

- Which one of the following processes enables us to see objects clearly?
 - Convection
 - Dispersion
 - Refraction
 - Reflection.
- Which of the following objects will **not** form a shadow?
 - Black plastic bottle.
 - A coin.
 - Clear polythene paper.
 - Frosted glass.
- The following are safety measures when dealing with electricity.
 - Avoid touching naked sockets with wet hands.
 - Fit copper wire arrestors on tall buildings.
 - Avoid sheltering under trees when it is raining.
 - Don't overload the sockets.
 Which pair prevents a person from being struck by static electricity?
 - (i) and (ii)
 - (ii) and (iv)
 - (ii) and (iii)
 - (iii) and (iv).
- The **main** source of energy in the environment is
 - soil
 - sun
 - water
 - plants.

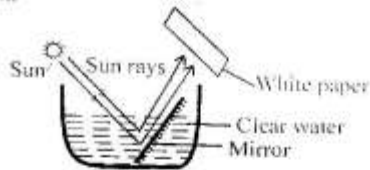
- The correct energy transformation in a burning charcoal jiko is
 - Chemical \rightarrow heat \rightarrow light.
 - Chemical \rightarrow kinetic \rightarrow heat.
 - Mechanical \rightarrow heat \rightarrow light.
 - Electrical \rightarrow chemical \rightarrow heat.

- The following are sources of energy.

(i) Solar	(iv) Kerosene
(ii) Coal	(v) Water
(iii) Wind	

 Which pair consists of renewable sources of energy?
 - (i) and (ii)
 - (ii) and (iii)
 - (iii) and (v)
 - (iv) and (v)

- The diagram below shows a set up that was used to investigate a certain property of light.



Which aspect of light was being investigated?

- How light travels.
 - Reflection of light.
 - Refraction of light.
 - Making a rainbow.
- The diagram below shows an improvised jiko.

 The purpose of the part labelled J is to
 - increase surface area of heating
 - prevent amount of heat loss by conduction
 - reduce surface area of heating
 - reduce amount of charcoal to be used.

9. Which one of the following methods can control both hookworms and mites?
- Spraying
 - Dipping
 - Deworming
 - Rotational grazing.
10. Which one of the following practices can reduce the pollution of air and water?
- Controlled use of farm chemicals.
 - Burying solid wastes.
 - Treatment of sewage.
 - Controlling soil erosion.
11. Which one of the following groups of animal feeds consists of body building feeds only?
- Dairy meal, maize stalk, napier grass.
 - Lucerne, desmodium, cloves.
 - Sweet potato vines, sorghum, salt licks.
 - Chick mash, lucerne, cloves.
12. Which one of the following levers has the effort in between the load and the fulcrum when in use?
- Wheelbarrow
 - Claw hammer
 - Crowbar
 - Spade.
13. Three of the following statements are true about the flag post **except**
- the effort moves the same distance as the load
 - the effort and the load are equal
 - the force applied is twice the load
 - the wheel reduces friction.
14. Which one of the following machines works the same way as the road winding uphill?
- Claw hammer
 - Flag post
 - Ladder
 - Crowbar.
15. Which of the following food chains is **correct**?
- Grass → antelope → zebra.
 - Sunflower → moth → rats.
 - Grass → grasshopper → cow.
 - Maize → rats → snakes.
16. Which of the following pairs consists of energy giving foods only?
- Oranges and butter.
 - Eggs and mutton.
 - Coconut and honey.
 - Pineapple and lemons.
17. The function of fibre in the diet is to help in
- food digestion
 - food absorption
 - preventing diarrhoea
 - removal of undigested materials.
18. Which one of the following statements is **true** about blood circulation in human beings?
- Pulmonary artery carries oxygenated blood.
 - Pulmonary vein carries deoxygenated blood.
 - Venacava is the smallest vessel in the body.
 - Aorta carries blood to all parts of the body.
19. The human teeth that are shaped like small chisels with sharp edges are used for
- cutting
 - grasping
 - tearing
 - grinding.

Turn over

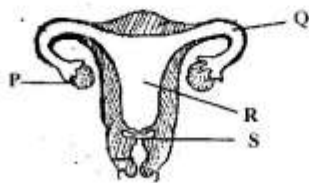
Signal Sparks 2022

20. Ali took ugali and meat for lunch. Digestion of the meat took place in the
- mouth
 - stomach
 - duodenum
 - ileum.

21. Which one of the following lists consists of small animals that have similar characteristics?
- Mites, spiders, ticks.
 - Ant, butterfly, flea.
 - Beetle, lice, mosquito.
 - Scorpion, wasps, termites.

22. The following are characteristics of big animals.
- Have scales.
 - Lay eggs.
 - Body is covered with hair.
 - Have constant body temperature.
 - Partially lives in water and on land.
- Which pair of characteristics belong to bat?
- (ii) and (iv)
 - (i) and (iii)
 - (iii) and (iv)
 - (iv) and (v)

23. The diagram below shows parts of a female reproductive organ.



In which part does fertilization take place?

- P
- Q
- R
- S

24. When breathing in, the
- diaphragm becomes domeshaped
 - lung cavity decreases
 - rib cage moves upward
 - ribcage moves downward.

25. The diagram below shows a beak of a certain bird.



This bird feeds on

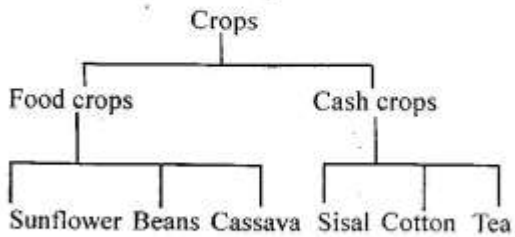
- nectar
 - chicken
 - grains
 - fish.
26. A planet that is seen within a few hours after sunset or before sunrise is also the
- brightest planet in the solar system
 - planet with many moons
 - planet with reddish colour
 - planet with a beautiful ring.

