

**UNIVERSITY OF SWAZILAND**  
FACULTY OF HEALTH SCIENCES

**FINAL EXAMINATION PAPER – MAY, 2011**

TITLE OF PAPER : COMMUNICABLE DISEASES CONTROL  
COURSE CODE : HSC 311  
TIME : 2 HOURS  
MARKS : 100

INSTRUCTIONS : ANSWER **QUESTION 1** AND **FOUR** OTHERS  
: **QUESTION 1** IS COMPULSORY  
: EACH QUESTION IS 20 MARKS  
: NO FORM OF PAPER SHOULD BE  
BROUGHT INTO NOR TAKEN OUT OF THE  
EXAMINATION ROOM  
: BEGIN THE ANSWER TO EACH QUESTION  
ON A SEPARATE SHEET OF PAPER  
: ALL CALCULATIONS/WORK OUT DETAILS  
SHOULD BE SUBMITTED WITH YOUR  
ANSWER SHEET

## QUESTION 1: MULTIPLE CHOICE (COMPULSORY)

Indicate your response to this question by writing down the letter corresponding to your chosen answer among those given in each sub-question.

- i. Which one of the following statements about cholera is NOT true about cholera?
  - A. 75% of patients of cholera do not show any symptoms
  - B. People in Swaziland commonly suffer from infections involving the 0139 strain of the bacterium
  - C. Aquatic sources commonly provide reservoirs of the pathogen for human infections
  - D. Cholera outbreaks are common in peri-urban slums and refugee camps
  - E. Global warming contributes to cholera epidemics
  
- ii. The incubation period for Shigellosis is:
  - A. <1 – 5 days
  - B. 7 – 14 days
  - C. 1 – 3 weeks
  - D. 1 – 7 days
  - E. 10 – 14 days
  
- iii. Human infections with shigellosis occurs through
  - A. Ingestion of contaminated food
  - B. Ingestion of contaminated water
  - C. Entrance of the bacteria through the rectum
  - D. Homosexual activity between an infected man and a susceptible partner
  - E. All of the above
  
- iv. Swaziland is going through the pre-elimination phase of malaria control. Which of the following strategies is the most important after local transmission of the disease is interrupted?
  - A. Indoor residual spraying with Diphenyl-dichloro-trichloroethane (DDT) of all households in traditional endemic areas
  - B. Prompt case identification and treatment
  - C. Prevention of importation of cases and mosquitoes through the border
  - D. Taking prophylactic treatment when visiting known endemic areas in the country
  - E. Both B and C
  
- v. The prevalence of schistosomiasis remains significantly high in Swaziland despite the presence of a control programme for many years. Why do you think the prevalence of schistosomiasis has remained high in Swaziland?
  - A. The capacity of the bilharzia control programme has remained unchanged despite increase in the control burden caused by new breeding areas of snail vectors constructed
  - B. The funding of the programme has not changed in response to the increasing challenge of disease incidence
  - C. Global warming has resulted to higher breeding rates of snail vectors

- D. Communities are not involved in control programmes
  - E. Both A and B
- vi. The morbidity and mortality rate of tuberculosis has increased in Swaziland in the last 15 years due to:
- A. lack of interventions in specific transmission areas such as peri-urban slums
  - B. existence and spread of untreatable strains of the bacterium
  - C. lack of drugs to treat everyone infected
  - D. the association of the disease with HIV infection
  - E. failure of infected patients to close their mouths when coughing or sneezing
- vii. Which one of the following statements about cholera is NOT true?
- A. Brackish water is sometimes a significant reservoir for cholera
  - B. Cholera can kill within hours even after administration of Oral Rehydration Salts (ORS)
  - C. Cholera transmission is closely linked to inadequate environmental management
  - D. Cholera is an easily treatable disease
  - E. Administration of antibiotics to cholera patients reduces transmission to other people
- viii. The World Health Organisation (WHO) definition of malaria elimination is:
- A. No vectors carrying the malaria parasite in the country
  - B. Zero locally transmitted malaria cases
  - C. No malaria cases in the country
  - D. No malaria cases in the world
  - E. All of the above
- ix. Potassium chloride is included in an Oral Rehydration Therapy packet in order to:
- A. correct acidosis
  - B. increase energy
  - C. increase the shelf-life of the packet
  - D. reduce stool volume
  - E. correct hypokalaemia
- x. The country with the largest number of TB cases world-wide is
- A. Swaziland
  - B. South Africa
  - C. Botswana
  - D. India
  - E. USA

