


Name:			
Enrolment No:			
UPES End Semester Examination, December 2024 Course: Research Methodology and Research Ethics Semester : 5 Program: Int BMSc Clinical Research/Nutrition & Dietetics Duration : 3 Hours Course Code: HSCC3017_1 Max. Marks: 100			
Instructions: All questions are compulsory. Use of non-programmable scientific calculators are allowed.			
S. No.	Section A Short answer questions/ MCQ/T&F (20Qx1.5M= 30 Marks)	Marks	COs
Q 1	Which of the following is a citation indexing database? a. Scopus b. Web of Science c. Google Scholar d. All of the above	1.5	CO1
Q 2	Which one of the following is a plagiarism checking software? a. Turnitin b. Grammerly c. iThenticate d. All of the above	1.5	CO1
Q 3	How to judge the depth of any research? a. By research title b. By research duration c. By research objectives d. By total expenditure on research	1.5	CO1
Q 4	Which one of the following is not a journal-level metric? a. Impact factor b. H-index c. Citescor d. Quartile rankings	1.5	CO1
Q 5	Which of the following is not a part of any research article? a. Materials and methods b. Abstract c. Keywords d. List of suggested reviewers	1.5	CO1

Q 6	Probability of an event is any value between 0 and 1. Is this statement true or false?	1.5	CO2
Q 7	Equally likely outcomes are those which have equal probability. Is this statement true or false?	1.5	CO2
Q 8	Correlation coefficient is greater than 0.83 for strong positive correlation. Is this statement true or false?	1.5	CO2
Q 9	Define regression analysis.	1.5	CO2
Q 10	The correlation for the values of two variables moving in the same direction is: a. Perfect positive b. Negative c. Positive d. No correlation	1.5	CO2
Q 11	Which of the following techniques is an analysis of the relationship between two variables to help provide the prediction mechanism? a. Standard error b. Correlation c. Regression d. None of the above	1.5	CO2
Q 12	State the importance of hypothesis testing.	1.5	CO3
Q 13	Define null hypothesis.	1.5	CO3
Q 14	Define type 1 error.	1.5	CO3
Q 15	Illustrate the expression for finding the probability of not occurrence of an event E.	1.5	CO2
Q 16	What will be the probability of getting odd numbers if a dice is thrown? a. 1/2 b. 2 c. 4/2 d. 5/2	1.5	CO2
Q 17	The probability of getting a head after tossing a coin is: a. 1 b. 2/3 c. 1/3 d. 1/2	1.5	CO2
Q 18	The probability of getting a random card in a deck of cards is: a. 1/52 b. 14/52 c. 3/52 d. 10/52	1.5	CO2
Q 19	Impact factor is an author level metric. Is this statement true or false?	1.5	CO1

Q 20	List of suggested reviewers should be included in a scientific manuscript. Is this statement true or false?	1.5	CO1														
Section B (4Qx5M=20 Marks)																	
Q 1	What do you mean by citation indexing? What are the citation indexing databases available for the research community?	1+4 = 5	CO1														
Q 2	Explain the importance of literature survey in scientific research.	5	CO1														
Q 3	With the following data in 6 cities, calculate the Karl Pearson's coefficient of correlation between the density of population and the death rate: <table border="1" style="margin: 10px auto; width: 80%;"><tr><td>Density (x)</td><td>200</td><td>500</td><td>400</td><td>700</td><td>600</td><td>300</td></tr><tr><td>Death rate (y)</td><td>10</td><td>16</td><td>14</td><td>20</td><td>17</td><td>13</td></tr></table>	Density (x)	200	500	400	700	600	300	Death rate (y)	10	16	14	20	17	13	5	CO2
Density (x)	200	500	400	700	600	300											
Death rate (y)	10	16	14	20	17	13											
Q 4	Find the linear regression equation for the following set of data: <table border="1" style="margin: 10px auto; width: 60%;"><tr><td>x</td><td>2</td><td>4</td><td>6</td><td>8</td></tr><tr><td>y</td><td>3</td><td>7</td><td>5</td><td>10</td></tr></table>	x	2	4	6	8	y	3	7	5	10	5	CO2				
x	2	4	6	8													
y	3	7	5	10													
Section C (2Qx15M=30 Marks)																	
Q 1	A weight reducing program that includes a strict diet and exercise, claims that it can help an average overweight person lose 10 pounds in 3 months. After the program, 12 individuals lost 8.1, 5.7, 11.6, 12.9, 3.8, 5.9, 7.8, 9.1, 7.0, 8.2, 9.3, 8.0 pounds in three months. Test with 5% significance whether the program is overstating reality. (Assume a standard deviation of 2.536 and $t_{11,0.05} = 2.201$)	15	CO3														
Q 2	a. Define conditional probability. b. In a pharmacokinetic study, the probability that a particular medicine causes a side-effect is 0.37, and the probability that it leads to side-effect and a cure is 0.20. Find the probability that medicine will cause a side-effect provided that the patient is cured from it.	2+13 = 15	CO2														
Section D (2Qx10M=20 Marks)																	
Q 1	Explain in detail about the attributes of a good manuscript for publication in high impact journals.	10	CO1														

Q 2	a. Define dependent events in probability theory. b. 9 red balls and 3 green marbles are place in a bag. Find the probability of randomly selecting a red marble on the first draw and a green marble on the second draw.	2+8 = 10	CO2
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