Natural Science Discipline
Category 2 - Sample Questions

1. Lucy is pregnant. Besides her reproductive system, which two organ systems in her body work together to provide nutrients for her developing baby?

(1) Muscular system
(2) Digestive system
(3) Circulatory system
(4) Respiratory system

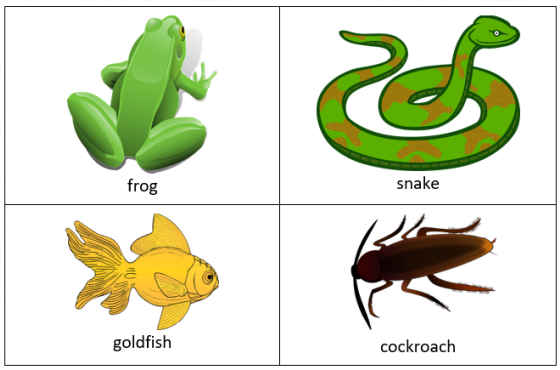
A. 1 and 3 only
B. 2 and 3 only
C. 2 and 4 only
D. 1 and 4 only

2. The roots of a plant _____.

(1) Support the plant
(2) Can store food for the plant
(3) Hold the plant firmly to the soil
(4) Absorb water and mineral salts from the soil

A. 4 only
B. 1 and 3 only
C. 2, 3, and 4 only
D. 1, 2, 3, and 4

3. The diagram shows some animals.

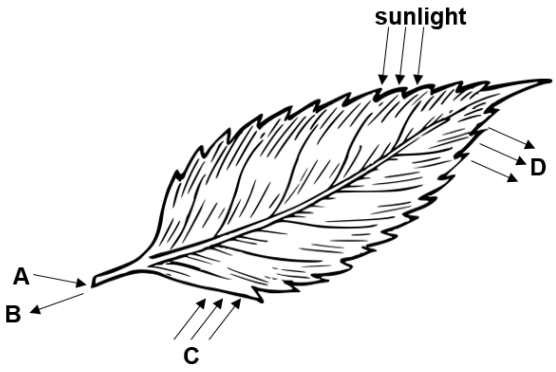


Which of the following statements are correct?

(1) Only the goldfish has scales.
(2) Only the cockroach has six legs.
(3) The frog and snake have moist skin.
(4) All four animals reproduce by laying eggs.

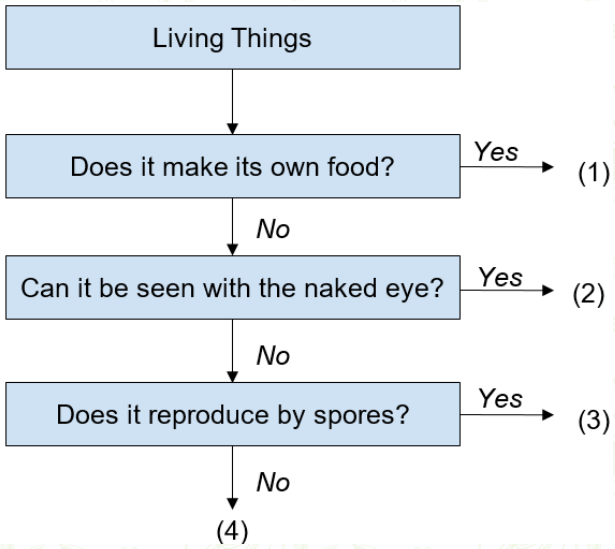
A. 1 and 3 only
B. 2 and 4 only
C. 1, 3, and 4 only
D. 2, 3, and 4 only

4. Below is the diagram of a leaf where photosynthesis takes place.



From the given substances – starch, water, oxygen, and carbon dioxide – identify what A, B, C, and D represent.

5. Study the flowchart below.



From the given organisms – bread mold, bacteria, orchid, and mushroom – identify which represents 1, 2, 3, and 4.

