

SRM VALLIAMMAI ENGINEERING COLLEGE

SRM Nagar, Kattankulathur – 603 203

DEPARTMENT OF COMPUTER APPLICATIONS

QUESTION BANK



I SEMESTER

BA4171 - RESEARCH METHODS AND INTELLECTUAL PROPERTY RIGHTS

Regulation – 2024

Academic Year 2025 – 26 (ODD)

Prepared by

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SUBJECT : BA4171 - RESEARCH METHODS AND INTELLECTUAL PROPERTY RIGHTS

YEAR / SEM : I / I

UNIT I – INTRODUCTION				
Introduction – Sources of Research Problem, Research Process - Criteria of Good Research - Scope and importance, Approaches – Qualitative – Quantitative, Research Design and Types, Types of Variables, Ethics in Research.				
PART – A				
Q. No	Questions	BT Level	Competence	Course Outcomes
1.	Define Research.	Level 1	Remembering	CO1
2.	List two common sources of a research problem	Level 1	Remembering	CO1
3.	List any two sources of research problems.	Level 1	Remembering	CO1
4.	What are the major steps in the research process?	Level 2	Understanding	CO1
5.	What is the role of literature review in identifying a research problem?	Level 1	Understanding	CO1
6.	Outline the key steps in the research process.	Level 2	Remembering	CO1
7.	List any two criteria of good research.	Level 1	Understanding	CO1
8.	Explain the importance of objectivity in research.	Level 2	Remembering	CO1
9.	Differentiate qualitative and quantitative approaches.	Level 2	Remembering	CO1
10.	List the importance of research.	Level 2	Remembering	CO1
11.	Write the scope of the research.	Level 1	Remembering	CO1
12.	Compare qualitative and quantitative research approaches.	Level 2	Understanding	CO1
13.	Define quantitative research.	Level 1	Remembering	CO1

14.	Enumerate the importance of using mixed methods in research.	Level 2	Understanding	CO1
15.	What is meant by qualitative research?	Level 1	Remembering	CO1
16.	Outline the research design.	Level 2	Understanding	CO1
17.	List any two types of research design.	Level 1	Remembering	CO1
18.	Describe the difference between experimental and non-experimental research designs.	Level 2	Understanding	CO1
19.	Define a dependent variable.	Level 1	Remembering	CO1
20.	Describe the difference between continuous and categorical variables.	Level 2	Understanding	CO1
21.	What is meant by an independent variable?	Level 1	Remembering	CO1
22.	Outline the general ethics need to follow while doing the research.	Level 2	Understanding	CO1
23.	Define Plagiarism.	Level 1	Remembering	CO1
24.	Describe how confidentiality is maintained in research studies.	Level 2	Understanding	CO1

PART –B

Q. No	Questions		BT Level	Competence	Course Outcomes
1.	Evaluate the role of research in solving real problems in industry and education.	(16)	Level 5	Evaluating	CO1
2.	Analyze the sources of a research problem and explain how to identify a research gap.	(16)	Level 4	Analyzing	CO1
3.	Evaluate the steps in the scientific research process using a real-life example.	(16)	Level 5	Evaluating	CO1
4.	Apply the research process to study the effectiveness of remote work for software engineers.	(16)	Level 3	Applying	CO1
5.	Analyze the criteria for good research using examples from academic journals.	(16)	Level 4	Analyzing	CO1
6.	Analyze the meaning of scope and importance in research and their role in project success.	(16)	Level 4	Analyzing	CO1
7.	Design a research proposal on consumer buying behaviour by defining scope and hypothesis.	(16)	Level 3	Applying	CO1
8.	Evaluate qualitative and quantitative research to identify which is better for behaviour studies.	(16)	Level 5	Evaluating	CO1

9.	Analyze the differences between qualitative and quantitative research with examples.	(16)	Level 4	Analyzing	CO1
10.	Construct a research design to study the impact of online learning tools on academic performance.	(16)	Level 3	Applying	CO1
11.	Evaluate different types of research designs by discussing their strengths and weaknesses.	(16)	Level 5	Evaluating	CO1
12.	Evaluate how poor selection of variables can affect research outcomes.	(16)	Level 5	Evaluating	CO1
13.	Analyze a published research article to identify dependent, independent, and control variables.	(16)	Level 4	Analyzing	CO1
14.	Apply the concept of variables by designing a study to measure how diet affects student concentration.	(16)	Level 3	Applying	CO1
15.	Evaluate how confounding variables can affect the validity of a research study.	(16)	Level 5	Evaluating	CO1
16.	Analyze the role of research ethics in protecting participants and ensuring data accuracy.	(16)	Level 4	Analyzing	CO1
17.	Evaluate a real-world research case where ethical principles were violated.	(16)	Level 5	Evaluating	CO1

