

AQ-2722

Faculty of Engineering & Technology

M.E. (Production Tech. & MGT.) (P. T.) Fourth Semester (CBS) Examination

RESEARCH METHODOLOGY

Paper—4 SPTM 2

Sections—A & B

Time—Three Hours]

[Maximum Marks—80

INSTRUCTIONS TO CANDIDATES

- (1) All questions carry marks as indicated.
- (2) Answer **THREE** questions from Section A and **THREE** questions from Section B.
- (3) Assume suitable data wherever necessary.
- (4) Illustrate your answers wherever necessary with the help of neat sketches.

SECTION—A

1. (a) What do you mean by term 'Research' ? How does everyday thinking differ from Research ? Explain with suitable example. 7
- (b) What are the various purposes of research ? 7
2. What are the steps involved in research process ? Explain. 13
3. What are the various methods of formulation of research tasks ? Explain any one with suitable example. 13
4. What do you mean by Literature Review ? What is the purpose of doing literature review ? State various sources of literature review. Explain with suitable example. 13
5. Explain different types of data. Brief out the advantages and disadvantages of primary and secondary data. 13

SECTION—B

- 6 (a) What are the primary and derived quantities ? Explain. 7
(b) What is principle of homogeneity of dimensional equation ? State various uses of dimensional equation. 7
7. What do you mean by term dimensional analysis ? Explain the various methods of reduction of variables. Explain any one. 13
8. What do you mean by ANN ? How can you simulate a phenomenon through ANN model ? 13
9. Explain the following models used in engineering research :
(i) Proof of concept model
(ii) Scale model
(iii) Experimental model
(iv) Prototype model. 13
10. What are the major sections of a technical paper ? Explain how you will prepare a technical paper. 13