One answer and only one answer per question. Leaving a question blank or filling in 2+ answers will be incorrect no matter what.

Italicized phrases are true. Do not assume more than is given in a question.

A = True, B = False unless indicated otherwise. If any part of an answer is incorrect, treat all of it as incorrect. If different parts of an option are inconsistent with each other, consider it incorrect.

Alternative to Covid

1-4 (4 pts) Regarding the principles of proper scientific procedure, what major objections can be (or, in class, were) raised about the speaker's argument for his non-viral model to explain the cause of the epidemic?

(A) is a valid scientific objection to the speaker's case
(B) is not

1. (A)(B) He neglected evidence that supported a viral epidemic.

2. (A)(B) His model was found to be wrong.

3. (A)(B) His argument relied on persuasion rather than evidence.

4. (A)(B) His argument relied on falsified data.

Lie to Me

5-7 (3 pts) This video was an introduction to a 'TV' show (fiction) about an infallible method of lie detection based on micro-expressions of the face and body. Our discussion considered scientific reasons that such a method – as presented in the video -- would be suspect. If we were told that the video was depicting a real method of lie detection, which of the following characteristics would indeed render it suspect?

(A) was a part of the video and renders the method suspect from a scientific perspective,
(B) was either not a part of the video or is not suspect from a scientific perspective

5. (A)(B) The interpretation of micro-expressions was done with certainty, not probabilistically.

6. (A)(B) The micro-expressions and their meanings were claimed to be universal across all humans and cultures.

7. (A)(B) There was no explanation of what types of deceptive behaviors qualify as lying.

Bogus Chocolate Study

8-11 (3 pts) How could the authors be confident of getting a statistically 'significant' result before they even started getting the data?

A = true, B = false

8. (A)(B) They encouraged the participants in only some groups to restrict their food intake.

9. (A)(B) They knew from previous work that people who ate chocolate lost weight.

10. (A)(B) They intended to modify the raw data to inflate the differences between the study groups.

11. (A)(B) They replied on p-hacking -- doing lots of tests (without correcting for multiple comparisons) so that some might be significant purely by chance.

12-14 (1.5 pts) How critical was the media of the poor science in the study (and, if relevant, why)? **A = true, B = false**

12. (A)(B) None of the stories that initially covered the study questioned the science.

13. (A)(B) Most of the stories that initially covered the study questioned the science.

14. (A)(B) The author suggests that the problems with the study design were too subtle for anyone but an expert to understand, so the media could not possibly have questioned the science.

15-17. (2 pts) How was the study blinded (in what ways is blind clearly identified in the article)? **A = true, B = false**

15. (A)(B) The media was unaware that the study was intended to be nonsense.

16. (A)(B) The subjects were unaware of the nature of the study.

17. (A)(B) The observers were unaware of the group to which the subjects belonged.

18-20 (3 pts) From the bogus chocolate-diet study, which are reasonable conclusions about outcomes if the study was repeated or re-analyzed as indicated in the question? **A = true, B = false**

18. (A)(B) If the study was repeated with the same statistical methods, with the same number of subjects and without changing the goal, increasing the number of characteristics measured on each person would be expected to increase the number of 'statistically significant' changes found at the study's conclusion.

19. (A)(B) If the study was repeated with different people but used the same statistical methods, we should expect to find the same specific results – the specific body weight (or other) changes associated with eating chocolate that were found to be statistically significant in the first study would also likely be found statistically significant in the second study.

20. (A)(B) If the data from the original study were re-analyzed while using statistical methods that corrected for multiple comparisons, it is likely that there would have been no 'significant' results of eating chocolate.

Prisoner's of Silence (Facilitated Communication, or FC)

'child' refers to the individual with autism

21-24 (2 pts) What specific hypotheses were being tested by the experiments shown (as clearly explained in the video)? Choose all that apply, but do not assume that any apply. **A = true, B = false**

The tests were designed to determine:

21. (A)(B) Whether the children were lying (or not) about the sexual abuse allegations.

