



# INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

Dundigal, Hyderabad - 500 043

## ELECTRONICS AND COMMUNICATION ENGINEERING

### TUTORIAL QUESTION BANK

Course Name	RESEARCH METHODOLOGIES
Course Code	AHS552
Class	IV -B Tech VII SEMESTER
Branch	Electronics and Communication Engineering
Year	2019– 2020
Team of Instructors	Dr. S. Vinoth , Associate Professor , ECE

#### OBJECTIVES

Fundamental of Research Methodology and Data Collection is an excellent book that has a collection of basic concepts and terminologies in research method. It is filled with good ideas and tips on how to write very good articles that are fit for publication in reputable journals. The author has tried to identify problems encountered by young researchers and also proffered solutions to those problems. She has given detailed tips on how to assess and determine a good article meant for publication in quality journals. Referencing which is a vital part of any research work was fully covered with various styles carefully and painstakingly discussed.

#### PART – A (SHORT ANSWER QUESTIONS)

S. No	QUESTIONS	Blooms taxonomy level
<b>UNIT – I</b> <b>INTRODUCION TO RESEARCH AND PHILOSOPHIES</b>		
1	Define research and write the importance of research methodology?	Remember
2	What are the purposes of research?	
3	What are the characteristics of research?	
4	Why do we need research?	
5	Explain in detail about the research approaches?	Remember
6	What are the criteria of good research?	
7	Explain different types of research?	Understand
8	Explain in detail about the research process?	Remember
9	Explain the validity and reliability in research?	Understand
10	Distinguish between quantitative and qualitative research?	Understand
11	What are the 4 types of research methods?	Remember
12	What are the types of research methods according to nature of the study?	Understand
13	What are the types of research methods according to the purpose of the study?	Remember
14	Show the main differences between exploratory and conclusive research	Understand
15	Explain the general classification of types of research methods	Remember

16	What are the two types of approaches in research?	Understand
17	What is research strategy in research methodology	Understand
18	Describe the three basic types of descriptive research methods.	Understand
19	Write down about the research strategy in research methodology	Understand
20	What does research strategy mean? Explain about the six types of research?	Understand

**PART – B (LONG ANSWER QUESTIONS)**

S. No	Questions	Blooms Taxonomy Level
1	What is meant by research? Why do we need research?	Understand
2	What are the characteristics of research? What are the purposes of research?	Remember
3	What are the criteria of good research?	Understand
4	Steps involved in research process in research methodology.	Remember
5	Explain the research process overview in detail.	Remember
6	Explain different types of research with example.	Understand
7	Explains the merits of survey research & demerits of survey research and types of survey research.	Understand
8	What are the five approaches to qualitative research?	Understand

**PART – A (SHORT ANSWER QUESTIONS)**

S. No	Questions	Blooms Taxonomy Level
<b>UNIT – II</b>		
<b>A RESEARCHER PROBLEMS AND HYPOTHESES</b>		
1	Define research problem?	
2	How to select a research problem?	
3	What is defining a research problem?	
4	What is the necessity of defining a research problem?	
5	What are the techniques involved in defining a research problem?	
6	How we understand the nature of the research problem?	Understand
7	What is known as the statement of the problem in a general way?	Understand
8	What is meant by surveying the literature?	Understand
9	Write briefly about developing ideas through discussions.	Understand
10	What is meant by rephrasing the research problem?	Understand
11	What are the other parameters used to define a research problem?	Understand
12	Define variable?	Understand
13	What are the types of variable?	Remember
14	What is known as continuous & discrete variable?	Remember
15	What is meant by controlled variable?	Understand
16	What is Independent or Experimental variable?	Understand
17	What is meant by hypotheses?	Understand

