

# PRIMARY SCIENCE

KCPE MODEL TEST PAPER ON ENERGY

*Based on KCPE 2001-2010 Past Papers*

Retrieved from the Book:

Primary Science Series: Revision Guide for Standards 6, 7 and 8

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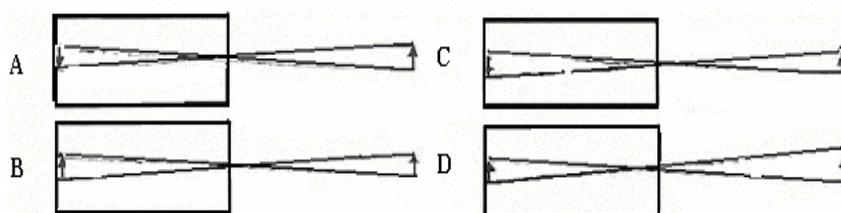
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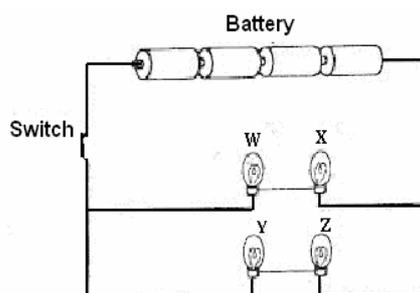
1. Which of the following DOES NOT have chemical energy?

- A. Lemon
- B. Kerosene
- C. Charcoal
- D. Dynamo

2. The Shown diagrams were drawn by different groups of pupils to show how images are formed in a pinhole camera. Which one is CORRECTLY drawn?



3. The diagram below represents a circuit with four bulbs labeled W, X, Y and Z. what would happen to bulb X, Y, and Z if W is removed?

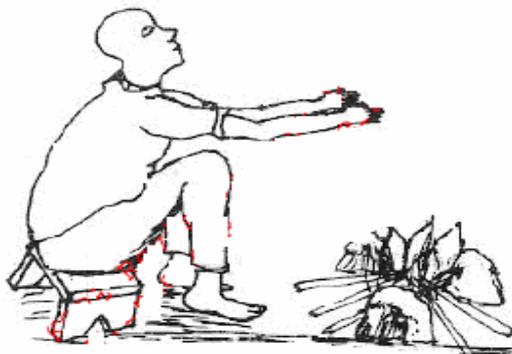


- A. X, T and Z would become dim
- B. X, Y and Z would go off
- C. X would go off, Y and Z would become brighter
- D. X would become dim, Y and Z would become brighter

4. Which of the following is a chemical change?

- A. Melting of candle wax
- B. Rusting of iron nails
- C. Evaporating spirit
- D. Water changing to ice

5. The diagram below represents a person warming by fire.



Which one of the following shows how heat reaches hands and feet?

- |    | Hands      | Feet       |
|----|------------|------------|
| A. | Convection | Radiation  |
| B. | Radiation  | Conduction |
| C. | Conduction | Convection |
| D. | Radiation  | Convection |

6. In a geothermal power station, steam is lead through pipes to generate a form of energy which enables people to see. The energy transformation involved are?

- A. **Chemical → electrical → mechanical → heat → light**
- B. **Heat → mechanical → electrical → heat → light**
- C. **Heat → chemical → mechanical → light → heat**
- D. **Chemical → electrical → mechanical → light → heat**

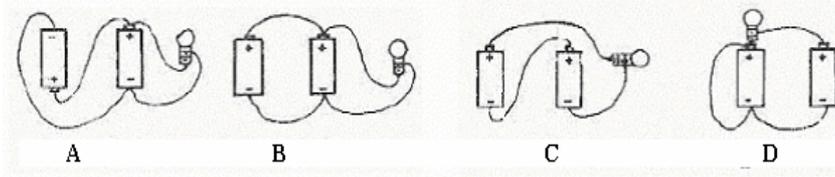
7. Which of the following occurs when rays of light pass from air into water?

- A. Reflection
- B. Dispersion
- C. Refraction
- D. Absorption

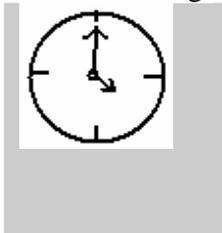
8. Which one of the following factors DOES NOT affect how high or low sound produced by stringed instrument is?

