**PHILOSOPHY TRIPOS     Part IB**

Friday 25 May 2018          09.00 – 12.00

Paper 2

LOGIC

*Answer* **three** *questions only.*

*Write the number of the question at the beginning of each answer. If you are answering an either/or question, indicate the letter as well.*

**STATIONERY REQUIREMENTS**
*20 Page Answer Book x 1*
*Rough Work Pad*

> **You may not start to read the**
> **questions printed on the**
> **subsequent pages of this question**
> **paper until instructed that you may**
> **do so by the Invigilator**

1.   What were Russell's reasons for adopting his theory of descriptions? Were they any good?

2.   Explain and assess Frege's use of the notion of sense to analyze indirect contexts.

3.   'Benjamin Franklin might not have invented bifocal lenses. But necessarily, the inventor of bifocal lenses invented bifocal lenses. So, by Leibniz's Law, Benjamin Franklin is not the inventor of bifocal lenses.' Is this a good argument?

4.   Suppose that '$\Box A$' is to mean 'from now on, A'. Describe a modal logic, either axiomatically, or in terms of Kripke models, that might capture the logic of this '$\Box$' operator. Justify your choices and suggest why S5 would not be suitable.

5.   EITHER (a) 'To say something true, you have to say *something*. So an uninterpreted theory cannot be true, whether or not it is consistent.' Is this a good argument?

     OR (b) In what sense, if any, does a theory constitute a definition of its primitive terms?

6.   What should a correspondence theory make truth correspond to?

7.   What is the logical form of action sentences?

8.   'Meaning is compositional. Verification conditions are not. So meaning cannot be constituted by verification conditions'. Discuss

9.   Outline a deductive system of sentential logic. State the soundness and completeness theorem for that system. Prove the completeness theorem.

10.  'Intuitionists complain that no justification can be given for treating the law of excluded middle as a law of logic. But this is a poor complaint, for no justification can be given of *any* of the supposed laws of logic.' Is this a good defence of classical logic?

**END OF PAPER**