

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

**MSc (COMMUNITY MEDICINE/COMMUNITY DENTISTRY)**  
**EXAMINATION – FEBRUARY 2021 (RESCHEDULED)**

**Date:-** 2<sup>nd</sup> February 2021

**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.

**Part A**

1.

1.1. A cross-sectional study was conducted among pregnant women in their first trimester to assess the renal function in pregnancy. Figure 1 shows the distribution of serum creatinine and estimated glomerular filtration rate (eGFR) and Table 1 shows the distribution of serum creatinine values by period of amenorrhea (PoA).

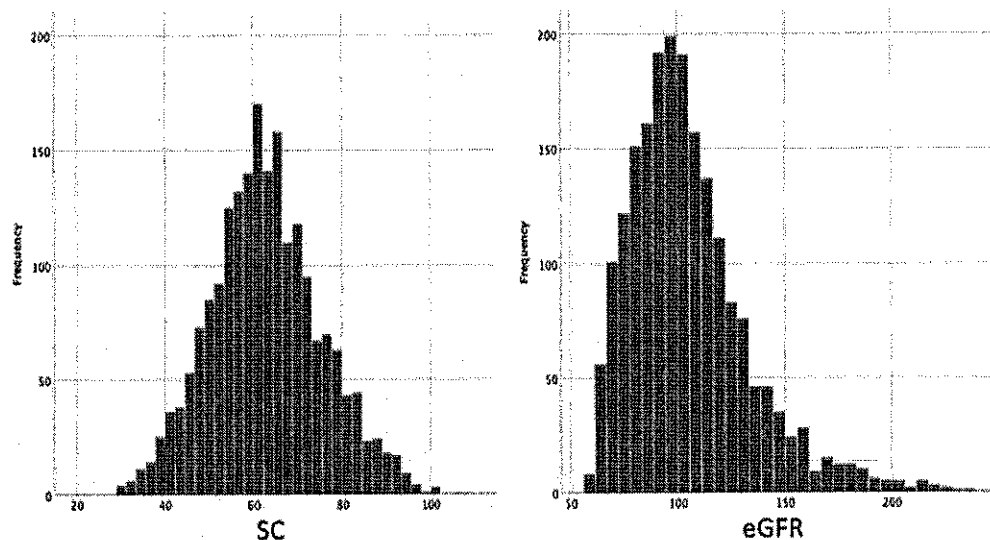


Figure 1: Distribution of serum creatinine (SC) and eGFR values

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Table 1: Distribution of serum creatinine values by PoA

	N	Serum creatinine mmol/L	
		Mean	SD
4-7 weeks	150	54.4	8.7
8-9 weeks	238	52.8	8.6
10-12 weeks	136	49.6	8.9
Total	524	52.4	8.9

- 1.1.1. State the appropriate measures of central tendency and dispersion to describe serum creatinine and eGFR values in this sample. (20 marks)
- 1.1.2. State the appropriate statistical test to determine whether there is a significant difference in serum creatinine values according to PoA. (10 marks)
- 1.1.3. State the appropriate statistical test to determine whether serum creatinine values are correlated with PoA. (10 marks)
- 1.1.4. Another researcher argued that the calculated mean serum creatinine value for the first trimester (52.4 mmol/L) may not be valid for the reference population because the sample is small. Calculate an appropriate measure/s to address this issue. (20 marks)
- 1.2. A researcher planned a double blind randomized clinical trial to test the long term effects of three independent drugs on a group of patients with a skin disease. Outcomes were measured as the diameter of the lesion in millimeters. Data were collected three-monthly over a one-year period.
- 1.2.1. Outline a plan of analysis for this study indicating the variables. (30 marks)
- 1.2.2. Giving reasons, indicate the most appropriate statistical test for data analysis. (10 marks)

Contd...../3-

2.

2.1. Cakes and soft drinks were served to 400 participants at a social gathering. Of them, 200 ate cakes and all consumed soft drinks. Six hours later, 160 developed severe vomiting and were hospitalised. All 160 reported consuming cakes and soft drinks.

2.1.1. Calculate the relevant epidemiological measure/s. (20 marks)

2.1.2. Determine whether cakes or soft drinks is likely to be responsible for the illness. (20 marks)

2.2. The table given below is from a study of caregivers looking after patients with residual impairment and disability after spinal cord injury in Sri Lanka.

Characteristic	Level of caregiver burden						Significance OR (95% CI)
	High		Low		Total		
	n	%	n	%	n	%	
Availability of support to the caregiver							
No	34	28.3	86	71.7	120	100.0	$\chi^2 = 8.52, p = 0.003,$ $OR = 2.12 (1.23 - 3.65)$
Yes	44	15.7	236	84.3	280	100.0	
Total	78	19.5	322	80.5	400	100.0	

2.2.1. State the study design used. (10 marks)

2.2.2. Interpret the results. (30 marks)

2.2.3. From a similar study done in Australia, the finding was OR 0.72 (95% CI: 0.57 – 0.91).

Based on the odds ratios of the two studies, what is your conclusion? (20 marks)

3.

