

BINDURA UNIVERSITY OF SCIENCE EDUCATION
FACULTY OF COMMERCE
DEPARTMENT OF ECONOMICS
MASTER OF SCIENCE DEGREE IN HEALTH ECONOMICS
EPIDEMIOLOGY MEC 520 (2)
EXAMINATION DURATION 3 HOURS

INSTRUCTIONS

1. This paper carries six questions
 2. Answer any four (4) questions.
 3. Each question carries 25 marks.
 4. Cell phones are not allowed in the examination room.
 5. A calculator is allowed in the examination room.
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JUN 2025

QUESTION 1

Zimbabwe has been faced by the re-emergence of cholera as a public health problem. Prepare a brief report to the Minister of Health on a raft of measures required to eliminate cholera as a public health threat.

[25 marks]

QUESTION 2

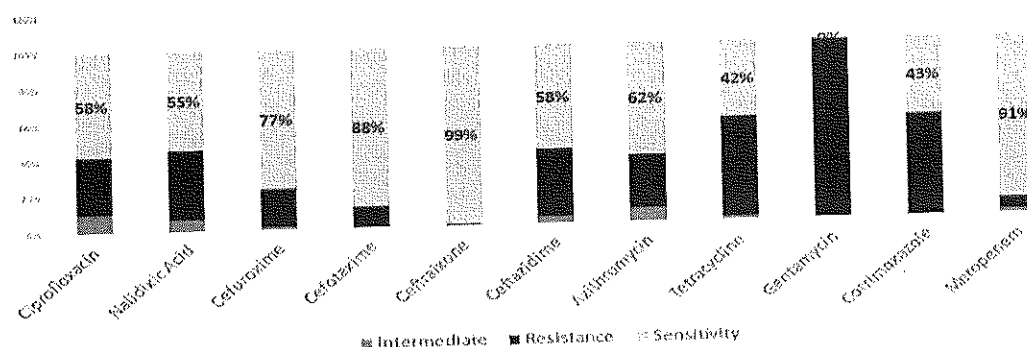
An epidemiologist is often the key person in an outbreak investigation. Using measles as an example describe the key steps in an outbreak investigation.

[25 marks]

QUESTION 3

- a. There is a global threat of anti-microbial resistance and Zimbabwe has joined the one health approach. Describe the figure below of a microbial sensitivity pattern for *Salmonella Typhi* in a Typhoid fever outbreak in Harare

Sensitivity pattern of Salmonella Typhi in Harare typhoid Fever outbreak, 1 Oct 2017 to 17 August 2018



First line medicines	Gentamycin, Tetracycline, Cotrimoxazole
Second line medicines	Ciprofloxacin, Nalidixic Acid, Cefuroxime, Ceftazidime
Third line medicines	Azithromycin, Cefotaxime, Ceftriaxone
4 th line medicines	Meropenem

- b. Describe the common causes of antimicrobial resistance and highlight the importance of the one health concept.

[25 marks]

QUESTION 4

John Snow is often described as the father of epidemiology. Describe John Snow's contribution to the field of epidemiology

[25 marks]

QUESTION 5

The principle of informed consent is the most important principle in ethics. Discuss.

[25 marks]

QUESTION 6

You are an epidemiologist in the national office, and you receive reports of a district facing an outbreak of cholera, which appears to have started in an overcrowded and underserved refugee camp and has spilled over to the host community.

For now, it appears to have largely affected children under 15 years but is affecting some older adults. Even without in-depth analysis of the data, the affected populations appear to be

those who are religious decliners or living in hard-to-reach areas with limited access to health services.

While the District Health Team acknowledges that the situation is concerning, they are in the middle of a twice postponed mass measles campaign and say they are unable to spare the manpower to investigate. Partners exist in the district; however, their support is focused on nutrition activities.

Describe your priority response actions, including who you would collaborate with to address this unfolding emergency, what strategies you would use, and what you would be aiming for.

[25 marks]

END OF PAPER