

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

**MSc (COMMUNITY MEDICINE/COMMUNITY DENTISTRY)**  
**EXAMINATION (NEW SYLLABUS) – NOVEMBER 2016**

**Date :- 22<sup>nd</sup> November 2016**

**Time :- 9.00 a.m. – 12.00 noon**

**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 Parts A and C.**

Each question to be answered in a separate book.

**Part A**

1. Distribution of the population in Sri Lanka by age and sex according to the Census – 2011/2012 appears below.

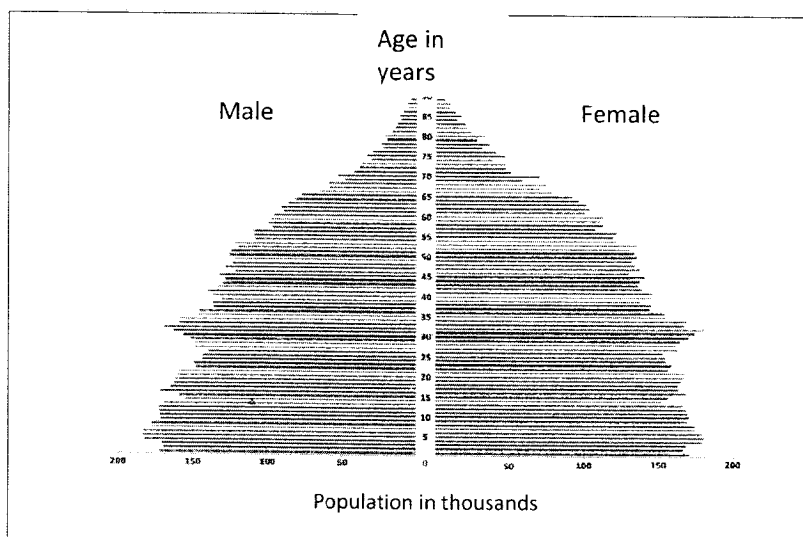


Figure1: Distribution of the population in Sri Lanka by age and sex according to the Census – 2011/2012

- 1.1. Describe the population structure of Sri Lanka in 2011/2012 based on the above figure. (25 marks)
- 1.2. Describe three (03) implications of the changing demographic pattern in Sri Lanka that need to be addressed by health policy makers. (30 marks)
- 1.3. Define 'demographic bonus'. (10 marks)
- 1.4. Describe the measures that Sri Lanka should adopt to optimize the benefits of the demographic bonus. (35 marks)
2. You are requested to carry out a study to assess the temporal relationship between environmental pollution and dementia among adults.
- 2.1. Name the most appropriate study design, giving reasons. (10 marks)
- 2.2. List two (02) feasibility issues that you would encounter in conducting the study using the selected design. (20 marks)
- 2.3. Discuss the following errors that may occur in this study and measures that can be taken to minimize each.
- 2.3.1. Sampling error (15 marks)
- 2.3.2. Measurement error (15 marks)
- 2.4. Interpret the following results obtained in this study using the most appropriate measure of risk. (40 marks)

Environmental pollution	Dementia	
	Present	Absent
Yes	10	30
No	25	40

3. The effect of a lifestyle modification programme on the systolic blood pressure of adults over 40 years of age was evaluated in a study. The setting was 12 *Grama Niladhari* (GN) areas of the Galle district. Six GN areas each were randomized to intervention and usual care arms. The lifestyle modification programme was implemented for six months for 20 participants in each of the six intervention GN areas and usual care was given to 20 participants each from the other six GN areas. The primary outcome measure was the change in systolic blood pressure at 1 year.

