MSC RESEARCH METHODOLOGY
PRACTICAL EXMINATION 2024 – 25

MSC – DSBDA

Date – 3rd January 2025

Time – 11.00 am to 1.00 pm

Instructions for articulating and uploading your work at the time of RM Practical Examination

A. Select the topic for a real-world problem in any domain of your choice (AI, Data Science, Cloud Computing, or Cyber Security…etc) and perform the following steps (It is an exhaustive list, apply whichever is required and relevant to your chosen problem)

1. Developing a Research Question and Hypothesis

Formulate a research question and hypothesis for the selected research topic and question.

Propose a research methodology to solve the selected problem:

- o Identify the type of research (exploratory, descriptive, experimental).
- o Explain the approach (quantitative, qualitative, or mixed).

2. Designing an Experimental Setup

Design an experiment to test the hypothesis.

3. Literature Review

Conduct a quick review of at least five research papers related to your chosen topic and domain.

Summarize the research gaps identified in these studies.

Prepare an index for the resources browsed with the following

Prepare a RESOURCE INDEX table

Resource No.	URL	Title with year of publishing
1		
2		
3		

4. Data Collection Methods

Specify data collection and analysis techniques.

Explore qualitative and quantitative data collection techniques.

Use a dataset (e.g., Kaggle's, UCL, …….etc datasets,).

5. Measurement Scales and Validity

Understand and justify the use of measurement scales.

Report on chosen measurement scales and justification.

6. Sampling Methods

Identify the sampling method / technique that can be used and determine sample size.

7. Statistical Analysis

Perform and interpret statistical analysis report with graphs and diagrams

Tools: Python/ R/ Excel / SPSS …..etc

8. Statistical Test

Identify, apply and interpret required statistical tests.

Tools: Python/ R/ Excel / SPSS …..etc

9. Preparing the list of anticipated research outcomes

10. Writing Conclusion and Future works.

B. Prepare the document consisting of the following

   I.   Intro including possible problem statement, objective, research plan, research design

  II.   Literature Review

 III.   Proposed Methodology/ Tools / Techniques/ Technology

 IV.   Anticipated findings / results

  V.   Conclusion

 VI.   References

C. Marks_distribution for the practical work

Marks	5	5	10	10	10	10
Step	Topic Selection	Problem Statement formulated	Quality of the literature review referred; recentness of the literature referred	Proposed Methodology/ Tools / Techniques/ Technology	Articulation for Anticipated findings / results and Conclusion	Documents neatness and arrangement of sections

D. Save the word document with the name: student_id_name_RM_PRACT_WORK

E. Upload the document on 3rd January after immediately completing your work on the link: https://forms.office.com/r/nHY0ShHGGA