POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

SELECTION EXAMINATION FOR MSc (COMMUNITY MEDICINE)
SEPTEMBER 2024

Date: - 13th September 2024 **Time:-** 9.00 a.m. – 12.00 noon

Answer **all five (05)** questions.
Answer each question in a **separate book.**

Part A

1. In a rural Medical Officer of Health (MOH) area, the low-birth-weight (LBW) rate is reported to be 20%.

1.1. Define low birth weight rate. (10 marks)

1.2. Briefly describe three (03) common risk factors for LBW in a rural MOH area. (30 marks)

1.3. As the MOH of the area, briefly describe three (03) community-based activities that you would implement to address this problem. (30 marks)

1.4. List one (01) indicator to monitor each activity you have mentioned in 1.3. (30 marks)

2. A Medical Officer of Health (MOH) is interested in establishing health promotion settings in the MOH area.

2.1. Briefly describe the concept of a health promotion setting. (20 marks)

2.2. List two (02) nutrition related **health promotion outcomes** you may observe in a health promotion setting. (10 marks)

2.3. List four (04) non-communicable diseases (NCD) related **health outcomes** you may observe in a health promotion setting. (20 marks)

2.4 Describe how a health promoting school setting will improve NCD related outcomes. (50 marks)

Contd...../2-

3. The incidence and prevalence of dengue and diabetes in a country for the year 2023 are shown below.

	Point Prevalence	**Incidence**
Dengue	32 per 100,000 population	29 per 100,000 population
Diabetes	150 per 100,000 population	30 per 100,000 population

3.1. Explain the difference between point prevalence and incidence of the two diseases. (20 marks)

3.2. List five (05) challenges in reducing dengue incidence in Sri Lanka. (30 marks)

3.3 As the Medical Officer of Health (MOH) of a suburban area, describe five (05) activities that you would implement to reduce the dengue incidence in your MOH area. (50 marks)

PART B

4. A new screening test to detect sedentary behaviour among adolescents was validated in a school. Two hundred (200) adolescents participated in the study. The screening test was administered by a trained investigator and their activity level was assessed using an accelerometer (gold standard test) worn on the wrist.

   Out of 50 adolescents with sedentary behaviour, 40 were detected by the screening test. Twenty (20) adolescents who were not sedentary were also classified as sedentary by the screening test.

4.1. Tabulate the data in a 2x2 table. (20 marks)

4.2. Calculate the sensitivity and specificity of the screening test. (20 marks)

4.3. Based on your responses to 4.2, discuss the suitability of this test as a screening test to detect adolescent sedentary behaviour. (20 marks)

Contd...../3-

4.4. In this group of adolescents, the association between routine use of hand-held digital devices (assessed as a mean score) and sedentary behaviour (presence or absence) was determined.

4.4.1. State the null and alternative hypotheses for the above study. (20 marks)

4.4.2. State the most appropriate statistical test to determine the significance of this association. (10 marks)

4.4.3. Justify your answer given to 4.4.2. (10 marks)

5. A researcher is interested in determining the association between unhealthy food habits and exposure to advertisements among garment factory workers in Sri Lanka.

5.1. Recommend the most suitable study design that can be used, mentioning two (02) reasons for your recommendation. (20 marks)

5.2. Briefly describe two (02) biases related to the study design mentioned in 5.1. (20 marks)

5.3. The researcher identified the following variables to be measured. State the scale of measurement of the identified variables listed below. (20 marks)

5.3.1. Consumption of ultra processed food (Frequently/Occasionally/Rarely)

5.3.2. Body Mass Index (BMI kg/m^2)

5.3.3. Sex (Male/Female/Other)

5.3.4. Waist circumference (in cm)

5.4. The researcher collects data from 1000 garment factory workers and reports the following:

The mean BMI is 24.8 (SD=0.8) kg/m^2.
The prevalence of frequent consumption of ultra processed food is 70% (95% CI: 54% to 78%).

Briefly describe the above results statements using statistical concepts. (40 marks)