- 3.1. State the study design. (20 marks)
- 3.2. Explain the term 'randomization'. (10 marks)
- 3.3. The systolic blood pressure at baseline and at one year in one GN area is given below. Calculate the mean difference of systolic blood pressure at baseline and at 1 year in this sample. (25 marks)

Participant Number	Systolic BP at baseline	Systolic BP at 1 year
001	120	120
002	110	120
003	135	130
004	125	120
005	115	120
006	140	135
007	155	150
008	180	160
009	135	130
010	140	150
011	130	135
012	120	120
013	110	115
014	100	110
015	120	130
016	135	130
017	145	130
018	150	155
019	165	155
020	150	140

- 3.4. The standard deviation of the mean difference was 8.72. Apply a suitable statistical test to determine whether the change in systolic blood pressure is significant. (25 marks)
- 3.5. Interpret your results. (20 marks)

### **PART B**

4. Sri Lanka is facing many disasters every year.
- 4.1. List the disasters more likely to occur in the coming years in Sri Lanka considering the changing socio-demographic and economic scenario. (20 marks)
- 4.2. List five (05) stakeholders involved in disaster preparedness and response in Sri Lanka stating the contribution of each. (30 marks)
- 4.3. Describe the activities carried out in Sri Lanka regarding the Zika outbreak :
- 4.3.1. To prevent the introduction of the disease to the country. (25 marks)
- 4.3.2. To control the spread within the country, if the disease is introduced (25 marks)
5. Household air pollution is an important public health issue in Sri Lanka.
- 5.1. List five (05) pollutants that contribute to household air pollution in Sri Lanka. (10 marks)
- 5.2. Describe the factors which contribute to household air pollution in Sri Lanka. (30 marks)
- 5.3. List the health problems commonly attributed to household air pollution. (20 marks)
- 5.4. Describe the measures that could be recommended to reduce household air pollution in Sri Lanka at
- 5.4.1. National level (20 marks)
- 5.4.2. MOH level (20 marks)

6. The figure given below is extracted from Lancet (2014).

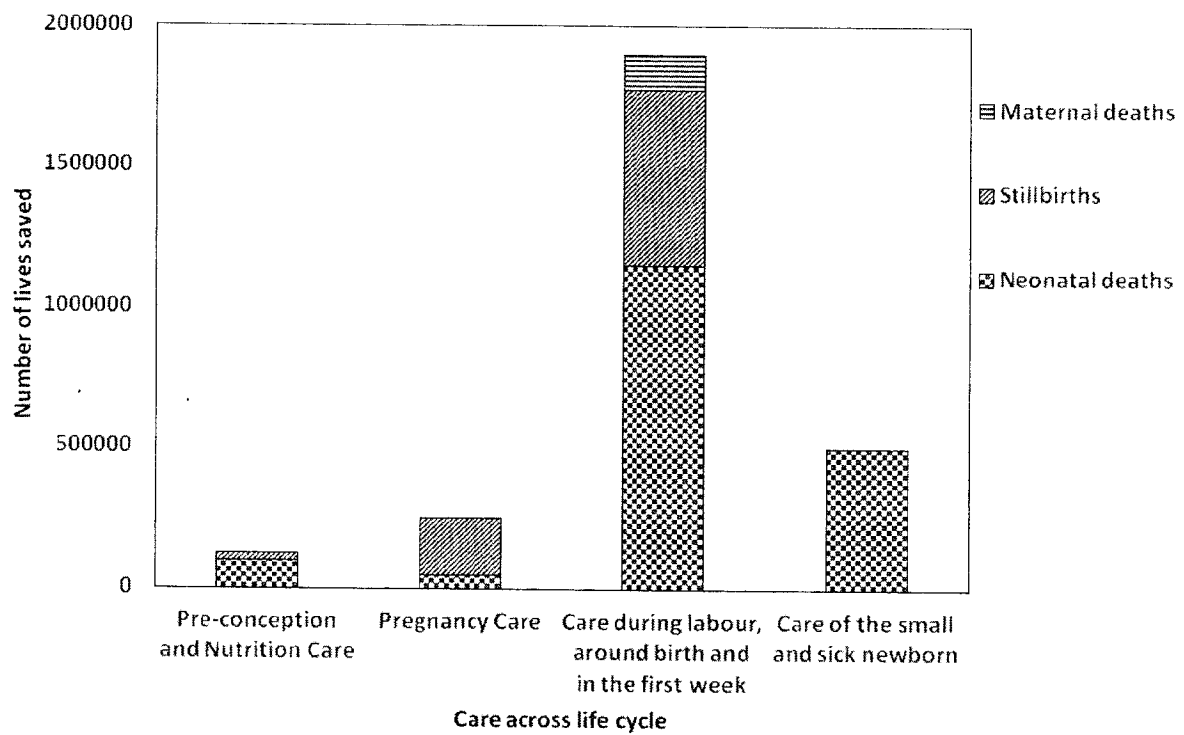


Figure 2: Lives that could be saved by 2025 with universal coverage of care

- 6.1. Explain the figure given above, in relation to lives saved by provision of care across life cycle. (50 marks)
- 6.2. In Sri Lanka, 99.9% of deliveries occur in hospitals and of these, 92% occur in hospitals with specialist care.  
Discuss the implications of this status, giving examples of evidence based interventions for further improvement of maternal and neonatal care in the country. (50 marks)



