

POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

SELECTION EXAMINATION FOR MSc (COMMUNITY DENTISTRY)
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. Oral cancer is the leading cancer among males in Sri Lanka. Age-standardized incidence rate of oral cancer among males in Sri Lanka has increased from 12.8 per 100,000 population in the year 2000 to 23.1 per 100,000 population in the year 2021.
 - 1.1. List four (04) common risk factors for oral cancer in Sri Lanka. (20 marks)
 - 1.2. Briefly describe three (03) reasons for the above mentioned observations of age-standardized rates of oral cancer. (30 marks)
 - 1.3. As a Regional Dental Surgeon of a district, briefly describe five (05) community-based activities that you would implement to prevent and control oral cancer (50 marks)

2. Pregnant women are susceptible to a wide range of oral health conditions that could adversely affect the health of the mother and the baby. Oral healthcare was incorporated into the existing Maternal and Child Health Programme of Sri Lanka in 2009. However, the utilization of oral healthcare services by pregnant women is low in Sri Lanka.
 - 2.1. List four (04) advantages of having a national programme for providing oral healthcare during pregnancy. (20 marks)
 - 2.2. Briefly describe four (04) factors influencing the utilization of oral healthcare services by pregnant mothers. (40 marks)
 - 2.3. As the Regional Dental Surgeon, briefly describe four (04) activities that you would implement to improve the utilization of the oral healthcare services by pregnant women in your district. (40 marks)

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3. As a Regional Dental Surgeon, you have noticed the frequent promotions of non-fluoridated toothpaste brands in government schools.
- 3.1. List four (04) possible reasons for allowing the promotion of non-fluoridated toothpaste brands in government schools by the education sector. (20 marks)
- 3.2. Outline the roles of five (05) stakeholders who could collaborate with you to prevent harmful advertising of non-fluoridated toothpaste brands within government school premises in your area. (30 marks)
- 3.3. Describe five (05) measures that you would implement to address the issue of non-fluoridated toothpaste being promoted in the government schools in your 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)
- 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/m²)
- 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/m².
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)