UNIT – II – DATA COLLECTION AND ANALYSIS				
Sources of Data – Primary – Secondary, Data Collection Methods, Measurement and Scaling, Validity of Findings- Internal and External Validity				
PART – A				
Q. No	Questions	BT Level	Competence	Course Outcomes
1.	What is primary data?	Level 1	Remembering	CO2
2.	Explain the difference between primary and secondary data.	Level 2	Understanding	CO2
3.	Define secondary data.	Level 1	Remembering	CO2
4.	Classify the sources of primary data collection.	Level 2	Understanding	CO2
5.	List two sources of secondary data.	Level 1	Remembering	CO2
6.	Explain the importance of surveys in primary data collection.	Level 2	Understanding	CO2
7.	Describe the role of literature reviews in secondary data collection.	Level 1	Remembering	CO2
8.	Describe one advantage of using secondary data over primary data.	Level 2	Understanding	CO2

9.	Define Depth interview.	Level 1	Remembering	CO2
10.	What is meant by Schedules.	Level 2	Understanding	CO2
11.	Write two essentials of a good questionnaire.	Level 1	Remembering	CO2
12.	How to measure the Reliability of an instrument?	Level 2	Understanding	CO2
13.	Write two selections of appropriate methods for data collection.	Level 1	Remembering	CO2
14.	Write two prerequisites and basic tenets of interviewing.	Level 2	Understanding	CO2
15.	What is meant by measurement in research?	Level 1	Remembering	CO2
16.	Define scaling in the context of research.	Level 2	Understanding	CO2
17.	Explain the difference between nominal and ordinal scales.	Level 1	Remembering	CO2
18.	Describe the purpose of a Likert scale in research.	Level 2	Understanding	CO2
19.	What is internal validity?	Level 1	Remembering	CO2
20.	Explain how internal validity affects the results of a study.	Level 2	Understanding	CO2
21.	Describe why external validity is important for generalizing research findings.	Level 1	Remembering	CO2
22.	Write the types of Scaling.	Level 2	Understanding	CO2
23.	Define Nominal Scale	Level 1	Remembering	CO2
24.	What is meant by ordinal scale.	Level 2	Understanding	CO2

PART –B

Q. No	Questions		BT Level	Competence	Course Outcomes
1.	Apply the key differences between primary and secondary data with examples.	(16)	Level 3	Applying	CO2
2.	Explain the advantages and limitations of using secondary data in research.	(16)	Level 3	Applying	CO2
3.	Apply suitable data collection methods for a study on online shopping behaviour.	(16)	Level 3	Applying	CO2
4.	Compare interview, questionnaire, and observation methods for collecting primary data.	(16)	Level 4	Analyzing	CO2
5.	Analyze the suitability of primary data sources in market research.	(16)	Level 4	Analyzing	CO2
6.	Evaluate different data collection methods based on cost, time, and accuracy.	(16)	Level 5	Evaluating	CO2
7.	Design a data collection plan for studying employee satisfaction in IT companies.	(16)	Level 3	Applying	CO2
8.	Construct a suitable questionnaire to collect primary data for consumer research.	(16)	Level 3	Applying	CO2

9.	Apply appropriate measurement scales (nominal, ordinal, interval, ratio) in a marketing research study.	(16)	Level 3	Applying	CO2
10.	Distinguish between reliability and validity in research measurement.	(16)	Level 4	Analyzing	CO2
11.	Analyze the threats to internal and external validity in an experimental study.	(16)	Level 4	Analyzing	CO2
12.	Assess how external validity influences the generalizability of research findings.	(16)	Level 5	Evaluating	CO2
13.	Design a study that ensures both internal and external validity.	(16)	Level 3	Applying	CO2
14.	Explain the meaning of measurement and scaling in research with examples.	(16)	Level 3	Applying	CO2
15.	Compare different types of measurement scales with suitable examples.	(16)	Level 4	Analyzing	CO2
16.	Evaluate the role of validity in ensuring the quality of data collection.	(16)	Level 5	Evaluating	CO2
17.	Apply scaling techniques like Likert or semantic differential to assess customer satisfaction.	(16)	Level 3	Applying	CO2

UNIT – III – DATA PREPARATION AND DATA CLEANING

Sampling Techniques, Editing – Coding – Tabulation of Data, Validity of data – Qualitative Vs Quantitative, Data analysis – Univariate - Bivariate and Multivariate statistical techniques – Cluster analysis – Multiple regression.