6. Which of the following is the same measurement as 2000 grams of soda?
   A. 2 liters of soda
   B. 0.2 liters of soda
   C. 2 milliliters of soda
   D. 2 kilograms of soda

7. All matter consists of tiny particles known as atoms. The different types of atoms are known as
   A. Chemicals
   B. Compounds
   C. Elements
   D. Mixtures

8. Which correctly describes the atoms in gases?
   A. They vibrate in place.
   B. They slide past one another.
   C. They move in certain direction only.
   D. They move fast in different directions.

9. A puddle of water disappeared on a hot day. What phase change is evident in this scenario?
   A. Condensation
   B. Deposition
   C. Evaporation
   D. Sublimation

10. What effect does increasing atmospheric pressure have on the rate of evaporation?
   A. Evaporation decreases
   B. Evaporation increases
   C. Evaporation stays the same
   D. Evaporation increases then decreases

11. The table shows the freezing points and boiling points of two substances, P and Q.

Substance	Freezing Point (°C)	Boiling Point (°C)
P	110	190
Q	50	230

What are the states of substances P and Q at 80 °C?

12. Which type of friction do wheels on skateboard most like experience?

   A. Fluid
   B. Rolling
   C. Sliding
   D. Static

13. Imagine a simple series circuit with one 1.5V battery and one bulb. When the 1.5V battery is replaced with a 3V battery, what will happen to the bulb?
   A. The bulb gets brighter.
   B. The bulb gets dimmer.
   C. The brightness of the bulb decreases.
   D. The bulb stays at the same level of brightness.

14. Complete the sentences below.

   (1) Heat is transferred in conduction by
   (2) Heat is transferred in convection by
   (3) Heat is transferred in radiation by

   A. Movement of fluids; direct contact; waves through the air
   B. Waves through the air; direct contact; movement of fluids
   C. Direct contact; waves through the air; movement of fluids
   D. Direct contact; movement of fluids; waves through the air

15. The ball and ring shown in the diagrams are made of iron.

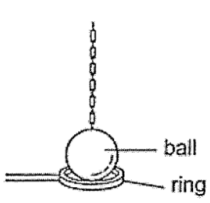


Diagram 1

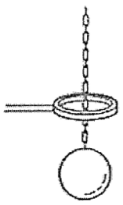


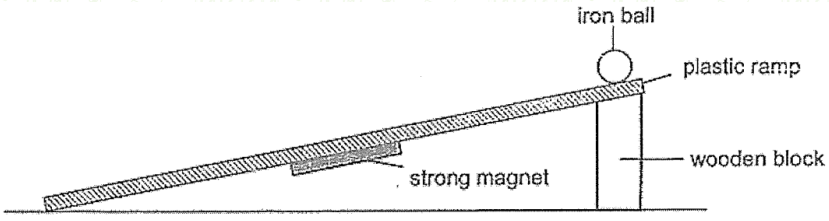
Diagram 2

In Diagram 1, the ball was unable to pass through the ring at room temperature. In Diagram 2, the ball was able to pass through the ring after heating the ring over a Bunsen burner for 10 minutes.

Why could the ball pass through the ring?

A. The ball expanded while the ring contracted.
B. The ball contracted while the ring expanded.
C. The ball remained the same size while the ring expanded.
D. The ball expanded while the ring remained the same size.

16. An iron ball is released from the top of a plastic ramp which has a strong magnet attached to its underside as shown in the image below.



Which forces are acting on the iron ball as it rolls down the ramp?

(1) Kinetic force
(2) Magnetic force
(3) Frictional force
(4) Gravitational force

