UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Term Examination, May 2022

Course: Business Research Methods	**Semester: II**
Programme: MBA(All Program)	**Time: 03 hrs**
Max. Marks: 100	**Course Code: DSRM 7002**

SECTION A
Each Question will carry 2 Marks

S. No.		Marks	CO
Q 1.	Select the most appropriate	**(2x10)**	
	i. A research proposal is best described as a(n): a. Framework for data collection and analysis b. Description of the research process for a research project c. Description of how the researcher plans to maintain an ethical perspective during the study d. Argument for the merit of the study		**CO1**
	ii. The purpose of a literature review is to: a. Use the literature to identify present knowledge and what is unknown b. Assist in defining the problem and operational definition c. Identify strengths and weaknesses of previous studies d. All of the above		**CO1**
	iii. The research process is best described as a: a. Method to select a frame of reference b. Set of rules that govern the selection of subjects c. Series of steps completed in a logical order d. Plan that directs the research design		**CO1**
	iv. The statement 'To identify the relationship between the time the patient spends on the operating table and the development of pressure ulcers' is best described as a research: a. Objective b. Aim c. Question d. Hypothesis		**CO1**

v. 'There is no difference in the incidence of phlebitis around intravenous cannulae changed every 72 hours and those changed at 96 hours' is an example of a: a. Null hypothesis b. Directional hypothesis c. Non-directional hypothesis d. Simple hypothesis		CO1
vi. The researcher needs to clearly identify the aim of the study; the question to be answered; the population of interest; information to be collected, and feasibility in order to decide on the research: a. Design and method b. Purpose and assumptions c. Design and assumptions d. Purpose and data analysis		CO1
vii. In a qualitative research proposal you would not expect to see a: a. Research question b. Research aim c. Hypothesis d. Operational definition		CO1
viii. Which one of the following in not a major method of data collection: a. Questionnaires b. Interviews c. Secondary data d. Focus groups e. All of the above are methods of data collection		CO1
ix. . ………. Is the process of assigning figures or other symbols to answers so that responses can be put into a limited number of categories or classes? a. Editing b. Coding c. Tabulation d. Classification		CO1
x. Determining the sample interval (represented by k), randomly selecting a number between 1 and k, and including each kth element in your sample are the steps for which form of sampling? a. Simple Random Sampling b. Stratified Random Sampling c. Systematic Sampling d. Cluster sampling		CO1

	SECTION B		
	Each question will carry 5 marks	**(5x4)**	
Q 2.	What is the purpose and importance of literature survey in research?		**CO2**
Q 3.	A company manufacturing brand new personal computers would like to identify potential market segment for their brand. Suggest suitable research design to identify market potential with justification. What would be your sampling frame in this situation?		**CO2**
Q 4.	A foreman thinks that the low efficiency of the machine tool operators is directly linked to the high level of fumes emitted in the workshop. He would like to prove this to his supervisor through a research study. Suggest a suitable research study and also justify.		**CO2**
Q 5.	What is a questionnaire? Can it be used in all situations? Why /why not? Support your answer with suitable examples.		**CO2**
	SECTION-C		
	Each Question carries 10 Marks	**10x3**	
Q 6.	We have the potato yield from 12 different farms. We know that the standard potato yield for the given variety is $\mu=20$. x = [21.5, 24.5, 18.5, 17.2, 14.5, 23.2, 22.1, 20.5, 19.4, 18.1, 24.1, 18.5] Test if the potato yield from these farms is significantly better than the standard yield at 5%.		**CO3**
Q 7.	An instructor wants to use two exams in her classes next year. This year, she gives both exams to the students. She wants to know if the exams are equally difficult and wants to check this by looking at the differences between scores. If the mean difference between scores for students is "close enough" to zero, she will make a practical conclusion that the exams are equally difficult. Here is the data:	**CO3**	

Student	Exam 1 Score	Exam 2 Score
Bob	63	69
Nina	65	65
Tim	56	62
Kate	100	91
Alonzo	88	78
Jose	83	87
Nikhil	77	79
Julia	92	88
Tohru	90	85
Michael	84	92
Jean	68	69
Indra	74	81
Susan	87	84
Allen	64	75
Paul	71	84
Edwina	88	82

Use appropriate test to test that Is there any significance difference between exam 1 score and exam 2 score at 5%?

Q 8.	Sridhar from Bangalore, had developed an electric car-VERVE (It is fully automatic, no clutch, no gears), two door hatch back, easily seating two adults and two children with a small turning radius of just 3.5 meters). It runs on batteries and as compared to other electric vehicles, has an on board charger to facilitate easy charging which can be carried out by plugging into any 15 amp socket at home or work. A full battery charge takes less than seven hours and gives a range of 80 km. In a quick – charge mode (two-and-a-half hours) 80 percent charge is attained which is good enough for 65 km. A full charge consumes just about 9 units of electricity.

Somehow the product did not take off the way he expected. He is contemplating about repositioning the car. As he stood looking at the prototype, he knew that there were a couple of questions to which he must find answers before he undertook the repositioning exercise. Who should be the targeted segment –old people, young student just going to college, house wives? What should be the positioning stance? What kind of image would these customers relate to? Was a new name or punch line required? How should the promotions be undertaken? Hyundai had done it with Shah Rukh Khan, should he also consider a celebrity? If yes who? | | **CO3** |

	Questions:		
	i.What kind of research study should Sridhar undertake? Define the objectives of his research		
	ii. Do the stated objectives have scope for a qualitative research?		
	iii. Which method would you recommend and why?		
SECTION-D

	Each Question carries 15 Marks	**(15x2)**	
Q 9.	B.Tech. Students of UPES studied which vehicles come to a complete stop at an intersection with four-way stop signs, selecting at random the cars to observe. They looked at several factors to see which (if any) were associated with coming to a complete stop. (They defined a complete stop as "the speed of the vehicle will become zero at least for an instant"). Some of these variables included the age of the driver, how many passengers were in the vehicle, and type of vehicle. The variable we are going to investigate is the arrival position of vehicles approaching an intersection all traveling in the same direction. They classified this arrival pattern into three groups: whether the vehicle arrives alone, is the lead in a group of vehicles, or is a follower in a group of vehicles. The students studied one specific intersection in Dehradun at a variety of different times. Because random assignment was not used, this is an observational study. Also note that no vehicle from one group is paired with a vehicle from another group. In other words, there is independence between the different groups of vehicles. Use a 0.05 level of significance.		**CO4**

	Single Vehicle	**Lead Vehicle**	**Following Vehicle**	**Total**
Complete Stop	151	38	76	**265**
Not Complete Stop	25	5	22	**52**
Total	**176**	**43**	**98**	**317**

Q 10.	An infrastructure company has the head office in Mumbai & a branch in Delhi. The personnel director wanted to know if the workers at the two places would like the		**CO4**

introduction of a new plan of work & a survey was conducted for this purpose. Out of a sample of 500 workers at Mumbai, 62% favored the new plan. At Delhi out a sample of 400 workers, 41% were against the new plan. Is there any significant difference between the two groups in their attitude towards the new plan at the 10 % level?