UNIVERSITY OF ABUJA
DIVISION OF GENERAL STUDIES
SECOND SEMESTER 2017\2018 EXAMINATION
COURSE CODE: GST104 (SCIENCE & SOCIETY)
INSTRUCTION: Attempts **a**ll the question in Section A **on the OMR Sheet**
And any ONE question in SECTION B **in the Answer Booklet** **TIME:1hr 30mins**

SECTION A

1. The stages of the stone age are ....., ... and .....
   (a)Paleolitic, Grasses and Spoon (b) Paleolithic, Mesolithic and Neolithic (c) Paleolithic, Mesolithic and Water (d) Mesolithic, Neolithic and Streams (e) Neolithic, Streams and Water
2. Pythogoras discover the relationship between..... and .....
   (a)Sound and sign (b) Number and sign (c) Music and Sign (d) Sound and Music (e)Number and Music
3. The life of a resource can be prolonged in the following ways except
   (a) Recycling (c) Multiplication (e) technology invention (e) Substitution
4. The two types of cracking are ..... and .....
   (a)Force and distillation (b) Hot and Cold b(c) Breaking and destroying (d) Water and Vapor (e) Thermal and catalytic
5. The major impurity in petroleum is.....
   (a)Sulphur (b) Acid (c) Water (d) Base (e) Calcium
6. ..... is the chemical formula of carbon dioxide
   (a) NO_3 (b) NaC1 (c) $CaC1_2$ (d) CO (e) Co_2
7. A substance which cannot be split into simpler substance by any known chemical process is known as.....
   (a)Atom (b) Cell (d) element (d) Neutron (e) Proton
8. Petroleum is an example of .....
   (a)Nonrenewable mineral resource (b) Renewable mineral resource (c) Enzyme mineral resource (d) Hot mineral resource (e) Liquid mineral resource
9. Where is Gold found in Nigeria?
   (a) Jos (b) Mambila (c) Ilesha (e) Liquid mineral resource
10. The major gas pollutant that causes acid rain is .....
    (a) $CaC1_2$ (b) Carbon monoxide(CO_2) (c) Water vapour
    (d) Hydrochloric acid (HC1) (e) Sulphurdioxide (SO_2)
11. An atom is built up of sub partial namely ....., ... and .....
    (a) Proton, Oxygen And atom (b) Electron, Proton and Neutron (c) Oxygen, atom and element (d) Element, Molecules and atom
12. There are forms of Science ..... and .....
    (a)Natural and pure (b) Natural and physical (c) Biology and chemistry (d) Pure and applied
13. .....is the earliest man and first primate to use tools consistently.
    (a) Homo erectus (b) Homo habillis (c) Mesolithic (d) Homo sapien

14. Homo erectus gave rise to ..... in china.
    (a) Dog and man (b) Motor man (c) Green man (d) Perking man
15. The distinctive human characteristic of a modern man is possession of .....
    (a) Legs (b) Brain (c) Hands (d) Eyes
16. ..... possess hominid teeth with large jaws and molar teeth type
    (a) Paleocine (b) Paleopithecus (c) Fiocine (d) Australopithecus
17. The scientific name for the perking man is .....
    (a) Genotropus (b) Sinothropus (c) Phenotropus (d) Ginotropus
18. The use of signs and beginning of language and gesture was found in .....
    (a) Homo sapiens saipens (b) Homo erectus (c) Homo sapiens neanderthalensis
    (d) Homo habilis
19. The Homo sapiens appeared about ..... years ago
    (a) 40-100,000 (b) 100-200,000 (c) 200-400,000 (d) 100,000-300,000
20. In the story of evolution ..... is the latest and highest organism to evolve.
    (a)Man (b) Dog (c) Giraffe (d) Fish
21. Babylonians use base..... in their number system.
    (a)60 (b) 70 (c) 50 (d) 10
22. The result of 21x19 using the Egyptian method of successive doubling is .....
    (a) gggnnnnnnnnn (b) gggnnnnnnnnn111111111 (c) gnnnnnnnnn111111111
    (d) gggnn111111111
23. 42. unit of force is .....
    (a) Meter (b) Centimeter (c) Newton (d) square
24. Weight is defined as .....
    (a)Product of mass and acceleration due to gravity (W=mg) (b) Product of mass and weight (W=mw) (c) Product of acceleration and length (W=al) (d) Product of weight and length (W=wl)
25. Work is defined as .....
    (a)Product of weight and distance (Work = W x d) (b) Product of weight and length (Work = Wx L) (c) Product of force and acceleration (Work = F x a) (d) Product of force and distance (Work = F x d)
26. Microorganism in contaminated water can best be viewed using an instrument called .....
    (a) Slide (b) Microscope (c) Telescope (d) Picture
27. A particle of mass 2kg is kept at a height of 2m. What is its potential energy? (take g=10m\s^2). (a) 30J (b)70J (c) 15J (d) 40J
28. The inner and outer diameter of a tube can best be measured using an instrument called ....
    (a)Vernier calipers (b) Gauge (c) Clock (d) Cylinder
29. ..... is a device that work on the principle of reflection of lightly by a plane mirror.
    (a) Microscope (b) Hand lens (c) Periscope (d) Lens
30. The instrument used in measuring time in the laboratory is .....
    (a) Caliper (b) Stopwatch or stop-clock (c) Vanier (d) Pendulum
31. Which of the following metric prefix could replace 10^{-9}?
    (a) Micro (b) Nano (c) Mega (d) Kilo

