

UNIVERSITY OF SWAZILAND

FACULTY OF HEALTH SCIENCES

MAIN EXAMINATION PAPER – MAY, 2012

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

INSTRUCTIONS	:	ANSWER QUESTION 1 AND ANY FOUR OTHER QUESTIONS
	:	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: COMPULSORY [All students must answer this question]

- i. The difference between diarrhoea and dysentery is that
 - A. in diarrhoea there is no abdominal discomfort
 - B. in dysentery there is no blood
 - C. in dysentery there is usually blood and mucus while in diarrhoea there is usually no blood or mucus
 - D. diarrhoea is always accompanied by vomiting while dysentery is usually not accompanied by vomiting
 - E. dysentery involves effortless passing of soft stool yet diarrhoea requires an effort

- ii. Which of the following is NOT true about tuberculosis?
 - A. Tuberculosis usually remains latent in most individuals for many years
 - B. TB kills about 4 700 people daily
 - C. Eating a balanced diet may prevent tuberculosis infection
 - D. Standard therapy for active tuberculosis involves a 6-month drug regimen
 - E. Swaziland has the largest number of people with tuberculosis disease.

- iii. In the child immunisation schedule, measles vaccinations are done at
 - A. birth and after 9 months
 - B. 9 months and 18 months
 - C. 6 weeks and 10 weeks
 - D. birth, 9 months and 18 months
 - E. birth and 18 months

- iv. Which one of the following childhood diseases is responsible for producing nasal discharges on one side of the nose?
 - A. tetanus
 - B. pertussis
 - C. rubella
 - D. measles
 - E. diphtheria

- v. The incubation period for food poisoning due to *Staphylococcus aureus* is
 - A. 7 - 10 days
 - B. 2 - 4 hours
 - C. 2 - 4 days
 - D. 1 - 7 days
 - E. 9 - 10 days

- vi. To prevent food poisoning, food is best kept
 - A. either below 0°C or above 100°C
 - B. either below 4°C or above 37°C
 - C. either below 4°C or above 60°C
 - D. either below 7°C or above 60°C
 - E. at 0°C

- vii. The symptoms "*mild flu-like illness that progresses to paralysis which is typically non-symmetrical and flaccid, short and small limbs due to muscle waisting*" are associated with
- A. polio
 - B. measles
 - C. diphtheria
 - D. tetanus
 - E. rubella
- viii. Which of the following statements is NOT important during anti-retroviral treatment of HIV infected patients?
- A. Avoid sexual intercourse during treatment
 - B. Patients must strictly adhere to the medication schedule agreed with health personnel
 - C. Taking regular exercise
 - D. Having a good and balanced diet in sufficient quantities
 - E. Avoiding stressing situations
- ix. Which one of the following is NOT a side-effect of anti-retroviral treatment?
- A. increased diarrhoeal episodes
 - B. weight gain
 - C. skin rashes
 - D. reduced sexual desire
 - E. frequent vomiting
- x. Which of the statements below is NOT true about gonococcal infection?
- A. Effect in males and females differ in course, severity and ease of recognition
 - B. Infections are more common in the tropics (warmer) than in temperate zones (colder) of the world
 - C. Prevalence is highest in communities of low socio-economic status
 - D. In females, infection carries a significant risk of infertility and ectopic pregnancy
 - E. Infection may be asymptomatic in some individuals

[20 marks]

QUESTION 2

- a. Write **T** (for true) and **F** (for false) for each of the statements below: (4)
- Someone dies of tuberculosis every 20 seconds globally.
 - Tuberculosis affects only the lungs, gut/intestines, skin or tonsils
 - Presence of diabetes in a patient increases the risk of tuberculosis.
 - Tuberculosis causing organisms grow very fast but die very slowly during treatment.
- b. Drug resistant TB has become a major problem in Swaziland in the last few years.
- What is drug resistant TB? (2)
 - What causes development of drug-resistant TB? (2)
- c. You are an Environmental Health Officer in charge of a peri-urban community that involves some slums. Discuss two major strategies you may use to prevent transmission of tuberculosis in the community. Also, explain how you expect the strategies to perform and reduce tuberculosis incidence. (6)
- d. Tuberculosis prevalence continues to increase in Swaziland every year despite financial support for control from the Global Fund. Discuss the challenges faced by the Swaziland National Tuberculosis Control Programme in the control of tuberculosis. (6)

