

The LNM Institute of Information Technology**Multimodal interaction and interface (End-Term Examination)****Time:** 3 Hours**Date:** 09.05.2022**Max. Marks:** 35

Instruction: 1) Start each answer on a fresh page of your answer book and highlight your answer number.
2) Check that your Question paper has 4 Questions. All Questions are compulsory.

Q1.**[5 x 3M=15]**

- Suppose you are going to design a system to check the boredom level of students in a classroom. Which input mode will it belong to? Justify your statement.
- Explain the property of super additivity in a multimodal system.
- What is the difference between phoneme and morpheme? Explain with an example for each term.
- How are allophones different from phoneme and phone?
- What is super-additivity property of a multimodal system?

Q2.**[4 x 5M =20]**

- What are the different attributes you would be looking into while designing a multimodal system?
- Explain in brief the six linguistic hierarchy.
- Explain the CASE properties in a multimodal system with examples.
- You want to design a multimodal system for the physically disabled people for outdoor applications. What modalities can you use for this system? What challenges will you try to cover while designing the application?

Q3.**[7]**

Design any multimodal system useful for patients in this Covid-19 scenario (design can be made for either hospital patients or home quarantine patients). After designing answer the following questions.

- Which model have been selected → sequential/parallel/any other? Justify why such model was being used.
- How are they going to help the patients?
- Is it cost effective?
- What are the applications of the proposed system?

Q4.**[8]**

Say you went to a library to find the best book for MII course. This is a two stage task: Find the 5 best rating books first and then select the best among that 5 after reading the abstract/contents. [Remember: in library you cannot speak loud nor disturb the other people there].

Answer the following questions based upon the above task.

- Which type of multimodal interface would you design [fusion based/temporally cascaded] so that you can select the best book.
- Which modality will you be using for the above task?
- Show the work flow/block diagram of the above task.