

POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

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

Date :- 22nd November 2016

Time :- 9.00 a.m. – 12.00 noon

PAPER I

Answer all five (05) questions.

Each question to be answered in a separate book.

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

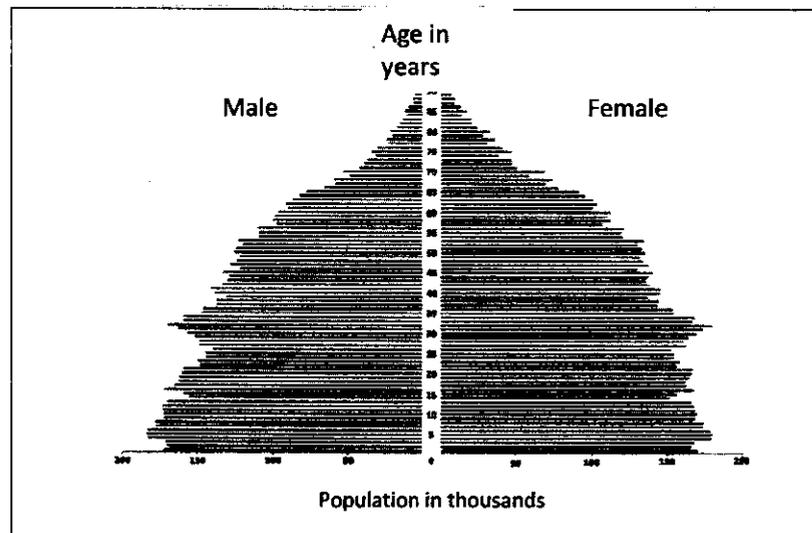


Figure1: Distribution of the population in Sri Lanka by age and sex according to the Census – 2011/2012

- 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)

Contd...../2-

- 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)
4. A study was carried out among school children in the Colombo district to assess the effectiveness of health education via internet for reduction of salt consumption in households.
- 4.1. State the eligibility criteria of school children to be selected for the study. (15 marks)
- 4.2. Discuss the precautions that should be taken to minimize errors. (30 marks)

At end of one year, the following results were obtained.

Salt reduction in households by 50%	Group	
	Intervention group	Control group
Yes	10	30
No	25	40

- 4.3. Apply a suitable statistical test to determine the effectiveness of the intervention. (30 marks)
- 4.4. Interpret the results. (25 marks)
5. A researcher wishes to estimate the lifetime prevalence of domestic violence among married females between 25-55 years of age residing in the Kandy district. It is planned to collect data using a paper-based self-administered questionnaire containing 50 items.
- 5.1. Describe a suitable sampling method to obtain a representative sample. (25 marks)
- 5.2. Describe the ethical issues you would anticipate when developing the methodology of this study. (25 marks)
- 5.3. Describe the steps that can be taken to minimize the ethical issues you identified in 5.2. (25 marks)
- 5.4. Critically comment on the validity of the questionnaire described above. (25 marks)

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PAPER II

Answer all five (05) questions.

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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)

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PAPER III

Community Medicine candidates should answer **all five (05) questions in Parts A and B.**

Community Dentistry candidates should answer **all five (05) questions in Parts A and C.**

Each question to be answered in a separate book.

PART A

1. The focus has shifted from the Millennium Development Goals (MDGs) to Sustainable Development Goals (SDGs).
 - 1.1. Describe five (05) major differences between MDGs and SDGs. (35 marks)
 - 1.2. Describe four (04) major challenges that need to be addressed for achieving SDGs. (20 marks)
 - 1.3. Describe how the SDGs expand the focus on gender equality when compared to MDGs. (45 marks)
2.
 - 2.1. Healthy ageing is promoted through the life course approach. Explain the above statement giving reasons. (30 marks)
 - 2.2. List five (05) health implications of ageing. (10 marks)
 - 2.3. As a Medical Officer of Health, design a programme to promote awareness on healthy ageing in your area. (40 marks)
 - 2.4. Describe the benefits that an elder could obtain from community based elderly clubs. (20 marks)

Contd...../2-

3. Chemical incidents are increasingly reported in Sri Lanka.
- 3.1. Enumerate five (05) important factors that are likely to contribute to this increased occurrence of chemical incidents (20 marks)
- 3.2. Describe the actions that could be taken to reduce the risk of such incidents
- 3.2.1. At national level (25 marks)
- 3.2.2. At MOH level (25 marks)
- 3.3. Discuss the role of the Medical Officer of Health in managing the risk of chemical incidents in an area where new mass scale industries are emerging. (30 marks)

