

HALL TICKET NO

--	--	--	--	--	--	--	--	--	--

Question Paper Code: AHS552



**INSTITUTE OF AERONAUTICAL ENGINEERING**  
(Autonomous)

**MODEL QUESTION PAPER**

IV B. Tech VII Semester End Examinations (Regular), November – 2019

**Regulation: IARE–R16**  
**RESEARCH METHODOLOGIES**  
(ELCTRONICS AND COMMUNICATION ENGINEERING)

**Time:3Hours**

**Max Marks:70**

---

**Answer ONE Question from each Unit**  
**All parts of the question must be answered in one place only**

---

**UNIT – I**

1. (a) Define research and write the importance of research methodology [7M]  
(b) Briefly describe the different steps involved in research process [7M]
  
2. (a) What is the research design? Discuss the basis of stratification to be employed in sampling public opinion on inflation? [7M]  
(b) What are the basic principles of experimental design? And explain the steps in research design [7M]
  
3. (a) State the different ways to access different types of data files? Discuss the relevant packages and methods to access .csv, .exl files. [7M]  
(b) Explain about the scaling and scale construction techniques? And Write detail about the time series analysis? [7M]
  
4. (a) Point out the possible sources of error in measurement. Describe the tests of sound measurement? [7M]  
(b) Explain about the scaling and scale construction techniques? And Write detail about the time series analysis? [7M]

5. (a) Point out the possible sources of error in measurement. Describe the tests of sound measurement? [7M]
- (b) Why forecasting is done in research? Write about the different types of forecasting techniques? [7M]
6. (a) What is "Primary Data" collection? What are different major areas of measurements? [7M]
- (b) Distinguish the main merits and demerits of observation methods of collecting information? [7M]
7. (a) Distinguish the different approaches to interview as a method of data collection? Explain their relative merits and demerits [7M]
- (b) Why tabulation is considered essential in a research study? Write briefly about the different Forms of data presentations devices [7M]
8. (a) Maintain the different types of interpretations particular pointing out the difference of a report and the interpretation? [7M]
- (b) Write different points will you keep in mind while preparing a research report ?describe in detail? [7M]
9. (a) Define intellectual property? And Explain with an example of why intellectual properties need to be protected? [7M]
- (b) Define the law of copyrights? And write the fundamental of copyrights laws was formulated [7M]
10. (a) Explain why agencies responsible for intellectual property registration with any two examples? [7M]
- (b) Explain why the international organization, agencies and treaties were established? give any five International agreements and treaties that affect [7M]



# INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

Dundigal, Hyderabad – 500 043

## COURSE OBJECTIVES:

The course should enable the students to:

I	Identify an appropriate research problem in their interesting domain.
II	Organize and conduct research project.
III	Understand the Preparation of a research project thesis report.
IV	Understand the law of patent and copyrights.
V	Understand the Adequate knowledge on process for filing Patent.

## COURSE OUTCOMES:

Students, who complete the course, will have demonstrated the ability to do the following:

Sl. No	Course Outcomes
CO 1	Understand the research process and formulate the research problem
CO 2	Illustrate various measurement, scaling and estimate hypotheses values in research
CO 3	Explore on various data collection methods and professional attitude, goals and ethics
CO 4	Prepare a well-structured research paper and scientific presentations
CO 5	Explore on various IPR components and process of filing

## COURSE LEARNING OUTCOMES (CLOs):

Sl. No.	Description
AHS552.01	Understand the different approaches of research
AHS552.02	Understand the features of good design, types of research design
AHS552.03	Understand the forecasting techniques and scale construction techniques
AHS552.04	Understand the time series analysis, interpolation and extrapolation;
AHS552.05	Understand the collection of secondary data, cases and schedules.
AHS552.06	Professional attitude and goals, concept of excellence, ethics in science and engineering.

AHS552.07	Understand the participation in public debates on scientific issues.
AHS552.08	Understand the famous frauds in science, and case studies.
AHS552.09	Understand the techniques of interpretation, and making scientific presentation.
AHS552.10	Understand the patent laws, patent and searching process.
AHS552.11	Understand the importance of intellectual property rights.
AHS552.12	Understand the rights to perform the, copy right ownership issues.

### MAPPING OF SEMESTER END EXAMINATION TO COURSE LEARNING OUTCOMES:

SEE Question No.		Course Outcomes		Blooms Taxonomy Level
1	a	CO 1	Understand the research process and formulate the research problem	Understand
	b	CO 1	Understand the research process and formulate the research problem	Remember
2	a	CO 1	Understand the research process and formulate the research problem	Understand
	b	CO 1	Understand the research process and formulate the research problem	Understand
3	a	CO 2	Illustrate various measurement, scaling and estimate hypotheses values in research	Understand
	b	CO 2	Illustrate various measurement, scaling and estimate hypotheses values in research	Understand
4	a	CO 2	Illustrate various measurement, scaling and estimate hypotheses values in research	Understand
	b	CO 2	Illustrate various measurement, scaling and estimate hypotheses values in research	Understand
5	a	CO 3	Explore on various data collection methods and professional attitude, goals and ethics	Understand
	b	CO 3	Explore on various data collection methods and professional attitude, goals and ethics	Remember
6	a	CO 3	Explore on various data collection methods and professional attitude, goals and ethics	Understand
	b	CO 3	Explore on various data collection methods and professional attitude, goals and ethics	Understand
7	a	CO 4	Prepare a well-structured research paper and scientific presentations	Remember
	b	CO 4	Prepare a well-structured research paper and scientific presentations	Remember
8	a	CO 4	Prepare a well-structured research paper and scientific presentations	Understand
	b	CO 4	Prepare a well-structured research paper and scientific presentations	Understand
9	a	CO 5	Explore on various IPR components and process of filing.	Remember
	b	CO 5	Explore on various IPR components and process of filing	Understand
10	a	CO 5	Explore on various IPR components and process of filing	Understand
	b	CO 5	Explore on various IPR components and process of filing.	Understand

**HOD, ECE**