Roll No.

Total No. of Pages : 02

Total No. of Questions : 08

Ph.D in Faculty of Applied Science (Mathematical Science) RESEARCH METHODOLOGY M.Code : 77397

Time : 3 Hrs.

Max. Marks : 100

INSTRUCTIONS TO CANDIDATES :

- 1. Attempt any FIVE questions out of EIGHT questions.
- 2. Each question carry TWENTY marks.
- 1. a) What are objectives of research?
 - b) What is the motivation of research?
- 2. a) What is difference between TEX and LATEX?

b) Write the LATEX commands for the following mathematical formulas :

- i) A2
- ii) Ŋ6
- iii) 🛙 🗖 1xf
- iv) a = v(mod \Box)
- 3. Write short note on :
 - a) PDE toolbox of MATLAB
 - b) Installation process of MATHEMATICA
- a) What are the basics of importing and exporting data in origin?
 - b) Write an example code for plotting a 2D graph in origin.
- 5. a) What is standard error? Describe utility of standard error.
 - b) Difference between sampling and Non-sampling errors.

6. a) From the given data, obtain the regression equation (X on Y)

sales	91	97	108	121	67	124	51	73	111	57
purchases	71	75	69	97	70	91	39	61	80	47

b) Calculate the mean for the following frequency distribution :

Marks	0-10	10-20	20-30	30-40	40-50	50-60	60-70
No. of Students	6	5	8	15	7	6	3

- 7. Describe in detail
 - a) Cannonical correlation analysis.
 - b) Use of computers in multiple regressions.
- 8. a) Write the following polynomial in LATEX code

3x3 + 4x2 + 5x + 6 = 0

b) Write an example code to subtract two matrices in MATLAB.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.