

SRM VALLIAMMAI ENGINEERING COLLEGE

(An Autonomous Institution)

SRM Nagar, Kattankulathur – 603 203

DEPARTMENT OF MANAGEMENT STUDIES

(Common to Department of Computer Science and Engineering)

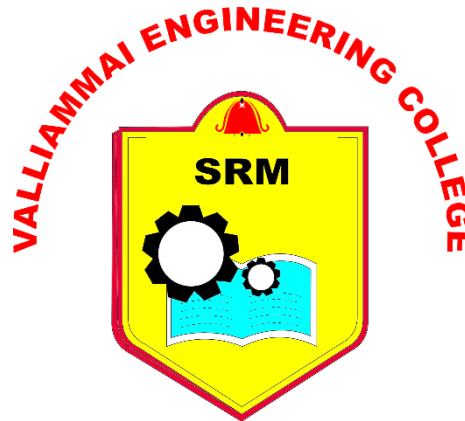
QUESTION BANK

III SEMESTER

BA3371 RESEARCH METHODOLOGY AND INTELLECTUAL PROPERTY RIGHTS

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Prepared by

Ms. R. Parhana, AP/ MBA



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DEPARTMENT OF MANAGEMENT STUDIES

QUESTIONBANK

SUBJECT: RESEARCH METHODOLOGY AND INTELLECTUAL PROPERTY RIGHTS

SEM / YEAR: III / II

UNIT I: – INTRODUCTION TO RESEARCH AND ITS DESIGN				9
The concept of research – Characteristics of good research – The hallmarks of scientific research – Building blocks of science in research – Concept of applied and Basic research – Quantitative and Qualitative Research techniques – Need for theoretical frame work – Hypothesis development and testing. Research design – Purpose of the study: Exploratory, Descriptive, Experimental Research Design, Hypothesis Testing, Measurement of variables - Scales and measurements of variables - Factorial Design in Research – Taguchi method in Research, Developing scales.				
PART- A				
S.NO	QUESTIONS	CO Level	BT Level	COMPETENCE
1.	Define research.	CO1	Level 1	Remembering
2.	Explain the primary purpose of conducting research.	CO1	Level 2	Understanding
3.	List four characteristics of good research.	CO1	Level 1	Remembering
4.	Why objectivity is important in research.	CO1	Level 2	Understanding
5.	Identify hallmarks of scientific research.	CO1	Level 1	Remembering
6.	Differentiate between applied and basic research.	CO1	Level 2	Understanding
7.	Define quantitative research.	CO1	Level 1	Remembering
8.	Which type of research is best suitable for research in engineering?	CO1	Level 2	Understanding
9.	Define qualitative research.	CO1	Level 1	Remembering
10.	What is the role of theoretical framework in research.	CO1	Level 2	Understanding
11.	Define a hypothesis.	CO1	Level 1	Remembering
12.	List the significance of research design?	CO1	Level 2	Understanding
13.	What is type I and Type II error?	CO1	Level 1	Remembering
14.	Differentiate between exploratory and descriptive research.	CO1	Level 2	Understanding
15.	What is the primary aim of experimental research design?	CO1	Level 1	Understanding
16.	Give an example of an applied research study.	CO1	Level 2	Understanding

17.	What is a null hypothesis	CO1	Level 1	Remembering
18.	What is the role of a variable in research.	CO1	Level 2	Understanding
19.	What is a scale of measurement?	CO1	Level 1	Remembering
20.	List the different types of scale?	CO1	Level 2	Understanding
21.	What is factorial design?	CO1	Level 1	Remembering
22.	How the concept of reliability can be applied in research?	CO1	Level 2	Understanding
23.	What is the Taguchi method?	CO1	Level 1	Remembering
24.	Why is the Taguchi method used in research?	CO1	Level 2	Understanding

