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SECTION I: SAQs - Attempt all questions

1. Using malaria as an example outline the major points in a communicable disease process and the measures to be taken at each point to control malaria. (5 marks)  
 Agent → Reservoir → Portal of exit → Transmission → Portal of entry → Susceptible host → Agent
2. Cohort and case-control study designs are often used in epidemiological studies. Use an example to show the difference between the two study designs. In addition, give one advantage and one disadvantage of a cohort study. (5 marks)  
 Case-control - definition of group w/ particular dx (condition/cases), selection of suitable control. Treatment dx
3. Compare a ventilated improved (VIP) latrine with an ordinary pit (OP) latrine. (5 marks)
4. Using the 'Pathway to impact Approach', outline the 5 steps that precede the selection of the most appropriate key monitoring indicators. (5 marks)
5. Giving examples of each, differentiate between 'rate' and 'ratio' measures as used in demography. (5 marks)
6. Briefly describe the FIVE types of learners/learning styles to consider when selecting teaching methods for a health education session. (5 marks)
7. Identify five challenges that affect care-seeking by youth for reproductive health services in Kenya. (5 marks)
8. With relevant examples, briefly discuss any two principles of primary care. (5 marks)  
 → Universal accessibility & coverage based on need  
 → Comprehensive care
9. Define the economic concepts of consumer and producer surplus. Give an application example in the provision of health care. (5 marks)
10. What are the three key strategies for reducing maternal deaths and suffering according to the experience from successful maternal health programmes? (5 marks)
  - ① meeting unmet need for FP services (↓ 20% or more)
  - ② skilled birth attendance & functioning referral systems for all women in labor
  - ③ Timely EmOC for women who develop complications

(CEGIRAH)

SECTION II: LAQs - Attempt both questions

1. A random sample of medical students was selected for a hypertension study and the following observations made on the fasting blood glucose levels:

7.0 ✓	8.5 ✓	6.2 ✓	5.6 ✓	7.3 ✓	7.6 ✓	8.6 ✓	10.2 ✓
6.9 ✓	7.2 ✓	5.8 ✓	6.8 ✓	8.3 ✓	9.5 ✓	8.7 ✓	7.3 ✓
7.1 ✓	8.4 ✓	9.8 ✓	8.5 ✓	5.8 ✓	6.4 ✓	6.8 ✓	7.1 ✓

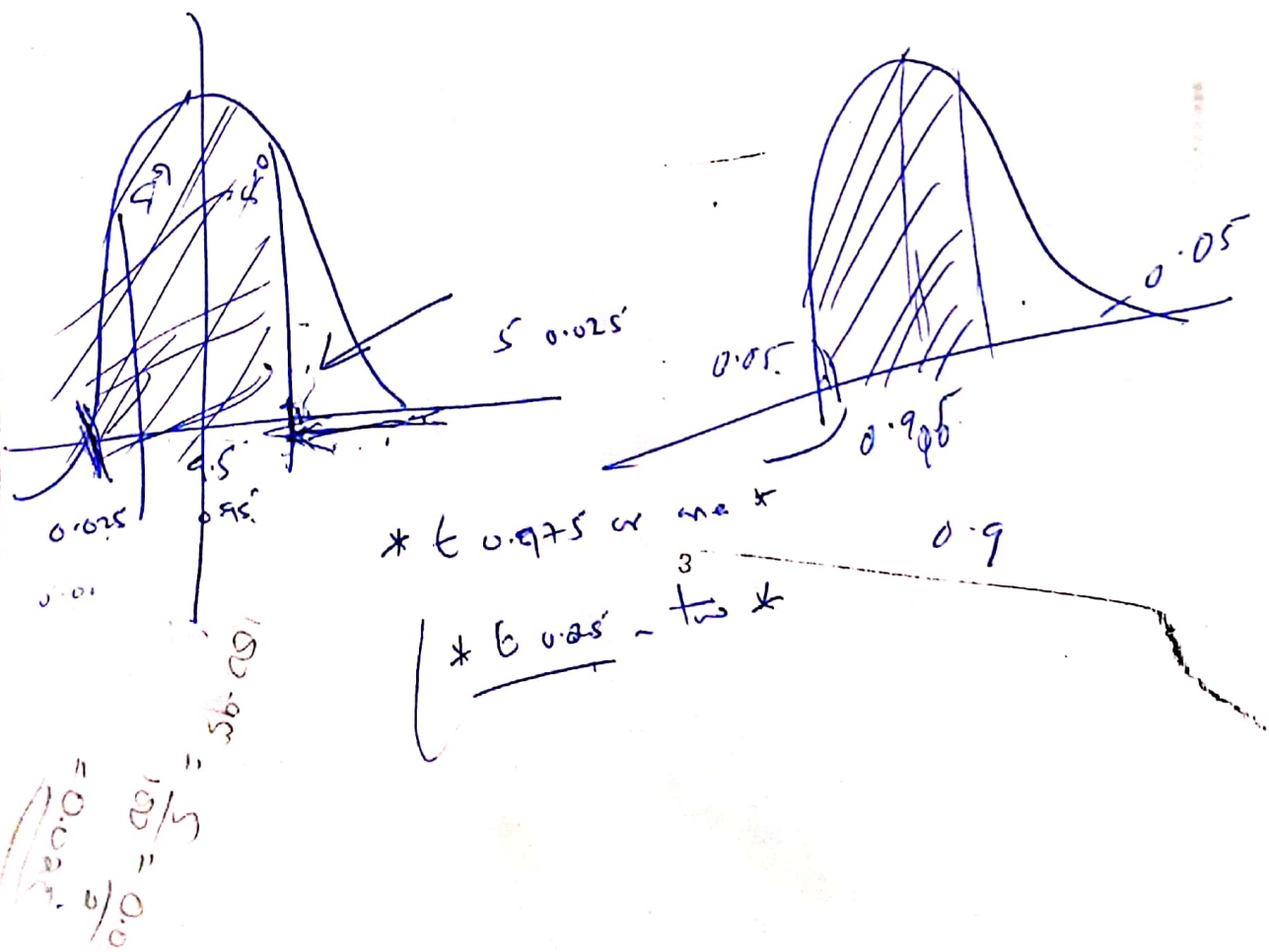
- (a) What is the median (2 marks)
- (b) Calculate the mean, variance and standard deviation (6 marks)
- (c) Calculate the coefficient of variation (2 marks)
- (d) Calculate the standard error of the mean (3 marks)
- (e) Construct a 95% confidence interval for the mean fasting blood glucose level in the population from which the sample was drawn (7 marks)

