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**POSTGRADUATE INSTITUTE OF MEDICINE**  
**UNIVERSITY OF COLOMBO**

**MSc (COMMUNITY MEDICINE/COMMUNITY DENTISTRY)**  
**EXAMINATION – JANUARY 2020**

**Date:** - 7<sup>th</sup> January 2020

**Time:-** 9.30 a.m. – 12.30 p.m.

**PAPER I**

Community Medicine candidates should answer **all six (06) questions in Parts A and B.**

Community Dentistry candidates should answer **all six (06) questions in Part A and C.**

Each question to be answered in a separate book.

052

**Part A**

1. In the recent past, it was reported that the air quality of Colombo city was poor. There were reports that the number of children seeking care for asthma at the Lady Ridgeway Hospital for children had increased during this period. The following statistics have been compiled.

<b>Patients visiting LRH for all asthma attacks (including acute attacks) during:</b>	<b>No. of patients</b>
Two weeks before poor air quality was reported in Colombo city	750
Two-week period when poor quality was reported in Colombo city	1250

<b>Patients visiting LRH for acute asthma attacks during:</b>	<b>No. of patients</b>
Two weeks before poor air quality was reported in Colombo city	200
Two- week period when poor quality was reported in Colombo city	450

450  
200

- 1.1. What other information do you require to estimate the period prevalence of asthma in Colombo city during the period when poor air quality was reported?  
(10 marks)

Contd..../2-

- 1.2. Describe and calculate a suitable measure of association for comparing the occurrence of acute asthma attacks before and during the period of poor air quality. (25 marks)
- 1.3. State one (01) assumption you made when calculating the measure of association in 1.2. (10 marks)
- 1.4. Perform a statistical test to determine whether the proportion of children presenting with acute asthma from among all asthma visits is the same before and during the period of poor air quality at the 5% significance level. (30 marks)
- $$\frac{200}{700} \text{ vs } \frac{450}{1200}$$
- 1.5. Interpret your results taking into consideration the answers to 1.2 and 1.4. (25marks)

2. The following data are available for a Medical Officer of Health (MOH) area with a population of 100,000 for 2019.

No. of deaths	500	No. of females 15-49 years	20,000
No. of live births	1500	No of deaths under 5 years	75
No. of maternal deaths	30	No. of neonatal deaths	15
No. of children under 5 years	7500	No. of infant deaths	20

- 2.1. Calculate and explain the term “natural increase” and its importance. (15 marks)
- 2.2. Calculate the maternal mortality rate and the post neonatal mortality rate. (20 marks)
- 2.3. Describe the stages of the demographic transition. (35 marks)
- 2.4. Infant mortality rate is a good indicator of the development of a country. Comment on this statement. (30 marks)

3. A researcher intends to conduct an unmatched case control study to determine the association between tobacco usage and oesophageal carcinoma.

3.1. State suitable sources to recruit cases and controls for this study, giving reasons. (20 marks)

3.2. List the parameters required to calculate the sample size to test the hypothesis. (10 marks)

Out of 300 cases recruited for the study, there were 160 tobacco users, while among the 300 controls there were 150 tobacco users.

3.3. Calculate an appropriate measure of association and comment on the relationship between tobacco use and oesophageal carcinoma. (30 marks)

The researcher further analysed the data by stratifying into two groups;  $\leq 40$  years and  $> 40$  years and obtained the following results:

Less than 40 years				More than 40 years			
Exposure	Cases	Controls	Total	Exposure	Cases	Controls	Total
Tobacco users	40	50	90	Tobacco users	120	100	220
Tobacco non-users	80	100	180	Tobacco non-users	60	50	110
Total	120	150	270	Total	180	150	330

3.4. For each group, calculate the measure of association for the relationship between tobacco use and oesophageal carcinoma and interpret your findings. (40 marks)

**Part B**

4. A divisional level assessment conducted among 425 adolescents of age 15-19 years showed that only 54% were doing physical activity for one hour a day and 44% did not know fruits were a good source of vitamins. Twelve percent of the youth had ever smoked in their lives and 50% of them, said they started to smoke when they were 14-18 years old. Sixteen percent of the youth had said that they have taken Cannabis or any other substance. Eight percent had ever had sexual intercourse though only 48% of the youth had ever heard of family planning. Over 95% expressed the importance of having an adolescent friendly service in health care settings.
- 4.1. List three (03) available health services for adolescents in Sri Lanka. (15 marks)
- 4.2. As the MOH taking into consideration the above findings, discuss the interventions you would carry out to improve adolescent health in the area. (50 marks)
- 4.3. Discuss the challenges that you may face when providing adolescent health services. (35 marks)
- 5.
- 5.1. Many new development projects are being carried out in Sri Lanka and these could have negative impacts to the environment.
- 5.1.1. Describe briefly the terms "Environment Impact Assessment" and "Initial Environment Examination". (20 marks)
- 5.1.2. Describe the long-term benefits of carrying out an Environment Impact Assessment. (30 marks)
- 5.2. Briefly describe the role of the MOH in providing public health relief to persons affected by a natural disaster. (50 marks)
- 6.
- 6.1. The Ministry of Health in Sri Lanka has planned to develop an Occupational Health, Safety and Wellbeing programme for healthcare workers.  
Discuss why such a programme is required for healthcare workers in the Ministry of Health in Sri Lanka. (50 marks)