**[20 marks]**

## QUESTION 2

- a. Syphilis is an acute and chronic sexually transmitted treponemal disease.
- What are the characteristic symptoms of syphilis? (3)
  - Explain how a person acquires syphilis infection. (2)
  - Briefly describe the manifestations of syphilis. (3)
  - How do the manifestations of syphilis differ in people with concurrent HIV-infection compared to those without? (2)
  - How is syphilis infection confirmed in the laboratory? (2)
  - Name the causative agent of syphilis. (1)
  - Mention two methods by which syphilis infection may be prevented. (2)
- b. Candidiasis is a mycotic infection that has high prevalence among certain groups of people.
- Name two groups of people in which deep candidiasis is common. (2)
  - Name one drug that is commonly used as chemoprophylaxis to prevent deep candidiasis. (1)
  - Mention 2 methods candidiasis may be passed from an infected to a susceptible individual. (2)

[20 marks]

## QUESTION 3

- a. Enterotoxigenic *Escherichia coli* (ETEC) are a major cause of diarrhoea among travellers and communities of developing countries. What are the predisposing factors of ETEC among:
- travellers (3)
  - poor communities (3)
- b. What is the incubation period for ETEC? (2)
- c. Write down briefly the symptoms associated with ETEC (3)
- d. Mention how complete treatment of ETEC may be achieved in health facilities. (3)
- e. How can individuals prevent infection with ETEC? (2)
- f. A newly emerged strain of *E. coli* (O157) was first described in the late 70s. What are the symptoms of *E. coli* O157 infections in humans? (4)

[20 marks]

## QUESTION 4

- a. The primary infection of tuberculosis (TB) occurs at four parts of the body. Name them. (4)
- b. Swaziland has the highest TB rates worldwide. Discuss why the incidence of TB in Swaziland has been on the increase since 1993. (5)
- c. The success of every TB control programmes depend critically on the quality of diagnostic services.
- What methods are used for the diagnosis of TB in Swaziland? (3)
  - Are these methods effective and efficient or not? Give reasons. (4)
- d. List four factors affecting susceptibility to TB. (4)

[20 marks]

### QUESTION 5

- a. Despite several environmental impact assessments that have been done before the construction of big dams like the Lubovane Dam, bilharzia incidence appears to remain on the increase. Explain why bilharzia incidence remains on the increase around the Lubovane Dam. (4)
- b. The Swaziland National Malaria Control Programme (SNMCP) has embarked on elimination of malaria transmission in Swaziland. After the disease is eliminated, prevention of re-importation of cases will be critical. Mention 3 strategies the SNMCP may implement to reduce malaria importation from one of the country's neighbours, Mozambique. (3)
- c. Children follow a scheduled immunisation in Swaziland and in many developing and developed countries of the world.
- Name FOUR diseases, besides polio, that children in Swaziland are immunised against. (4)
  - What is the scheduled immunisation against polio in children in Swaziland?(3)
  - Describe the process of immunisation against polio. (2)
  - The World Health Organisation's (WHO) acceptance level of national polio immunisation coverage for children is 80%. Has Swaziland reached this target? If no, give reasons for the failure. If yes, what strategies have been employed to reach the target? (4)

[20 marks]

### QUESTION 6

- a. Chicken pox and herpes zoster are common infections among children and adults respectively but rarely cause death.
- What is the relationship between chicken pox and herpes zoster? (2)
  - What are the common causes of death among children infected with chicken pox and among adults infected with herpes zoster? (3)
  - What is the risk of neonates who acquire chicken pox 5 – 10 days after birth? (2)
  - Why has there been an increase in herpes zoster incidence in Swaziland in the last two decades? (3)
  - Discuss briefly the symptoms that would make you suspect herpes zoster infection in an adult. (3)
- b. *Shigella dysenteriae* type 1 has caused several epidemics in Swaziland and many other countries since its recognition in Zaire in 1979.
- What obstacles have been met by developing countries in the control of *Shigella dysenteriae* type 1 epidemics? (3)
  - Mention FOUR strategies that are important in every shigellosis control programme. (4)

[20 marks]

## QUESTION 7

- a. Discuss the part played by the following organisations in the fight against HIV/AIDS in Swaziland.
- i. National Emergency Response Council on HIV/AIDS (NERCHA) (4)
  - ii. Swaziland National AIDS Programme (SNAP) (4)
  - iii. The AIDS Information and Support Centre (TASC) (4)
  - iv. Hospice at Home (2)
- b. The 20-29 and 30-39 age groups show a higher number of females infected with HIV than males. Give reasons why more females than males are infected in these age groups. (3)
- c. The 50-59 age group shows the reverse of what is observed in the 20-39 age group i.e. more males than females are infected. Explain why the reverse. (3)

**[20 marks]**