**MUCHINGA PROVINCE**

**PROVINCIAL JETS FAIR, 2014.**

**THEME:Golden Jubilee: Recognising Scientists as a Driving Force for National Development.**

**JUNIOR MATHEMATICS**

**QUIZ - 2014**

1. Write in expanded form 2118-14
2. What is the value of the square root of 0.01
3. The area of a circle is 81 cm2. . The circumference in cm in terms of pie (π)
4. The elements of set A intersected to the elements of its compliment is equal to:
5. The result of subtracting 89 from negative 89 is…
6. Find the LCM of 2x,y and 4
7. On Monday, Mubita withdrew K15,000 from her savings account. On Wednesday, she deposited K40,000 into the same account. She now has K100,000. How much was in her account on Monday before she withdrew the money?
8. John got 16 marks out of 25 in a mathematics test. What percentage did he get in the test?
9. From the word MATHEMATICS the modal letter is ….
10. If the mean of 8 numbers is 40, then the sum of the numbers is …
11. Each interior angle of the regular polygon is 1200m. Find the number of sides that this polygon has.
12. The angles of$$ a triangle are in a ratio 1:2:3, Calculate the size of the largest angle.
13. Change the number $110\_{3}$ into a number in base 10
14. What do we call a comparison between two or more similar quantities?
15. Factorise a(x + y) + b(x + y)
16. Find the exact value of 1004 ÷ 1003
17. Find the slope of the equation; 6 – 2y = -4x
18. Find the median of the prime numbers between 10 and 35.
19. Name a 12 sided regular polygon.
20. A triangle has sides of length 10cm, 10cm and 16cm. What is the area?
21. A pencil was bought at K400 and later sold at K200. What is the loss percentage?
22. Angle A and B are supplementary angles. If angle A is 780. What is the size of angle B?
23. Convert 100 cm / min to m / h
24. Find the positive square root of 2 $\frac{1}{4}$,
25. The mean of numbers 7, 8, 6, 10 and x is 7. Find the value of x.
26. Simplify $\frac{3x^{2}- 27}{\left(x+3\right)(x-3)}$
27. Express 5398.5 in standard form correct to three significant figures.
28. Find the positive value of $\sqrt{x+6} =x^{2}$
29. An aircraft travelled a distance of 9 km at an average speed of 27km / h. How long does the journey take?
30. A white light flashes after 6 min, a blue light flashes after 10 min and an orange one after 15 min. If they all start at the same time will they all flash at the same time again?
31. If x = $\frac{x+5}{b}$, make x the subject of the formula.
32. Solve for x in the equation 3(x + 1) = 2x
33. The area of a circle is 616cm2
34. If x = 2$\frac{1}{5}$ and y = $\frac{2}{5}$ , find the value of $\frac{x}{y}$
35. Find the value of $\frac{x+5}{b}$
36. Find the exact value of $\frac{0.024}{0.06}$
37. In a grade 9 class, the ratio of boys to girls is 9:7. If there are 21 girls, find the total number of pupils in the class.
38. Solve the inequality 1- 2x ≥11
39. How many lines of symmetry has a kite?
40. The angles in an Isosceles triangle are 2x, x + 20, and x+ 20. Find the value of x
41. Find the two possible values of the square root of 36
42. Find the difference between the of 60º and the complement of 40º
43. What is the product of the numbers 1 to 5 ?
44. What is the sum of interior angles in a pentagon?
45. What is the product of the 4th and the 9th even number?

# MATHEMATICS JUNIOR QUIZ ANSWERS(2014)

1. $2^{18}÷2^{14}$
2. 0.1
3. 18$π cm$
4. An empty set
5. -178
6. 4xyz
7. K 75, 000=00
8. 64%
9. M
10. 320
11. 6 sides
12. $90^{0}$
13. $13$
14. Ratio
15. (x + y) (a + b)
16. 100
17. 2
18. 19
19. Duodecagon
20. $48cm^{2}$
21. $50\%$
22. $102^{0}$
23. 60 m/h
24. $\frac{3}{2} or 1\frac{1}{2}$
25. 4
26. 3
27. 5.40
28. X = 3
29. 20 min
30. 30 min
31. X = $\frac{-5}{1-b} or \frac{5}{b-1}$
32. X = -3
33. 14 cm
34. 6
35. $\frac{23}{7} or 3\frac{2}{7}$
36. O.4
37. 48 pupils
38. X $\leq -5$
39. 1 (one attempt)
40. X = $35^{0}$
41. -6 and +6
42. $70^{0}$
43. 60
44. $540^{0}$
45. $96$

