

M. Sc. EPIDEMIOLOGY
SEMESTER - II EXAMINATION, JUNE - 2026

(CMEP505) EPIDEMIOLOGICAL STUDY DESIGNS & BASICS OF RESEARCH METHODOLOGY

[Time Allotted: 3:00 Hours]

[Max. Marks: 100]

Note: Read all the instructions carefully

Answer all questions in serial order, Draw suitable diagrams wherever necessary

Q. 1. Objective type questions: (Attempt All)

(10 x 02 = 20)

(Very short/ Short answer/ MCQ/ One liners/ Fill in the blanks/ True/False)

- a. The process of checking the consistency and stability of research findings over time and across different populations is known as _____. (CO2,PO2)
 - i. Validity testing
 - ii. Reliability testing
 - iii. Sampling error
 - iv. External validity
- b. Which type of study design is best suited for investigating rare diseases or outcomes with long latency periods? (CO1,PO1)
 - i. Case-control study
 - ii. Cohort study
 - iii. Cross-sectional study
 - iv. Ecological study
- c. The _____ study design is commonly used to investigate the natural history of disease and generate hypotheses for analytical studies. (CO1,PO1)
 - i. Cross-sectional
 - ii. Ecological
 - iii. Descriptive
 - iv. Experimental
- d. The first step in conducting research involves: (CO2,PO2)
 - i. Collecting data
 - ii. Analyzing data
 - iii. Formulating research questions
 - iv. Writing research articles
- e. _____ involves assessing the accuracy and consistency of a research tool in measuring the intended constructs or variables. (CO2,PO2)
 - i. Reliability
 - ii. Validity
 - iii. Generalizability
 - iv. Sensitivity
- f. Nested case-control studies are a variation of _____ studies. (CO1,PO1)
 - i. Cohort
 - ii. Cross-sectional
 - iii. Experimental
 - iv. Ecological
- g. Which of the following is NOT a sampling technique? (CO2,PO2)
 - i. Convenience sampling
 - ii. Simple random sampling
 - iii. Snowball sampling
 - iv. Quantitative sampling
- h. Plagiarism involves: (CO2,PO2,4,5)
 - i. Properly attributing sources in research articles
 - ii. Copying someone else's work without acknowledgment
 - iii. Citing all sources used in a study
 - iv. Collaborating with other researchers on a project
- i. _____ refers to the extent to which a research tool produces consistent results over time. (CO2,PO2)
- j. _____ refers to the process of systematically collecting and analyzing numerical data. (CO1,2 PO1,2)
 - i. Qualitative research
 - ii. Quantitative research
 - iii. Mixed methods research
 - iv. Action research

Q. 2. Short notes / Short Answer Type (Attempt any five out of seven)

(5 x 4 = 20)

- a. PICOT in research (CO2,PO2)
- b. Cumulative Incidence (CO1,PO1)
- c. Odds Ratio (CO1,PO1) (CO1,PO4) (CO2,PO2)
- d. Community trials (CO1,PO1) (CO1,PO3) (CO2,PO2)
- e. Ecological Fallacy (CO1,PO1)
- f. Sampling Unit (CO2,PO2)
- g. Point Source Epidemic (CO1,PO1) (CO1,PO3) (CO1,PO4) (CO1,PO5)

P.T.O....

- Q. 3. Structured Question** (Attempt any **three** out of **four**) **(3 × 10 = 30)**
- a. Illustrate the cohort study design with two important historical examples. (CO1,PO1)
 - b. How does confounding differ from bias in epidemiological studies, and what strategies can researchers employ to minimize the impact of confounding variables on study results?
(CO1,PO1) (CO2,PO2) (CO2,PO5)
 - c. What is the purpose of research objectives, and how do they differ from research questions in guiding the research process?
(CO2,PO2)
 - d. How will you critically review an article? Enumerate a few guidelines for reviewing different study designs.
(CO2,PO2) (CO2,PO5)
- Q. 4. Long Answer/Essay type** (Attempt any **two** out of **three**) **(2 × 15 = 30)**
- a.
 - i. Define Sampling. (CO2,PO2)
 - ii. Describe Cluster sampling with the help of a suitable example. (CO2,PO2) (CO2,PO3)
 - b.
 - i. What is the fundamental purpose of research? (CO2,PO2) (CO2,PO3) (CO2,PO5)
 - ii. How does it contribute to the advancement of knowledge in various fields?
(CO2,PO2) (CO2,PO3) (CO2,PO5)
 - c.
 - i. What distinguishes nested case-control studies from traditional case-control studies?
(CO1,PO1) (CO1,PO5)
 - ii. What are the advantages of using this design in epidemiological research? (CO1,PO1) (CO1,PO5)