PART- B				
S.NO	QUESTIONS	CO LEVEL	BT LEVEL	COMPETENCE
1.	How would you apply the characteristics of good research to design a study on scientific research?	CO 1	Level 3	Applying
2.	Analyze how the hallmarks of scientific research ensure the objectivity and replicability of research findings.	CO 1	Level 4	Analyzing
3.	Evaluate the building blocks of science in research.	CO 1	Level 5	Evaluating
4.	How would you apply the building blocks of science in research to develop a research proposal for a new scientific study?	CO 1	Level 3	Applying
5.	Analyze the differences between applied and basic research..	CO 1	Level 4	Analyzing
6.	Evaluate the effectiveness of the theoretical framework used in a research study and suggest ways to strengthen it.	CO 1	Level 5	Evaluating
7.	How would you apply quantitative research techniques to assess the science based research?	CO 1	Level 3	Applying
8.	Analyze the importance of a theoretical framework in ensuring the coherence and direction of a research study.	CO 1	Level 4	Analyzing
9.	Evaluate the robustness of the hypothesis-testing procedure used in a research study.	CO 1	Level 5	Evaluating
10.	How would you apply different methods of qualitative and quantitative research methods in a research?	CO 1	Level 3	Applying
11.	Analyze the differences between exploratory, descriptive, and experimental research designs.	CO 1	Level 4	Analyzing
12.	Evaluate the different research design for conducting a scientific research.	CO 1	Level 5	Evaluating
13.	How would you apply different scaling methods for a research study?	CO 1	Level 3	Applying
14.	Analyze the differences between nominal, ordinal, interval, and ratio scales in terms of their applicability in research.	CO 1	Level 4	Analyzing
15.	Evaluate the factorial design approach in a research study, considering its advantages and disadvantages.	CO 1	Level 5	Evaluating

16.	What is Taguchi method? How would you implement the Taguchi method in designing an experiment to improve product quality?	CO 1	Level 3	Applying
17.	Analyze the process of developing scales and point out its challenges in research.	CO 1	Level 4	Analyzing

UNIT 2- DATA COLLECTION METHODS AND ANALYSIS TECHNIQUES 9

Types of data – Primary Vs secondary data, Advantages and Disadvantages of various Data-Collection Methods, Sampling plan - Sampling Techniques – Probability and non-probability Sampling, Determination of Optimal sample size, Data Analysis – Factor Analysis – Cluster Analysis – Discriminant Analysis – Multiple Regression and Correlation – Canonical Correlation – Application of Statistical (SPSS) Software Package in Research.

PART- A

S.NO	QUESTIONS	CO Level	BT Level	COMPETENCE
1.	Define primary data.	CO2	Level 1	Remembering
2.	Differentiate between primary and secondary data.	CO2	Level 2	Understanding
3.	Give example of secondary data	CO2	Level 1	Remembering
4.	What is an advantage of using surveys for data collection?	CO2	Level 1	Remembering
5.	Write the disadvantages of using interview method for data collection.	CO2	Level 2	Understanding
6.	Compare the reliability of data obtained through observations versus surveys.	CO2	Level 2	Understanding
7.	Define sampling method in research.	CO2	Level 1	Remembering
8.	What is the difference between probability and non probability methods	CO2	Level 2	Understanding
9.	What is the purpose of random sampling?	CO2	Level 2	Understanding
10.	Write the advantages and disadvantages of convenience sampling.	CO2	Level 1	Remembering
11.	List two types of non-probability sampling techniques.	CO2	Level 2	Understanding
12.	Why probability sampling is preferred in scientific research?	CO2	Level 2	Understanding
13.	What is the formula for calculating sample size?	CO2	Level 1	Remembering
14.	Identify factors that influences the determination of sample size.	CO2	Level 2	Understanding
15.	Why is it important of determining an optimal sample size in research.	CO2	Level 2	Understanding
16.	Define factor analysis.	CO2	Level 1	Remembering
17.	Differentiate between multiple regression and correlation analysis.	CO2	Level 2	Understanding
18.	Define discriminant analysis.	CO2	Level 1	Remembering

