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QUALIFICATIONS: BACHELOR OF ENVIRONMENTAL HEALTH SCIENCES, BACHELOR OF SCIENCE IN HEALTH INFORMATION SYSTEMS MANAGEMENT, BACHELOR OF HUMAN NUTRITION	
QUALIFICATION CODE: 08BOHS, 07BHIS, 08BOHN	LEVEL: 6
COURSE NAME: EPIDEMIOLOGY 2B	COURSE CODE: EPD 612S
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DURATION: 3 hours	MARKS: 100

SUPPLEMENTARY/SECOND OPPORTUNITY EXAMINATION QUESTION PAPER

EXAMINER(S): DR LARAI AKU-AKAI

MODERATOR: DR ROSWITHA MAHALIE

INSTRUCTIONS:

1. Answer ALL the questions.
2. Write clearly and neatly in the answer booklet.

PERMISSIBLE MATERIALS:

1. Non-programmable calculator

ATTACHEMENTS

1. None

THIS QUESTION PAPER CONSISTS OF 6 PAGES (Excluding this front page)

SECTION A

Question 1

(15 marks)

Select the most appropriate answer from the options provided. (Each correct answer earns 1 mark)

- 1.1 Of the following, which disease causes most death worldwide?
a. Cancer
b. HIV/AIDS
c. Malaria
d. Tuberculosis (1)
- 1.2 Epidemiology would include the following activities, **except**:
a. Describing the demographic characteristics of persons with acute aflatoxin poisoning in District A
b. Prescribing an antibiotic to treat a patient with community-acquired methicillin-resistant *Staphylococcus aureus* infection
c. Comparing the family history, amount of exercise, and eating habits of those with and without newly diagnosed diabetes
d. Identifying a restaurant as the source of a hepatitis A outbreak (1)
- 1.3 A number of passengers on a cruise ship from Cape town to Walvis bay have recently developed a gastrointestinal illness compatible with norovirus. Testing for norovirus is not readily available, and the test takes several days even where available. Assuming you are the epidemiologist called on to board the ship and investigate this possible outbreak, your case definition should include, at a minimum:
a. Clinical criteria, plus specification of time, place, and person
b. Clinical features, plus the exposure(s) you most suspect
c. Suspect cases
d. The nationally agreed standard case definition for disease reporting (1)
- 1.4 For the cruise ship scenario described above, how would you display the time course of the outbreak?
a. Endemic curve
b. Epidemic curve
c. Seasonal trend
d. Secular trend (1)

- 1.5 For the cruise ship scenario described above, if you suspected that the norovirus may have been transmitted by ice made or served aboard ship, how might you display "place"?
- a. Spot map by assigned dinner seating location
 - b. Spot map by cabin
 - c. Shaded map of United States by state of residence
 - d. Shaded map by whether passenger consumed ship's ice or not (1)
- 1.6 Which variables might you include in characterizing the outbreak above by person?
- a. Age of passenger
 - b. Detailed food history (what person ate) while aboard ship
 - c. Status as passenger or crew
 - d. Symptoms (1)

Use the options (a to d) below to answer the following questions 1.7 to 1.9.

Which term below best describes the pattern of occurrence of the three diseases (1.7 to 1.9) noted below in a single area?

- a. Endemic
 - b. Outbreak
 - c. Pandemic
 - d. Sporadic
- 1.7 Disease 1: usually 40–50 cases per week; last week, 48 cases ____ (1)
- 1.8 Disease 2: fewer than 10 cases per year; last week, 1 case ____ (1)
- 1.9 Disease 3: usually no more than 2–4 cases per week; last week, 13 cases ____ (1)
- 1.10 A reservoir of an infectious agent can be any of the following **except**:
- a. An asymptomatic human
 - b. A vaccine
 - c. An animal
 - d. The environment (1)

- 1.11 Disease control measures are generally directed at which of the following?
- a. Eliminating the reservoir
 - b. Eliminating the vector
 - c. Eliminating the host
 - d. Interrupting mode of transmission (1)
- 1.12 H1N1 is a mutated form of which pathogen?
- a. Influenza
 - b. Norvirus
 - c. Staphylococcus
 - d. Streptococcus (1)
- 1.13 A source of an infectious agent can be all the following **except**:
- a. An asymptomatic human
 - b. An animal
 - c. The environment
 - d. A susceptible person (1)
- 1.14 The following are all methods to preventing the spread of communicable disease **except**:
- a. Washing hands before you eat
 - b. Regular exercise
 - c. Vaccination
 - d. Proper nutrition (1)
- 1.15 Tsetse-fly transmits:
- a. Oriental sore
 - b. Sleeping sickness
 - c. Chagas disease
 - d. River blindness (1)

Question 2

(15 marks)

- 2.1 The figure below shows the disease infection timeline. Use the timeline to answer the questions below. Indicate which of the alphabets corresponds to the statement/phrase indicated in the question.

