Enrolment No.: .....

IIHMR UNIVERSITY

Institute of Health Management Research

EXAMINATION CELL IIHMR UNIVERSITY

MBA Hospital and Health Management

Batch-29th (2024-2026)

First Year, Term 1, End Term Examinations, December 2024

CC–605 Essentials of Epidemiology

Time - 3 Hour **Maximum Marks: 50 (Minimum Marks: 20)**

Instructions to students:

- **This question paper contains 2 printed pages.**
- **Don't write anything on the Question Paper except your Enrolment No.**

Part A

(Maximum Marks: 5)

Q1. Choose the correct option/ fill in the blank for the following (1 mark each):

(a). Epidemiological Transition is a change in the pattern of population proportion. (True/False)

(a) True
(b) False

(b). Name a disease which has been eradicated from the world _____.

(c). Which is the correct statement for the Maternal Mortality Ratio?

(a) Numerator is part of denominator.
(b) Denominator is the number of Pregnant women.
(c) Numerator is not part of denominator.
(d) Numerator is the number of children born

(d). Investigators examine data from police records to identify crash factors associated with driver fatality vs. driver non-fatality. The crash factors they consider are the driver's blood alcohol level, age and the driver's use of the seat belt. This is an example of a:

(a) Case-control study
(b) Retrospective cohort study
(c) Case series study
(d) Prospective cohort study

(e). At which stage of a disease's natural history do we apply screening as a prevention method?

(a) Pre-disease stage
(b) Susceptible Stage
(c) Latent Stage
(d) Symptomatic Stage

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Part B

(Maximum Marks: 15)

Answer any three of the following questions (5 mark each).

Q2. Write the Differences between Case-Control and Cohort Study.

Q3. Please write down the steps of conducting an outbreak and explain them briefly with an example.

Q4. Explain Agent factors/characteristics of infectious diseases

Q5. A new rapid test for typhoid was compared with blood culture as the gold standard. There were 100 who were gold standard positive and 200 normals, 120 turned out to be test positive, but 30 of them were false positive.

(a) Calculate the sensitivity of the test.
(b) Calculate the specificity of the test.
(c) Calculate Positive Predictive Value.
(d) Calculate Negative Predictive Value.

Q6. The table below has data for a hypothetical population of 10,000 children, only 50 % of whom are in car Seats. The overall motor vehicle injury rate is 70 per 10,000 children. Out of 70 per 10,000 children, 20 were in car seats. Draw a 2 X 2 table and calculate the following.

(a) What is the incidence of motor vehicle injury among children who were in car seats?
(b) What is the incidence of motor vehicle injury among children who were not in car seats?
(c) How many motor vehicle injuries could be prevented if all children were in car seats?

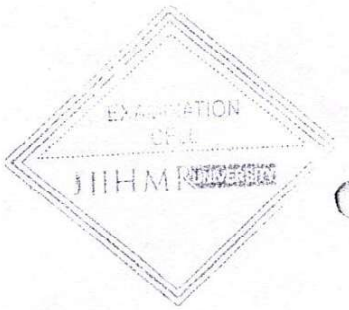
Part C

(Maximum Marks: 30)

Answer any three of the following questions in detail (10 mark each).

Q7. Explain briefly about the following terms

(a) Bias
(b) Blinding
(c) Confounding
(d) Phases of clinical trials
(e) Impairment, Disability and Handicap



Q8. Explain Modes of Transmission with examples.

Q9. Explain prevention & control strategies for Dengue.

Q10. Explain prevention & control strategies for Cervical cancer

Q11. In a study to test the association between significant ECG abnormalities and the risk of death from coronary heart disease (CHD), 47 men aged 40-64 years who had significant ECG abnormalities at initial examination and 144 men in the same age group with no ECG abnormalities were recruited. Both groups were followed up for 20 years, and death from CHD was recorded. There were eight deaths in the ECG abnormal group and ten deaths in the second group.

(a) Identify the study design
(b) Calculate the attack rate in the exposed group.
(c) Calculate the attack rate in the unexposed group.
(d) Calculate relative risk and interpret the result
(e) Calculate the attributable risk and interpret the results.