- A. Length of the string
- B. Thickness of the string
- C. Tightness of the string
- D. Force used to pluck the string

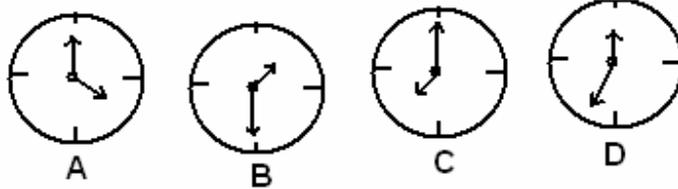
9. In which of the following would bulb light brightest?



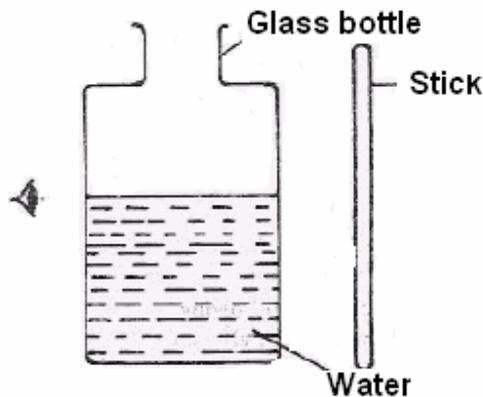
10. A pupil standing in front of a mirror observed image of a clock on the wall behind him. The image of the clock appeared as shown in the diagram below.



Which one of the following diagrams shows the real time on the clock?



11. A stick was placed behind a bottle half filled with water as shown in the diagram below.



The part of the stick below the level of the water appeared to be larger than the part above level of water because rays of light were

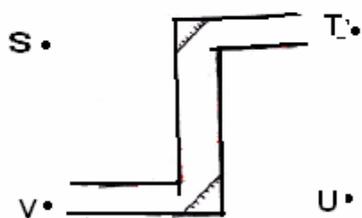
- A. Absorbed
- B. Refracted
- C. Dispersed
- D. Reflected

12. Which one of the following ways of producing light involves energy changes from chemical to electrical and lastly to heat and light?

Using a

- A. Bicycle
- B. Hydroelectric generator
- C. Solar system
- D. Torch

13. Below represents a periscope and the position of the image at point V.



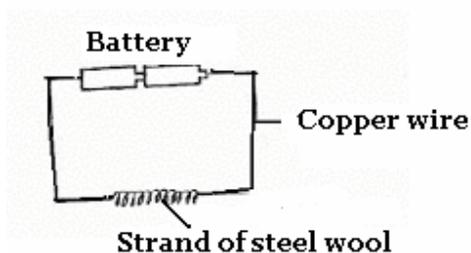
The correct is at position?

- A. S
- B. T
- C. U
- D. V

14. If the hole in a pin hole camera is widened. The image

- A. Becomes blurred
- B. Becomes larger
- C. Is upright
- D. Is not formed on the screen

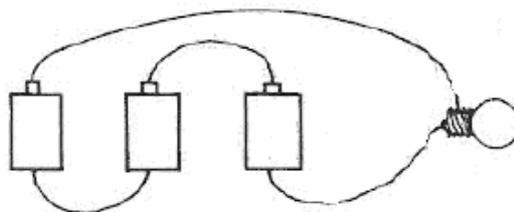
15. The diagram below represents a set up that can be used to demonstrate a certain effect of electricity.



The effect demonstrated is made use of in making

- A. Electromagnets
- B. Light bulbs
- C. Switches
- D. Conductors

16. The diagram below represents a circuit. Which is true about the circuit?

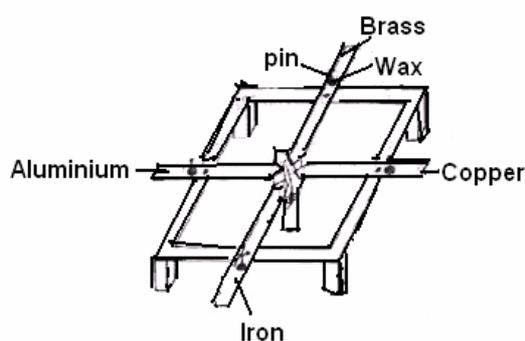


- A. The bulb uses power from the three cells
- B. The bulb uses power from one cell
- C. The cells are connected in series
- D. The cells are connected in parallel

17. Which of the following pairs consists of renewable sources of energy?

- A. Firewood and kerosene
- B. Water falls and petrol
- C. Biogas and charcoal
- D. Wind and coal

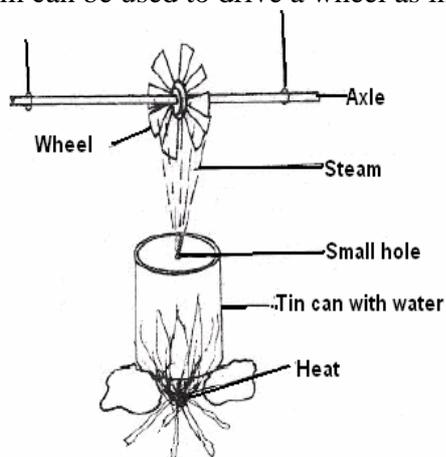
18. The SHOWN diagram represents a set up used by pupils to compare the rate at which heat is conducted in metals.



