SELEÇÃO MESTRADO E DOUTORADO PPGHCTE 2023
PROVA ESCRITA
Rio de Janeiro, 30 de junho de 2023
Auditório Maria Irene e Espaço Flex, NCE/CCMN

CANDIDATA/O (NOME COMPLETO E ASSINATURA)

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( ) MESTRADO ( ) DOUTORADO

QUESTION 1:

A source is an objectively given, material item from the past, created by human beings; a letter, for example, or a clay pot. But this item is not in itself a source. It can be called a relic of the past or a source object. If the relic is to achieve the status of source-material it must be evidence from the past, it must tell us something about it. The relic must be capable of being utilized to give some of the information that it contains in a latent form. It is the historian who turns the relic into a source through his interpretation. By posing questions to it from particular hypotheses (that do not themselves need to have any documentary basis) the historian forces the source to disclose information. Unlike the relic, the source is not, as a source, a material item, but has to be regarded as information that has been released. The information disclosed by the source, and in that sense the source itself, becomes an interplay between the source object and the historian, a meeting between past and present. It follows from this that while the source object is fixed, the very same source can disclose different and possibly conflicting information.

(Retirado de: *Kragh, H. An introduction to the historiography of science. New York: Cambridge University Press, 1991. p. 120*)

Translate this excerpt into Portuguese.

(QUESTION 1: cont.)

Comment this excerpt briefly, using your own words. Answer in Portuguese (10 lines max.)

QUESTION 2:

Physics has been the cutting edge of science since Galileo, and its mathematization in dynamics was, therefore, the crucial act in the scientific revolution. But modern science is a complex enterprise, compact of elements both intellectual and social. The strands which the genius of the seventeenth century twisted together, it drew from diverse areas of the Renaissance. Naturalism, for one, had expressed itself in art long before it became an essential element of the scientific outlook. Empiricism, secondly, may be more explicitly exemplified in the life sciences than in physics, and there it was early coupled with half-heroic, half-petulant, and wholly self-conscious revolt against authority. Thirdly, the technological achievements of Renaissance navigator, engineer, and artisan were realities behind the Baconian philosophy, which makes science an inductive systematization of observations or experiments performed upon nature rather than of concepts, and which holds up at the reward for understanding nature the power to control its forces.

(Retirado de: *Gillispie, C.C. The edge of objectivity. An essay in the History of Scientific Ideas. London: Oxford University Press, 1973. p.54*)

Translate this excerpt into Portuguese.

(QUESTION 2: cont.)

Comment this excerpt briefly, using your own words. Answer in Portuguese (10 lines max.)

QUESTION 3:

Obenga (1973) analyzes the numeration system and arithmetic (including the use of fractions) and what he calls the 'cosmic numbers' of the Mbosi (Congo-Brazzaville). Mfika (1988) analyses oral and possible graphic numeration systems from Congo/Zaire. In particular, he deals with the symbolic expression of numbers in Luba cosmogony, e.g., the significance of even and odd, the use of 'numbers of peace': 4 and 12, 24, 48, 96 .... The author stresses that 'the explanation of the origin of life [among the Luba] by numbers [is] practically equal to that of Pythagoras'. Mantuba-Ngoma (1989a: 61) describes the binary system used among the Yombe in the lower Congo to measure lubongo (plural: zimbongo, traditional money made out of cloth. One lubongo corresponds to a piece of cloth, made out of raffia or pineapple strands, of a length of about 2 yards. The next units are: 1 kindela = 2 zimbongo; 1 nlabu = 2 bindela; 1 babu = 2 minlabu. Numeration and counting systems from Mozambique are discussed in Gerdes (1993), where, along with the presentation of historical written sources, Ismael and Soares analyze popular counting systems, Mapapa and Uaila present a comparative overview of numeration systems, and Draisma reflects on mental arithmetic.

(Adaptado de: *Gerdes, P. ON MATHEMATICAL IDEAS IN CULTURAL TRADITIONS OF CENTRAL AND SOUTHERN AFRICA. In: Selin, H. Mathematics across cultures: the history of non-western mathematics. Dordrescht: Springer, 2000. p.315*)

Translate this excerpt into Portuguese.

(QUESTION 3: cont.)

Comment this excerpt briefly, using your own words. Answer in Portuguese (10 lines max.)