



**AMREF INTERNATIONAL TRAINING CENTER**

Qualification Code : 091906T4HRI  
Qualification : Health Records Management & IT Level 6  
Unit Code : AITC/HRIT/01/6/A  
Unit of Competency : Medical Statistics 1

**WRITTEN ASSESSMENT**

**Time: 3 HOURS**

**INSTRUCTIONS TO CANDIDATE**

1. Marks for each question are indicated in the brackets.
2. The paper consists of **TWO** sections: **A** and **B**.
3. Candidates are provided with a separate answer booklet.
4. Do not write on the question paper.

*This paper consists of **THREE (3)** printed pages.  
Candidates should check the question paper to ascertain that all the pages are printed as  
indicated and that no questions are missing*

**SECTION A: (40 MARKS)**

*Answer All Questions in This Section*

1. Medical statistics play a big role in management of hospital operations. Explain two of the five reasons why hospital administrator/manager needs medical statistics (4marks)
2. Medical statistics depends on information gathering, Identify four vital data collected in the hospital during patient visits (4marks)
3. XYZ hospital is made up of 564 bed count, in a certain month they happened to get a total of 362 patients in the ward. If in the same month they discharged up to 40% of the total beds occupied, calculate
  - (a) Bed occupancy rate after total discharges given that total admissions after discharges was 80% of the total discharges (4marks)
  - (b) Find the average length of stay given that all the discharges done were admissions as at 15<sup>TH</sup> June to 25<sup>th</sup> July, 2020 (5marks)
4. BOY hospital is made up of four wards, each ward has a capacity of up to 40 beds, in a certain month they had bed occupancy of 80 patients. If they discharged 73% of the patients in the ward that month, calculate bed turnover rate for the same month (4marks)
5. NPM hospital is made up of two theatre departments, each theatre performs five surgical cases in a day, in a certain week they managed to have cases every day and happened to get post operative sepsis of 15 patients who did surgery. Calculate the rates of infections for the week (4marks)
6. The ratio of male to female babies born at mbagathi is as follows, 4:7 per week. In a certain week they managed to deliver a total of babies out of these 10 were male and x female. Find the female babies who were born in that month (4marks)
7. In a certain hospital the number of deliveries per day on estimate is 83 babies. In a certain day 93 mothers were admitted in labour ward . on that day, the total number of mothers who gave birth was 10% less than the total number of mothers in labour ward. During discharge 93% of the mothers who delivered were discharged home with their babied while the rest had been recorded as mortalities. Calculate the new born mortality rate given that both babies were born a live (3marks)

8. In the month of June, the total number of bed count was 180, after some time of the month they recorded some admission after having had an inpatient of 86% of bed count. If the total number of admissions in the hospital was 10% of the total patients in the ward that month, calculate average daily census (4marks)
9. In a certain hospital, number of deliveries were 130 in a week. If in the same week they had 2 fatalities for the new born and 120 babies being discharged home. Calculate the fetal death rate for that week (2marks)
10. In a certain hospital total discharges were 60 and of these patients 10 had acquired infections during their stay in the hospital. Calculate the infection rate in this hospital if mortalities were 2 patients (2marks)

### SECTION TWO B: 60 MARKS

#### *Answer Three Questions in This Section*

11. Patients who came in the hospital were in following age group.

Age group	f
0-15	8
16- 25	11
26-35	3
36-45	6
46-55	18
56-65	25
66-75	13

- a) Calculate the mean age group (5marks)
- b) Calculate the variance (10marks)
- c) Calculate the standard mean deviation (5marks)
12. Below are the morbidities recorded in BTK hospital

Morbidities cases	Range of values	frequency
Asthma	0-15	5
Pneumonia	16-35	22
Pulmonary TB	36-55	8
STI	56-75	6
Amoeba	76-95	11
URTI	96-115	27

- a) Calculate the total number of morbidities in this hospital as per the cases in the table above (2marks)
- b) On average what were the morbidity cases in that month of the year in the hospital (6marks)
- c) calculate the variance on morbidities for that months in that hospital (10marks)
- d) calculate standard mean deviation for the same (2marks)
- 13.) medical statistics play a very big role in administration of care to patients.
- (a) Discuss five major uses of medical statistics in the current healthcare deliver (10marks)
- (b) In a certain hospital the number of deliveries per day on estimate is 83 babies. In a certain day 93 mothers were admitted in labour ward . on that day, the total number of mothers who gave birth was 10% less than the total number of mothers in labour ward. During discharge 93% of the mothers who delivered were discharged home with their babies while the rest had been recorded as mortalities. Calculate
- i ). The total babies born alive in the hospital (5marks)
- ii) Total number of mortalities recorded in that day (5marks)

14. Data collection, analysis and interpretation is an essential competency in health data science.

- a) Discuss five methods used in data analysis and interpretation in data science (10 marks)
- b) Explain Five importance of health data in data science (10 marks)

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