

KERALA UNIVERSITY OF HEALTH SCIENCES

QP Code:

Reg. No.....

M Phil Clinical Epidemiology

(Model Question Paper - Paper I)

Sub: CLINICAL EPIDEMIOLOGY (Including Research Methodology)

Time : 3 hours

Maximum Marks : 80

Answer all questions

Essays

8 x 10 = 80

1. Define 'Clinical Epidemiology'. Elaborate the differences and similarities with community epidemiology. Explain two scenarios where the tools of epidemiology have changed clinical practice.
2. What is confounding variable. How does it affect the results of an observational study. How does it differ from an effect modifier. Illustrate with suitable examples.
3. What is 'lead time bias'? How does it affect the outcomes. What are the strategies to minimize it. How do you assemble an inception cohort in a study of natural history of disease.
4. What is meant by a clinical trial. How do you distinguish between efficacy and effectiveness. When and why do you require a placebo in the control arms. What are the principles of analyzing an effectiveness trial.
5. How do you derive likelihood ratios(LR) while testing diagnostics tests. What are the disadvantages over other indices of diagnostic testing? How do we translate LR into clinical practice? Explain with suitable examples.
6. Explain the terms regression and correlation. What are the presumptions or requisites for various types of regression. What does 'goodness of fit' mean in regression.
7. Define and explain research ethics. What are the justifications for comparative studies especially RCTs. What are the guidelines followed to stick to ethical issues. Explain briefly.
8. How do you rate a Journal article. How do you critically appraise published 'case control study' pertaining to post menopausal women and endometrial cancer. Enumerate the possible biases.

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(Model Question Paper - Paper II)

Sub: BIOSTATISTICS AND BIOCOMPUTING

Time : 3 hours

Maximum Marks : 80

Answer all questions

Essays

8 x 10 = 80

- 1) Explain briefly on the graphical representations of data highlighting the merits and demerits of each of them. Describe in detail box and whisker plot.
- 2) Describe in detail with examples, various steps involved in summarization of data. Mention formulae wherever necessary.
- 3) Give a detailed account of measures of variation (dispersion) with formulae and appropriate examples. Distinguish between absolute measures of variation and relative measures of variation.
- 4) Define t -test and describe various forms of t -tests with formulae and examples.
In an immunologic study, the diameter of skin test reaction to an antigen was measured in 49 adolescents. The mean diameter was 20 and standard deviation was 10 mms of erythema. Can it be concluded from these data that the population mean is less than 30 mms. Let, $\alpha = 0.05$. (Theoretical value of the test statistic at 5% level is 2.01)
- 5) Describe the chi-square test statistic. What are the different chi-square tests used in biomedical research. Mention formulae with and without correction factor and explain when do you require a correction factor.

To test the association between recent meat consumption and enteritis necroticans, the following observations were made. Test whether there is an association between meat consumption and enteritis necroticans.

		Meat consumption	
		Yes	No
Disease	Yes	50	15
	No	15	40
Total		65	55

(Theoretical value of the test statistic at 5% level of significance is 3.84)

- 6) Explain one-way analysis of variance highlighting its uses in medical research. Differentiate between t -test and one-way analysis of variance.
- 7) Define regression and correlation. How these methods are useful for making future predictions. How regression analysis and analysis of variance methods are related.
- 8) In regression analysis, how the test of linear relationship between two quantitative variables be performed. What are the assumptions of simple linear regression analyses.

The regression equation of Y on X is $Y = 81.54 + 1.22 X$ with $SE(b) = 0.213$. Test whether there is a significant linear relationship between Y and X. (Theoretical value of the test statistic at 5% level of significance is 2.05)

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(Model Question Paper - Paper II)

**Sub: HEALTH SOCIAL SCIENCES, HEALTH ECONOMICS, HEALTH POLICY,
BIOETHICS & PROJECT MANAGEMENT**

Time : 3 hours

Maximum Marks : 80

Answer all questions

Essays

8 x 10 = 80

1. What are the major steps in the development of a new tool. Describe the measures for ensuring desirable psychometric properties.
2. -Combining qualitative and quantitative research methods ,in a study, would improve the reliability and validity of findingsø - Substantiate this statement with suitable examples
3. Design a qualitative study to explore the stakeholder perceptions on the influence of Social Networking Sites among adolescents in high school and higher secondary classes
4. What are the biases that can encounter while doing a community survey.
5. Briefly describe the justifications for economic evaluation in health care. Discuss on the types of economic evaluation with reference to their application in clinical comparisons in practice.
6. Discuss on the types of costs usually incurred in the health care setting.
7. What is meant by opportunity cost. What are the different types and how do you measure. Explain with examples.
8. Describe the meaning and applications of incremental cost effectiveness ratio.