

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	Citescore of a journal is calculated over: a. 5 year window b. 3 year window c. 1 year window d. 2 year window	1.5	CO1
Q 2	The allowed level of maximum plagiarism percentage for a scientific writing is: a. 20% b. 25% c. 14% d. 10%	1.5	CO1
Q 3	Which of the following is a reference citation managing software? a. Mendeley b. Endnote c. Refworks d. All of the above	1.5	CO1
Q 4	Which one of the following is a journal-level metric? a. G-index b. H-index c. Citescore d. i-10 index	1.5	CO1
Q 5	Which of the following is a primary source of literature review? a. Review articles b. Research articles c. Books d. None of the above	1.5	CO1
Q 6	Write the expression of calculating the probability of any event.	1.5	CO2
Q 7	Define sample space in probability theory.	1.5	CO2

Q 8	Correlation coefficient is -1 for strong negative correlation. Is this statement true or false?	1.5	CO2
Q 9	Write the expression of a linear regression equation.	1.5	CO2
Q 10	The correlation for the values of two variables moving in the opposite direction is: a. Perfect positive b. Perfect negative c. Moderate 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 alternate hypothesis.	1.5	CO3
Q 14	Define type II 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 even 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 two heads after tossing two unbiased coins together is: a. 1 b. 2/3 c. 1/4 d. 1/2	1.5	CO2
Q 18	The probability of getting an ace card from a deck of cards is: a. 1/52 b. 14/52 c. 3/52 d. 1/13	1.5	CO2
Q 19	Impact factor is a journal level metric. Is this statement true or false?	1.5	CO1
Q 20	Experimental details should be included in a scientific manuscript. Is this statement true or false?	1.5	CO1

**Section B**  
**(4Qx5M=20 Marks)**

<b>Q 1</b>	Explain the importance of literature survey in scientific research.	<b>5</b>	<b>CO1</b>														
<b>Q 2</b>	Discuss the importance of plagiarism correction in a research manuscript.	<b>5</b>	<b>CO1</b>														
<b>Q 3</b>	With the following data, calculate the Karl Pearson's coefficient of correlation between the age of person and percentage (%) of cardiac arrest:  <table border="1" data-bbox="240 514 1304 594"> <tr> <td>Age (<math>x</math>)</td> <td>20</td> <td>30</td> <td>40</td> <td>50</td> <td>60</td> <td>70</td> </tr> <tr> <td>% (<math>y</math>)</td> <td>4</td> <td>8</td> <td>10</td> <td>15</td> <td>20</td> <td>30</td> </tr> </table>	Age ( $x$ )	20	30	40	50	60	70	% ( $y$ )	4	8	10	15	20	30	<b>5</b>	<b>CO2</b>
Age ( $x$ )	20	30	40	50	60	70											
% ( $y$ )	4	8	10	15	20	30											
<b>Q 4</b>	Discuss the various types of correlation in statistical analysis.	<b>5</b>	<b>CO2</b>														
<b>Section C</b> <b>(2Qx15M=30 Marks)</b>																	
<b>Q 1</b>	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 $t_{11,0.05} = 2.201$ )	<b>15</b>	<b>CO3</b>														
<b>Q 2</b>	a. Define mutually exclusive events. b. What is the probability of a dice showing either a 2 or 5?	<b>2+13=15</b>	<b>CO2</b>														
<b>Section D</b> <b>(2Qx10M=20 Marks)</b>																	
<b>Q 1</b>	What is the importance of publishing papers in journals? Also describe the aspects to be considered while selecting a journal for publishing.	<b>10</b>	<b>CO1</b>														
<b>Q 2</b>	a. Define dependent events in probability theory. b. 10 yellow balls and 15 blue marbles are placed in a bag. Find the probability of randomly selecting a blue marble on the first draw and a yellow ball on the second draw.	<b>2+8 = 10</b>	<b>CO2</b>														