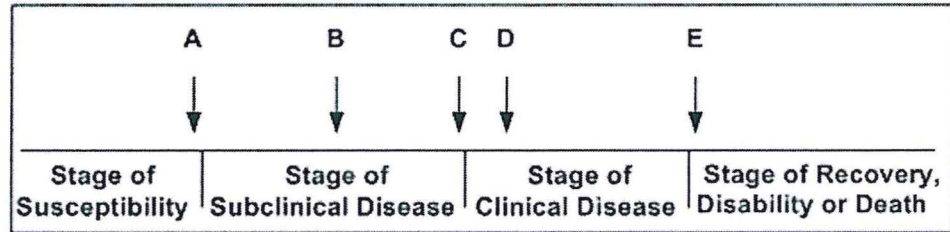


Figure 1: Disease timeline

- 2.1.1 Onset of symptoms (1)
- 2.1.2 Usual time of diagnosis (1)
- 2.1.3 Exposure (1)
- 2.1.4 Prodromal period (1)
- 2.1.5 Treatment outcome (1)

2.2 Explain the following epidemiological terms:

- 2.2.1 Biological vector (2)
- 2.2.2 One health concept (2)
- 2.2.3 Susceptible host (2)
- 2.2.4 Habitat (2)
- 2.2.5 Isolation (2)

Question 3

(10 marks)

Match the following communicable diseases with their respective causative agents in the table below. (Each correct answer earns 1 mark) (10)

	Disease		Causative agent
3.1	Swine flu	A	<i>Treponema pallidum</i>
3.2	Scabies	B	<i>Chlamydia</i>
3.3	Genital and anal warts	C	<i>Herpes varicella-zoster virus</i>
3.4	Hookworm infestation	D	<i>Shigella species</i>
3.5	Yellow fever	E	<i>Sarcoptes scabie</i>
3.6	Botulinism	F	Human papilloma virus
3.7	AIDS	G	<i>Myxovirus parotiditis</i>
3.8	Bacillary dysentery	H	<i>Ancylostoma duodenale</i>
3.9	Mumps	I	<i>Clostridium</i>
3.10	Trachoma	J	H1N1 virus
		K	<i>Flavivirus fibricus</i>
		L	HIV

SECTION B

Question 4

(30 marks)

- 4.1 A pregnant woman living in Ongwediva begins to complain of fever with chills, headache, body pains, joint pains, nausea and vomiting, and she is found to have anaemia. She was not regular with antenatal visits and did not receive any chemoprophylaxis for any disease. She is however confirmed to be HIV negative.
- 4.1.1 What condition do you think she has? (1)
 - 4.1.2 What is the name of the agent for the disease and how is it transmitted? (2)
 - 4.1.3 Specify two (2) strategies targeting pregnant women that would have prevented the occurrence of this disease in this woman? (2)
 - 4.1.4 Mention other measures that can be used to prevent transmission of this disease. (3)
- 4.2 A traveller from Angola arrives at Hosea Kutako airport.
- 4.2.1 Mention the documentation that he is required to present to health officials on arrival, stating the disease that is covered by this document. (2)
 - 4.2.2 For how long is the documentation expected to be valid? (1)
 - 4.2.3 If this traveller does not have this documentation what are the health officials expected to do? (2)
 - 4.2.4 Indicate two (2) other actions that should be ensured by these health officials to prevent international spread of the disease. (2)
 - 4.2.5 What regulation guides the actions of the health officials in dealing with health issues at the airport? (1)
- 4.3 A primary school child from an informal settlement has been complaining of occasional mild abdominal pain. His mother also noticed that he is not growing as expected especially compared to his siblings and peers, despite having a huge appetite. His mother is unemployed and has a small vegetable garden behind her shack that she fertilises using dried manure she gets from Gammams wastewater works. The family has no toilet facility and defecate in the bushes around the neighbourhood.
- 4.3.1 What do you suspect to be the reason for the child's condition and how was it acquired? (2)
 - 4.3.2 What would you recommend to diagnose the condition? (1)
 - 4.3.3 Enumerate three (3) risk factors for the condition in this particular child. (3)
 - 4.3.4 What advise would you give the community members to prevent occurrence of this condition? (4)
- 4.4 Your sister is pregnant and she tells you about a friend of hers that is sick with a fever, sorethroat and rashes all over her body, and the illness seems to be going around in her suburb, with several cases reported. The illness does not seem severe so she wants to visit her friend.

- 4.4.1 What disease could her friend possibly have? (1)
- 4.4.2 Do you think she should visit her friend? Justify your reason. (2)
- 4.4.3 How could your sister be protected from this illness? (1)

SECTION C

Question 5

(30 marks)

- 5.1 Highlight diseases that health workers are at risk of acquiring and mention what should be done to prevent disease transmission in the hospital setting. (8)
- 5.2 Discuss the role of immunity and host susceptibility in disease prevention, elaborating on factors that provide/strengthen immunity as well as factors that might compromise immunity and increase susceptibility to disease with relevant examples. (6)
- 5.3 In epidemiology, patterns in occurrence of disease is usually described. Discuss the relevance of describing the occurrence of disease by place and mention the determinants of geographical disease patterns. (6)
- 5.4 Explain the epidemiology of Tuberculosis **OR** Cholera in detail. (10)

Good luck!!!