3.1. Describe the measures that can be taken in a tertiary care health institution to mitigate climate change. (40 marks)

3.2. Describe the measures that can be taken in a tertiary care health institution to improve adaptation to climate change. (60 marks)

Contd...../4-

**Part B**

4. In Sri Lanka, more than 70% of infant deaths occur during the neonatal period.
- 4.1. Name three (03) evidence-based newborn care interventions/practices that are implemented under the guidance of the Medical Officer of Health (MOH). (15 marks)
  - 4.2. As the MOH of the area, describe how you would assess the provision of postpartum care in the domiciliary setting. (25 marks)
  - 4.3. Enumerate five (05) challenges in providing optimum postnatal care during the COVID-19 pandemic. (30 marks)
  - 4.4. Describe the appropriate measures that should be taken to continue postpartum services in a pandemic situation. (30 marks)
5. The COVID-19 pandemic has disturbed the functionality of most work settings in Sri Lanka resulting in significant adverse economic consequences.
- 5.1. Explain why large-scale apparel industries are at a higher risk of transmission of the SARS CoV-2 (COVID-19) virus. (30 marks)
  - 5.2. As a Medical Officer of Health (MOH), describe the measures that you would recommend to the manager of a large-scale apparel factory to keep the factory free of COVID-19. (40 marks)
  - 5.3. At the community level, apparel industry employees are stigmatized as "COVID-19 spreaders".  
What actions would you take as the MOH to address this problem in your area? (30 marks)
6. The Ministry of Health intends to design a programme to promote the wellbeing of residents in elderly homes.
- 6.1. Justify the need for introducing a programme to promote the wellbeing of residents in elderly homes in Sri Lanka. (25 marks)
  - 6.2. List the specific activities that you would identify to promote the wellbeing of residents in elderly homes. (20 marks)

- 6.3. Describe the possible challenges that could be encountered in the implementation of this programme at the
- 6.3.1. National level (15 marks)
  - 6.3.2. Institutional level (20 marks)
- 6.4. Outline the measures to minimise care-giver burden in elderly homes. (20 marks)

### Part C

7.

- 7.1. State three (03) modes of transmission of SARS CoV-2 in the dental clinic. (15 marks)
  - 7.2. Indicate the interventions to control the transmission of SARS CoV-2 mentioned in 7.1. (25 marks)
  - 7.3. As a Regional Dental Surgeon (RDS), outline a study to test the effectiveness of one (01) intervention mentioned in 7.2. (60 marks)
8. As schools were closed during the COVID-19 pandemic, school dental clinics in Sri Lanka were unable to function effectively.
- 8.1. Indicate the possible consequences of this situation. (40 marks)
  - 8.2. As a Regional Dental Surgeon (RDS), indicate the steps that you would take to overcome the consequences mentioned in 8.1. (60 marks)
9. The Regional Director of Health Services (RDHS) advises you to use online teaching methods for an in-service training programme targeting school dental therapists.
- 9.1. List five (05) advantages and five (05) disadvantages of online teaching methods. (40 marks)
  - 9.2. As a Regional Dental Surgeon (RDS), describe the steps in planning an online in-service training programme for school dental therapists in your area. (60 marks)

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**Date:-** 3<sup>rd</sup> February 2021

**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.

1.1. Discuss the role of information and communication technology (ICT) in the surveillance and control of COVID-19 outbreak in Sri Lanka.  
(30 marks)

1.2. In the second wave of COVID-19, Sri Lanka is continuing outbreak control activities while the country is kept open. This is in contrast to the strategy of complete disease suppression and lockdown adopted during the first wave.  
List the advantages and disadvantages of the current Sri Lankan COVID-19 control strategy.  
(40 marks)

1.3. The healthcare staff and other support frontline workers in Sri Lanka are offered the Covishield® COVID-19 vaccine initially.  
Discuss the implications of this approach in introducing a new vaccine in relation to pharmacovigilance.  
(30 marks)

2.

2.1. List three (03) generic skills required to be a good negotiator.  
(15 marks)

2.2. Describe the mental health services available for workers in Sri Lanka.  
(35 marks)

2.3. As a middle level healthcare manager, how would you identify and support a member of your healthcare team who is suffering from mental stress?  
(50 marks)

Contd...../2-

3.
  - 3.1. Define the term 'disease screening'. (15 marks)
  - 3.2. List the characteristics of a good screening test. (25 marks)
  - 3.3. Name three (03) leading cancer screening programs in Sri Lanka. (15 marks)
  - 3.4. Discuss the strengths and weaknesses of each of the above screening programs separately. (45 marks)
  
4. As the Medical Officer of Health (MOH) of an area that underwent frequent lockdowns, you observe that voluntary compliance for public health and social measures for controlling COVID-19 is not satisfactory among the youth. You feel that a risk communication campaign would be one strategy to address this issue.
  - 4.1. Define 'risk communication'. (10 marks)
  - 4.2. Describe the main steps in planning this risk communication campaign. (40 marks)
  - 4.3. Draw a risk communication framework for this campaign. (20 marks)
  - 4.4. List two (02) indicators each that could be used for monitoring and for evaluation of this campaign giving the rationale for the use of each indicator. (20 marks)
  - 4.5. State two (02) key risk communication messages appropriate for the youth. (10 marks)
  
5. As a middle level manager, a Medical Officer of Health (MOH) is supposed to undertake health planning in his/her area.
  - 5.1. List five (05) key duties and responsibilities of an MOH in planning. (30 marks)
  - 5.2. State the difference between strategic planning and operational planning in relation to the work of the MOH. (20 marks)
  - 5.3. Give an outline of the components of a project proposal to be submitted to the Regional Director of Health Services (RDHS) to address mental health issues in a rural MOH area following a severe drought lasting for several months. (30 marks)
  - 5.4. List the main items of the budget for the project proposal mentioned in 5.3. (20 marks)

6.

6.1. You are appointed as the Medical Officer in-Charge in a primary medical care institution (PMCI) in the estate sector. The statistics of the Healthy Lifestyle Centre (HLC) of the PMCI during the last six months show that the non-communicable disease (NCD) screening coverage is less than 5% of the target.

6.1.1. List the possible reasons for low screening coverage.(25 marks)

6.1.2. Describe how screening coverage could be improved.  
(35 marks)

6.2. Smoking and betel quid chewing practices are common among the empanelled population of this PMCI.

Describe the primary prevention interventions that you would carry out to address these risk factors.  
(40 marks)