10.10 SCIENCE

THE KENYA NATIONAL EXAMINATIONS COUNCIL

KCPE 2016

SCIENCE

Time: 1 hour 40 minutes

INSTRUCTIONS TO CANDIDATES (Please read these instructions carefully)

1. You have been given this question booklet and a separate answer sheet. The question booklet contains 50 questions.
2. When you have chosen your answer, mark it on the ANSWER SHEET, not in this question booklet.

HOW TO USE THE ANSWER SHEET

3. Use an ordinary pencil.
4. Make sure you have written on the answer sheet:
   YOUR INDEX NUMBER
   YOUR NAME
   NAME OF YOUR SCHOOL

5. By drawing a dark line inside the correct numbered boxes, mark your full Index Number (i.e. School Code Number and the three-figure Candidate's Number) in the grid near the top of the answer sheet.
6. Do not make any marks outside the boxes.
7. Keep the sheet as clean as possible and do not fold it.
8. For each of the questions 1-50, four answers are given. The answers are lettered A, B, C and D. In each case only ONE of the four answers is correct. Choose the correct answer.
9. On the answer sheet the correct answer is to be shown by drawing a dark line inside the box in which the letter you have chosen is written.

Example:
In the Question Booklet

4. Some curative drugs are also called
   A. painkillers
   B. vaccines
   C. stimulants
   D. antibiotics
   The correct answer is “D”.

On the answer sheet:

<table>
<thead>
<tr>
<th></th>
<th>[A]</th>
<th>[B]</th>
<th>[C]</th>
<th>[D]</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In the set of boxes numbered 4, the box with the letter D printed in it is marked.

10. Your dark line MUST be within the box.
11. For each question ONLY ONE box is to be marked in each set of four boxes.

This question paper consists of 7 printed pages and 1 blank page.
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1. Which one of the following characteristics can be used to identify molars? Presence of
   A. one root and chisel shape
   B. cusps and ridges
   C. one root and cusps
   D. ridges and chisel shape.

2. The following are functions of the trachea except
   A. trapping dust
   B. moistening air
   C. warming air
   D. exchanging gases.

3. Which one of the following parts of the alimentary canal is correctly matched to its function?
   \[ \begin{array}{ll}
   \text{Part} & \text{Function} \\
   A. Mouth & \text{digestion of food} \\
   B. Stomach & \text{production of bile} \\
   C. Small intestine & \text{absorption of water} \\
   D. Large intestine & \text{absorption of digested food} \\
   \end{array} \]

4. The diagram below represents the structure of a human heart.

5. The diagram below represents a female reproductive system.

6. Which one of the following is a health effect of drug abuse?
   A. Withdrawal.
   B. Marital conflict.
   C. Truancy.
   D. Rape.

7. The first stage of HIV infection is known as
   A. incubation
   B. window
   C. symptomatic
   D. asymptomatic.

Name the blood vessel labelled K, L, M and N.

\[ \begin{array}{llll}
\text{K} & \text{L} & \text{M} & \text{N} \\
A. & \text{Venacava} & \text{Pulmonary vein} & \text{Aorta} & \text{Pulmonary artery} \\
B. & \text{Pulmonary artery} & \text{Aorta} & \text{Pulmonary vein} & \text{Venacava} \\
C. & \text{Venacava} & \text{Pulmonary artery} & \text{Aorta} & \text{Pulmonary vein} \\
D. & \text{Pulmonary vein} & \text{Venacava} & \text{Pulmonary artery} & \text{Aorta} \\
\end{array} \]
8. Which one of the following vaccines are correctly matched to the age when they are first administered?

<table>
<thead>
<tr>
<th>BCG</th>
<th>Tetanus</th>
<th>Polio</th>
<th>Measles</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. At birth</td>
<td>10 weeks</td>
<td>6 weeks</td>
<td>9 months</td>
</tr>
<tr>
<td>B. 6 weeks</td>
<td>At birth</td>
<td>At birth</td>
<td>10 weeks</td>
</tr>
<tr>
<td>C. 10 weeks</td>
<td>9 months</td>
<td>10 weeks</td>
<td>At birth</td>
</tr>
<tr>
<td>D. At birth</td>
<td>6 weeks</td>
<td>At birth</td>
<td>9 months</td>
</tr>
</tbody>
</table>

9. Which one of the following diseases can be prevented by draining stagnant water around homesteads?
A. Tuberculosis.
B. Typhoid.
C. Cholera.
D. Malaria.

