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Faculty of Medicine, University of Ruhuna
Third Examination for Medical Degrees (Part II) February 2024
Community Medicine Paper I
Tuesday 6th February 2024

Answer all 05 questions

(9.00 a.m. - 12.00 noon) 3 hours

Answer each question in a separate book

PART A

- 1.1. Briefly explain the differences between the two terms given below (40 marks)
- 1.1.1. Probability and non-probability sampling methods
 - 1.1.2. Morbidity and mortality
 - 1.1.3. Descriptive and inferential statistics
 - 1.1.4. Type I error and type II error
- 1.2. A researcher is interested in identifying whether there is a significant difference of the mean platelet count ($\times 10^9/L$) between leptospirosis and dengue patients. A representative sample of 200 leptospirosis and 200 dengue patients were investigated. The mean (\pm SD) platelet count values were 180 ± 50 and 120 ± 20 for leptospirosis and dengue patients respectively.
- 1.2.1. Calculate the 95% CI of the mean platelet count of leptospirosis patients in this population (10 marks)
 - 1.2.2. Calculate the 99% CI of the mean platelet count of dengue patients in this population (10 marks)
 - 1.2.3. State the null and alternative hypothesis for this study (10 marks)
 - 1.2.4. Test the null hypothesis at 5% significant level (30 marks)

PART B

- 2.
- 2.1.1. Briefly describe the process of population census in Sri Lanka (20 marks)
 - 2.1.2. Last year several deaths due to leptospirosis were reported among the paddy farmers in Southern province. Among the 2,500,000 total population, there were 15,000 total deaths reported and 100 were due to leptospirosis.
Calculate the following indices for the above scenario
 - a) Disease Specific Death Rate for leptospirosis (10 marks)
 - b) Proportional Mortality Rate for leptospirosis (10 marks)

- 2.1.3. There were nearly 40,000 paddy farmers in the age range of 30-49 years and 50 deaths had been reported due to leptospirosis among them.
The age structure of paddy farmers and the relevant national death rates for the age groups are given below.

Explain whether there is an excess of deaths experienced among the paddy farmers using appropriate calculations (10 marks)

Age group (years)	Paddy Farmers (n)	National death rates (per 1000 population)
30-39	15000	0.5
40-49	25000	1

- 2.2. Lack of life skills is an important contributing factor for the health issues among teenagers. Better parenting enables the teenagers to develop life skills and manage health and social issues effectively.

- 2.2.1. List **five (05)** common health issues among teenagers (10 marks)
 2.2.2. List **five (05)** life skills that can be used to overcome the issues listed in 2.2.1 (10 marks)
 2.2.3. List **five (05)** practices that should be adopted by parents to teach life skills to their teenage children (10 marks)
 2.2.4. State how these practices help to develop life skills among teenagers (20 marks)

PART C

3. A 85 year-old man was admitted to hospital with an acute gastroenteritis. He was found to have a BMI of 18 and a low serum haemoglobin level of 10g/dl.
- 3.1. Briefly describe **four (04)** factors that would affect his food intake. (40 marks)
 3.2. State the dietary assessment method you would use to assess his dietary intake. (10 marks)
 3.3. State the important aspects to be inquired in the social history and how these aspects would affect his nutritional status (20 marks)
 3.4. Outline the nutritional management of this patient (30 marks)

PART D

- 4.
- 4.1. Food borne diseases cause a considerable economic impact to a country by straining health-care systems, diminishing human productivity and affecting tourism and trade. These diseases contribute significantly to the global burden of disease and mortality.
- 4.1.1. List **five (05)** food borne diseases prevalent in Sri Lanka. (05 marks)
- 4.1.2. State **three (03)** authorized public healthcare workers involved in provision of food sanitation in Sri Lanka. (05 marks)
- 4.1.3. List **five (05)** control strategies adopted at national level in the country for one of the food borne diseases you have mentioned in 4.1.1 (20 marks)
- 4.1.4. State **four (04)** key measures that you would take to prevent food borne diseases in a temporary shelter following a disaster (20 marks)
- 4.2.
- 4.2.1. Define "occupational accidents". (10 Marks)
- 4.2.2. List **three (03)** main causes of occupational accidents. (10 Marks)
- 4.2.3. During 2023, number of occupational accidents were reported from a tea factory in Deniyaya. Prepare an "Action Plan" to control the occupational accidents of the particular tea factory using the 'three stages' of control model. (30 Marks)

PART E

5. A research team examined the potential relationship between exposure to domestic violence and risk of maternal suicide. A study was designed with 800 mothers, recruited at their booking visit, and followed up until delivery. Mothers were screened for domestic violence exposure, and 300 were identified as victims. All mothers were screened for suicidal ideation one month after delivery. Out of them, 80 mothers in the domestic violence exposed group and 30 mothers in the non-exposed group reported suicidal thoughts.
- 5.1. Name the study design. (10 marks)
- 5.2. Test the following hypothesis using an appropriate measure of association
'Domestic violence exposure increases the risk of having suicidal thoughts (50 marks)
- 5.3. List different patient presentations that healthcare professionals should consider to identify potential exposure to domestic violence (20 marks)
- 5.4. List **four (04)** actions implemented by the public health service in Sri Lanka to address domestic violence in the community (20 marks)