- 6.2. As the MOH, you have received complaints from the neighbourhood of a base hospital that the hospital healthcare waste is mismanaged.
- 6.2.1. List four (04) categories of hazardous waste found in healthcare institutions. (10 marks)
- 6.2.2. As the MOH, describe the important actions that you would request the hospital director to carry out in managing healthcare waste. (40 marks)

### Part C

7. As the Regional Dental Surgeon, you have been asked to improve the surveillance in oral healthcare provided by dental surgeons in your district.
- 7.1. Explain three (03) key issues that affect surveillance. (30 marks)
- 7.2. Describe how you would improve surveillance in oral healthcare provided by dental surgeons in your district. (30 marks)
- 7.3. Discuss how you would use the information obtained from surveillance for planning of oral health services. (40 marks)
- 8.
- 8.1. Discuss the global trends for oral cancer. (30 marks)
- 8.2. Explain the factors responsible for these trends. (30 marks)
- 8.3. Describe the role of primary healthcare personnel in the prevention and control of oral cancer and oral potentially malignant disorders. (40 marks)
- 9.
- 9.1. As a recently appointed Regional Dental Surgeon, how would you plan a programme to improve the oral health of school children in your district? (50 marks)
- 9.2. Discuss the importance of monitoring the activities of School Dental Services. (50 marks)

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**EXAMINATION – JANUARY 2020**

**Date :- 8<sup>th</sup> January 2020**

**Time:- 9.30 a.m. – 12.30 p.m.**

**PAPER II**

**Answer all six (06) questions.**

**Each question to be answered in a separate book.**

1. A survey has found out that the prevalence of overweight and obesity among 14-15-year-old adolescent school children in an educational zone of a district was 10.8%. It has been decided to carry out a project at the district level to bring down the prevalence of overweight and obesity among adolescent school children.
  - 1.1. Briefly describe what is meant by the term “project”. (10 marks)
  - 1.2. Outline this project using the Logical Framework analysis. (30 marks)
  - 1.3. Describe briefly the key functions of the Regional Director of Health Services who will be the project manager of this project. (30 marks)
  - 1.4. Discuss three (03) key challenges in evaluating this project. (30 marks)
2.
  - 2.1. Healthy Settings, the settings-based approaches to health promotion, involve a holistic and multi-disciplinary method which integrates action across risk factors.
    - 2.1.1. Explain the term “healthy setting” with an example. (20 marks)
    - 2.1.2. List five (05) such settings where health promotion is currently being implemented in Sri Lanka. (15 marks)
    - 2.1.3. Outline the main components of a health promotion programme in any of the above settings to improve sexual and reproductive health of the working population. (30 marks)

2.2. Discuss the following statement.

“Culture could be considered as a factor in enhancing or diminishing the effectiveness of health communication programmes”. (35 marks)

3.

3.1. Describe the specific activities carried out by the Public Health Inspector (PHI) during the field investigation of a notified pulmonary tuberculosis patient. (30 marks)

3.2. Briefly describe the utilization of surveillance data to control communicable diseases. (40 marks)

3.3. A Regional Epidemiologist has noticed that the number of reported cases of enteric fever have significantly increased in General Hospital “X” during the last 2 months.  
Outline the possible reasons for this apparent increase in the reported enteric fever cases. (30 marks)

4.

4.1.

4.1.1. List two (02) possible circumstances in the personal life of a married medical officer/dental surgeon that can negatively influence his/her professional life. (10 marks)

4.1.2. Discuss how he/she can manage one of those situations so that his/her professional life is minimally affected. (50 marks)

4.2. As the MOH of a busy MOH area, how do you advice your staff to reduce mental stress. (40 marks)

Contd...../3-

5.

5.1. Describe the term “injury” (15 marks)

5.2.

5.2.1. Mention three (03) National data sources available to obtain information related to injuries. (15 marks)

5.2.2. List the strengths and weaknesses separately for each of the above-mentioned data sources in obtaining the incidence of injuries. (30 marks)

5.3. Sri Lanka is moving towards reducing the burden of road traffic accidents (RTA).

Describe the strategies that could be adopted in a prevention programme of RTAs. (40 marks)

6.

6.1. Discuss the common challenges experienced when designing and implementing a comprehensive Non Communicable Disease (NCD) prevention programme at district level. (50 marks)

6.2. Community based rehabilitation is a community development strategy that aims at enhancing the lives of persons with disabilities within a community.

6.2.1. Mention the key divisional level stake holders involved in community-based rehabilitation. (20 marks)

6.2.2. Describe how a stroke patient could be rehabilitated in the community with the help of stakeholders mentioned in 6.2.1. (30 marks)