

## LATE2 : NLI block: Sample Exam Questions

1. How does one measure the functionality of speech recognition in a dialogue system?
2. What are the characteristics of first- and second-generation dialogue systems? Please explain them.
3. What is a conversation turn?
4. Turn-taking rules enable one to distinguish between different types of pauses, i.e., delay, lapse and significant silence? Explain how they differ and give examples.
5. How do turn-taking rules describe overlaps in turns? Give examples.
6. Explain turn taking rules. When do they predict pauses or overlaps? Explain (and illustrate) what collaboration in dialogue means. What are collaborative responses?
7. Explain what the concept of push-to-talk is in the implementation of turn-taking in a dialogue system.
8. List and explain the Gricean maxims of cooperation.
9. What are adjacency pairs in dialogue, what characteristics do they have, and how is the concept of adjacency pair useful in dialogue modeling?
10. What is the general global structure of a conversation? Give some typical examples of the respective parts.
11. Explain the notion of a speech act.
12. Searle distinguishes between assertive, directive, commissive, expressive and declarations. Give examples of utterances belonging to the different categories.
13. Explain how saying the same words can mean different things in different contexts.
14. Explain the notion of common ground (mutual knowledge). When is a piece of information considered common ground between dialogue participants?
15. What is the process of grounding?
16. What levels of interpretation distinguishes Clark (1996)? Explain what they mean and illustrate on examples.
17. What are the various reasons for grounding problems (why does an agent have a problem to ground an utterance)? Explain and illustrate.
18. Explain the difference between finite state machine-based, template-based and information-state update based dialogue management. What are their advantages and disadvantages in comparison to each other?
19. Explain the notion of information state update and how it is employed in dialogue management.
20. What approaches to verification of understanding do we distinguish, and how can a dialogue manager decide among them?
21. How is dialogue move act recognition performed in dialogue systems?
22. What is the difference between fixed and mixed initiative? What advantages and disadvantages has fixed system initiative in comparison to mixed initiative model?
23. Extend/fix a given dialogue model: The given dialogue model contains a design error. Identify the error and modify the model in order to fix it. Consider the same dialogue model critically, and identify at least two other weak spots that would make it not very usable. Give example dialogues that illustrate the shortcomings. Then propose modifications that would lead to an improvement. Illustrate the behavior of the improved model with example(s).  
(FST DIALOGUE MODEL)
24. Explain what usability evaluation is.
25. The Paradise framework defines an objective and easy method to obtain parameters for measuring dialogue system performance. Mention some.
26. What are the basic motivations to carry out WoZ experiments? How does one specify a WOZ experiment?
27. What is the difference between medium and mode, and consequently between multimedia- and multimodal dialogue systems? Give examples.
28. What are the characteristics of an anthropomorphic interface?
29. What additional means of communication are available in an anthropomorphic interface as opposed to a non-anthropomorphic multimodal one? Give some concrete examples.
30. Explain the concept of composite multimodality, and give some examples of such multimodal input/output.
31. Integration of composite multimodal input can be done "early" or "late". Explain how early multimodal fusion is done in the MATCH system.

32. What is meant by pervasive computing and ambient intelligence?  
How are emotions reflected in dialogue, and what influence do emotions have on the interpretation of an utterance?
33. Building dialogue systems for robots has additional difficulties in comparison with using animated agents. Can you explain why, and where the additional complexity resides?
34. Although systems for computer-assisted learning or intelligent tutorial systems do not have human conversation abilities, they can still be useful. What are their advantages?
35. What are the characteristics of an intelligent tutoring system?
36. What does the concept of active learning mean? Discuss what it means for a dialogue system design.
37. What is the difference between static and dynamic generation of solutions in an ITS and how is it achieved?
38. What approaches are used to evaluate the effectiveness or appropriateness of teaching strategies in ITS?
39. How is dialogue management done in Autotutor?
40. Computer-assisted learning can take a variety of forms, where technology plays a range of functions. What technologies are used and how?