FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA

SCHOOL OF SCIENCE AND TECHNOLOGY EDUCATION

DEPARTMENT OF SCIENCE EDUCATION

FIRST SEMESTER EXAMINATION 2022/2023 ACADEMIC SESSION

HISTORY AND PHILOSOPHY OF STEM, EDU 211: (2 Units)

Instruction: answer all questions from each section ***Time Allowed: 1Hrs***

Question Type: A

*Examination Number*_____

SECTION A

1. _____ of science is concerned with uncovering the presupposition of the scientist.
2. Philosophy of science is also concerned with pausing and attempting to _____ _____ about the nature.
3. _____ is the view that, experience is the only source of knowledge.
4. The hypothesis that all knowledge is derived through sensory experience refers to _____
6. _____ is a philosophical cognition that sees reasoning as the prime source of knowledge.
7. _____ is the theory of reasoning.
8. The theory of knowledge refers to _____.
9. _____ is the study of the concepts, used in science and in ordinary life through the study of the internal structure of the languages used in different areas.
10. _____ is universally regarded as the organized study of natural phenomena.
11. Science was defined as activities cultivating into testable, falsifiable and verifiably body of knowledge

_____ in the year _____.

12. _____ is concerned with psychological pursuit of theoretical knowledge.

13. _____ and _____ in character means the organizational aspect of a theory is being free from contradiction.

14. Traditionally there are _____ steps in scientific research

15. The first step that a scientist takes when he is confronted with a problem or unknown phenomenon is referred as _____

16. _____ stage encompasses the early investigation into a phenomenon.

17. _____ is of the view that there is a logical progress in the development of scientific knowledge.

18. _____ argues that knowledge advances by the successive replacement of theories by more powerful and all-encompassing theories.

19. The principle of falsifiability is what popper considered as being central to _____ _____

20. ***"Repeated observations and experiments functions in science as over attempted reputations"*** is main argument against _____

21. Poppers second famous book was his of political philosophy titled _____ _____ _____

22. _____ believes that human knowledge has passed through stages in the course of its development.

SECTION B

23. The result and conclusion in mathematics are _____and _____only if they conform to certain rules.

24. Number is an_____ which can only be understood with the help of concretization.
25. The equation $\frac{2}{7} = \frac{1}{4} + \frac{1}{28}$ can be represented using Egyptian number system as _____
26. Babylonian used base sixty known as _____because of its _____
27. Babylonians used _____and _____as there unit for measuring length and weight respectively.
28. Euclid was a Greek Mathematician who had significantly contributed to the history of Mathematics and is regarded as _____
29. The element is divided into _____ sections with _____ books.
30. Plane geometry and number theory can be found in book _____of the Euclid Element.
31. Euclid's definitions on point and line are:_____ and _____
32. _____are statements that are generally accepted and require no proof.
33. 12632 can be represented using Egyptian number system as _____
34. Archimedes was a Greek,_____, _____, _____, inventor and astronomer.
35. Archimedes was born in _____ CE and died in _____CE.
36. Archimedes was born in the Greek city-state of _____on the island of _____
37. Archimedes died during the Siege of Syracuse when he was killed by_____ despite order that he should not be_____
38. _____ was a Greek female mathematician, astronomer, and philosopher.
39. Al-Khwarizimi was highly influential in the development of _____ throughout the world.
40. Al-Khwarizmi's studies took place in the _____ or the House of Wisdom, in Baghdad.
41. According to _____ all things in the universe were numerable and could be counted.
42. Al-Khwarizmi's book tittle "Kitab 'amal Al-Asturlab" was translated as _____ _____

43. The most famous astronomical work of Al-Khwarizmi is _____

_____

44. Provide any one statement that justify the saying "Pythagorean were more or less egalitarian"

_____

45. Pythagoras was born in _____ on the western coast of Turkey.

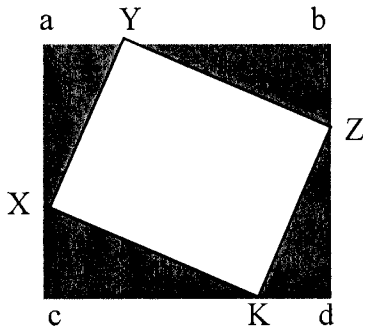
46. Around 825 CE, al-Khwarizmi wrote a text _____

_____

translated as The Book of Addition and Subtraction According to the Hindu Calculation.

47. Proposition 47 of the Euclid Element state that, in a right-angle triangle, the square of the side subtending the right-angle equals the sum of the squares on the sides containing the right-angle. Illustrate this in a diagram

Use the diagram below to answer question 48 and 49.



48. The area of the big square abcd equals the area of _____

_____

49. If triangle KdZ is slid to triangle XaY and triangle YbZ to triangle XcK. Present the new figure using clear diagram

50. Around 830 CE, Al-Khwarizmi wrote a book in an effort to give the Persian Hemisphere and Muslims mathematical aids to solve issues of inheritance, partition, lawsuits, legacies, and trade named Al-Kitab Al-Mukhtasar Fi Hasab Al-Jabr Wa-L-Muqabala, translated as The_____

_____

_____

51. The _____ is a weapon that Archimedes is said to have designed in order to defend the city of Syracuse.
52. The Archimedes heat ray was used to _____ onto approaching ships, causing them to _____
53. The full name of Al-Khwarizmi is _____
54. The word algebra comes from _____ (Literally means to enforce) in the title of the book, which al-Khwarizmi used to describe the operation of completion.
55. According to mathematicians of the antiquity, three points generate _____ of dimension two and four points generate tetrahedron, of _____
56. While taking a bath, Archimedes noticed that the level of the water in the tub rose as he got in, and realized that this effect could be used to_____ _____
57. _____ made commentary on the 13-volume Arithmetica by Diophantus.
58. The general formula for obtaining the N^{th} triangular point is _____
59. _____ proposed some paradoxes on _____ and _____ that, if space and time are continuous or discrete, motion _____
60. _____ is an academic field of study that deal with philosophical study of mathematics, its problems or critical subject areas.