Note:

$t_{0.95}(23) = 1.7139$    
  $t_{0.975}(23) = 2.0687$    
  $t_{0.95}(24) = 1.7109$    
  $t_{0.975}(24) = 2.0639$

$CI = \bar{x} \pm t_c$

2. It has been argued that good nutrition is the cornerstone of survival, health and development for current and future generations. Discuss (20 marks)



Siama

UNIVERSITY OF NAIROBI

School of Public Health

LEVEL V BACHELOR OF MEDICINE AND BACHELOR OF SURGERY  
COMMUNITY HEALTH CONTINUOUS ASSESSMENT TEST (CAT)

DATE: APRIL 20, 2017

TIME: 2.00 PM – 4.00 PM

4-30

**INSTRUCTIONS**

Read and follow the instructions. There are **TWO** sections to this paper.

**I. Section I: SHORT ANSWER QUESTIONS.**

- i. There are Eleven (11) Questions in this section each carrying a maximum of 5 Marks. **Answer ANY TEN [10].**
- ii. Marks allocated to each question is indicated.

**II. Section II: LONG ANSWER QUESTIONS.**

- i. There are Three (3) Questions in this section, each carrying a maximum of 20 Marks. **Answer ANY TWO [2].**
- ii. Marks allocated to each question is indicated.

The total time allowed for the paper is **2 hours**.

Write your **student registration number** on each answer sheet used.

**ANSWER EACH QUESTION ON A SEPARATE SHEET OF PAPER.**

**Section I: SHORT ANSWER QUESTIONS – Answer ANY TEN (10)**  
**Questions from this Section**

Epidemiology

1. In a case-control study looking at the relationship between having freckles and the risk of melanoma, 136 of 183 cases and 61 of 183 controls had freckles.

Case	136	47	183
Control	61	122	183

(a) If you have freckles how much more likely are you to develop melanoma than someone who does not have freckles? Calculate and interpret the appropriate measure [3 marks]

(b) How much of melanoma could be prevented if freckles were removable [2 marks]

OR - 1

Attributable F  
 $\frac{a-c}{a+b+c+d}$   
 $\frac{a}{a+b}$

Occupational Health

2. (a) State three methods of preventing fire outbreak in public institution or an industry? [3 marks]

Active - Education  
 Passive - gypsum

(b) Name two key stakeholders who, in case of a disaster such as fire or large scale spill of a chemical, are the **MOST** beneficiaries of Material Safety Data Sheet (MSDS) [2 marks].

- CEO
- 1st aid personnel
- Fire fighters

Demography

3. (a) Name the source of data necessary in improving the overall birth registration in any county in Kenya? [1 mark]

(b) Highlight four measures you can provide to improve birth registration [4 Marks].