19.	When cluster analysis can be used?	CO2	Level 1	Remembering
20.	List two purposes of factor analysis.	CO2	Level 1	Remembering
21.	What is the purpose of correlation analysis?	CO2	Level 1	Remembering
22.	When did canonical correlation analysis use in research?	CO2	Level 2	Understanding
23.	Give the steps involved in importing data into SPSS for analysis.	CO2	Level 2	Understanding
24.	Write any four uses of SPSS software in research.	CO2	Level 1	Remembering

PART- B				
S.NO	QUESTIONS	CO LEVEL	BT LEVEL	COMPETENCE
1.	How would you adopt different primary data collection methods to gather information for a research study ?	CO2	Level 3	Applying
2.	Analyze the strengths and weaknesses of interviews, and observations as data-collection methods in qualitative research.	CO2	Level 4	Analyzing
3.	Elucidate different Probability and Non-Probability Sampling techniques.	CO2	Level 5	Evaluating
4.	How would you determine the optimal sample size for a survey aimed at understanding customer satisfaction in a retail chain?	CO2	Level 3	Applying
5.	Analyze the differences between probability and non-probability sampling techniques and their implications for research.	CO2	Level 4	Analyzing
6.	Evaluate the cluster analysis and its importance in understanding market for a new product.	CO2	Level 5	Evaluating
7.	How would you apply stratified sampling in selecting samples for a study?	CO2	Level 3	Applying
8.	Analyze the process of factor analysis and its role in reducing data dimensionality in a research study.	CO2	Level 4	Analyzing
9.	Evaluate the correlations and its application in research.	CO2	Level 5	Evaluating
10.	How would you apply discriminant analysis to predict the likelihood of student success based on various academic and personal factors?	CO2	Level 3	Applying
11.	Analyze the steps adopted in multiple regression in a research context.	CO2	Level 4	Analyzing
12.	Evaluate the canonical correlation analysis in a study and discuss the implications for multivariate research.	CO2	Level 5	Evaluating
13.	How would you apply canonical correlation to explore the relationship between two sets of variables.	CO2	Level 3	Applying
14.	Analyse the entire process of transferring research data from excel to SPSS.	CO2	Level 4	Analyzing
15.	Explain the methods of correlation in studying different variables in a research.	CO2	Level 5	Evaluating

16.	Discuss the application of Statistical (SPSS) Software Package in Research.	CO2	Level 3	Applying
17.	Analyze the advantages and limitations of using SPSS software for conducting complex statistical analyses in research.	CO2	Level 4	Analyzing

UNIT III: REPORT WRITING AND CODE OF ETHICS FOR RESEARCH

9

Research report – Layout of the Research Report- Steps in Writing Report- Types of Reports – Contents of report
- Significance of Report Writing- Report Presentation – Mechanics of Writing a Research Report - Precautions for Writing Report, Code of Ethics in research.

PART- A

S.NO	QUESTIONS	CO Level	BT Level	COMPETENCE
1.	What is a research report?	CO3	Level 1	Remembering
2.	List the main sections typically found in the layout of a research report.	CO3	Level 2	Understanding
3.	Write the importance of research report.	CO3	Level 2	Understanding
4.	Why it is important to draft an outline before writing a research report	CO3	Level 2	Understanding
5.	List types of research reports.	CO3	Level 1	Remembering
6.	Define a technical report.	CO3	Level 1	Remembering
7.	Compare a formal report with an informal report.	CO3	Level 2	Understanding
8.	Why is it important to choose the appropriate type of report for a given audience.	CO3	Level 2	Understanding
9.	Write the importance of literature review section in a research report.	CO3	Level 2	Understanding
10.	How report writing contributes to academic and professional fields.	CO3	Level 2	Understanding
11.	List out the methods of presenting a research report.	CO3	Level 1	Remembering
12.	Define report presentation.	CO3	Level 1	Remembering
13.	How visual aids can enhance a report presentation.	CO3	Level 2	Understanding
14.	What is meant by the mechanics of writing?	CO3	Level 1	Remembering
15.	What is the role of grammar and punctuation in the clarity of a research report.	CO3	Level 2	Understanding
16.	List two precautions to take when writing a research report.	CO3	Level 1	Remembering
17.	Why is it important to avoid plagiarism in report writing?	CO3	Level 2	Understanding
18.	How to avoid plagiarism in report writing?	CO3	Level 2	Understanding
19.	What is the significance of verifying data accuracy in a research report	CO3	Level 2	Understanding
20.	List two precautions to take when writing a research report.	CO3	Level 1	Remembering