10. A patient was instructed by a doctor to take two tablets of medicine every six hours. However, the patient forgot to take at noon and on remembering took four tablets at the same time. The patient should have
A. taken three tablets every six hours
B. taken two tablets every three hours
C. revisited the doctor for advice
D. thrown away the two extra tablets.

11. Which one of the following pairs consists only of illegal drugs in Kenya?
A. Alcohol and miraa.
B. Miraa and mandrax.
C. Alcohol and bhang.
D. Bhang and mandrax.

12. Which one of the following weeds has green-purple leaves?
A. Mexican marigold.
B. Black jack.
C. Pig weed.
D. Sodom apple.

13. Which one of the following pairs of plants stores food in the roots?
A. Irish potato and cassava.
B. Cassava and carrot.
C. Onion and carrot.
D. Irish potato and onion.

14. Which one of the following statements on interdependence between plants is not true? Some plants
A. depend on others for carbon dioxide
B. grow on dead plants
C. depend on others for protection against strong sunlight
D. depend on others for support.

15. Which one of the following crop pests is correctly matched to the part of the plant it damages?

<table>
<thead>
<tr>
<th>Pest</th>
<th>Part damaged</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Weevil</td>
<td>leaves.</td>
</tr>
<tr>
<td>B. Cutworm</td>
<td>stems.</td>
</tr>
<tr>
<td>C. Stalk borer</td>
<td>flowers.</td>
</tr>
<tr>
<td>D. Aphids</td>
<td>roots.</td>
</tr>
</tbody>
</table>

16. Which one of the following groups of plants consists of only flowering plants?
A. Onion, sisal, napier grass.
B. Maize, kales, toadstools.
C. Beans, mushrooms, peas.
D. Euphorbia, cactus, moulds.
17. Which one of the following diagrams represents the shape of the new moon?

A.  [Diagram]
B.  [Diagram]
C.  [Diagram]
D.  [Diagram]

18. In the solar system, Jupiter is found between
A. Mercury and Saturn.
B. Mars and Earth.
C. Saturn and Mars.
D. Earth and Mercury.

19. Pupils observed and classified certain animals into two groups E and F as shown below?

Group E  Group F
Bat        Chameleon
Eagle      Frog
Leopard    Snake
The pupils classified the animals on basis of
A. carnivorous and herbivorous
B. animals covered with fur and animals covered with scales
C. constant and varying body temperature
D. animals which give birth to young ones and those which lay eggs.

20. Standard five pupils observed a goat tied on a post to graze in the field. This method of grazing is classified as
A. rotational grazing
B. zero grazing
C. strip grazing
D. paddocking.

21. The diagrams below represents beaks of certain birds.

G  [Diagram]
H  [Diagram]
The birds whose beaks are represented by G and H are
Bird G  Bird H
A. grain eater  flesh eater
B. nectar feeder  filter feeder
C. flesh eater  grain eater
D. filter feeder  nectar feeder

22. Which one of the following methods of controlling animal parasites is correctly matched to the parasite controlled?

Method  Parasite controlled
A. Rotational Grazing  Ticks and tapeworms
B. Dipping  Fleas and tapeworms
C. Deworming  Liver flukes and ticks
D. Spraying  Fleas and liver flukes

23. Pupils gave the following statements about water.
(i) Lathers easily
(ii) Has a pleasant taste
(iii) Has mineral salts
(iv) Good for cleaning
Which two statements describe hard water?
A. (i) and (ii)
B. (ii) and (iii)
C. (iii) and (iv)
D. (i) and (iv)
24. Which one of the following pairs of diseases is as a result of drinking polluted water?
   A. Bilharzia and typhoid.
   B. Typhoid and cholera.
   C. Cholera and bilharzia.
   D. Malaria and cholera.

25. In which one of the following practices is water recycled?
   A. Storing water for future use.
   B. Recovering clean water from dirty water.
   C. Harvesting rain water from roof tops.
   D. Fetching water from a well.

26. Which one of the following pairs of signs and symptoms is for cholera?
   A. Skin rash and diarrhoea.
   B. Blood in stool and abdominal pains.
   C. Abdominal pain and diarrhoea.
   D. Skin rash and blood in stool.

27. Large furrows in the soil indicate
   A. rill erosion
   B. gully erosion
   C. splash erosion
   D. sheet erosion.

28. Which one of the following statements is true about clay soil?
   A. Has small air spaces.
   B. Retains low amount of water.
   C. Allows water to drain through easily.
   D. Has large soil particles.

29. Which one of the following soil conservation measures conserves soil in the same way as mulching?
   A. Planting cover crops.
   B. Contour farming.
   C. Use of gabions.
   D. Terracing.