Pupils made wrong conclusions if they used

- A. Metals of different thickness
- B. Metals of different length
- C. Different types of pins
- D. Different types of metals

19. Steam can be used to drive a wheel as in the set up shown in the diagram below.



Which of the following CANNOT increase the speed of the rotating wheel?

- A. Using blades from lighter material
- B. Increasing the size of blades
- C. Increasing the size of the small holes
- D. Increasing the amount of heat

20. Which one of the following pairs of forms of energy can be transformed only when there is a medium?

- A. Heat and light
- B. Sound and electricity
- C. Sound and light
- D. Heat and electricity

21. Which one of the following sources of energy is non-renewable?

- A. Kerosene
- B. Firewood

- C. Solar
- D. Biogas

22. Which one of the following sources of energy is renewable?

- A. Kerosene
- B. Biogas from cow dung
- C. Coal
- D. Cooking gas from crude oil

23. Which one of the following is the MAIN reason why the inside of a solar drier is painted black?

- A. To prevent rusting
- B. To make it last longer
- C. To make it absorb heat
- D. To decorate it

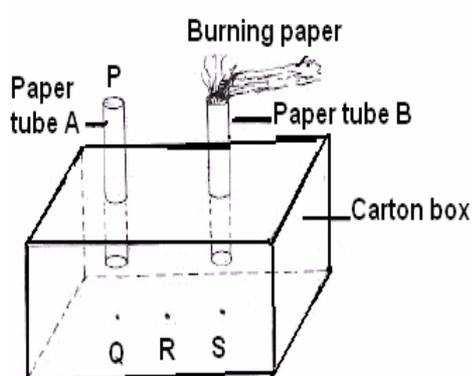
24. Below is an energy transformation.

Chemical Energy  $\longrightarrow$  Electrical Energy  $\longrightarrow$  Heat Energy  $\longrightarrow$  Light Energy

In which of the following does the energy transformation shown take place when used to produce light?

- A. Geothermal
- B. Car battery
- C. Electric bulb
- D. Bicycle dynamo

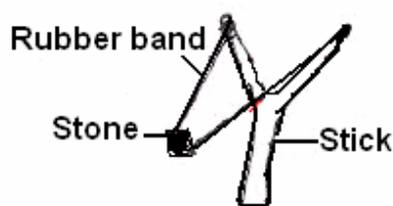
25. The diagram below represents a set up that can be used to demonstrate heat transfer in air.



For the demonstration to work the candle must be placed at

- A. P
- B. Q
- C. R
- D. S

26. The diagram below shows a stone being thrown using a catapult.



The form of energy on the rubber before the stone is released is

- A. Kinetic
- B. Potential
- C. Chemical
- D. Sound

27. Which one of the following is CORRECT about a solar heater?

A solar heater changes

- A. Heat energy → chemical energy
- B. Light energy → electrical energy
- C. Kinetic energy → heat energy
- D. Light energy → heat energy

28. Which of the following energy transformation takes place when a radio that uses cells is operating?

- A. Chemical → electrical → magnetic → kinetic → sound
- B. electrical → chemical → kinetic → magnetic → sound
- C. Kinetic → chemical → electrical → magnetic → sound
- D. Magnetic → electrical → kinetic → chemical → sound

29. Which of the following sources of energy DOES NOT contain chemical energy?

- A. Car battery
- B. Bicycle dynamo
- C. Food
- D. Fire wood

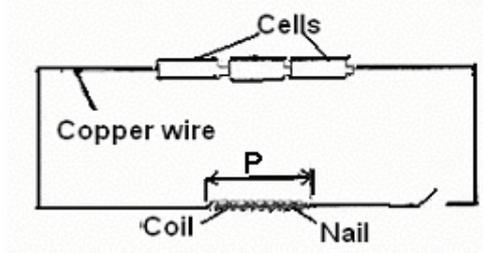
30. Heat reaches the feet of seated person by the side of the fire by

- A. Conduction
- B. Radiation only
- C. Convection only
- D. Radiation and convection

31. The reason why an ordinary *jiko* without a clay lining is not recommended for use is because

- A. It pollutes the environment
- B. Of the large amount of charcoal used
- C. It takes long time when cooking
- D. It gets too hot to hold

32. The diagram below represents a circuit that can be used to make a temporary magnet.



The energy transformation that occurs on the section marked P is?

