Research Methodology & Computer Application (RMCA)

Batch: July' 2024

QUESTION BANK

1. Introduction to Research Methodology

1. What is the meaning of research?
2. What are the main objectives of conducting research?
3. What are some common motivations for conducting research?
4. List and describe the various types of research.
5. What are the different approaches to research?
6. Why is research significant in today's world?
7. What are the differences between research methods and research methodology?
8. Explain the relationship between research and scientific methods.
9. What are the main steps in the research process?
10. What are the criteria for good research?
11. How does scientific research differ from other types of research?
12. Why is understanding the research process important?
13. How do research objectives influence the research process?
14. Explain the significance of ethical considerations in research.
15. What makes a research problem significant?

2. Defining the Research Problem

16. What is a research problem?
17. Why is defining a research problem important?
18. What are the criteria for selecting a research problem?
19. Explain the steps involved in defining a research problem.
20. What are some techniques for defining a research problem?

21. How does one identify a good research problem?
22. What are the challenges in selecting a research problem?
23. Why is it necessary to carefully define the problem in research?
24. What factors should researchers consider when choosing a problem?
25. How do research questions relate to the research problem?

3. Sample Design

26. What is a sample design in research?
27. Why is sample design important in research studies?
28. Explain the steps involved in selecting a sample.
29. What are the criteria for selecting a good sampling procedure?
30. Describe the characteristics of a good sampling procedure.
31. What are the different types of sample designs?
32. How do you select random samples in research?
33. What is complex random sampling design?
34. What are the advantages of using random sampling in research?
35. Explain the concept of sampling error and its implications.

4. Methods of Data Collection

36. What are the primary methods for data collection?
37. Describe the observation method of data collection.
38. How is the interview method used for data collection?
39. What is the importance of questionnaires in data collection?
40. How are schedules used in data collection?
41. List other methods of data collection besides observation and interviews.
42. What is secondary data, and how is it collected?
43. How do you choose the appropriate data collection method?

44. Explain the case study method in data collection.
45. What are some guidelines for developing a questionnaire?
46. What are the key elements of successful interviewing?
47. How does a survey differ from an experiment?
48. What factors influence the choice of data collection method?
49. How can sampling bias impact data collection?
50. What ethical considerations should be kept in mind during data collection?

5. Processing and Analysis of Data

51. What are measures of central tendency?
52. Explain the concept of dispersion in data analysis.
53. How is correlation calculated in data analysis?
54. What is regression, and why is it used?
55. Describe the Chi-square test and its applications.
56. What are the main steps involved in the Chi-square test?
57. What are the limitations of the Chi-square test?
58. Explain the concept of analysis of variance (ANOVA).
59. How does covariance differ from variance?
60. What is the significance of data processing in research?
61. Describe the importance of central tendency in understanding data.
62. How can researchers avoid data processing errors?
63. Explain the steps involved in processing quantitative data.
64. What is the significance of graphical representation in data analysis?
65. How can ANOVA be used to compare different groups?

6. Testing of Hypothesis

66. What is a hypothesis in research?

67. Explain the basic concepts of hypothesis testing.
68. Describe the flow diagram of a hypothesis testing process.
69. What is the power of a hypothesis test?
70. List the important parametric tests in hypothesis testing.
71. Explain hypothesis testing of means.
72. How is hypothesis testing applied to correlation coefficients?
73. What are the limitations of hypothesis tests?
74. Describe the concept of null and alternative hypotheses.
75. What is the role of sample size in hypothesis testing?
76. How is a significance level determined in hypothesis testing?
77. Explain the importance of p-values in hypothesis testing.
78. How does one interpret the results of a hypothesis test?
79. What is Type I and Type II error in hypothesis testing?
80. Why is it important to test a hypothesis in research?

7. Computer Applications in Research (PPD 101-B)

81. What are the main features of MS Excel?
82. How can spreadsheets be used for research data entry?
83. Explain the process of formatting worksheets in Excel.
84. What types of graphics can be added to Excel sheets?
85. How can data be manipulated and analyzed in Excel?
86. Describe custom calculations in Excel.
87. Explain the process of consolidating worksheets in Excel.
88. What are pivot tables, and how are they used in data analysis?
89. Describe the steps to create charts in Excel.
90. What is the purpose of what-if analysis in Excel?

91. How can MS Excel be used to perform statistical analysis?
92. What are the advantages of using spreadsheets in research?
93. How can researchers use Excel to create a data dashboard?
94. Explain the concept of conditional formatting in Excel.
95. How can Excel be used to manage large data sets?

8. UGC Infonet, INFLIBNET & Research Databases

96. What is UGC Infonet, and how does it support research?
97. Describe the role of INFLIBNET in research access.
98. What is ERNET, and how does it help in research networking?
99. How do researchers find publications in Scopus?
100. What is the significance of SCI and other citation indexes in research?

Course Coordinator

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