Tscau

- Limited access of women to decision making in the family
- Poverty - Poor road conditions - lack of transportation
- Traditional views

MCH

4. What are the five major reasons for persistently high rates of unskilled birth attendance in Kenya? [5 marks].

3 delays - modern decision at 1  
 Access to acceptable Antenatal services (Quality of care)

PHC

5. Using your experience and examples during community diagnosis:

(a) List three key achievements of Community Health Strategy [3 marks]

(Co-operation -

availability of funds that could otherwise not have been available

(community can help in project

Est of village committee

Community pharmacy

barriers between  
 between  
 between

(b) Using examples briefly discuss one of these achievements [2 marks]

Health Education

6. Discuss at **ANY TWO** benefits of health education to a hospital [2.5 marks each]

*of trust in life  
access to  
information*

*Reduce cost  
by 10%*

HSM

7. Briefly describe, with use of an example, a primary and a secondary use of a health record [5 marks].

CDC

8. Outline the major points in a communicable disease process and the points at which measures can be taken [5 marks].

Health Economics

9. Briefly elaborate **ANY FIVE (5) KEY** policies recommended by the World Bank to overcome the existing weakness of health systems in developing countries [5 marks].

Medical Sociology

10. Select a cultural practice and describe its implications on health [5 marks].

Nutrition

11. Briefly outline **Five (5)** Sources of Error that may contribute to poor quality anthropometry data collection in community health diagnosis [5 marks].

Section II: LONG ANSWER QUESTIONS - Answer ANY TWO (2)

Questions from this section

Biostatistics

1. In an anthropometric study to assess the nutritional status of school-going children in a rural community, the average weight of children at 10-years of age was found to be 25.7kg with a standard deviation of 4.5. Accept these values as population parameters and that weight is normally distributed.

(a) What is the probability that a given 10-year old child in the community will have a weight greater than 24kg? [6 marks]

(b) What is the probability that the average weight of 48 10-year olds will lie between 25 and 27kg? [7 marks]

(c) What minimum weight do 10 year-olds in the community need to have to be in the top 10% of the children by weight? [7 marks]

Use the following information to answer the question:

$Z_{0.3520} = 0.38$ ;  $Z_{0.0005} = 3.29$ ;  $Z_{0.1461} = 1.08$ ;  $Z_{0.10} = 1.285$ ;  
 $Z_{0.025} = 1.96$ ;  $Z_{0.05} = 1.645$ ;  $Z_{0.02275} = 2.00$

Environmental Health

2. Explain global warming process and its health effects on human beings. [20 Marks].

CFCs → HCl C<sub>3</sub> → CO<sub>2</sub>

causing light to pass but not heat  
greenhouse effect.

Health  
Food  
Env  
economy  
Acid rain, global warming, pollution

NCD/CDC

3. Using the concept of commonality of risk factors, justify the targeting of the four common risk factors of Non Communicable diseases for prevention in public health - [20 marks].

Behavior

Physical

Why

Outcome

UNIVERSITY OF NAIROBI

School of Public Health

LEVEL V BACHELOR OF MEDICINE AND BACHELOR OF SURGERY

CONTINUOUS ASSESSMENT TEST (CAT)

DATE: November 17, 2016

TIME: 2.00 PM – 4.00 PM

INSTRUCTIONS

Read and follow the instructions. There are TWO sections to this paper.

I. Section I: SHORT ANSWER QUESTIONS.

- i. There are Eleven (11) Questions in this Section. Answer Any Ten [10] questions.
- ii. Each Question Carries 5 Marks, Unless Indicated Otherwise.

II. Section II: LONG ANSWER QUESTIONS.

- i. There are Three (3) Questions in this Section. Answer Any Two [2] questions.
- ii. Each Question Carries 20 Marks.

The total time allowed for this paper is 2 hours.

Write your student registration number on each answer page.

ANSWER EACH QUESTION ON A SEPARATE SHEET OF PAPER.

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Section I: SHORT ANSWER QUESTIONS – Answer ANY XX Questions from this section

- a) Epidemiology is applied in many areas. Give any two (2) uses of epidemiology in your future profession. (2 marks)
- b) A newly developed screening test for a certain disease was evaluated and the results were as presented in the table below.

- community diagnosis  
 - finding out determinants  
 - prevention & interventional strategies  
 - screening for dx & risk factors

		With Disease	Without Disease	Total
TEST RESULTS	Positive	350 a	1900 b	2250
	Negative	150 c	7600 d	7750
	Total	500	9500	10000

2/20

Calculate and interpret the following for the test: (3 marks, 1 mark each)

- Positive predictive value.  $= \frac{350}{2250}$
- Specificity.  $\frac{7600}{9500} \times 100$
- Sensitivity.  $\frac{350}{500} \times 100$

a) State three methods of preventing fire outbreak in an institution or industry.

