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MANIPAL INSTITUTE OF TECHNOLOGY

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I SEMESTER M.TECH. (COMMON TO ALL)

END SEMESTER EXAMINATIONS, NOV/DEC 2016

SUBJECT: RESEARCH METHODOLOGY AND TECHNICAL COMMUNICATION

[HUM 5101]

(03/12/2016)

Time: 3 Hours

MAX. MARKS: 50

Instructions to Candidates:

- ❖ Answer **ALL** the questions.
- ❖ Missing data, if any, may be suitably assumed

- 1A)** What are the major aspects of a good research study? Illustrate with an example. [4]
- 1B)** Distinguish between secondary and primary methods of data collection. Is it possible to use secondary data methods as substitute of primary methods? Justify your answer with examples. [3]
- 1C)** A study aims to quantify the organizational climate in an organization by administering a questionnaire to a sample of its employees. There are 900 employees in a company with 80 executives, 180 supervisors, and 640 workers. If the employees are stratified based on this classification and a sample of 100 is required, what should be the sample be from each stratum, if stratified sampling is used. [3]
- 2A)** What are the types of data and scales of measurement used in research design? Give examples for each. [4]
- 2B)** Explain any three qualitative research methods with examples. [3]
- 2C)** Differentiate between applied research and action research providing suitable examples [3]
- 3A)** Briefly describe the components of research design. [4]
- 3B)** Answer the following questions with respect to the Indian patent act: [3]
- i. What is a patent?
 - ii. What is the purpose of getting a patent?
 - iii. What can be patented?
- 3C)** What is a research hypothesis? Does all research require hypothesis formulation? Explain. [3]

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- 4A)** The Diet drink manufacturer in a study finds that young women are more health conscious and are looking at low calories options. Thus, any communication or advertisement for the product has to emphasize the health aspect. The purchase probability is also influenced by their education level and the nature of their profession. Other factors such as available brands, celebrity endorsement and dieticians' recommendations also have an impact on them. [4]
- i. Identify your research problem and hypothesis.
 - ii. Identify and classify the variables under study.
- 4B)** In a research work, the researcher has referred the following sources of information for writing a report. Cite the same as references as per American Psychological Association (APA) referencing techniques. [3]
- a. Journal paper titled Steam as coolant and lubricant in turning of metal matrix composites, authored by R. Shetty, R.B. Pai, S. Rao at Journal of Zhejiang University, 2008, Volume Number 9, issue number 9, page number 1245 to 1253.
 - b. Book on Design and analysis of experiments by Douglas C. Montgomery, published by John Wiley and sons, New York in 2005.
 - c. Cite an in-text reference for the paragraph from the book 'A history of Greece' 1994, Irwin Publications Sydney.
"One of the earliest civilizations to appear around Greece was the Minoan civilization in Crete, which lasted from about 2700 (Early Minoan) BC to 1450 BC, and the Early Helladic period on the Greek mainland from ca. 2800 BC to 2100 BC."
- 4C)** List out the contents of a technical paper. [3]