PART – A

Q. No	Questions	BT Level	Competence	Course Outcomes
1.	Define Sampling.	Level 1	Remembering	CO3
2.	Write the types of sampling techniques.	Level 2	Understanding	CO3
3.	Define probability sampling.	Level 1	Remembering	CO3
4.	What is meant by non-probability sampling?	Level 2	Understanding	CO3
5.	Define random Sampling.	Level 2	Understanding	CO3
6.	What is stratified sampling?	Level 1	Remembering	CO3
7.	Define Snowball Sampling.	Level 2	Understanding	CO3
8.	What is purposive sampling?	Level 1	Remembering	CO3
9.	Define Quota Sampling.	Level 2	Understanding	CO3

10.	What is cluster sampling?	Level 1	Remembering	CO3
11.	Define convenience sampling.	Level 1	Remembering	CO3
12.	Write about Simple random sampling.	Level 2	Understanding	CO3
13.	Describe the purpose of using cluster sampling in research.	Level 1	Remembering	CO3
14.	Write two characteristics of a good sample design.	Level 2	Understanding	CO3
15.	What is data editing in research.	Level 1	Remembering	CO3
16.	Define coding in the context of data analysis.	Level 2	Understanding	CO3
17.	Define data validity in quantitative research.	Level 1	Remembering	CO3
18.	What is univariate analysis?	Level 2	Understanding	CO3
19.	Define bivariate analysis.	Level 1	Remembering	CO3
20.	Explain the difference between univariate and bivariate analysis.	Level 2	Understanding	CO3
21.	Define multivariate analysis.	Level 1	Remembering	CO3
22.	Describe the purpose of using cluster analysis in data analysis.	Level 2	Understanding	CO3
23.	Define multiple regression.	Level 1	Remembering	CO3
24.	What is meant by cluster analysis?	Level 2	Understanding	CO3

PART –B

Q. No	Questions		BT Level	Competence	Course Outcomes
1.	Apply appropriate sampling techniques for conducting a survey on student career preferences.	(16)	Level 3	Applying	CO3
2.	Apply probability and non-probability sampling methods to a real-life college survey.	(16)	Level 3	Applying	CO3
3.	Analyze the advantages and disadvantages of probability and non-probability sampling methods.	(16)	Level 4	Analyzing	CO3
4.	Evaluate the impact of poor sampling design on the accuracy of research findings.	(16)	Level 5	Evaluating	CO3
5.	Apply the process of editing, coding, and tabulation to a given raw data set.	(16)	Level 3	Applying	CO3
6.	Analyze how errors in editing and coding affect data quality in research.	(16)	Level 4	Analyzing	CO3
7.	Evaluate the role of data tabulation in simplifying and analysing large datasets.	(16)	Level 5	Evaluating	CO3
8.	Apply coding techniques for open-ended responses collected from customer surveys.	(16)	Level 3	Applying	CO3
9.	Analyze the difference between qualitative and quantitative data with suitable research examples.	(16)	Level 4	Analyzing	CO3

10.	Evaluate the validity of data collected through qualitative interviews.	(16)	Level 5	Evaluating	CO3
11.	Apply univariate data analysis to summarize student attendance data.	(16)	Level 3	Applying	CO3
12.	Analyze bivariate analysis techniques used to study the relationship between age and income.	(16)	Level 4	Analyzing	CO3
13.	Evaluate the use of multivariate analysis in understanding customer satisfaction across different regions.	(16)	Level 5	Evaluating	CO3
14.	Analyze the steps involved in conducting cluster analysis and interpret its output.	(16)	Level 4	Analyzing	CO3
15.	Evaluate the applications and limitations of cluster analysis in market segmentation.	(16)	Level 5	Evaluating	CO3
16.	Apply multiple regression techniques to study the effect of education and experience on salary.	(16)	Level 3	Applying	CO3
17.	Analyze how multi collinearity affects the results of multiple regression analysis.	(16)	Level 4	Analyzing	CO3

UNIT – IV – INTELLECTUAL PROPERTY RIGHTS AND PATENTS

Introduction to Intellectual Property (IP) - Role of IP in the Economic and Cultural Development of the Society – IP Governance - IP as a Global Indicator of Innovation – Major Amendments in IP Laws and Acts in India, Trademark and Secrets - Types and features of IPR, Patents - Conditions for Obtaining a Patent Protection - National Bodies Dealing with Patent Affairs - Registration procedure.

