Name: **Enrolment No:**	UPES UNIVERSITY WITH A PURPOSE

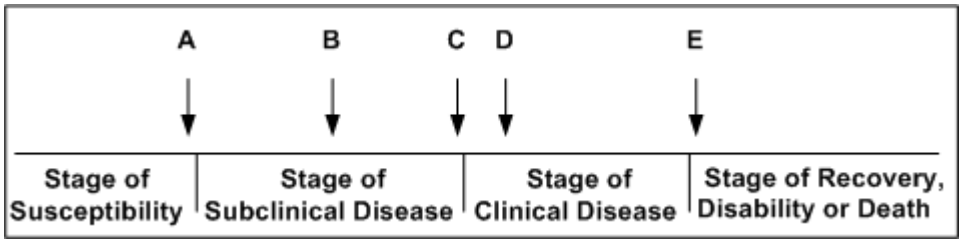
UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, May 2021

Course: Advanced Epidemiologic and Clinical Research Methods **Semester: II**
Program: M. Sc Clinical Research **Time : 03 hrs.**
Course Code: HSCR 7011 **Max. Marks: 100**

Instructions:

SECTION A

S. No.	MCQs or Fill in the blanks (1.5 marks each)	30 Marks	CO
1	A propagated epidemic is usually the result of what type of exposure? a. Point source b. Continuous common source c. Intermittent common source d. Person-to-person	1.5	CO1
2	A number of passengers on a cruise ship from Mumbai to Goa have recently developed a gastrointestinal illness compatible with norovirus (formerly called Norwalk-like virus). Testing for norovirus is not readily available in any nearby island, and the test takes several days even where available. Assuming you are the epidemiologist called on to board the ship and investigate this possible outbreak, your case definition should include, at a minimum: (Choose one best answer) a. Clinical criteria, plus specification of time, place, and person b. Clinical features, plus the exposure(s) you most suspect c. Suspect cases d. The nationally agreed standard case definition for disease reporting.	1.5	CO2
3	Comparing numbers and rates of illness in a community, rates are preferred for: a. Conducting surveillance for communicable diseases b. Deciding how many doses of immune globulin are needed c. Estimating subgroups at highest risk d. Telling physicians which strain of influenza is most prevalent	1.5	CO3
4	The hallmark feature of an analytic epidemiologic study is: a. Use of an appropriate comparison group b. Laboratory confirmation of the diagnosis c. Publication in a peer-reviewed journal	1.5	CO4

	d. Statistical analysis using logistic regression		
5	The epidemiologic triad of disease causation refers to: a. Agent, host, environment b. Time, place, person c. Source, mode of transmission, susceptible host d. John Snow, Robert Koch, Kenneth Rothman	**1.5**	**CO1**
6	For each of the following, identify the appropriate letter from the time line in the following figure representing the natural history of disease. Natural History of Disease Timeline:  a. ____ Onset of symptoms b. ____ Usual time of diagnosis c. ____ Exposure	**1.5**	**CO2**
7	John Snow's investigation of cholera is considered a model for epidemiologic field investigations because it included a: a. Biologically plausible hypothesis b. Comparison of a health outcome among exposed and unexposed groups c. Recommendation for public health action d. All of the above	**1.5**	**CO3**
8	A study in which children are randomly assigned to receive either a newly formulated vaccine or the currently available vaccine, and are followed to monitor for side effects and effectiveness of each vaccine, is an example of which type of study? a. Experimental b. Observational c. Case-control d. Clinical trial	**1.5**	**CO4**
9	Under reporting is not a problem for detecting outbreaks of notifiable diseases because the proportion of cases reported tends to remain relatively stable over time. a. True b. False	**1.5**	**CO1**
10	Which of the following statements about exposures is true?	**1.5**	**CO2**

	a. Refers to contact with some factor that may be harmful or beneficial to health. b. An exposed individual has a greater risk of disease. c. Dietary intake is not an 'exposure' because individuals make a choice about what they eat. d. High body mass index is a risk factor for a range of health conditions; therefore, it cannot be treated as a single exposure.		
11	When epidemiologists judge the evidence to establish possible causes of a health outcome, they consider a. The estimated strength of the association between an exposure and the outcome. b. Evidence that the exposure of interest has appeared before the outcome. c. Evidence showing that reductions in the exposure level will reverse the risk of the outcome. d. All of the options given.	**1.5**	**CO3**
12	In a cohort study, the risk ratio of developing diabetes was 0.86 when comparing consumers of tea (the exposed) to those who did not drink tea (the unexposed). Which one statement is correct? a. The tea drinkers have lower risk of developing diabetes. b. The tea drinkers have higher risk of developing diabetes. c. Based on the information given we cannot tell if the observed difference in disease risk is the result of chance. d. The risk ratio is close to the value one, so there is no difference in disease risk between the two groups.	**1.5**	**CO4**
13	What is the name of an effect that occurs when an experimental group gets better simply because they are being given a pill and this leads them to expect to get better? a. The domino effect. b. The butterfly effect c. The placebo effect. d. The expectancy effect.	**1.5**	**CO1**
14	A case study can be used in which of the following circumstances? a. When there are only a few instances of a particular psychopathology available for study. b. Providing new insights into existing psychopathologies c. Providing detailed information that may disprove existing theories. d. All of the above.	**1.5**	**CO2**
15	Notifiable disease surveillance usually focuses on morbidity from the diseases on the list and does not cover mortality from those diseases. a. True b. False	**1.5**	**CO3**
16	Which of the following describes a meta-analysis? a. Analyses very large studies. b. Analysis of the methods of statistical analysis. c. Establish external validity. d. Detect trends across studies that may have used different procedures, numbers of participants, types of control procedures, and different forms of	**1.5**	**CO4**

