

Dec.-22-1362

MCE-103 (Research Methodology)

M.Tech. 1st (CE) (CBCS)

Time : 3 Hours

Max. Marks : 60

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

Note : Candidates are required to attempt one question from each section. Question no. 9 will be compulsory. In all, five questions are to be attempted.

SECTION - A

1. (a) How to define the research problem? What are the different techniques for research design?
(b) Explain the criteria for good research. Justify the criteria.
(10)

OR

2. (a) What are qualitative and quantitative research? Differentiate between them using an appropriate example.
(b) Discuss the sources in identifying research problems. What are the various points to be considered while selecting a research problem and how would you specify a research problem? Formulate a hypothesis by considering a problem you have identified for carrying out research.
(10)

SECTION - B

3. (a) What is the internal and external validity of experimental research?

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- (b) What is the procedure for conducting descriptive research?
(10)

OR

4. (a) What is the concept and design of experimental research?
(b) What is Ex-post facto research? How it is different from experimental research?
(10)

SECTION - C

5. (a) Differentiate between census and sampling with suitable examples.
(b) What are the different techniques and methods for data collection? What is the different process of data analysis?
(10)

OR

6. (a) Explain 'Stratified Random Sampling' with suitable example.
(b) What are the types of data? How to determine sample size?
(10)

SECTION - D

7. (a) What is chi-square test? Give its formula and discuss the applications and conditions for applying chi-square test.
(b) Explain different methods of selecting an appropriate statistical method for analysis?
(10)

OR

8. (a) What is reporting? What are the different stages in the preparation of a report? Explain briefly.
(b) What is ANOVA test? Explain.
(10)

[P.T.O.]

SECTION - E (Compulsory)

9. (a) What is correlation?
- (b) What is skewness? Why it is important.
- (c) Differentiate between primary and secondary data collection?
- (d) What are the different methods of research?
- (e) Write application areas of action and applied research? With the help of suitable examples differentiate between them.
- (f) What is the research methodology?
- (g) What do you mean by scientific research?
- (h) Write a short note on the "role of the internet in business research", (8×2.5=20)