

Z-2974

M.Phil. Examination - 2016

MATHEMATICS

Paper-I

(Research Methodology, Quantitative techniques and Computers)

Time - Three Hours

Max.Marks : 100

Note: Attempt any two parts from each question. Solve all questions. All questions carry equal marks.

Unit-I

1. (a) Differentiate between applied and fundamental research?
(b) Explain general goals of mathematical research.
(c) Write a note on Research Ethics.

UNIT-II

2. (a) Scientific writing is a social enterprise. Justify.
(b) Give some guidelines for writing effective scientific prose.
(c) Differentiate the following:
Research article, review article, theoretical paper, case studies

UNIT-III

3. (a) Write down the structure of a standard mathematical research paper.
(b) Write a note on important of *mathscinet* and other E-resources in mathematical research.
(c) Write a note on organization of Mathematical Review.

UNIT-IV

4. (a) What is LATEX? What are the components of LATEX? Explain LATEX production chain.
(b) Write down syntax with example for typesetting following in the LATEX :
(i) fraction (ii) square root (iii) equation
(iv) subequation (v) matrix
(c) Explain importance and uses of figure environment in LATEX.

UNIT-V

5. (a) Write the names of different windows available in MATLAB with their purpose.
- (b) Make a script file in Matlab to calculate the average of points scored in three games, the point from each game should assigned to the variable by using the input command.
- (c) Explain following built-in functions for handling an array in MATLAB
- (i) length (ii) size (iii) reshape (iv) diag

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