

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT
TEST -3EXAMINATION- 2025

PhD - HSS

COURSE CODE (CREDITS): 18PIWGE101 (3)

MAX. MARKS: 25

COURSE NAME: Research Methodologies including Quant. Methods and Computer App.

COURSE INSTRUCTORS: Neena Jindal

MAX. TIME: 2 Hours

Note: (a) All questions are compulsory.

(b) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems

Q.No	Question	CO	Marks
Q1	<p>Case Study 1:</p> <p>The National Institute of Rural Finance (NIRF) planned a detailed research study to understand the level of mobile banking adoption among rural households in the state of Uttarak Pradesh. The state has 75 districts, each containing a large number of villages of different sizes and socio-economic compositions. Conducting a statewide survey would require significant time, money, and manpower. Therefore, the research team had to carefully choose an appropriate sampling method to ensure accurate representation. The researchers first obtained a complete list of all districts, then categorized the districts into three groups based on economic development indicators:</p> <ul style="list-style-type: none">• Highly developed districts• Moderately developed districts• Low-developed districts <p>From each group, the team selected five districts using random selection. Then from each selected district, they prepared a list of villages sorted by population size and selected three villages randomly. Within each village, a household list was obtained from the panchayat office. Instead of randomly picking households, the researchers decided to select every 10th household from the list, ensuring even coverage of the entire village population.</p> <p>After selecting the households, the team conducted face-to-face interviews with the head of each selected household. The questionnaire included questions on awareness of mobile banking, frequency of usage, barriers (network issues, lack of trust, literacy problems), and satisfaction levels. This approach allowed the research team to gather data from multiple geographic and economic layers of the state in a systematic way. Although random sampling was used at earlier stages, the final household selection relied on a fixed interval, ensuring that no single cluster of houses dominated the sample.</p> <p>The team compared their approach with simple random sampling and found that it would have been too costly and logistically difficult to select respondents spread across thousands of villages. They also rejected convenience sampling due to its high bias risk. The chosen method ensured representation of different development levels, districts, villages,</p>		5+5

	<p>and households, making the findings more generalizable. The study results highlighted significant variations: households in highly developed districts showed higher adoption of mobile banking, whereas low-developed districts faced barriers like lack of smartphones, mistrust, and limited awareness.</p> <ol style="list-style-type: none"> 1. What sampling method was used in this study? Explain your answer with reasons. 2. What are two advantages and two limitations of this sampling method based on the case? 		
Q2	<p>Case Study 2:</p> <p>The government launches a new skill development initiative called SkillPower 2030 to train unemployed youth in digital skills. After one year, policymakers want to evaluate whether the program is effectively improving employment prospects. Instead of asking participants for opinions, the evaluation team decides to gather first-hand data by observing the training sessions directly. Researchers visit 30 training centers across different districts. At each center, they spend an entire day watching activities silently. They record:</p> <ul style="list-style-type: none"> • How trainers conduct sessions • Whether students are attentive • Availability of training materials • Use of digital tools • Student participation and engagement • Classroom environment <p>The observers use a structured observation checklist, where each item must be marked as "Present," "Absent," or "Partially Present." They also maintain short field notes describing unusual or unexpected events. Researchers do not interact with trainers or students during observation to avoid influencing behavior. This allows them to capture real and unbiased actions, not self-reported answers. After compiling the data, the team notices large variations in training quality. Some centers lack experienced trainers, others face equipment shortages, and many struggle with low student engagement. The government uses these findings to redesign the program and develop a trainer certification module.</p> <p>QUESTIONS</p> <ol style="list-style-type: none"> 1. Why did the researchers choose observation instead of interviews? 2. Is this structured or unstructured observation? Give reasons. 		5+5
Q3	Explain ethical issues in research and suggest measures to ensure ethical compliance.		5