UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, May 2019

Course: **Quantitative Techniques and Research Methods**   Semester: **IV**
Programme: **BA PP**   CC: **BAPP 2007**
Time: **03 hrs.**   Max. Marks: **100**

SECTION A- 20 Marks
In this section all the questions are compulsory.

S. No.	Statement of question	Marks	CO
Q1	A sociologist chose 300 students at random from each of the two school and asked each student how many sibling he or she has. The results are shown in the table below: <table><tr><td>**Number of Siblings**</td><td>**St. Joshep School**</td><td>**St. Xavier's School**</td></tr><tr><td>0</td><td>120</td><td>140</td></tr><tr><td>1</td><td>80</td><td>110</td></tr><tr><td>2</td><td>60</td><td>30</td></tr><tr><td>3</td><td>30</td><td>10</td></tr><tr><td>4</td><td>10</td><td>10</td></tr></table> There are total 2400 students at St. Joshep School and 3300 students at St. Xavier's School. What is the median number of siblings for all the students surveyed? a. 0 b. 1 c. 2 d. 3 e. 4	2	CO 1
Q2	The arithmetic mean of 6, 19 and x is 19. Find the value of x. a. 19 b. 25 c. 31 d. 32 e. 37	2	CO 2
Q3	10, 18, 4, 15, 3, 21, x If x is the median of 7 numbers listed above, which of the following could be value of x?	2	CO 2

	a. 4 b. 5 c. 8 d. 9 e. 14		
Q4	**1.** Determine the median and modal values for the set: [73.8, 126.4, 40.7, 141.7, 28.5, 237.4, 157.9]	2	CO 2
Q5	**1.** 21 bricks have a mean mass of 24.2 kg, and 29 similar bricks have a mass of 23.6 kg. Determine the mean mass of the 50 bricks.	2	CO 3
Q6	**1.** The frequency distribution given below refers to the heights in centimetres of 100 people. Determine the mean value of the distribution, correct to the nearest millimetre. 150–156 5, 157–163 18, 164–170 20 171–177 27, 178–184 22, 185–191 8	2	CO 2
Q7	Determine the mean, median and modal values for the following set: [4.72, 4.71, 4.74, 4.73, 4.72, 4.71, 4.73, 4.72]	2	CO 2
Q8	Which one of the following is the most comprehensive source of population data? a. Census b. National Sample Surveys c. Demographic health Surveys d. National Family Heath Surveys	2	CO 2
Q9	Field work based research is classified as a. Historical b. Empirical c. Biographical d. Experimental	2	CO 2

Q 10	Identify the personal data------------- A. Marital status B. Geographical characteristics C. Occupation pattern D. District	**2**	**CO 2**

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SECTION B – 20 Marks
Answer any **FOUR** Questions (5x4)
Give brief description of the following

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Q	**Statement of question**		
1.	Differentiate between Cluster Sampling and Stratified Sampling.	**5**	**CO 2, CO 3**
2.	What are the limitations of convenience sampling?	**5**	**CO 2, CO 3**
3.	How sampling bias happens? How it can be minimized?	**5**	**CO 2, CO 3**
4.	Differentiate between primary data and secondary data with suitable examples.	**5**	**CO 2, CO 3**
5.	Distinguish between participant observation and Non-Participant observation	**5**	**CO 2, CO 3**
6.	Differentiate between References and Bibliography	**5**	**CO 2, CO 3**
7.	How problem is selected for research?	**5**	**CO 2, CO 3**

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SECTION-C
Descriptive type questions-30 marks
Answer any **TWO** Questions

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	Statement of question		
Q1	Discuss the components of Research Proposal. Differentiate between research Proposal and research report.	**15**	**CO 1, CO 2, CO 5**
Q2	Define Stratified random Sampling. Discuss all the Advantages and disadvantages of Stratified random sampling.	**15**	**CO 3, CO 4, CO 5**
Q3	What are the guiding considerations in the construction of a good questionnaire? Explain. Discuss the merits and limitations of Questionnaire method.	**15**	**CO 3, CO 4, CO 5**