A. 1 and 4 only
B. 2 and 3 only
C. 2, 3, and 4 only
D. 1, 2, 3, and 4

17. Most of the Earth's water is found in what phase?

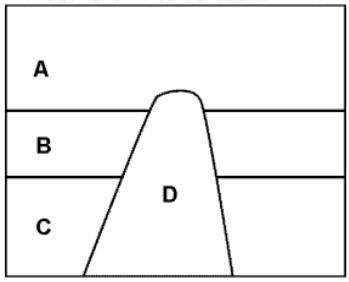
A. Gas
B. Liquid
C. Plasma
D. Solid

18. Which is/are renewable source(s) of energy?

(1) Coal
(2) Wind
(3) Sunlight
(4) Natural gas

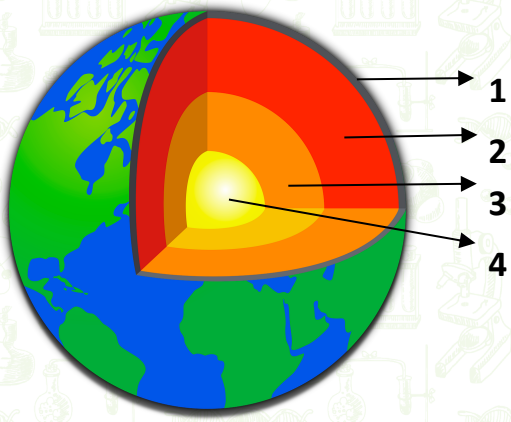
A. 1 only
B. 2 and 3 only
C. 2, 3, and 4 only
D. 1, 2, 3, and 4

19. Rocks A, B, and C are layers of sedimentary rocks. Rock D is a rock intrusion. Which rock is oldest and which one is youngest?



A. A is oldest, C is youngest
B. B is oldest, D is youngest
C. C is oldest, D is youngest
D. D is oldest, A is youngest

20. Label the layers of the Earth.

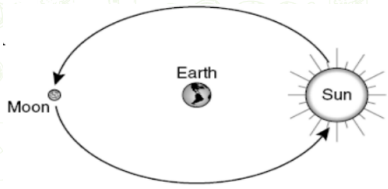


21. The length of the planet's day is defined as
A. Tilt of the axis
B. Period of rotation
C. Period of revolution
D. Distance from the sun

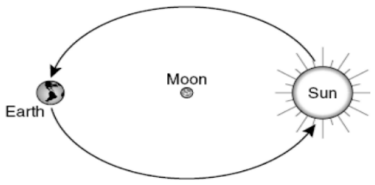
22. An astronaut weighs 400 Newtons on the Moon's surface. On Earth, this astronaut would
A. Weigh less
B. Weigh more
C. Weight the same
D. Increase in mass

23. Which model best shows the relationship between the Earth, the moon, and the sun?

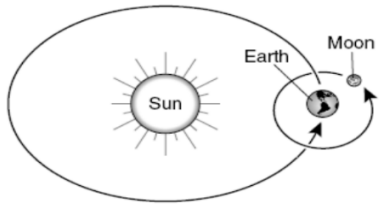
A.



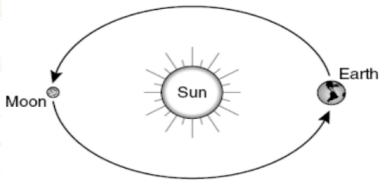
B.



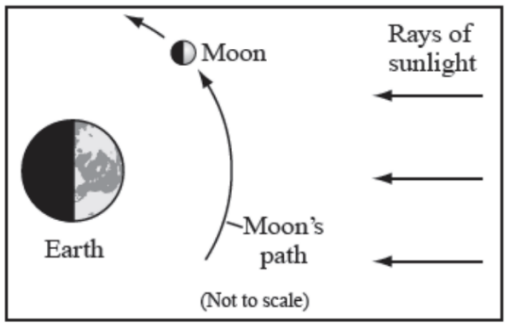
C.



D.



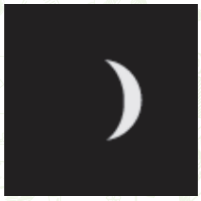
24. The diagram below shows the relative positions of Earth and the moon and rays of sunlight.



Based on the diagram, which of the following **best** represents how the Moon would appear as seen from Earth?

A.

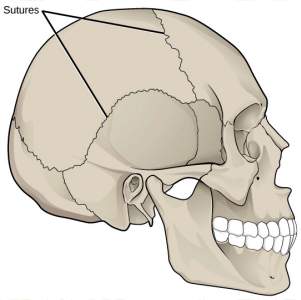
B.