32. In Egyptian number system, the symbol for 100 is called ..... or .....
(a)snare or Hook (b) Needle or Pin (c) Hook or Needle (d) Snare or Pin
33. The earliest Egyptian writing is called .....
(a)Hieroglyphics (b) Radiographic (c) Logarithm (d) Least square
34. Gasoline is another name for .....
(a) Petroleum (b) Petrol (c) Natural gas (d) Crude oil
35. ..... is an informed guess or a trail answer that might be true
(a) Theory (b) Hypothesis (c) Experiment (d) Conclusion
36. Mathematics was developed in Mesopotamia in a country now called .....
(a) Egypt (b) Liberia (c) Iraq (d) Nigeria
37. Hazardous substance that exclude or interfere with oxygen uptake and distribution to different cells are called ..... (a) irritants (b) asphyxiants (c) mutagens (d) allergens
38. Name 2 Nigerian mathematicians.
(a) Prof. Adikwu and prof. Abdulrahman (b) Prof. Idowu and Prof. Kolawole
(c) Prof. Chike Obi and Prof. Olubumm (d) Prof. Olubumi and Prof. Idris
39. Who invented method of least square?
(a)Carl Friedrich (b) Mongo park (c) Chike Obi (d) Chris Okotie
40. Sexagesimal means .....
(a) A number in base 30 (b) A number in base 60 (c) A number in base 50
(d) A number base in 40
41. The ..... had the highest achievement in mathematics among the early civilization.
(a)Egyptian (b) Monogolean (c) Babylonian (d) Nigerian
42. Development of mathematics in India dates back to about .....
(a)300 AD (b) 900 AD (c) 500 AD (d) 600 AD
43. In Egyptian number system, the symbol for 100 is .....
(a) F (b) Q (c) G (d) g
44. The period that mark transmission between hunting and gathering to a period of dominant agriculture is known as .....
(a) Devonian period (b) Archaic period (c) Silurian period (d) carboniferous period
45. The number system to base 60 in Babylonians is called ..... system
(a) Base (b) Log (c) Sexagesimal (d) Fraction
46. Primates used the following tools except .....
(a) Stones (b) Animal bones (c) Stem (d) Soil
47. The various forms of energy are commonly classified into two categories namely:
(a)force and distance energy (b) kinetic and potential energy (c) power and time energy (d) mechanical and electrical energy
48. ..... is the spontaneous disintegration of a radioactive element (a) nuclear reaction (b) radioactivity (c) chemical reaction (d) neutralization reaction
49. Oxygen atom has ..... number of electron
(a)8 (b) 16 (c) 23 (d) 2
50. Which of the following is positively charged?
(a) atom (b) proton (c) neutron (d) electron

SECTION B: ANSWER ANY ONE QUESTION

1a. i. Define octane number

ANS: Octane number is an arbitrary number assigned to petrol and is an indication of the degree of branched hydrocarbon it contains.

ii. List any three factors that can help prolong the life of a resource

ANS: (i) Recycling (ii) Substitution (iii) Technological invention

b. i. Identify three areas of application of radioactive isotope

ANS: (i) Curative (ii) Scientific uses (iii) Industrial use

ii. Name pollutants responsible for ozone depletion

ANS: (i) Chlorofluorocarbons (CFCs) (ii) Hydrocarbons (HCFCs) (iii) Oxides of nitrogen

2. a. Calculate the work done by a boy who carries a load of 1000kg for three (3) hours without moving a distance.

ANS: W = F x D

F = 1000kg x 10

D = 0

W = 1000kg x 10 x 0

W = 10,000kg x 0

W = 0 Joule

b. Compare each of the following

i. Vector and scalar quantities

ANS:

(i) A vector quantity has a direction and a magnitude, while a scalar quantity has only a magnitude.

(ii) Vector quantity is a multi-dimensional quantity, while scalar quantity is a one dimensional quantity.

(iii) Vector quantity follows rules of vector algebra, while scalar quantity follows ordinary rules of algebra

ii. Energy and power

ANS:

(i) The unit of energy is Joules, while the unit of power is Watt.

(ii) Energy can be stored, while power cannot be stored.

(iii) Energy can be converted to another, while power cannot be converted.

(iv) Energy is described as the object's ability to perform work, while power refers to the rate at which work is performed upon an object.

iii. Fundamental and derived quantities

ANS:

(i) A set of fundamental units are defined in every unit system and the corresponding physical quantities are called fundamental quantities, while derived quantities are formed by product of powers of fundamental units.

(ii) Fundamental quantities are the base quantities of a unit system, while derived quantities are based on fundamental quantities.