List of exam questions – OK-HRI'21

1. Why is verbal HRI so complicated?
2. What is transparency, what should a robot be transparent about, and why is it so difficult?
3. What needs to be taken into account about the timing of robot utterances?
4. What is an independent, and what is a dependent variable?
5. What is a subjective measure and what is an objective measure?
6. For what research questions are questionnaires well suited? What are their limits?
7. What is the difference between within-subject and between-subject design? When would you go for the one, when for the other?
8. What is the advantage of Likert scales, and when would you go for open questions?
9. Why pilot test your study?
10. Name three problems that you have to avoid when designing questionnaire and interview questions.
11. What methods are commonly used in HRI research?
12. What characterizes an ethnographic observation and what can you use it for?
13. What does your methodological choice depend on?
14. What is an affinity diagram, and what can you use it for?
15. What can you use usability testing for?
16. What is a think-aloud protocol good for, and what do you need to keep in mind when facilitating it?
17. What do you have to keep in mind when recruiting your participants?
18. What are robots?
19. What is HRI and how does it relate to robotics?
20. Explain the interdisciplinarity of HRI.
21. What is embodiment?
22. What is physical HRI?
23. What are social robots and why are they often used in HRI?
24. What are the two basic approaches for designing robots and explain them.
25. What are affordances in HRI?
26. What is anthropomorphization?
27. What is anthropomorphic design?
28. How to measure anthropomorphism?
29. Explain the Uncanny Valley, give your opinion (whether you agree with the main idea).
30. Explain the engineering design process.
31. Explain user centered design.
32. Explain participatory design.
33. What's the connection between culture and robot design?
34. What is computational thinking and why is it important?
35. How can robots be used in teaching computational thinking?
36. What approaches can one use to analyze Likert scaled data from questionnaires?
37. What are the benefits/drawbacks of online vs. in-person HRI studies?
38. How to get subjects for HRI studies?
39. What is non-verbal interaction?
40. What type of non-verbal interaction channels are there?
41. What happens when there is a lack of non-verbal interaction?
42. What are gestures and how to use them in HRI?
43. What is imitation and what is mimicry? How can they be used in HRI?
44. How can touch be used in HRI? Benefits/drawbacks?
45. Rhythm and timing in HRI.
46. Gaze actions between two agents. Enumerate and explain.
47. Can eye gaze be substituted by head orientation in HRI. Pros/cons?

48. What are controlled experiments?
49. What is a scientific problem?
50. What is a hypothesis?
51. What is the procedure of conducting controlled experiments with human subjects?
52. What is bias?
53. What is randomization?
54. What is the meaning of the p value in t-tests and ANOVA?
55. What different statistical methods should one use for controlled studies and why?
56. When does one use a t-test and when an ANOVA?
57. What types of ANOVA tests are there?
58. Give an example of an HRI experiment when you would use a one-way ANOVA to analyze it?
59. Give an example of an HRI experiment when you would use a two-way ANOVA to analyze it?
60. Give an example of an HRI experiment when you would use a t-test to analyze it?
61. What are non-parametric methods and when would one use them?
62. What is ethics and why is it important for HRI?
63. What are the three laws of robotics?
64. What are the principles of robotics?
65. Can robots be treated non-ethically by people? Give your opinion pro/con.
66. Can robots treat people non-ethically?
67. Robots used as weapons. Pros and cons. Your opinion.
68. Robots replacing human workforce. Pros and cons. Your opinion.
69. Robots in teaching. Pros and cons. Your opinion.
70. Emotional connection with robots. Pros and cons. Your opinion.
71. Sex robots. Pros and cons. Your opinion.