OCCHx

b) Name TWO key stakeholders who in case of a disaster such as fire, spill of a large scale of chemical are the most beneficiaries of material safety data (MSDS). Elaborate on how they benefit from MSDS.

a) Name TWO health care related occupational diseases of which after accidental exposure a post exposure prophylaxis is immediately administered.

OCCH

b) List two types of psychosocial hazards and one health condition or disease associated with each hazard.

c. You have been invited to attend a meeting aimed at improving vital statistics for Kenya. Outline any FIVE suggestions that can improve the civil registration and vital statistics system for Kenya.

Demography

- strengthen partnerships, jointly organise civil registration with other health providers esp police  
 train civil reg officers

use of mass media esp SMS  
 computer in system of collection, storage  
 training of staff use of e-based airport registration



15. Using the example of obesity describe the impact of lifestyle on health <sup>→ CVD → Risk → DM → CH.</sup>
16. Identify and discuss five behaviours that you might want to address in a community health promotion intervention. <sup>Alcohol, Diet, Drug abuse, Alcohol, Cigarette</sup>
17. Urbanisation may contribute to poor health among urban residents. Explain. <sup>Alcohol, Diet, Drug</sup>
18. Differentiate price elasticity of demand, cross price elasticity of demand and income elasticity of demand.
19. The central strategy in efforts to reduce maternal deaths is timely emergency obstetric care for women who develop complications. Describe the standards for Basic Emergency Obstetric Care. <sup>BEOC 100/1000</sup>
20. Define a communicable disease and outline the major points at which a communicable disease can be controlled. <sup>Direct/agent product transmission, Removal of R, Accepted, Ability to prevent transmission</sup>
21. Briefly discuss the vision and mission of Primary Health Care (PHC). <sup>- affordable, - accessible, - community participatory, - universal, - acceptable</sup>

Section II: LONG ANSWER QUESTIONS - Answer Any TWO Questions from this section.

A random sample of medical students was selected for a hypertension study and the following observations were made on their diastolic blood pressures:

74	86	80	79	68	85	76	73	83	74	72	
74	82	76	69	87	77	81	73	70	84	72	
71	78	75	74	81	64	78	72	85	72	79	81

$$\frac{123}{36} = 3.416$$

- What is the median? (2 marks)
- Calculate the mean, variance and standard deviation (6 marks)
- Calculate the coefficient of variation (2 marks)
- Calculate the standard error of the mean (3 marks)
- Construct a 95% confidence interval for the mean diastolic blood pressure in the Population from which the sample was drawn (7 marks)

$$\begin{aligned} \bar{x} \pm SE &= 76.61 \pm 1.6896 \\ &= 74.92 \text{ to } 78.29 \end{aligned}$$

Note:  $t_{.95}(35) = 1.6896$        $t_{.975}(35) = 2.0301$

$$\bar{x} \pm Z \left( \frac{s}{\sqrt{n}} \right)$$

Extreming mean

Using relevant examples, explain the linkage of any three health systems building blocks and health care outcomes for a local community in Kenya [20 Marks]

- Leadership & Governance
- Essential supplies
- Health workforce
- Finance

- Efficiency
- Health equity
- Improved population health
- Accessibility

- Information systems
- Extreming mean
- Human resources
- Finance
- Leadership & Governance
- Essential supplies
- Health workforce

Using examples, discuss Any Five (5) high impact nutrition interventions implemented within the health sector in Kenya [20 Marks]

- Improved health
- Efficiency
- Financial return
- Reduced morbidity
- Reduced mortality

1. Pre-birth feeding
2. Exclusive breastfeeding
3. Complementary feeding
4. Micronutrient supplementation
5. Vitamin A, iron

- Optimal complementary feeding
- Iron & zinc supplementation
- Zinc & Vitamin A
- IFA for pregnant women
- Salt iodization
- Low fat/high protein diet
- 44.44

f	Midpoint	fx	x - $\bar{x}$	$(x - \bar{x})^2$
6	65.5	393	-11.1	123.21
20	75.5	1510	-1.1	1.21
10	85.5	855	8.9	79.21
$\Sigma f = 36$		$\Sigma fx = 2758$		

$$\Sigma f(x - \bar{x})^2 = 1555.56$$

$$\bar{x} = \frac{\Sigma fx}{\Sigma f} = \frac{2758}{36} = 76.61$$

$$\frac{\Sigma f(x - \bar{x})^2}{n - 1} = \frac{1555.56}{36 - 1} = \frac{1555.56}{35} = 44.44$$

Variance 44.44

$$\sqrt{44.44} = 76.5$$

Efficient and effective

1555.56 / 35 = 44.44