**JETS QUIZ 2014 JUNIOR BIOLOGY**

**1.** What name is given to the process by which plants lose waterto the atmosphere in the form of water vapour?

**ANS**: Transpiration

**2.**The sharp needle- like structure on the body of an animal orplant is called\_\_\_\_\_\_\_

**ANS**: Spine

**3.** What name is given to a plant or animal which results fromcrossing two different plant or animal varieties?

**ANS**: Hybrid

**4**. Name the young of the goat.

**ANS**: Kid

**5.** State the large gap between the canines and premolars in thelower jaw of some animals.

**ANS**: Diastema

**6.** Which set of colours of the spectrum does chlorophyll absorbthe most?

**ANS**: Red – Orange and blue - violet

**7.** Name the enzyme in human saliva…..

**ANS**: Salivary Amylase

**8.** Name the hormone produced by the testes……

**ANS:** Testosterone

**10.**What is the hydrostatic skeleton?

**ANS**: It is a skeleton formed by internal watery fluids containedwithin confined spaces in the body

**11**. What is the scientific name of human beings?

**ANS**: Homo sapiens

**12**. Which phylum does a cockroach belong?

**ANS**: Arthropod

**13.** Name two organs that form the Central Nervous system.

**ANS**: Brain and spinal cord

**14**. Name the pigment which gives the skin of humans its colour

**ANS**: Melanin

**15.** The position of a gene on a chromosome is called\_\_\_\_\_\_\_\_\_

**ANS**: Gene locus

**16.** What is the name of a nerve which connects the eye to thebrain?

**ANS**: Optic nerve

**17.** Name the two roots which the neurone takes up in the spinalcord.

**ANS**: Dorsal root and Ventral Root.

**18**. Name a membrane bound cell organelle which is refered to asa ‘power house’.

**ANS**: Mitochondria

**19.** What name is given to a blood vessel that leads blood fromthe artery to the v**ein?**

**ANS**: Capillary.

**20**. Name the component of blood that is responsible for bloodclotting

**ANS**: Blood platelets

**21**. Which blood vessel transports blood from the liver to the venacava?

**ANS:** Hepatic vein.

**22**. Name the membrane which surrounds the cell sap in a plant

cell.

**ANS:** Tonoplast

**23**. When a plant has small yellowish leaves, what element does itlack?

**ANS**: Nitrogen

**24**. What process reduces the percentage of carbon dioxide in theatmosphere?

**ANS**: Photosynthesis

**25**. What is the role of sunlight in photosynthesis?

**ANS**: To split water into oxygen and hydrogen.

**26**. What name is given to the first shoot that emerges from theseed?

**ANS**: plumule

**27**. Name the process by which the green plants manufacture itsown food.

**ANS**: Photosynthesis

**28**. Which part of the eye contains the light sensitive rods andcones?

**ANS**: Retina

**29**. What instrument is used to measure root pressure?

**ANS:** Manometer

**30**. What name is given to the direct flow of sap from the injuredpart of the plant body?

**ANS**: Bleeding

**31**. What do you call the amount of air that can be exchangedduring normal breathing in and out?

**ANS**: Vital capacity

**32**. In a human body blood flows from lungs to the heart, from the heartto the rest of the body and back to the heart. This system ofblood flow is called ---------

**ANS**: Double circulation

**33.** Name one organelle found in the cell were respiration takes place

**ANS**: Mitochondria

**34.** What term is used to describe an organism made up of more than onecell?

**ANS**: Multicellular organism

**35**. What name is given to the largest artery in a mammal?

**ANS**: Aorta

**36.** What do you call the thinnest blood vessels in a human body?

**ANS**: Capillary

**37**. Name two phases of photosynthesis

**ANS**: Light dependent and light independent

**38**. What name is given to the male sex cell of a plant?

**ANS**: Pollen

**39**. Name the type of respiration were glucose is completely oxidized towater and carbon dioxide.

**ANS**: Aerobic respiration

**40**. Which part of a plant cell is made up of cellulose?

**ANS**: Cell wall

**41**. Name the part of a plant cell which is fully permeable

**ANS**: Cell wall

**42**. What is the function of chloroplast during photosynthesis?

**ANS**: Light energy (Rejectrespiration)

**43**. What do we call the pregnancy which takes place in the fallopiantube?

**ANS**: Ectopic pregnancy.

**44**. A thousand Chain of genes is called.

**ANS**: Chromosomes

**JETS PHYSICS JUNIOR QUIZ**

**1**. What physical quantity describes the rate of change of displacement with time?

**ANS**: Velocity

**2**. Two bulbs each of resistance 2Ω are connected in series. If the total voltage across the bulbs is 7.2V, calculate the current through the circuit?

**ANS**; 1.8A

**3**. What makes the filament of the bulb white hot when it’s working?

**ANS**: High Resistance

**4.** What do we call a pair of equal but opposite forces that are not acting through the same point?

**ANS:** Couple

**5**. The energy contained by a bag due to its position above the ground is called?

**ANS**: Gravitational potential Energy

**6.** What is the S.I unit for Loudness of sound?

**ANS**: Decibels

**7.** What is the acceleration of a car of mass 1000kg moving at a constant velocity?

of 40m/s?