PART – A

Q. No	Questions	BT Level	Competence	Course Outcomes
1.	Define Intellectual Property.	Level 1	Remembering	CO4
2.	What do you understand by IPR?	Level 2	Remembering	CO4
3.	List different types of Intellectual Property Rights (IPR).	Level 1	Remembering	CO4
4.	Brief about any two major amendments in IP laws in India.	Level 2	Understanding	CO4
5.	What is a patent?	Level 1	Remembering	CO4
6.	Identify the role of the national body dealing with patent affairs in India.	Level 2	Understanding	CO4
7.	Explain the role of IP in the cultural development of society.	Level 2	Understanding	CO4
8.	Compare patents and trademarks.	Level 2	Understanding	CO4
9.	What is a trademark?	Level 1	Remembering	CO4
10.	Describe how IP acts as a global indicator of innovation.	Level 2	Understanding	CO4

11.	Define trade secret.	Level 1	Remembering	CO4
12.	Illustrate a few conditions for obtaining patent protection.	Level 2	Understanding	CO4
13.	What is the role of Patents in economic development?	Level 1	Remembering	CO4
14.	Mention features and the importance of patents.	Level 2	Understanding	CO4
15.	Explain the significance of IP governance.	Level 2	Understanding	CO4
16.	Summarize the registration procedure for obtaining a patent.	Level 2	Understanding	CO4
17.	Discuss the types of IPR.	Level 2	Understanding	CO4
18.	What is the IP registration procedure?	Level 1	Remembering	CO4
19.	Name the act related to IP laws in India.	Level 1	Remembering	CO4
20.	Elaborate on the role of IPR in economic development.	Level 1	Remembering	CO4
21.	Explain the term 'trade secret'.	Level 2	Understanding	CO4
22.	Illustrate the importance of major amendments in IP laws in India.	Level 2	Understanding	CO4
23.	Describe the conditions required for obtaining patent protection.	Level 1	Remembering	CO4
24.	Explain the function of national bodies dealing with patent affairs.	Level 2	Understanding	CO4

PART –B

Q. No	Questions	BT Level	Competence	Course Outcomes
1.	Apply the concept of Intellectual Property to explain its role in economic development. (16)	Level 3	Applying	CO4
2.	Analyze the role of IP in the Economic and Cultural Development of the Society. (16)	Level 4	Analyzing	CO4
3.	Evaluate how IP acts as a global indicator of innovation. (16)	Level 5	Evaluating	CO4
4.	Apply IP governance principles to assess a country's innovation ecosystem. (16)	Level 3	Applying	CO4
5.	Analyze major amendments in IP Laws and Acts in India. (16)	Level 4	Analyzing	CO4
6.	Evaluate the impact of recent Indian IP amendments on domestic innovations. (16)	Level 5	Evaluating	CO4
7.	Apply the types and features of trademarks with relevant examples. (16)	Level 3	Applying	CO4
8.	Analyze the differences between trademarks and trade secrets. (16)	Level 4	Analyzing	CO4
9.	Evaluate the advantages and limitations of trade secrets in protecting business knowledge. (16)	Level 5	Evaluating	CO4
10.	Apply the conditions required to obtain patent protection in India. (16)	Level 3	Applying	CO4
11.	Analyze the national bodies dealing with patent affairs. (16)	Level 4	Analyzing	CO4
12.	Evaluate the effectiveness of the national patent (16)	Level 5	Evaluating	CO4

	office in streamlining applications.				
13.	Evaluate the role of patent cooperation treaty (PCT) in global IP protection.	(16)	Level 5	Evaluating	CO4
14.	Apply amendments in IP laws to hypothesize changes in patent processing time.	(16)	Level 3	Applying	CO4
15.	Analyze the importance of Intellectual Property rights for startup innovation.	(16)	Level 4	Analyzing	CO4
16.	Apply the concept of IP as a tool for cultural preservation.	(16)	Level 3	Applying	CO4
17.	Analyze the significance of IP registration for small and medium enterprises.	(16)	Level 4	Analyzing	CO4

