

HSS (202) Philosophy of Science

Second Mid-Semester Exam

March, 2019

Total Marks: 20

**IMPORTANT: PLEASE WRITE LEGIBLY. NO EFFORT WILL BE MADE TO READ
ILLEGIBLE HANDWRITING.**

1. "Facts are assumed to be the basis of science." What are three components of this assumption in the common view? Which one of the above components is challenged or refuted by the case of "image switch" in seeing between the duck and the rabbit (case discussed in class). Explain how it counters this component and also explain what other factors come into play in the act of seeing? 3+4=7

2. Explain how the reformed and modified view of observation, according to Chalmers, leads to the view that is apparently contradictory (objective and fallible). 3

3. a) Illustrate with an example that the relationship between theory and experiment might involve a circular argument (one example was discussed in the class).

b) "However informed by theory an experiment is, there is a strong sense in which the results of an experiment is determined by the world and not by the theories." Unfold the meaning of the statement in the context of the discussion on the theory-dependence of experiments. 3+2=5

4. Briefly explain the Humean problem of Induction (David Hume). The seriousness of this problem can be played down by dissolving the problem of induction. Explain how the problem can be dissolved. 3+2=5

HSS (202) Philosophy of Science

End-Semester Exam

April, 2019

Total Marks: 30

IMPORTANT: PLEASE WRITE LEGIBLY. NO EFFORT WILL BE MADE TO READ

ILLEGIBLE HANDWRITING.

1. A hypothesis or theory describes or accounts for the behaviour of some aspect of the world or universe. For the falsificationist, a hypothesis must be falsifiable. Explain with simple examples the sense of the term *falsifiable*. Why do falsificationists insist that the hypothesis be falsifiable in this sense? 3 + 2=5

2. Give a brief account of the falsificationist view of scientific progress. Explain how the progress of physics from Aristotle through Newton to Einstein fits into this account. 3 + 6= 9

3. What is ad hoc modification and explain how the case of a suggestion offered in overcoming the difficulty of accounting for planet Uranus departing from its orbit as predicted is not a case of ad modification? 6

4. Suppose you are an anti-realist about electron theory and make a statement "I know about electrons". Which sense of 'know' best applies in the use of the word 'know' in the above statement? Explain. 2

5. How is the logical structure of 'Obama exists' represented (You have to explain in words what this logical structure means) 3

6. How does van Fraassen distinguish constructive empiricism from scientific realism in terms of aim and acceptance of scientific theories? (If van Fraassen has used some specific term to explain you have to elaborate on that term) 5