**ANS**: Zero

**8.** What do we call the radiation that comes from Space?

**ANS**: Cosmic Radiation

**9**. Which theory assumes that matter is in a constant random motion?

**ANS**: Kinetic Theory of matter

**10.** Name the three basic physical Quantities?

**ANS**: Mass, Length and Time

**11**. A boy wants to measure the thickness of a plain paper. What instrument should

he use? (One attempt)

**ANS**: Micrometre Screw Gauge

**12**. What is referred to as “the Ratio of mass of any Volume of a substance to the mass of an equal Volume of water?

 **ANS**: Relative Density

**13**. A man walks 7km east stops and then walks 5km west. What is his

Displacement?

**ANS**: 2km East

**14**. A tank 3m long, 1m wide and 0.5m deep is filled with oil which weighs 12000n.

What is the pressure on the base of the tank due to the oil?

**ANS**: 400pa

**15**. What type of energy is released when Atoms regroup?

 **ANS**: Chemical/ fuel

energy

**16**. A cube with sides 2cm long is made from a material of density 8g/cm3.What is

the mass of the cube?

**ANS**: 64g

**17**. What is the name given to the unit Kgm/s2?

**ANS**: Newton

**18**. What is a Pipette used to measure?

**ANS**: Fixed Volume of a liquid

**19**. What value of resistance could you obtain if you were supplied with three cells

each of resistance 2Ω when they are connected in series?

**ANS: 6Ω**

**20**. What name is given to the ratio of speed of light in air ton that in another

material?

**ANS**: Refractive Index

**21**. The splitting of white light into its component colours is known as \_\_\_\_\_\_\_\_\_\_\_\_\_\_

**ANS**: Dispersion

**22**. Which property of waves explains why you hear your voice after shouting in a

big building?

**ANS**: Reflection of Sound

**23**. Which instrument is mostly used in the laboratory when studying Sound waves?

**ANS**: Tunning Folk

**24**. Why is it that shiny smooth surface are able to produce a clear sharp image

than rough surfaces?

**ANS**: It’s due to regular reflection which occurs on surfaces which are smooth

**25**. In which medium would you expect the speed of light to be greater: inair, or in a

Vacuum? (one attempt)

**ANS**: It is the same

**26**. When you look into the mirror, your left hand appears to be the right hand while

the right appears to be the left hand. This property is referred to as

**ANS**: Lateral Inversion

**27**. A lightening thunder is heard 6s after the flash of light is seen. If the speed

of sound in air is 340m/s how far is the lightening from the observer?

**ANS**; 2040m

**28**. When a stone of mass 40g was lowered into a measuring cylinder containing

30cm3of water, the level of water rose to 100cm3.What is the volume of the stone?

**ANS**: 70cm3

**29**. What is reduced by the step down transformer?

 **ANS**: Voltage

**30**. The property of mass which resists motion is referred to as\_\_\_\_\_\_\_\_\_\_\_\_

**ANS**: Inertia

**31**. When brakes are used to stop the car, Name the type of energy into which most of the Kinetic energy is converted?

 **ANS**: heat energy

**32**. The process by which energy from the sun reaches the earth is\_\_\_\_\_\_\_\_\_\_

**ANS**: Radiation

**33**. Name one property of an object that does not change by the application of

Force?

 **ANS**: Mass

**34**. State the S.I unit of measurement for Electric Resistance.?

 **ANS**: Ohm

**35**. What name is given to a device that protects an electrical appliance from damage when the current flowing through the circuit exceeds a certain value?

**ANS**: Fuse

**36**. How is a Voltmeter, connected in an electrical circuit?

**ANS:** In parallel across a resistor.

**37**. A 20g stone is lowered into a beaker containing 50cm3 of water .What is the

density of the stone if the Volume of water in the beaker is now 75cm3?

**ANS**:0.8g/cm3

**38**. Name two processes that take place simultaneously at the point where the

incident ray of white light strikes the side of a glass prism? ANS: Dispersion &

Refraction

**39**. An electric kettle is rated 250V, 1000W. What is the resistance of the kettle in

Ohms?

**ANS:** 62.5 Ohms

**40**. Name the test for Magnetism?

**ANS**: Repulsion

**41**. What invisible rays come immediately after RED in an electromagnetic

spectrum?

**ANS**: Infra-red Rays

**42**. Carbon Dioxide and Iodine are said to exist in two states only. What name is

given to such substances? ANS: Sublimates

**43.** The rate of change of Velocity is known as\_\_\_\_\_\_\_\_\_\_\_\_

**ANS**: Acceleration

**44**. What is the name of physical quantities that require both magnitude and

direction to specify them?

ANS: Vector Quantities

1. A pull or push acting on an object is known as\_\_\_\_\_\_\_\_\_\_\_\_

 **ANS**: A Force