	SECTION-D Analytical / Case Study-30 marks Answer any **TWO** Questions		
	Statement of question		
Q1	Ethics in Research. Substantiate with examples.	**15**	**CO 3, CO 4**
Q2	Critically evaluate the various errors in measurement in research methodology	**15**	**CO 3, CO 4**
Q3	"Research is much concerned with proper fact finding, analysis and evaluation." Do you agree with this statement? Give reasons in support of your answer.	**15**	**CO 2, CO 3, CO 4**

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S. No.	Statement of question	Marks	CO
	SECTION A- 20 Marks **In this section all the questions are compulsory.**		
Q1	A research is always a. Exploring new knowledge b. Verifying the old knowledge c. Filling the gap between knowledge d. All of these	2	CO 1
Q2	Alternative Hypothesis is proved to be a. True b. Partially True c. Partially Wrong d. Completely Wrong	2	CO 2
Q3	Which one of the following is the most comprehensive source of population data? e. Census f. National Sample Surveys g. Demographic health Surveys h. National Family Heath Surveys	2	CO 2
Q4	Which one is called non-probability sampling? a. Quota Sampling b. Cluster Sampling c. Systematic Sampling d. Stratifies random Sampling	2	CO 2

Q5	Field work based research is classified as
	
	    e. Historical
	    f. Empirical
	    g. Biographical
	    h. Experimental
		2	**CO 3**

Q6	Which of the following tasks are the main tasks of research in modern society?
	
	    a. To discover new things
	    b. To keep pace with the advancement in knowledge
	    c. To systematically examine and critically analyse the investigations/ sources with objectivity
	    d. All of the above
		2	**CO 2**

Q7	The depth of any research can be judged by
	
	    a. Title of research
	    b. Duration of research
	    c. Objectives of research
	    d. Total expenditure on the research
		2	**CO 2**

Q8	Which of the following is not a method of research?
	
	    a. Survey
	    b. Historical
	    c. Observation
	    d. Philosophical
		2	**CO 2**

Q9	Bibliography given in a research report
	
	    a. Has no relevance to research
	    b. Shows vast knowledge of the researcher
	    c. Helps those interested in further research
	    d. All of the above
		2	**CO 2**

Q 10	Research problem is selected from the standpoint of
	
	    a. Social relevance
	    b. Financial support
		2	**CO 2**

	c. Researcher's interest		
	d. Availability of relevant literature		

SECTION B – 20 Marks
Answer any **FOUR** Questions (5x4)
Give brief description of the following

Q	Statement of question		
1.	Define Hypothesis and give suitable examples.	**5**	**CO 2, CO 3**
2.	Discuss the merits of interview schedule.	**5**	**CO 2, CO 3**
3.	Copy Right	**5**	**CO 2, CO 3**
4.	Impact Factor	**5**	**CO 2, CO 3**
5.	Define Validity and reliability. Differentiate between them.	**5**	**CO 2, CO 3**
6.	Explain the term Plagiarism	**5**	**CO 2, CO 3**
7.	What do you understand by the term, "Peer Review"? Discuss the "Simple Blind" and "Double blind" Peer Review methods.	**5**	**CO 2, CO 3**

SECTION-C
Descriptive type questions-30 marks
Answer any **TWO** Questions

	Statement of question		
Q1	Write in detail about the essential components of good research proposal and what are the factors affecting the research design?	**15**	**CO 1, CO 2, CO 5**
Q2	Define Stratified random Sampling. Discuss all the Advantages and disadvantages of Stratified random sampling.	**15**	**CO 3, CO 4, CO 5**
Q3	Define and discuss the Observation method and types of Observation. Discuss the merits and limitations of Observation method.	**15**	**CO 3, CO 4, CO 5**

SECTION-D
Analytical / Case Study-30 marks
Answer any **TWO** Questions

	Statement of question		

Q1	Critically evaluate the various errors in measurement in research methodology	15	CO 2, CO 3, CO 4
Q2	Ethics in Research. Substantiate with examples.	15	CO 3, CO 4
Q3	Explain the steps of research process with examples.	15	CO 2, CO 3, CO 4