- A. Electrical to Magnetic
- B. Chemical to Electrical
- C. Heat to Electricity
- D. Chemical to Magnetic

33. The diagram below represents a circuit that can be used to make a temporary magnet. The following are forms of energy:

- i. Heat
- ii. Electricity
- iii. Light
- iv. Sound

The two forms of energy that DO NOT require a medium for transmission are

- A. (ii) and (iv)
- B. (i) and (iii)
- C. (i) and (ii)
- D. (iii) and (iv)

34. The following practice help to conserve energy.

- i. Using improved firewood jikos
- ii. Switching off lights that use hydroelectric power when not needed
- iii. Using public transport whenever possible
- iv. Using biogas for cooking

Which two practices concern non-renewable sources of energy?

- A. (i) and (ii)
- B. (ii) and (iii)
- C. (ii) and (iv)
- D. (iii) and (iv)

35. Which of the following is a recommended practice to avoid being struck by lightning?

- A. Sheltering under a tree
- B. Using an umbrella in an open field
- C. Sheltering while leaning on a wall
- D. Wearing rubber shoes with thick soles

36. Which of the following DOES NOT function the same as a bicycle dynamo when used to produce electricity?

- A. Hydro electric generator
- B. Car battery
- C. Diesel generator
- D. Wind driven turbines

37. Which of the following consist of materials of only materials that are ALL non-magnetic?

- A. Aluminium foil, a shilling coin
- B. Iron nails, staple pins
- C. Metal scissors, steel wool
- D. Piece of glass, sewing needle

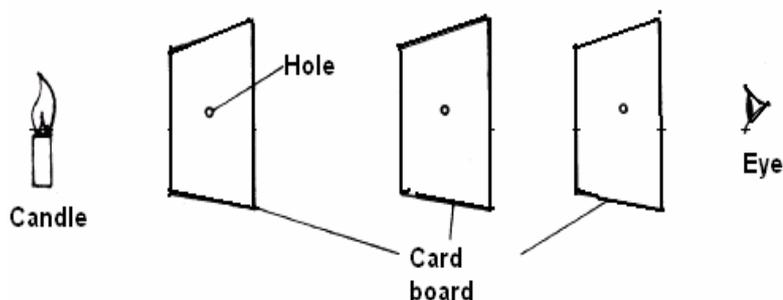
38. Which of the following consists of magnetic materials only?

- A. Tin, aluminium, copper
- B. Iron, steel, cobalt
- C. Tin, iron, copper
- D. Aluminium, steel, cobalt

39. Which of the following DOES NOT produce electricity?

- A. Bicycle dynamo
- B. Batteries
- C. Water dams
- D. Solar panels

40. The diagram below represents a set up that is used to investigate a certain property of light.



The property investigated is that light

- A. Is refracted
- B. Travels in a straight line
- C. Is dispersed
- D. Does not pass through opaque materials

41. Which one of the following groups of sources of energy consists of only renewable sources?

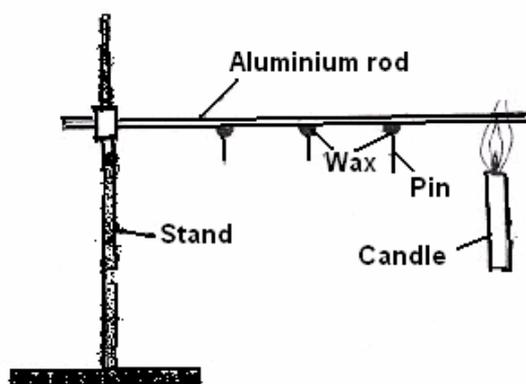
- A. Firewood
- B. Wind, charcoal, biogas
- C. Diesel, waterfalls, wind

D. Biogas, kerosene, firewood

42. Which one of the following is NOT a reason for lighting a house?

- A. For safety purposes
- B. To discourage pests
- C. To feel warm
- D. To read comfortably