22. (A)(B) Whether the children were able to comprehend the nature of their allegations.

23. (A)(B) Whether the typed words were being controlled by the facilitator or the child.

24. (A)(B) Whether the facilitators knew they were controlling the typing.

25-27 (2 pts) Which properties of the FC testing environment rendered it an experiment? You are being asked why the test constituted an experiment, so any correct answer must not only describe a true property of the design but must also correctly explain why it was an experiment. Choose any and all that apply. **A = true, B = false**

25. (A)(B) The design included replication.

26. (A)(B) The design asked the child to provide a typed answer to a specific question.

27. (A)(B) The design prevented the facilitator from knowing what the child saw and vice versa.

28-31 (2 pts) In what ways was the design blinded? **A = true, B = false**

28. (A)(B) The facilitator and child did not know they were being tested.

29. (A)(B) The facilitator did not know which child they were paired with.

30. (A)(B) The facilitator and child did not know the picture shown to the other.

31. (A)(B) The facilitator could not see the keyboard.

32-36 (4 pts) Which statements about controls are correct? (A) True (B) false

32. (A)(B) The controls were the tests in which the facilitator was paired with a child familiar to them.

33. (A)(B) The controls were the tests in which both child and facilitator were shown different pictures.

34. (A)(B) The controls were the tests in which both child and facilitator were shown the same picture.

35. (A)(B) The controls were needed to establish that the testing environment was producing answers consistent with the way FC normally worked.

36. (A)(B) The controls were all tests in which the facilitator and child were each blinded to what the other saw.

Secrets of the Psychics

The video showed a horoscope test and described a palm reading test by Ray Hayman; in addition, Cors236 students were supposed to take a personality predictor survey. Questions below may address one, two, or all three of these studies.

37-39 (2 pts) Why is the horoscope test considered an experiment? You are asked for features that causes it to be experimental *per se*. So, the answer must not only describe a true property of the test but also describe why those properties render it an experiment.

A = true, B = false

37. (A)(B) The design involved replication, random, and blind.

38. (A)(B) The design used groups of individuals for the purpose of gathering data.

39. (A)(B) The design changed the way individualized descriptions are usually done by giving everyone the same description.

40. (1 pt) In the palm reading test , which ideal data feature was essential to controlling for the expectation of personalized accuracy between control and treatment groups?

(A) Randomization (B) Replication (C) Blind (D) Standards (E) None

41 (1 pt) What constituted the control group in the palm reading test? **One answer only**

(A) The subjects who were specifically told that the readings were being done the right way

(B) The subjects for which readings were done the opposite way from the book.

(C) The subjects for which readings were done the right way

(D) The use of a second palm reader.

(E) None.

42-44 (1.5 pts) What would be the consequences of conducting an experiment (such as the Palm Reading expt) without having a valid control group? **A = true, B = false**

42. (A)(B) It would not be possible to know if the treatment had an effect unless there was a control group.

43. (A)(B) It would not be possible to apply the treatment if a control was not included.

44. (A)(B) Failure to have a control group would unblind the study – participants would be able to discern the nature of the treatment.

45-49 (2.5 pts) Which of the following properties apply to all three studies? **A = true, B = false**

45. (A)(B) All were experiments.

46. (A)(B) All maintained an expectation of personalized accuracy for all participants (whether in a control or treatment group)

47. (A)(B) All involved blind at some level.

48. (A)(B) All included explicit control groups

49. (A)(B) None involved randomization.

50. (-1 pt for getting it wrong) (B) **Key code, name, and ID number**. Provide answer (**B**) on question 50 to indicate your key for this version of the exam. Then upload your answers to the field on BbLearn (test 6 upload) in the usual format:

Format: **last name first name** , last 4 digits of your Vandal ID number , 1 answer 2 answer …