PART B

- 4.
- 4.1. List five (05) important factors that have been attributed to the increased incidence of disasters in Sri Lanka. (30 marks)
- 4.2. List five (05) man-made disasters that had occurred during the post war period in Sri Lanka. (30 marks)
- 4.3. Discuss the role of the Medical Officer of Health in preventing such disasters or in reducing the human suffering from such man-made disasters. (40 marks)
5. Road traffic accidents for the past decade have increased in the country causing increased death and disability.
- 5.1. Describe the preventive activities you would propose at the
- 5.1.1. National level (25 marks)
- 5.1.2. Provincial level (25 marks)
- 5.2. Discuss the importance of a injury surveillance system in a country. (20 marks)
- 5.3. Discuss the challenges that could be encountered in establishing an injury surveillance system in Sri Lanka. (30 marks)

Contd...../ 3-

PART C

- 6.
- 6.1. Define the term 'screening'. (20 marks)
 - 6.2. Explain the characteristics of a good screening test. (30 marks)
 - 6.3. Discuss the importance of the following biases that may occur in the evaluation of a screening test carried out to detect Oral Potentially Malignant Disorders (OPMD) and oral cancer.
 - 6.3.1. Volunteer bias (10 marks)
 - 6.3.2. Length bias (20 marks)
 - 6.3.3. Lead time bias (20 marks)
7. Early Childhood Caries (ECC) is a major public health problem in Sri Lanka.
- 7.1. Define ECC. (20 marks)
 - 7.2. Describe the possible social factors contributing to the high prevalence of ECC. (30 marks)
 - 7.3. Outline the preventive measures that could be taken to control ECC. (50 marks)

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PAPER IV

Community Medicine candidates should answer **all five (05) questions in Parts A and B.**

Community Dentistry candidates should answer **all five (05) questions in Parts A and C.**

Each question to be answered in a separate book.

PART A

1. Communicable diseases which are transmitted by the Aedes mosquito are becoming a global issue.
 - 1.1. List the diseases transmitted by the Aedes mosquito. (20 marks)
 - 1.2. Discuss the role of multi-sectoral co-ordination to control Aedes mosquito. (40 marks)
 - 1.3. Outline the steps to be taken by you as the Medical Officer of Health (MOH) to prevent the re-emergence of the diseases transmitted by Aedes mosquito. (40 marks)

2. Health promoting schools are playing a major role in the prevention of Non-Communicable Diseases (NCDs).
 - 2.1. Define the term 'health promotion'. (15 marks)
 - 2.2. Describe the role of health promotion in the prevention of NCDs. (25 marks)
 - 2.3. List the functions of the health promoting schools. (30 marks)
 - 2.4. Discuss the challenges faced at MOH level in establishing health promoting schools. (30 marks)

Contd.../2-

3. The Cancer Registry is one of the surveillance methods to monitor the cancer trends.
- 3.1. List three (03) common preventable cancers in Sri Lanka. (20 marks)
- 3.2. State the programmes conducted by the Ministry of Health Sri Lanka to prevent such cancers. (20 marks)
- 3.3. Discuss the issues in implementing and monitoring the programmes mentioned in 3.2. (30 marks)
- 3.4. Discuss the usefulness of Mammography to screen breast cancers. (30 marks)

PART B

4. In Sri Lanka children with special needs have been neglected over the years. At the national level how would you plan a programme to address this issue. (100 marks)
5. Write short notes on :-
- 5.1. Elimination of malaria (25 marks)
- 5.2. Association and causation (25 marks)
- 5.3. Gender-based violence (25 marks)
- 5.4. Nutritional surveillance (25 marks)

Contd..../3-

PART C

6. According to the National Cancer Registry data, the incidence of oral cancer has increased during the last few years.
- 6.1. Describe possible reasons for this observation. (50 marks)
- 6.2. As the Regional Dental Surgeon, describe the preventive measures that could be taken to reduce oral cancer incidence in your district. (50 marks)
7. Write short notes on the following :
- 7.1. Community Periodontal Index of Treatment Needs (CPITN) (30 marks)
- 7.2. WHO criteria for assessment of dental caries in oral health surveys. (30 marks)
- 7.3. Clinical audit in dentistry. (40 marks)