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Question Paper Code: BCS703



**INSTITUTE OF AERONAUTICAL ENGINEERING**  
(Autonomous)

M.Tech II Semester End Examinations (Regular) - July, 2017

Regulation: IARE-R16

**RESEARCH METHODOLOGY**  
(Common to CSE|(CAD/CAM)|PEED|ES|SE)

Time: 3 Hours

Max Marks: 70

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

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**UNIT – I**

- (a) What are different types of research? Clearly explain Applied vs Fundamental research. [7M]  
(b) Explain the terms [7M]
  - Design of the research project
  - Objectives of research
- (a) Explain techniques involved in defining a research problem. [7M]  
(b) Briefly explain different types of research design. [7M]

**UNIT – II**

- (a) What is the classification of measurement scales? Explain with examples. [7M]  
(b) Explain the terms in detail [7M]
  - Test of Validity
  - Test of Reliability
- (a) Explain various forecasting methods. Explain expert opinion method in detail. [7M]  
(b) Exponential smoothing is used to forecast automobile battery sales. Two value of  $\alpha$  are examined,  $\alpha = 0.8$  and  $\alpha = 0.5$ . Evaluate the accuracy of each smoothing constant. Which is preferable? (Assume the forecast for January was 22 batteries). Actual sales are given in Table 1. [7M]

Table 1

Month	January	February	March	April	May	June
Actual Sales	20	21	15	14	13	16
Forecast	22	20	21	16	14	13

### UNIT – III

5. (a) What are various sources of secondary data? Briefly explain. [7M]  
(b) Write a short note on collection of data by personal interview. [7M]
6. (a) Explain in detail about the term ethics in detail? [7M]  
(b) Explain the role of ethics in science and technology. [7M]

### UNIT – IV

7. (a) Explain the precautions to be taken in interpretation? [7M]  
(b) Discuss the various types of reports in detail. [7M]
8. (a) Explain the terms [7M]  
    i. footnote  
    ii. document styles  
(b) Discuss about oral presentation in detail. [7M]

### UNIT – V

9. (a) What are the different types of Intellectual property rights? [7M]  
(b) Discuss about legal definition of a copy right? [7M]
10. (a) According to the patent act 2005 what are various items which are not patentable? [7M]  
(b) Explain the importance of Trade Mark. Give the benefit of registering a Trade Mark. [7M]

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