

POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

MD (COMMUNITY MEDICINE/COMMUNITY DENTISTRY) THEORY
EXAMINATION (NEW PROSPECTUS) – AUGUST 2017

Date :- 21st August 2017

Time :- 2.00 p.m. – 4.00 p.m.

PAPER I

Answer **all four (04)** questions.

Answer each question in a separate book.

1. A group of researchers is planning to conduct a descriptive cross sectional study to determine the prevalence of human papilloma virus (HPV) infection among men aged 18 to 50 years in a district. As the initial stage, one researcher proposed to apply cluster sampling with probability proportionate to size (PPS) (Plan I) and another proposed proportional stratified sampling technique according to urban/rural status (Plan II).
 - 1.1. Briefly describe the process of identifying the required number of clusters considering Grama Niladari areas as clusters (Plan I). (20 marks)
 - 1.2. List two (02) advantages of sampling Plan II over Plan I. (20 marks)
 - 1.3. The expected prevalence of HPV among men is 5%.
Justify the required assumption to calculate the sample size for simple random sampling and calculate the sample size.
How would you determine the design effect for sampling plan I? (30 marks)
 - 1.4. A pilot study was conducted to calculate the mean age at first sexual intercourse among men using cluster sampling with PPS. Three clusters were selected with PPS from the district and the mean age of first sexual intercourse of the selected clusters were 20, 25 and 22 years respectively.
Calculate the mean age of first sexual intercourse among men in the district and its 95% confidence interval. (30 marks)

Contd..../2-

2. The results of a regression analysis to predict birth weight of infants based on maternal height (height in cm), pre-pregnancy weight (weight in kg), pre-delivery fundal height (fundal height in cm) and period of amenorrhoea (POA in weeks) is given below.

Source	SS	df	MS
Model	41256245.8	4	10314061.4
Residual	46252683.2	375	123340.5
Total	87508929.0	379	230894.3

$$F(4, 375) = 83.62; p < 0.001$$

- 2.1. What was the sample size? (10 marks)
- 2.2. Explain briefly what is meant by $p < 0.001$ in this situation. (15 marks)
- 2.3. Calculate and interpret R-squared value of this model. (25 marks)

Variable	Coef.	S.E.	t	P value	[95% Conf. Interval]	
Height	5.1	3.1	1.62	0.107	-1.1	11.2
Weight	5.4	2.5	2.17	0.030	0.5	10.4
Fundal height	149.9	10.8	13.83	0.000	128.6	171.2
POA	71.7	16.4	4.37	0.000	39.4	103.9
Constant	-6199.9	781.6	-7.93	0.000	-7736.8	-4663.0

Coef – co-efficient S.E. – Standard Error

- 2.5. Present the regression equation for predicting birth weight. (10 marks)
- 2.6. Describe the association between fundal height and birth weight. (20 marks)
- 2.7. Describe the association between maternal height and birth weight. (20 marks)

3.
 - 3.1. Discuss critically the current practice of applying ethical principles in the modern day research involving human subjects. (50 marks)
 - 3.2. Discuss the need for a more professional approach to the work of modern day professionals. (50 marks)

4.
 - 4.1. Case-control studies can yield important scientific findings with relatively little resources compared with other study designs. However, case control studies have many methodological issues.
Discuss briefly five (05) aspects in the design and/or conduct of a case-control study that an investigator should pay attention in order to enhance the validity of the results. Give an example for each. (50 marks)

 - 4.2. In a study comparing two different types of iron preparations for the treatment of iron deficiency anaemia, 50 anaemic students were randomized to receive either treatment. After three months of treatment the Haemoglobin levels were measured.
Discuss methods of analysis of the above study. (50 marks)

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Date :- 22nd August 2017

Time :- 9.00 a.m. – 11.00 a.m.

PAPER II

Answer **all four (04)** questions.

Answer each question in a separate book.

1. Primary Health Care is defined as essential health care based on practical, scientifically sound, socially acceptable methods and technology, and made universally accessible to individuals and families in the community through their full participation.
 - 1.1. Briefly describe five (05) deficiencies of the present primary health care services. (50 marks)
 - 1.2. Describe how a provincial Consultant Community Physician (Planning) could contribute to the strengthening of the primary health care services in the province. (50 marks)
2.
 - 2.1. Briefly describe five (05) major public health achievements of Sri Lanka during the last decade. (50 marks)
 - 2.2. Name the key legislations and policies that have contributed to achieving one of the above and briefly discuss how they have contributed to the stated public health achievement. (30 marks)
 - 2.3. Explain how public health advocacy helps in bringing out necessary public health legislation. (20 marks)

3.

3.1. The National HIV/AIDS policy of Sri Lanka aims to prevent HIV and other sexually transmitted infections and improve the quality of life of people infected and/or affected by HIV/AIDS. The policy advocates multi sectoral approach in achieving this aim.

3.1.1. Describe the role of non health sectors in achieving the above. (30 marks)

3.1.2. Discuss the areas that need to be further strengthened to effectively achieve the aim of the policy. (30 marks)

3.2. Establishment Code plays a key role in general administration in the government sector. However critics say that certain provisions are outdated and not in par with the current context. Discuss the above statement. (40 marks)

4.

4.1. Using a hypothetical health sector related example, explain the following concepts (50 marks)

4.1.1. Economic efficiency

4.1.2. Consumer surplus

4.1.3. Adverse selection

4.1.4. Asymmetry of information

4.2. How does the existence of private health insurance affect the healthcare market? (25 marks)

4.3. List the measures the Sri Lankan government can take to 'reduce exposure to financial hardship', given the current health challenges in the country. (25 marks)