18	What are the nature of hypotheses?	Understand
19	What are the functions of hypotheses?	Understand
20	What are the types of hypotheses?	Understand
<b>PART – B (LONG ANSWER QUESTIONS)</b>		
1	Explain in detail about the research problem? How to select a research problem.	Understand
2	How to define a research problem? What is the necessity of defining a research problem?	Remember
3	Explain briefly about the various techniques involved in defining a research Problem.	Remember
4	What are the sources of the research problem? Define statement of research problem?	Understand
5	What are the objectives of assumptions about the research problem and aspects of delimiting the problem?	Understand
6	Define construct? Explain briefly about Variable and its types.	Remember
7	What is meant by confounding and intervening variable?	Remember
8	What is meant by organismic variable and Extraneous variable?	Understand
9	Define Hypotheses? nature, functions and importance of hypotheses?	Understand
10	What are the forms and formulations of hypotheses?	Understand

**PART – A (SHORT ANSWER QUESTIONS)**

S. No	Question	Blooms Taxonomy Level
<b>UNIT – III</b>		
<b>RESEARCH DESIGN AND DATA COLLECTION</b>		
<b>CIE- I</b>		
1	Define research design and different types of research design?	Remember
2	What are the basic principles of experimental design?	Understand
3	Write about the steps in research design?	Understand
4	What are the features of good design?	Understand
5	Show the difference between Correlation research design and Causal comparative research design	Remember
6	Show the differences between True experimental research design and Quasi-experimental research design	Remember
7	Explain the basic principles of experimental designs and what are the principles of experimentation?	Understand
<b>CIE- II</b>		
1	What is primary data collection? What are the different areas of measurement?	Remember
2	Explain about observation in Primary Data Collection?	Understand
3	Distinguish the main merits and demerits of observation methods of collecting Information?	Understand
4	Define questionnaire? What are different types of questionnaire?	Remember

5	What are the factors would you take into account while designing questionnaire?	Remember
6	Explain Mail Questionnaire? What are its advantages and limitations?	Remember
7	Classify the methods of collecting Primary Data? Discuss each method with Respective merits and demerits.	Remember
8	What would you cover in introduction of Research Report	Remember
9	Discuss the major differences between oral and written report	Remember
10	What considerations are relevant in oral presentation?	Understand
11	Explain the difference between primary and secondary data	Remember
12	Discuss the advantages of secondary data over the primary data? Explain three Different methods for primary data collection. (ii) What would be the best source for the following data? (a) Weekly earnings of full time salaried workers for the range 1995 – 2000 in an established software firm. (b) Annual sales of the top ten fast food companies	Understand
13	Distinguish the different approaches to interview as a method of data Collection? Explain their relative merits and demerits	Understand
14	Write the Essentials of a good Questionnaire.	Understand
15	Write five ethical issues in science and engineering faced in present scenario	Understand
<b>PART – B (LONG ANSWER QUESTIONS)</b>		
1	What are the features of a good research design?	Understand
2	How to select a random sample? Types of sampling design in research methodology	Remember
3	Important concepts relating to research design	Remember
4	What are the characteristics of a good design?	Understand
5	Explain in detail about the purpose of research design.	
6	What is sampling? What is probability sampling and non probability sampling method? Explain with examples. How does quantum sampling differ from stratified sampling?	Understand
7	Explain and distinguish with examples “prima data” and “secondary data”. What are the precautions one should take while administering “Data Collection”	Understand
8	Differentiate between survey and experiment method and its scope.	Remember
9	Examine the merits and limitations of the observation method in collecting material. Illustrate your answer with suitable examples?	Remember
10	What are the various sources of collection of secondary data? And write down the secondary data collection methods	Remember
11	What are the various sources of collection of secondary data?	Understand

