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M TECH
(SEM I) THEORY EXAMINATION 2017-18
RESEARCH PROCESS & METHODOLOGY

Time: 3 Hours ***Total Marks: 70***

Notes: *Attempt all Sections. Assume any missing data.*

SECTION-A

Q1. Attempt all parts. **(7x2 = 14)**

a) Write down the classification of research.
b) What is the significance of scientific research?
c) What do you understand by primary data and secondary data?
d) What are the type-I and type-II error?
e) What is bibliography?
f) What is a double barreled question?
g) What is hypothesis in research?

SECTION-B

Q2. Attempt any 5 parts: **(5x7=35)**

a. 8. "A research scholar has to work as a judge and derive the truth and not as a pleader who is only eager to prove his case in favour of his plaintiff." Discuss the statement pointing out the objectives of research.

b. Explain the procedure of Hypothesis testing with an example.

c. Why probability sampling is generally preferred in comparison to non-probability sampling? Explain the procedure to selecting a simple random sample.

d. A specimen of copper wires drawn from a large lot has the following breaking strength9in kg. weight):

578, 572, 570, 568, 572, 578, 570, 572, 596, 544

Test (using student's t-statistic) whether the mean breaking strength of the lot may be taken to be 578 kg. Test at 5% level of significance. (Given:'t' for 9 d.f. at 5% level of significance=2.262)

e. Research design in exploratory studies must be flexible but in descriptive studies, it must minimize bias and maximize reliability". Discuss.

f. Write down short notes on:
(i) Referencing styles
(ii) Plagiarism
(iii) Indexing and Citation of Journals
(iv) SPSS

g. What is a research problem? Explain. Describe and illustrate Experience survey and Pilot survey.

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h. Give your understanding of a good research design. Is single research design suitable in all research studies? If not, why?

SECTION-C

Attempt any 2 questions: **(2x10.5 = 21)**

Q3. Explain the significance of a research report and narrate the various steps involved in writing such report.

Q4. How does the case study method differ from the survey method? Analyze the merits and limitations of case study method.

Q5. What is a chi-square test? Genetic theory states that children having one parent of blood type A and the other of blood type B will always be one of three types, A, AB, B and that the proportion of three types will on an average be as 1:2:1. A report states that out of 300 children having one A parent and B parent, 30% were found to be types A, 45 % type AB and remainder type B. Test the hypothesis by chi-square test. (Given: chi-square for 2 d.f. at 5%level of significance= 5.991)

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