21.	How is proper citation and referencing contribute to the mechanics of writing a research report?	CO3	Level 2	Understanding
22.	List out the ethical principles in research.	CO3	Level 1	Remembering
23.	What is informed consent in research?	CO3	Level 1	Remembering
24.	How maintaining confidentiality is considered as an ethical practice in research?	CO3	Level 2	Understanding

PART- B				
S.NO	QUESTIONS	CO LEVEL	BT LEVEL	COMPETENCE
1.	How would you apply the principles of writing a research report to create a report for a recent research project you conducted?	CO3	Level 3	Applying
2.	Analyze the importance of different sections of a research report and how they contribute to the overall clarity and effectiveness of the report.	CO3	Level 4	Analyzing
3.	Evaluate the layout of a research report, considering its impact on the reader's understanding and engagement.	CO3	Level 5	Evaluating
4.	How would you implement the steps in writing a research report for a study?	CO3	Level 3	Applying
5.	Analyze the challenges faced at each step of writing a research report and how they can be overcome.	CO3	Level 4	Analyzing
6.	Describe the different types of reports and discuss which type will be more suitable for scientific research.	CO3	Level 5	Evaluating
7.	How would you structure the contents of a research report?	CO3	Level 3	Applying
8.	Analyze the role of report writing in the research process and its impact on the dissemination of research findings.	CO3	Level 4	Analyzing
9.	Evaluate the significance of report writing in academia and industry, considering the different purposes and audiences.	CO3	Level 5	Evaluating
10.	How would you determine the most appropriate type of report for presenting research findings in a corporate setting?	CO3	Level 3	Applying
11.	Analyse the problems and precautions to be considered in writing report.	CO3	Level 4	Analyzing
12.	Evaluate the mechanics of writing a research report.	CO3	Level 5	Evaluating
13.	Analyse the role of visual aids in communicating complex data to a non-technical audience.	CO3	Level 3	Applying
14.	Describe different report presentation methods adopted by the researcher.	CO3	Level 4	Analyzing
15.	Elucidate the precautions a researcher should take while preparing a research report.	CO3	Level 5	Evaluating
16.	Evaluate the ethical implication of using deception in a research study and discuss for and against its use.	CO3	Level 3	Applying
17.	Explain the code of ethics adopted for conducting a study in scientific research.	CO 3	Level 4	Analyzing

UNIT IV: INTELLECTUAL PROPERTY RIGHTS				9
Nature of Intellectual Property - Patents, Designs, Trade mark and Copyright. Process of Patenting and Development: technological research, innovation, patenting & development. Procedure for grants of patents, Patenting under PCT.				
PART- A				
S.NO	QUESTIONS	CO Level	BT Level	COMPETENCE
1.	What is intellectual property (IP)?	CO4	Level 1	Remembering
2.	Why intellectual property is important for businesses.	CO4	Level 2	Understanding
3.	List two types of intellectual property.	CO4	Level 1	Remembering
4.	Differentiate between a patent and a copyright.	CO4	Level 2	Understanding
5.	Define a patent.	CO4	Level 1	Remembering
6.	How a design registration protects an industrial design?	CO4	Level 2	Understanding
7.	What is a trademark?	CO4	Level 1	Remembering
8.	What is the role of innovation in the patenting process.	CO4	Level 2	Understanding
9.	Who is responsible for granting patents in a country?	CO4	Level 1	Remembering
10.	Write the steps in the patenting process?	CO4	Level 2	Understanding
11.	What is industrial design?	CO4	Level 1	Remembering
12.	How does the procedure for granting patents ensure the protection of inventions?	CO4	Level 2	Understanding
13.	Why is patenting important in technological development?	CO4	Level 1	Remembering
14.	How does technological research contribute to innovation?	CO4	Level 2	Understanding
15.	What are the requirements to file a patent for a new product?	CO4	Level 1	Remembering
16.	How does the PCT simplify the patenting process for international applicants?	CO4	Level 2	Understanding
17.	Name the stages involved in patenting under PCT.	CO4	Level 1	Remembering
18.	Describe the role of technological research in product development.	CO4	Level 2	Understanding
19.	What is the purpose of the Patent Cooperation Treaty?	CO4	Level 1	Remembering