**PART – A (SHORT ANSWER QUESTIONS)**

S. No	Questions	Blooms Taxonomy Level
<b>UNIT – IV ATTITUDE MEASUREMENT , SCALING AND SAMPLING TECHNIQUES</b>		
1	Define sampling techniques?	Understand
2	Write about associative models?	Understand
3	Define test of validity?	Understand
4	Define qualitative forecasting methods	Understand
5	Explain quantitative forecasting methods	Understand
6	Explain test of practicality?	Understand
7	Define test of reliability?	Understand
8	Discuss about summated scales?	Remember
9	Explain about the arbitrary scales?	Remember
10	What do you mean by forecast?	Understand
11	Explain about interpolation?	Understand
12	Explain about differential scales	Understand
13	What is multidimensional scaling	Understand
14	State scale construction techniques?	Understand
15	Explain about the cumulative scales?	Understand
16	Explain about factor scales?	Understand
17	What are the different types of forecast?	Understand
18	What do you mean by extrapolation?	Remember
19	Write about time series analysis ?	Remember
20	State different types of forecasting methods ?	Understand
<b>PART – B (LONG ANSWER QUESTIONS)</b>		
1	Explain the errors in measurement ?	Understand
2	Explain Curve fitting in time series analysis	Remember
3	Explain Exponential smoothing in time series analysis?	Remember
4	Explain about the types of forecasting?	Understand
5	Explain the different types of forecasting techniques?	Understand
6	Explain about the scaling and scale construction techniques?	Remember
7	Explain about the interpolation and extrapolation?	Remember
8	Write detail about the time series analysis?	Understand
9	What do you mean by tests of sound measurement?	Understand
10	What are the types and errors in measurement give examples?	Understand
11	What is error in research methodology? And how do you get rid of errors in measurement?	Understand
12	What are the causes of errors in measurement? And explain what is random error in measurement?	Understand
13	Explain about test of sound measurement in research methodology?	Understand
14	What is scale construction? And what are scaling techniques in research methodology?	Understand
15	What techniques are used for forecasting and analysis?	Remember

16	What is a forecasting tool? And what are quantitative forecasting techniques?	Understand
17	Why is forecasting so important? And what is forecasting and explain its features?	Understand
18	What is a quantitative forecasting method in supply chain forecasts?	Remember
19	What is the difference between forecasting and prediction?	Understand
20	What is the difference between budget and forecast? And why do we budget and forecast?	Understand

**PART – A (SHORT ANSWER QUESTIONS)**

S. No	Question	Blooms Taxonomy Level
<b>UNIT – V</b>		
<b>INTRODUCTION TO INTELLECTUAL PROPERTY</b>		
1	Define intellectual property?	Remember
2	Discuss intellectual property rights?	Understand
3	Discuss condition of purchase a book and make photocopies of it and sell, is it violation?	Understand
4	Explain with an example of why intellectual properties need to be protected?	Remember
5	Describe how monopoly nature of owner is controlled by patent trademark organization?	Remember
6	Describe how long will patent protections for the invention for which application was filed on August 10 and patent was issued on January 28, 2003 last?	Remember
7	Explain how long will the copy right last if a novel written by moby dick in 1851 and died in 1891?	Remember
8	Explain how long will protections for the song composed by bala in1982 last?	Remember
9	Define the law of copyrights?	Remember
10	Write the fundamental of copyrights laws was formulated	Understand
11	Discuss the originality of material in copyrights?	Remember
12	Explain the rights of reproduction in copy rights?	Remember
13	Write the procedure of „rights to perform the work publicly“ in copy rights?	Remember
14	Explain how the copy right ownership issues are solved?	Remember
15	Explain how the copy rights are registered?	Understand
16	What did you understand about Law of patents?	Remember
17	Write about the procedure for „the notice of the copy right“ is prepared?	Remember
18	Define the rights of ownership issues?	Remember
19	Write surplus age in copyright notice?	Understand
20	Describe the procedure restoration of Copyright is done?	Remember
<b>Part - B (Long Answer Questions)</b>		
1	Explain why agencies responsible for intellectual property registration with any two examples?	Remember
2	Describe the importance of international organization? When it was established?	Remember

3	Explain why the international organization, agencies and treaties were established? Give any five international agreements and treaties that affect	Understand
4	Explain vessel hull protection in copyright?	Remember
5	Explain the reasons for increasing importance for intellectual property rights?	Remember
6	Explain the international organizations, agencies and treaties?	Remember
7	Express your views about the Intellectual property rights necessity for the countries?	Understand
8	What is meant by a patent? Explain in detail?	Remember
9	Explain about different types of intellectual property?	Remember
10	Explain when the terminations of transfers of copyrights take place?	Remember

**Prepared By:**

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