Name:

Enrolment No:



UPES

End Semester Examination, May 2024

Course: Epidemiologic and Clinical Research Methods

Program: Int. (B.SC.+ M.Sc.) Clinical Research

Course Code: HSCR 3018

Semester : VI

Duration : 3 Hours

Max. Marks: 100

Instructions: Read question paper carefully. Attempt all sections.

| S. No. | Section A | Marks | COs |
|--------|---|-------|-----|
| | Short answer questions/T&F | | |
| | (20Qx1.5M=30 Marks) | | |
| Q 1 | Define exposure and outcome. | 1.5 | CO1 |
| Q 2 | Write any two importance of determining ideal sample size. | 1.5 | CO1 |
| Q 3 | Define single and double blinding. | 1.5 | CO1 |
| Q 4 | Robert Koch's postulate is based on sufficient v/s necessary components. True/False | 1.5 | CO1 |
| Q 5 | Enlist 3 missing data mechanisms. | 1.5 | CO1 |
| Q 6 | Bias occurs when systematic error is introduced into sampling. True/False | 1.5 | CO2 |
| Q 7 | Enlist any 3 sources of bias. | 1.5 | CO2 |
| Q 8 | Define bias. | 1.5 | CO2 |
| Q 9 | Non-randomized clinical trial is an example of experimental study. True/False | 1.5 | CO2 |
| Q 10 | Define counterfactual outcome. | 1.5 | CO2 |
| Q 11 | Define extraneous variable. | 1.5 | CO3 |
| Q 12 | Statistical significance of dichotomous variables is high. | 1.5 | CO3 |
| Q 13 | The most ideal calibration plot would show a 30° line. True/False | 1.5 | CO3 |
| Q 14 | Write 3 phases of multiple imputation. | 1.5 | CO3 |
| Q 15 | Define propensity score. | 1.5 | CO3 |
| Q 16 | Enlist 3 techniques for propensity score matching. | 1.5 | CO3 |
| Q 17 | Linear regression is used when the dependent variable is binary or categorical. True/False | 1.5 | CO4 |
| Q 18 | Write any 3 advantages of meta-analysis. | 1.5 | CO4 |
| Q 19 | Write the 2 types of prediction modelling. | 1.5 | CO4 |
| Q 20 | Enlist any 3 statistical measures for prediction model evaluation. | 1.5 | CO4 |
| | Section B (4Qx5M=20 Marks) | | |
| Q 1 | Write a short note on measurement scales. | 5 | CO1 |
| Q 2 | Describe the types of bias observed after completion of trial. | 5 | CO2 |

| Q 3 | Discuss potential outcome model for casual inference with example. | | | | | CO4 | | | |
|-------------------|--|--------------|--------|-----|--|-----|--|--|--|
| | OR | | | | | | | | |
| | Elaborate the Bradford H | | 5 | | | | | | |
| Q 4 | Write about any 2 strategies for controlling confounding in clinical research. | | | | | CO2 | | | |
| | | Section (| | | | | | | |
| (2Qx15M=30 Marks) | | | | | | | | | |
| Q 1 | Data in below table disp | | 15 | CO4 | | | | | |
| | exposure and the nun Calculate following mea | | | | | | | | |
| | c) risk difference, d) nur | | | | | | | | |
| | | | | | | | | | |
| | Exposure | Outcome | | | | | | | |
| | | Present | Absent | | | | | | |
| | | Present | Absent | | | | | | |
| | Present | 200 | 300 | | | | | | |
| | | | | | | | | | |
| | Absent | 400 | 500 | | | | | | |
| | | | | | | | | | |
| Q 2 | Construct a note on steps | n model. | 15 | CO3 | | | | | |
| | | Section I | | | | | | | |
| | T= | (2Qx10M=20 N | | | | T | | | |
| Q 1 | Define clinical epidemi | • | 10 | CO1 | | | | | |
| | features and example | al study | | | | | | | |
| Q 2 | designs. | | 10 | CO2 | | | | | |
| Q Z | Diabetes | | | | | COZ | | | |
| | Infactions Surgary Vescular Panel | | | | | | | | |
| | Infections Surgery Vascular Renal Disease Failure | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
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| | | | | | | | | | |
| | Judge the above hypoth | between | | | | | | | |
| | diabetes and analgesics. | | | | | | | | |