[20 marks]

QUESTION 3

- a. Typhoid is an under-estimated global burden.
- What is the global burden (morbidity and mortality) of typhoid? (2)
 - What is the incubation period of typhoid? (1)
 - Give two ways typhoid may be acquired by a susceptible human host. (4)
 - Describe briefly the symptoms you would associate with typhoid. (3)
 - Discuss two pieces of advice you may give a traveller who is visiting a typhoid endemic area to prevent infection while on holiday. (4)
- b. Shigellosis is a disease of the tropics and temperate regions of the world that causes symptoms ranging from mild diarrhoea to severe dysentery.
- Write down three (3) methods by which shigellosis may be acquired by a suitable host. (3)
 - Explain the pathogenesis that results in the symptoms of shigellosis. (3)

[20 marks]

QUESTION 4

- a. There are six strains of *Escherichia coli* responsible for disease in man. Only one serotype causes severe disease and death.
- i. Name the serotype responsible for most pathogenicity due to *E. coli*. (1)
 - ii. Explain how this serotype causes disease in man. (3)
 - iii. Describe briefly, the symptoms you would associate with enterohaemorrhagic *Escherichia coli* (EHEC) infection. (3)
 - iv. EHEC is transmitted through ingestion of contaminated food, water or hands. List 3 types of food that pose high risk of *Escherichia coli* infection. (3)
 - v. List four ways by which infection with EHEC in humans may be prevented. (4)
- b. Other strains of *E. coli* include enterotoxigenic *E. coli* (ETEC), which commonly infects children 0 – 3 years old, enteropathogenic *E. coli* (EPEC) and enteroinvasive *E. coli* (EIEC).
- i. What makes ETEC more prevalent in children 0 – 3 years than older children? (2)
 - ii. Explain the pathogenesis of disease in EIEC. (2)
 - iii. Also, explain the pathogenesis due to infection with EPEC. (2)

[20 marks]

QUESTION 5

- a. Early paediatric health is mainly achieved through a comprehensive schedule of vaccinations for children.
- i. What are the two vaccines administered to a child immediately after birth in Swaziland? (2)
 - ii. At what age is a child supposed to have completed all childhood immunisations? (2)
 - iii. At what ages does a child vaccinate against measles? (2)
 - iv. What percentage coverage has been achieved by the Expanded Programme on Immunization in Swaziland? What challenges are faced by the programme, preventing it achieving 100% coverage every year? (4)
- b. Cholera is often a cause of death in many patients with acute watery diarrhoea.
- i. What is the causative agent for cholera? (1)
 - ii. Name the two strains responsible for cholera outbreaks in Africa and South East Asia. (2)
 - iii. Besides humans, name two other main reservoirs of *Vibrio cholerae*. (2)
 - iv. Discuss strategies that you would set up for preparedness against cholera outbreaks in your community of responsibility. (5)

[20 marks]

QUESTION 6

- a. Food poisoning may be caused by several agents including *Staphylococcus aureus*.
 - i. What are the main symptoms of food poisoning? (2)
 - ii. What is the main cause of symptoms in a patient with food-poisoning? (2)
 - iii. What is the incubation period of *Staphylococcus aureus* infection? (1)
 - iv. Mention two ways humans may acquire *Staphylococcus aureus* infection. (2)
- b. Food poisoning due to *Clostridium perfringens* occurs worldwide both in humans and animals.
 - i. Name three (3) animals that may carry *Clostridium perfringens*. (3)
 - ii. What causes disease in the host during infection with *Clostridium perfringens*? (1)
- c. Food poisoning due to *Salmonella* may cause two diseases. Name the two diseases. (2)
- d. Design an education programme for food handlers on prevention of transmission of food poisoning in a food preparation establishment. (7)

[20 marks]

QUESTION 7

Discuss bilharzia and worm control in Swaziland. Include points such as: the strategies utilised by the programme and whether these strategies are successful or not; the capacity of the programme visa-a-vis' the increasing challenges of control.

[20 marks]