

Questions for Exam 1

Philosophy 517

Spring 2007

The first exam will consist of a subset of the following questions.

1. Describe a situation in which the inductive probability of a die landing six is (a) the same as its physical probability; (b) different to its physical probability.
2. State two differences between inductive and physical probability.
3. Is subjective probability the same as inductive probability? Justify your answer.
4. "Since our assertions about inductive probabilities express our degrees of belief, they can have no meaning other than that we have these degrees of belief." Is this a sound argument? Justify your answer.
5. Is the inductive probability of H given E the same as the degree of belief in H that would be rational for a person whose evidence is E ? Justify your answer.
6. What is the instrumental conception of epistemic rationality? Is the inductive probability of H given E the same as the degree of belief in H that would be instrumentally epistemically rational for a person whose evidence is E ? Justify your answer to the latter question.
7. What is the evidential conception of epistemic rationality? Is the inductive probability of H given E the same as the degree of belief in H that would be evidentially epistemically rational for a person whose evidence is E ? Justify your answer to the latter question.
8. What does it mean for a probability concept to be logical in Carnap's sense? Explain the meaning of any technical terms that you use.
9. Is inductive probability logical in Carnap's sense? Justify your answer.
10. Is inductive probability the same thing as logical probability in Carnap's sense? Justify your answer.
11. Explain the meaning of "explication," "explicandum," and "explicatum."
12. What is meant by "clarification of the explicandum?" What are some ways of doing this? How does this differ from explication?
13. Does Carnap regard explicanda and explicata as terms or concepts? Is this satisfactory? Why, or why not?
14. Carnap said:

One might perhaps think that the explicatum should be as close to or as similar with the explicandum as the latter's vagueness permits. However, it is easily seen that this requirement is too strong, that the actual procedure of scientists is often not in agreement with it, and for good reasons.

What example did Carnap use to support this claim? Does that example really support his claim? Why, or why not?

15. State two reasons why explicating a concept isn't the same as defining that concept.

16. Strawson said:

To offer formal explanations of key terms of scientific theories to one who seeks philosophical illumination of essential concepts of non-scientific discourse, is to do something utterly irrelevant.

How did Carnap reply to this? Was his reply adequate? Why, or why not?

17. According to Maher, how does the method of explication help to solve philosophical problems about concepts of ordinary language?

18. What is the function p intended to do? What sorts of things does it have as its arguments and its values? What determines its values?

19. Describe two ways that Kolmogorov's axioms could be applied to the explication of inductive probability. For each, say whether it is adequate and, if not, why not.

20. State axioms A1–A5.

21. What is Maher's justification for requiring p to satisfy axioms A1–A5?

22. For each proposition below, prove that it follows from A1–A5 and the preceding propositions.

P1. If $C \Rightarrow A$ then $p(A|C) = 1$.

P2. If C is consistent and $C \Rightarrow \sim A$ then $p(A|C) = 0$.

P3. If C is consistent then $p(A|C) = p(A.B|C) + p(A.\sim B|C)$.

P4. If C is consistent and $A.B$ is inconsistent then

$$p(A \vee B|C) = p(A|C) + p(B|C).$$

23. What is an experiment token? What is an experiment type? Give an example of each.

24. What is determinism? Is it possible for pp's to have values other than 0 or 1 if determinism is true? Explain.

25. Suppose $f_X(O)$ is defined as follows:

$f_X(O) = r$ iff, in an infinite sequence of repetitions of X , O would occur randomly but m/n would approach r as a limit.

Is $f_X(O)$ a good explicatum for $pp_X(O)$? Why, or why not?

26. What is a Q -proposition? What is the principle of direct inference? What is the principle of irrelevance?

27. State Maher's proof of the following:
 - (a) $q_X(O) \geq 0$.
 - (b) If O is analytic, $q_X(O) = 1$.
 - (c) If O_1, O_2 is contradictory, $q_X(O_1 \vee O_2) = q_X(O_1) + q_X(O_2)$.
28. According to Maher's explication, how do we learn the values of physical probabilities? (A brief verbal answer is sufficient.)
29. Is there is a physical probability that Cleopatra's death was caused by snake bites, according to Maher's account of physical probability? Explain.
30. Let X = a day's maximum temperature is recorded, O = the recorded temperature exceeds 50 degrees. Is there a physical probability of X having outcome O , according to Maher's account of physical probability? Explain.
31. What was Laplace's (official) view about the nature of probability? What was his argument for this?
32. Is Laplace's treatment of the biased coin is consistent with his official view about the nature of probability? Explain.
33. Is Laplace's derivation of the rule of succession consistent with his official view about the nature of probability? Explain.
34. State Laplace's first and second principles of probability. Include any necessary provisos.
35. What is the classical theory of probability? What are two standard objections to it?
36. Laplace said his first principle was the definition of probability. State three reasons for doubting that he really meant that.
37. If Laplace's first principle isn't a definition, what would it be? What are the advantages and disadvantages of interpreting the principle in this other way?
38. What did Keynes mean by "probability"? Justify your answer
39. Give an example of probabilities that Keynes would say are (a) comparable but not quantifiable, and (b) not comparable.
40. How did Ramsey argue that "there really do not seem to be any such things as the probability relations [Keynes] describes"? Evaluate his argument.
41. What is Maher's argument that inductive probabilities exist?
42. Show that application of the Principle of Indifference to contradictories gives inconsistent probability assignments.
43. Show that application of the Principle of Indifference to specific volume and density gives inconsistent probability assignments.
44. If there is no sound formulation of the Principle of Indifference, does it follow that quantitative logical probabilities (in Carnap's sense) don't exist? Justify your answer.
45. Show that the Rule of Succession is inconsistent. State two criticisms of Laplace's derivation of this rule.