GUJARAT TECHNOLOGICAL UNIVERSITY
Ph.D. COURSE WORK EXAMINATION – SUMMER - 2021

Subject Code: PHD20-01   **Date: 10/10/ 2021**
Subject Name: Research Methodology [Sciences]
Time: 11:30 AM – 1:00 PM   **Total Marks: 35**

Instructions:
1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Subject relevant literature, book, research papers are permitted to carry in the exam hall.
5. Use of e-books, e-materials on electronics devices are strictly prohibited.

Q.1	**(a)**	State different types of Research and explain it with an example.	**10**
	(b)	State the significance of research related to state priorities and supplement it by taking it consideration the current scenario of the state.	**05**
Q.2	**(a)**	Describe some of the important research designs used in experimental hypothesis-testing research study.	**05**
	(b)	Give your understanding of a good research design. Is single research design suitable in all research studies? If not, why?	**05**
Q.3	**(a)**	State and briefly describe about two sampling distributions.	**05**
	(b)	In a random selection of 64 of the 2400 intersections in a small city, the mean number of scooter accidents per year was 3.2 and the sample standard deviation was 0.8. (1) Make an estimate of the standard deviation of the population from the sample standard deviation. (2) Work out the standard error of mean for this finite population. (3) If the desired confidence level is .90, what will be the upper and lower limits of the confidence interval for the mean number of accidents per intersection per year?	**05**

****