**PART C**

7. School authorities complain that restorations placed at mobile dental clinics by School Dental Therapists get dislodged usually within one week.

7.1. Outline possible factors that might have lead to such a complaint.  
(40 marks)

7.2. As the Regional Dental Surgeon, how would you manage this issue?  
(60 marks)

8. Discuss the following statements:

8.1. Dental Caries is an infectious disease. (30 marks)

8.2. Prolonged breast feeding is a risk factor for Early Childhood Caries.  
(40 marks)

8.3. Introduction of 'Plain packaging' will reduce smoking in Sri Lanka.  
(30 marks)

9. Professional ethics is an important consideration in dentistry.

9.1. Describe the key principles of professional ethics. (40 marks)

9.2. Describe how you would apply the above principles in carrying out duties as a Regional Dental Surgeon. (60 marks)

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**Date :- 22<sup>nd</sup> November 2016**

**Time :-1.00 p.m. – 4.00 p.m.**

**PAPER II**

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

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

1.

- 1.1. List five (05) common deficiencies observed in the management of health educational programmes at the divisional (MOH) level. (20 marks)
- 1.2. As the MOH, how would you improve health education skills among the Public Health Midwives in your area? (50 marks)
- 1.3. Describe the basic differences between health education and health promotion. (30 marks)

2.

- 2.1. Ministry of Health has decided to introduce Human Papiloma Virus (HPV) vaccine in to the National Immunization Programme from 2017 as a Cervical Cancer preventive vaccine.  
  
Describe key factors to be considered in introducing HPV vaccine into the National Immunization Programme. (50 marks)
- 2.2. Describe the reporting system of Adverse Events Following Immunization (AEFI) in the country. (25 marks)
- 2.3. As a Medical Officer of Health, what are the measures you would take to prevent AEFI due to programme errors? (25 marks)

Contd..../2-

3. As a Medical Officer of Health (MOH) of an area which has a developing industrial zone and expanding commercial facilities, you are requested to develop a comprehensive programme to address life style issues to prevent chronic non-communicable diseases.

3.1. Give an outline of the components of a project proposal to be submitted to the Regional Director of Health Services (RDHS) to address life style change in the above setting. (30 marks)

3.2. Describe how you would monitor the implementation of the proposed project. (40 marks)

3.3. Describe the tool that can be used for evaluating this project. (30 marks)

4.

4.1. Define Communicable Disease surveillance. (20 marks)

4.2. Describe how you would identify gaps/deficiencies in the Communicable Disease surveillance activities in a Teaching Hospital. (40 marks)

4.3. As a Medical Officer of Health you are regularly receiving communicable disease notifications.

Describe how you would utilize the notification system to detect a hepatitis outbreak in your MOH area. (40 marks)

5.

5.1. A recently conducted periodic island-wide survey revealed that prevalence of physical inactivity among school children and adults has increased over the past few years.

5.1.1. Discuss school based interventions which could be adopted to promote physical activity among school children. (40 marks)

5.1.2. As the District Medical Officer, Non Communicable Diseases (MO NCD) how would you improve the physical activity among adults using the multi-sectoral approach? (40 marks)

5.2. List five (05) criteria used to identify the "Best Buys" and "Good Buys" interventions for NCD. (10 marks)

5.3. List five (05) "Best Buy" interventions that could be used in reducing tobacco use. (10 marks)



6. Describe the importance of the following:-

- 6.1. Process of finalizing a draft health policy. (25 marks)
- 6.2. Equity in health care workforce distribution. (25 marks)
- 6.3. Job description of health staff. (25 marks)
- 6.4. World Health Assembly Resolutions. (25 marks)