27. The following are characteristics of flowers.
- Have scent smell.
 - Produce a lot of pollen grains.
 - Have short sticky stigma.
 - Have small dull petals.
- Which pair of characteristics are for a wind pollinated flower?
- (i) and (ii)
 - (iv) and (v)
 - (ii) and (iii)
 - (i) and (iv).

28. Which one of the following plants is non green non-flowering?

- A. Liverwort
- B. Toadstool
- C. Moss
- D. Lichen.

29. The chart below shows a simple classification of crops.



Which crops were **wrongly** classified?

- A. Cotton and sisal.
 - B. Beans and cassava.
 - C. Tea and sisal.
 - D. Sunflower and tea.
30. Plants with flexible stems and broad leaves are **likely** to have
- A. thick waxy cuticle.
 - B. succulent stem
 - C. deep and widely spread roots
 - D. thick waxy cuticle.

31. Which one of the following materials are matched **correctly** matched as magnetic and non-magnetic?

Magnetic	Non magnetic
A. Aluminum foil	Copper coin
B. Steel wool	Tin
C. Copper	Tin
D. Cobalt	Silver coin.

32. Which one of the following statements is **true** about the states of matter?

- A. Liquids have definite volume and shape.
- B. Gases have definite volume.
- C. Liquids have no definite mass.
- D. Gases have definite mass.

33. The first step when separating a mixture of salt, steel wool and sand is

- A. use of magnet
- B. filtration
- C. dissolving
- D. decanting.

34. Which one of the following materials are **correctly** classified into sinkers and floaters?

Sinkers	Floaters
A. Wood, wax	Nail, feather.
B. Pin, plastic plate	Candle wax stone
C. Nail, piece of glass	Plastic bag, wood.
D. Aluminium dish, charcoal	Bottle top, razor blade.

35. The following are effects of drug abuse.

- (i) Rape.
- (ii) Lack of concentration.
- (iii) Truancy.
- (iv) Marital conflicts.
- (v) Withdrawal symptoms.

Which effects are social?

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

36. Pupils put a sample of garden soil in a glass and then dipped the glass in a basin of water. What component of soil were they trying to investigate? Presence of

- A. organic matter
- B. air
- C. water
- D. mineral salts.

37. Which one of the following water borne diseases can be prevented by draining stagnant water and wearing protective clothing?

- A. Bilharzia
- B. Malaria
- C. Cholera
- D. Typhoid.

38. In which one of the following activities is water used for recreational purposes?

- A. Making fountains.
- B. Mixing chemicals.
- C. Boat racing.
- D. Transporting logs of wood.

39. The following are signs and symptoms of a certain nutritional deficiency disease.

- (i) Lack of breath.
- (ii) Pale gums and finger nails.
- (iii) General body weakness.
- (iv) Increased heart beat.

The disease is **likely** to be

- A. marasmus
- B. rickets
- C. anaemia
- D. kwashiorkor.

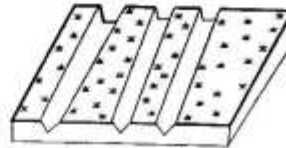
40. Which one of the following statements is **true** about HIV and AIDS?

- A. HIV can be spread by mosquito bites.
- B. A person in window stage has no AIDS.
- C. A person in symptomatic stage may test negative.
- D. ARVS can cure HIV and AIDS.

41. The soil that has less organic matter with fine mineral particles is also likely to have three of the following properties **except**

- A. large soil particles
- B. high capillarity
- C. poor drainage
- D. poor aeration.

42. The diagram below shows a section of land that has been eroded.



This type of erosion is **likely** to be

- A. sheet
- B. splash
- C. gully
- D. rill.

43. The following are uses of air.

- (i) Germination of seeds.
- (ii) Used in electric bulbs.
- (iii) Preserving soft drinks.
- (iv) Used in making plant nutrients.
- (v) Supports burning.

Which two uses are for the component that makes 21% of air?

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

44. The diagram below shows a set up that was used to investigate a certain property of matter.



The aspect being investigated was

- A. water occupies space
 B. water expands on heating
 C. air occupies space
 D. air expand on heating.
45. Which one of the following is **not true** about cumulus cloud? It
- A. is mountainous with irregular shape
 B. spreads in flat layers
 C. is cotton like and white in colour
 D. is a sign of fine weather.
46. The diagram below represents a weather chart prepared by pupils.

DAY	MORNING	EVENING
MON		
TUE		
WED		
THUR		

Which one of the following statements is **correct** about the weather chart?

- A. It rained only in the afternoon.
 B. Whenever it was windy, it was also sunny.
 C. Monday evening was the best day for washing clothes.
 D. Monday was the best day for drying grains.

47. The following are maintenance practices of simple tools.

- (i) Clean after use.
 (ii) Store properly or safely after use.
 (iii) sharpen cutting tools.
 (iv) Use tools for correct purpose.
 (v) Oiling and greasing.

Which pair of the above practices will prevent a person from getting injuries?

- A. (i) and (ii).
 B. (ii) and (v).
 C. (iii) and (iv).
 D. (iv) and (ii).
48. The force that opposes motion can be measured in
- A. newtons
 B. joules
 C. meters
 D. kilogrammes.

49. Which one of the following is advisable when spraying with chemicals?

- A. Spraying against wind direction
 B. Spraying when temperatures are high.
 C. Washing hands before spraying.
 D. Wearing mask when spraying.

50. A farmer practising zero grazing is **likely** to feed animals on

- A. commercial feeds only
 B. fodder and concentrates
 C. pasture and conserved feeds
 D. fodder and silage only.

Turn over