UNIVERSITY OF LONDON
ARTS FACULTY
MA EXAMINATION
for Internal Students
PHILOSOPHY NEW REGULATIONS

PHILOSOPHY OF MATHEMATICS

Answer <u>THREE</u> questions.

1. Is there good reason to think that the objects of mathematical geometry are not perceptible entities?

2. Assess Berkeley's criticisms of the claim that we have abstract ideas of kinds of geometrical object, such as squares, circles, and triangles.

3. What truth is there, if any, in Kant's view that geometrical knowledge is not purely analytic but has an intuitive component?

4. 'If physical space is non-Euclidean, Euclidean geometry is untrue.' Discuss.

5. Assess the claim that a whole number is a multitude of units.

6. What are the merits and defects of the formalist view that an arithmetical equation expresses a truth about nothing but a system of numerals?

7. EITHER (a) Did Frege have good grounds for his claim that cardinal numbers are objects rather than properties?

   OR   (b) Should cardinal number attributions, such as 'Jupiter has 16 moons', be construed as assertions about a concept, or about a set, or about neither of these?

8. EITHER (a) How successful was Russell's attempt to show that mathematics can be reduced to logic?

   OR   (b) Is any form of logicism tenable?

9. Explain Hilbert's programme. What problems does it have? Can they be overcome?

10. EITHER (a) How, if at all, do Brouwer's metaphysical beliefs about the nature of mathematics require the revision of classical mathematics?

    OR   (b) Is intuitionistic logic the correct logic for mathematics?

11. Is mathematical knowledge empirical?

12. Is mathematics the science of abstract structures?

13. Assess the view that mathematical axioms can be known to be true by stipulation.

14. Can we make sense of the idea that mathematical objects such as numbers are contingent beings, present at some possible worlds, absent at others?

END OF PAPER