UNIT – V – DOCUMENTATION AND REPORT WRITING

Research report – Report format – Title of the report - Contents of report - Different types, Report Presentation – Oral Presentation – Written Presentation, IPR Document – Forms of IPR – IPR Guidelines

PART – A

Q. No	Questions	BT Level	Competence	Course Outcomes
1.	What is a research report?	Level 1	Remembering	CO5
2.	Explain the importance of a research report..	Level 2	Understanding	CO5
3.	Define report format	Level 1	Remembering	CO5
4.	Describe the function of a report format.	Level 2	Understanding	CO5
5.	What is an oral presentation?	Level 1	Remembering	CO5
6.	List the main importance and contents of a report.	Level 2	Understanding	CO5
7.	Define written presentation.	Level 1	Remembering	CO5
8.	Mention a few key elements of a research report.	Level 2	Understanding	CO5
9.	What do IPR guidelines refer to?	Level 1	Remembering	CO5
10.	Explain the role of an IPR document.	Level 2	Understanding	CO5
11.	Summarize different types of reports.	Level 1	Remembering	CO5
12.	What is the purpose of an executive summary in a report?	Level 2	Understanding	CO5
13.	What is the difference between oral and written presentation?	Level 1	Remembering	CO5
14.	Identify a few benefits of using a structured report format.	Level 2	Understanding	CO5
15.	Illustrate the purpose of IPR guidelines.	Level 1	Remembering	CO5
16.	Elucidate different forms of IPR.	Level 2	Understanding	CO5
17.	Name a few forms of IPR that are commonly documented.	Level 1	Remembering	CO5
18.	Compare the benefits of oral and written presentations.	Level 2	Understanding	CO5
19.	Describe the steps involved in preparing an oral presentation.	Level 2	Understanding	CO5

20.	Define copyright.		Level 1	Remembering	CO5
21.	What is the significance of the title in a research report?		Level 1	Remembering	CO5
22.	Discuss the importance of different types of reports in various contexts.		Level 2	Understanding	CO5
23.	Compare different forms of IPR and their documentation.		Level 1	Remembering	CO5
24.	Describe how to structure the contents of a report for clarity.		Level 2	Understanding	CO5
PART –B					
Q. No	Questions		BT Level	Competence	Course Outcomes
1.	Apply the general structure of a research report to prepare a report on digital learning tools.	(16)	Level 3	Applying	CO5
2.	Apply report writing techniques to write a report based on survey findings.	(16)	Level 3	Applying	CO5
3.	Analyze the essential components that make up a well-structured research report.	(16)	Level 4	Analyzing	CO5
4.	Evaluate the logical flow and coherence of contents in a written research report.	(16)	Level 5	Evaluating	CO5
5.	Apply formatting and layout principles to improve the readability of a technical report.	(16)	Level 3	Applying	CO5
6.	Analyze the importance of title, abstract, introduction, and conclusion in a report.	(16)	Level 4	Analyzing	CO5
7.	Evaluate different types of technical reports with suitable examples.	(16)	Level 5	Evaluating	CO5
8.	Apply oral presentation techniques to present the findings of a mini research project.	(16)	Level 3	Applying	CO5
9.	Analyze the differences between oral and written research presentations.	(16)	Level 4	Analyzing	CO5
10.	Evaluate the impact of effective oral presentation skills on academic success.	(16)	Level 5	Evaluating	CO5
11.	Apply the steps in preparing a written report for academic or industrial purposes.	(16)	Level 3	Applying	CO5
12.	Analyze the various types of research reports and their appropriate uses.	(16)	Level 4	Analyzing	CO5
13.	Evaluate the quality and completeness of a research report on environmental sustainability.	(16)	Level 5	Evaluating	CO5
14.	Apply the different forms of Intellectual Property Rights (IPR) with examples.	(16)	Level 3	Applying	CO5
15.	Analyze the differences among patents, copyrights, trademarks, and trade secrets.	(16)	Level 4	Analyzing	CO5
16.	Evaluate the significance of IPR in academic and commercial research.	(16)	Level 5	Evaluating	CO5
17.	Apply the IPR guidelines to prepare a basic IPR filing document for a real invention.	(16)	Level 3	Applying	CO5