20.	Write the steps involved in the patent examination process.	CO4	Level 2	Understanding
21.	What does PCT stand for?	CO4	Level 1	Remembering
22.	List the steps for granting patents under the PCT.	CO4	Level 2	Understanding
23.	Name one advantage of filing a patent under the PCT.	CO4	Level 1	Remembering
24.	How the PCT modernizes the international patent application process.	CO4	Level 2	Understanding

PART- B				
S.NO	QUESTIONS	CO LEVEL	BT LEVEL	COMPETENCE
1.	How would you apply the principles of intellectual property to protect a new logo for a tech startup through trademarks?	CO4	Level 3	Applying
2.	How do the protections provided by patents, designs, trademarks, and copyrights to the intellectual property.	CO4	Level 4	Analyzing
3.	Evaluate the importance of intellectual property laws in promoting creativity and innovation.	CO4	Level 5	Evaluating
4.	Can you illustrate how the protection offered by a design patent with an example.	CO4	Level 3	Applying
5.	How does patenting influence the commercialization of new products in the market.	CO4	Level 4	Analyzing
6.	Elucidate the procedure for applying for a product patent.	CO4	Level 5	Evaluating
7.	Can you demonstrate how technological research drives the development of new patents?	CO4	Level 3	Applying
8.	Examine the role of IP in the economic development of society by providing examples.	CO4	Level 4	Analyzing
9.	Illustrate the steps involved in the procedure for the grant of a patent in India.	CO4	Level 5	Evaluating
10.	Critically evaluate the importance of trademarks and trade secrets in maintaining a competitive edge in the market.	CO4	Level 3	Applying
11.	Analyze the differences between design protection and patent protection.	CO4	Level 4	Analyzing
12.	How would you implement the registration procedure for obtaining a patent for a new invention?	CO4	Level 5	Evaluating
13.	Can you demonstrate the procedure for obtaining a grant of patent under a specific national system	CO4	Level 3	Applying
14.	Analyze the challenges faced while applying patent for a new product	CO4	Level 4	Analyzing
15.	Evaluate the advantages and challenges of patenting under the PCT compared	CO4	Level 5	Evaluating
16.	How would you apply the PCT system to file for a patent that needs protection in multiple countries?	CO4	Level 3	Applying
17.	How do the procedures for granting patents differ between the national patent systems and the PCT system, and what are the implications for international businesses?	CO4	Level 4	Analyzing