30. The following statements are true about breast milk except
   A. it cannot transmit diseases
   B. it allows the mother and the baby to bond
   C. its available in the correct form and at right temperature
   D. its easier for infants to digest.

31. A child who appears old with a wrinkled face is also likely to
   A. lack blood
   B. have swollen abdomen
   C. have bow legs
   D. cry often.

32. Which one of the following groups consists only of foods that will provide energy to the body?
   A. Maize, rice, milk.
   B. Cassava, beans, fish.
   C. Ground nuts, coconut, sunflower.
   D. Meat, wheat, peas.

33. The diagram below illustrates a jiko.

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   J  K  L  M
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It is an improved jiko because the part labelled
   A. J takes less charcoal
   B. K is made of clay
   C. L is metallic
   D. M is closed.

34. Which one of the following sources of energy is exhaustible?
   A. Petroleum
   B. Wind
   C. Biogas
   D. Trees.
35. Which one of the following is an efficient way of using energy?
   A. Drying grain using solar.
   B. Using a vacuum flask to keep tea hot.
   C. Using biogas.
   D. Putting off wood fire when not in use.

36. The following can produce electricity except
   A. solar drier
   B. biogas
   C. torch battery
   D. dynamo.

37. A card with the word TEACHER written on it was placed in front of a mirror.
   Which three of the letters did not change in appearance?
   A. R, A and C.
   B. T, A and H.
   C. H, E and R.
   D. C, H and T.

38. Which one of the following materials works in the same way as frosted glass?
   A. Sky light.
   B. Mirror.
   C. Clear water.
   D. Car windscreen.

39. The property of light used in the working of a lamp in a room is that light
   A. travels in a straight line
   B. spreads in all directions
   C. bends as it passes from one media to another
   D. forms shadows with opaque objects.

40. In which one of the following processes is carbon dioxide used?
   A. Making electric bulbs.
   B. Burning substances.
   C. Fixing soil nutrients.
   D. Preserving soft drinks.

41. After using a magnet, the next stage of separating a mixture of salt, sand and iron fillings is to
   A. filter the mixture
   B. decant the mixture
   C. add water to the mixture
   D. sieve the mixture.

42. The diagram below shows a set up used by pupils to demonstrate a certain property of matter.
   The mistake made in the set up was to
   A. use balls of wax of the same size
   B. place balls of wax at equal intervals
   C. use a plank of wood
   D. place the candle at the end of the plank of wood.

43. Which one of the following groups of materials are correctly matched to magnetic and non magnetic?
   **Magnetic**
   A. Office pins
   B. Staples
   C. Aluminium foil
   D. Silver coin

   **Non magnetic**
   A. Steel wool
   B. Copper coin
   C. Nails
   D. Glass

44. Which one of the following machines works in the same way as a staircase?
   A. Spade.
   B. Claw hammer.
   C. Crowbar.
   D. Ladder.
45. Which one of the following practices will help to control soil pollution?
   A. Burning wastes in dump sites.
   B. Using organic fertilisers.
   C. Grouping wastes into categories.
   D. Planting cover crops.

46. Which one of the following pairs correctly represents living and non-living components of the environment?
   Living: A. Soil  B. Chameleon  C. Earthworm  D. Oxygen
   Non-living: bat.  mushroom plant.  water.  mineral salts.

47. The following are some ways by which soil is conserved.
   (i) Reducing speed of surface runoff
   (ii) Trapping soil
   (iii) Reducing evaporation of soil water
   (iv) Reducing impact of rain drops.
   Which two ways are as result of contour farming?
   A. (i) and (ii)
   B. (ii) and (iii)
   C. (iii) and (iv)
   D. (i) and (iv)

49. The diagram below represents a lever in use.

If the lever is to make work easier, which one of the following will correctly represent the position of load, fulcrum and effort?

<table>
<thead>
<tr>
<th>Load</th>
<th>Fulcrum</th>
<th>Effort</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.</td>
<td>X</td>
<td>Y</td>
</tr>
<tr>
<td>B.</td>
<td>Z</td>
<td>Y</td>
</tr>
<tr>
<td>C.</td>
<td>Y</td>
<td>Z</td>
</tr>
<tr>
<td>D.</td>
<td>Z</td>
<td>X</td>
</tr>
</tbody>
</table>

50. In which one of the following is friction reduced by streamlining?
   A. Biro pen casing.
   B. Skating shoes.
   C. Shoe soles.
   D. Vehicle bodies.