22.46
7	12.02	14.07	16.01	18.48	20.28	24.32
8	13.36	15.51	17.53	20.09	21.95	26.12
9	14.68	16.92	19.02	21.67	23.59	27.88
10	15.99	18.31	20.48	23.21	25.19	29.59
11	17.28	19.68	21.92	24.73	26.76	31.26
12	18.55	21.03	23.34	26.22	28.30	32.91
13	19.81	22.36	24.74	27.69	29.82	34.53
14	21.06	23.68	26.12	29.14	31.32	36.12
15	22.31	25.00	27.49	30.58	32.80	37.70
16	23.54	26.30	28.85	32.00	34.27	39.25
17	24.77	27.59	30.19	33.41	35.72	40.79
18	25.99	28.87	31.53	34.81	37.16	42.51
19	27.20	30.14	32.85	36.19	38.58	43.82
20	28.41	31.41	34.17	37.57	40.00	45.31
21	29.62	32.67	35.48	38.93	41.40	46.80
22	30.81	33.92	36.78	40.29	42.80	48.27
23	32.01	35.17	38.08	41.64	44.18	49.73
24	33.20	36.42	39.36	42.98	45.56	51.18
25	34.38	37.65	40.65	44.31	46.93	52.62
26	35.56	38.89	41.92	45.64	48.29	54.05
27	36.74	40.11	43.19	46.96	49.64	55.48
28	37.92	41.34	44.46	48.28	50.99	56.89
29	39.09	42.56	45.72	49.59	52.34	58.30
30	40.26	43.77	46.98	50.89	53.67	59.70
40	51.81	55.76	59.34	63.69	66.77	73.40
50	63.17	67.50	71.42	76.15	79.49	86.56
60	74.40	79.08	83.30	88.38	91.95	99.51
70	85.53	90.53	95.02	100.4	104.2	112.3
80	96.58	101.9	106.6	112.3	116.3	124.8
90	107.6	113.1	118.1	124.1	128.3	137.2
100	118.5	124.3	129.6	135.8	140.2	149.4