	measurement.		
17	Those with more complex psychopathologies are likely to be excluded from treatment outcome studies and so denied access to the treatment programme associated with the study. This is referred to as: a. Simple diagnosis criteria. b. A no-treatment control condition. c. Narrow inclusion criteria. d. Complex exclusion criteria.	**1.5**	**CO1**
18	In psychological research, the term privacy refers to which of the following options: a. Participants in psychological research have a right to expect that information they provide will be treated confidentially. b. Participants have the right to withdraw from the experiment at any time. c. The design of the experiment is double-blind. d. Participants can decide not to provide some forms of information to the researcher if they so wish.	**1.5**	**CO2**
19	A study starts with 5,000 people. Of these, 125 have the disease in question. What is the prevalence of disease per 1000 people?	**1.5**	**CO3**
20	The systematic distortion of the retrospective study is? a. Confounding b. Effect modification c. Recall bias d. Measurement bias	**1.5**	**CO4**
SECTION B 20 marks 4 questions 5 marks each, word limit-not more than 250 words			
Q	Short Answer Type Question (5 marks each) Scan and Upload 4 questions 5 marks each	**20 Marks**	**CO**
1	Enumerate the various national health programmes in India. Write short notes any one of them. (2+3)	**5**	**CO1**
2	Current studies have shown the global patterns of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) spread, characteristics of COVID-19 cases and global epidemiology of early confirmed cases of COVID-19 outside mainland China. What is the role of Epidemiologist in disease outbreak like COVID-19?	**5**	**CO2**
3	Enumerate the indicators of health. Describe all the mortality indicators with suitable examples. (2+3)	**5**	**CO3**
4	Write short notes on geographic distribution of diseases and its relevance in epidemiology.	**5**	**CO4**
SECTION C 30 marks			
Q	**Two case studies 15 marks each subsections**	**30 Marks**	**CO**
1	It is well known that the use of urinary catheters conveys a substantial risk of urinary tract infection (UTI). A group of physicians believe that, in an intensive care setting,	**15**	**CO1. CO3**

	use of one particular type of urinary catheter is more likely to encourage infection than use of other types. They therefore review medical records over a recent period for all uses of urinary catheters in an ICU. They find that 200 new UTI's occurred during 1000 ICU patient-days of catheterization with the suspect type of catheter, as compared to 100 new UTI's during 5000 ICU-patient days of catheterization with all other types. Noting the increased frequency of new UTI's when the suspect catheter type is used, they regard their hypothesis as confirmed. To reduce nosocomial UTI's, they recommend discontinuing use of that type of catheter in the ICU. a) Was this a cross-sectional, case-control, cohort or retrospective cohort study? (3) b) From these data, estimate all of the following that you can: i) the relative risk for UTI associated with the suspect catheter type; ii) the rate of new UTI's which are specifically due to the choice of the suspect catheter, above the rate conferred by use of another catheter type; iii) for an individual catheterized with the suspect type, the proportion of that person's risk of UTI attributable to choice of catheter; iv) the percentage reduction in rate of UTI's that might be expected in the ICU, if the physicians are correct and their advice is followed. (4x3)		
2	Compare the advantages and disadvantages of the following methods of choosing controls for a case-control study in which the cases are obtained by monitoring hospitals: a) hospitalized controls with other diseases b) hospitalized controls who were accident victims c) controls selected from the neighbourhoods of each case d) family members of cases e) controls randomly sampled from the population (5x3)	**15**	**CO2, CO4**
	SECTION- D 20 marks		
Q	**Long Answer type Questions Scan and Upload (10 marks each), word limit-not more than 500 words**	**20 Marks**	**CO**
1	What are the questionnaires related to health events and health action in epidemiology in public health? What are the measurement error and bias? (7+3)	**10**	**CO2, CO3**
2	What are the different levels/types of causality? What is called biological coherence? (5+5)	**10**	**CO1, CO4**