43. The diagram below represents a set up that can be used to demonstrate a certain aspect of heat.



The aspect demonstrated is that

- A. Solids melt when heated
- B. Metals expand when heated
- C. Solids conduct heat
- D. Metals bend when heated

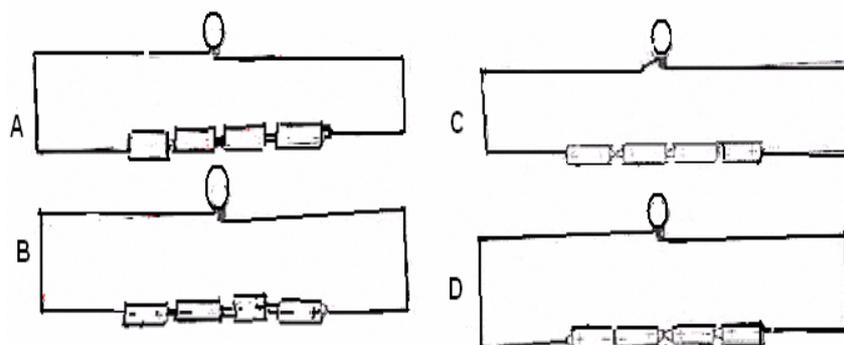
44. Which of the following materials allows light to pass but one cannot see through it clearly?

- A. Toilet glass window pane
- B. Mirror
- C. Clean water
- D. Iron sheet

45. Which of the following DOES NOT explain why an improved jiko conserves energy? It has

- A. Cone shape
- B. Walls made of clay
- C. A small space for holding charcoal
- D. An outer cover made of metal

46. Which one of the following circuit diagrams will the bulb not light?



47. Which one of the following pairs consists only of materials that are non-magnetic?

- A. Copper and aluminium
- B. Steel and zinc
- C. Silver and steel
- D. Iron and aluminium

48. The following are activities involved in demonstrating that light travels in a straight line.

- i. Light a candle and place it at the opposite end of the cardboard
- ii. Thread a string through the holes
- iii. Observe the candle through the holes
- iv. Make a hole at same level in the three cardboards
- v. Cut three similar squares of cardboard and fix each cardboard to a piece of wood.

Which of the following is the correct order of the activities?

- A. (v), (i), (iv), (ii), (ii)
- B. (v), (iv), (ii), (i), (iii)
- C. (v), (i), (iv), (ii), (iii)
- D. (v), (iii), (iv), (i), (i)

49. Which of the following is true about heat transfer by convection? It takes place in

- A. Solids only
- B. Liquids and gases only
- C. Gases only
- D. Solids and gases

50. Force is measured in?

- A. Grams
- B. Grams per cubic centimeters
- C. Cubic centimeters
- D. Newtons

51. After the incubation period, the chick comes out of shell by?
- The mother cracking the shell to open using its beak
  - Cracking the shell to open using its beak
  - Growing bigger then force the shell to break
  - The shell cracking by its own
52. Which of the following DOES NOT increase the strength of an electromagnet?  
Increasing the
- Number of coils
  - Amount of current
  - Size of soft iron
  - Length of connecting wire
53. A change in force of gravity on an object will change its?
- Mass
  - Weight
  - Volume
  - Pressure
54. If the size of the hole of pin-hole camera increases, the image formed is?
- Enlarged
  - Blurred
  - Upright
  - Not real
55. A stone at the bottom of a pond appears to be near the surface due to?
- Refraction
  - Dispersion
  - Defraction
  - Reflection
56. Which of the following shows the correct order of the parts in the human eye through which light passes?
- Cornea → pupil → lens → retina
  - Pupil → lens → cornea → retina
  - Pupils → cornea → lens → retina
  - Cornea → lens → pupil → retina
57. Coins are arranged in a pile as shown in the diagram below.
- 
- When the coin at the bottom was knocked out suddenly using a ruler, it moved out leaving the pile intact. The pile remained intact because of?
- Friction
  - Gravity
  - Inertia
  - Weight

58. The image of a pin-hole camera is?

- A. Upright and smaller than the object
- B. Upside down and formed on the screen
- C. Upside down and same as object
- D. Upright and formed on the screen

59. When an object is thrown up in the air it falls because it?

- A. Is pulled by the earth
- B. Exerts pressure
- C. Is raised by air
- D. Is as heavy as air

60. Which two of the following processes involve loss of heat to the surrounding?

- A. Melting and freezing
  - B. Evaporation and condensation
  - C. Freezing and condensation
  - D. Melting and evaporation
-

## **ANSWERS**

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