UNIT V: INTELLECTUAL PATENT RIGHTS AND NEW DEVELOPMENT				9
Patent Rights: Scope of Patent Rights. Licensing and transfer of technology. Patent information and databases. Geographical Indications, New Developments in IPR: Administration of Patent System.				
PART- A				
S.NO	QUESTIONS	CO Level	BT Level	COMPETENCE
1.	What is a patent?	CO5	Level 1	Remembering
2.	Explain why patents are important for innovation.	CO5	Level 2	Understanding
3.	Name three types of inventions that can be patented.	CO5	Level 1	Remembering
4.	How does a patent differ from a trademark?	CO5	Level 2	Understanding
5.	What is a geographical indication (GI)?	CO5	Level 1	Remembering
6.	Why is the transfer of technology important for developing countries?	CO5	Level 2	Understanding
7.	What does IPR stand for?	CO5	Level 1	Remembering
8.	How does a geographical indication benefit local communities?	CO5	Level 2	Understanding
9.	What is the difference between an exclusive and a non-exclusive patent license?	CO5	Level 1	Remembering
10.	How does the administration of the patent system impact inventors?	CO5	Level 2	Understanding
11.	What is the term of protection for a patent in most countries?	CO5	Level 1	Remembering
12.	What is the significance of patent classification systems in databases?	CO5	Level 2	Understanding
13.	What is a compulsory license?	CO5	Level 1	Remembering
14.	How does a patent owner enforce their rights if a patent is infringed?	CO5	Level 2	Understanding
15.	What kind of information can you typically find in a patent document?	CO5	Level 1	Remembering
16.	Why are geographical indications considered a form of intellectual property?	CO5	Level 2	Understanding
17.	What is meant by "technology transfer" in the context of patents?	CO5	Level 1	Remembering
18.	How do patent rights contribute to the commercialization of new technologies?	CO5	Level 2	Understanding
19.	What is a compulsory license?	CO5	Level 1	Remembering
20.	In what situations might a government issue a compulsory license for a patented technology?	CO5	Level 2	Understanding
21.	What is the purpose of a patent database?	CO5	Level 1	Remembering
22.	How can patent databases be used in research and development?	CO5	Level 2	Understanding
23.	What is meant by "technology transfer" in the context of patents?	CO5	Level 1	Remembering
24.	Explain the role of patent examiners in the patent application process.	CO5	Level 2	Understanding

PART- B				
S.NO	QUESTIONS	CO LEVEL	BT LEVEL	COMPETENCE
1.	How would you apply the concept of patent rights to protect an innovation?	CO5	Level 3	Applying
2.	Analyze the role of patent rights and the balance between encouraging innovation and preventing monopolies in different industries.	CO5	Level 4	Analyzing
3.	Evaluate the success of compulsory licensing in boosting startups and the interests of patent holders in innovation.	CO5	Level 5	Evaluating
4.	Demonstrate how patent information can be utilized to identify trends in innovation within the field of renewable energy.	CO5	Level 3	Applying
5.	Analyze the role of geographical indications on local communities and the global market for region-specific products.	CO5	Level 4	Analyzing
6.	Evaluate the importance of patent information and databases in fostering global innovation and collaboration.	CO5	Level 5	Evaluating
7.	Can you demonstrate the process of registering a geographical indication for a traditional handicraft?	CO5	Level 3	Applying
8.	Analyze the effects of new technological developments on the patent administration system.	CO5	Level 4	Analyzing
9.	Evaluate the reforms in the administration of the patent system in reducing patent backlogs and increasing transparency.	CO5	Level 5	Evaluating
10.	Demonstrate how the transfer of technology through licensing can foster innovation in a developing country.	CO5	Level 3	Applying
11.	How do different administrative practices across patent offices impact the efficiency and fairness of patent granting processes globally?	CO5	Level 4	Analyzing
12.	How would you assess the impact of new developments in IPR on fostering innovation, particularly in the context of emerging technologies like AI	CO5	Level 5	Evaluating
13.	Can you demonstrate the process of registering a geographical indication for a region specific product?	CO5	Level 3	Applying
14.	Analyze the role of patent databases in helping businesses in avoiding patent infringement.	CO 5	Level 4	Analyzing
15.	Analyse the new developments in IPR administration of Patent System.	CO5	Level 5	Evaluating
16.	How would you apply recent developments in patent law to streamline the administration of patent applications in a rapidly growing tech sector?	CO5	Level 3	Applying
17.	Evaluate the new developments in IPR and its impact on innovation	CO5	Level 4	Analyzing