C.

D. 

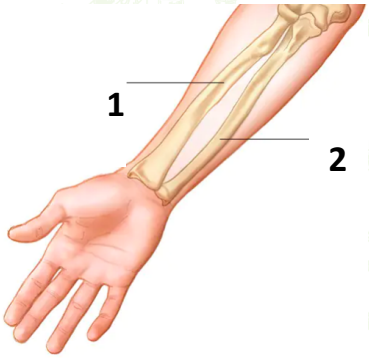
25. What kind of joint are sutures in the skull?



A. Synovial, movable
B. Fibrous, immovable
C. Muscular, immovable
D. Cartilaginous, Semi-movable

26. On which continent have the most dinosaur fossils been found?
A. Asia
B. Australia
C. North America
D. Europe

27. What are the names of the pair of bones in the human forearm?

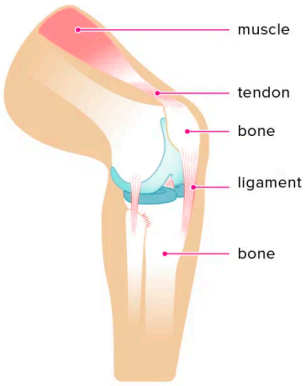


A. Tibia and fibula
B. Radius and Ulna
C. Humerus and femur
D. Carpal and metacarpal

28. Which dinosaur had a giraffe-like neck?

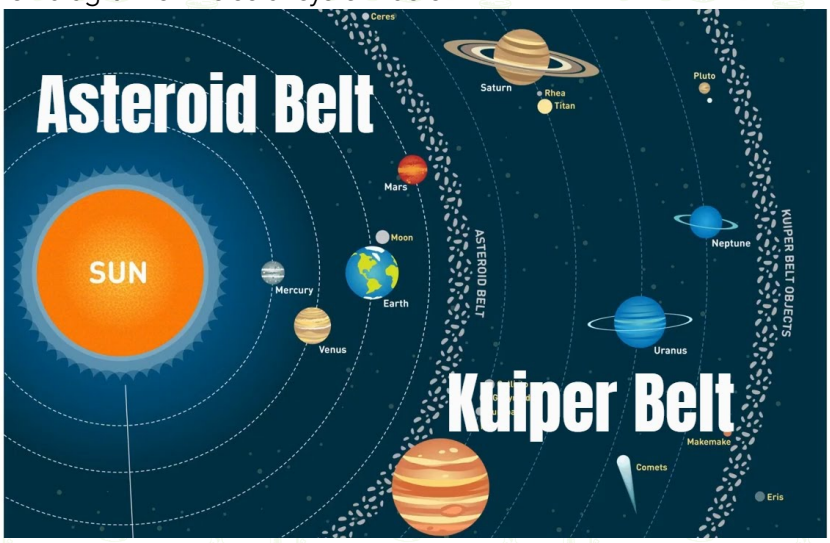
A. Archosaurs
B. Brachiosaurus
C. Triceratops
D. Velociraptors

29. Differentiate the function of tendon and ligament.



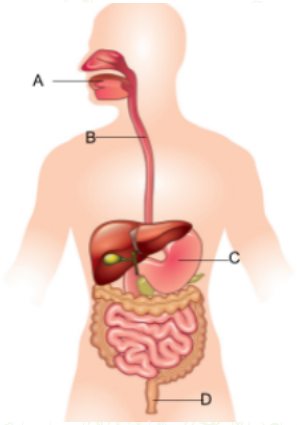
30. To which galaxy does our solar system belong?
A. Andromeda
B. Black Eye
C. Milky Way
D. Sombrero

31. Analyze the given diagram of the solar system below.



Which statement is true based on the given diagram?
A. Pluto is found in the asteroid belt.
B. The Kuiper belt is beyond Neptune's orbit.
C. Saturn is the largest planet in the solar system.
D. The asteroid belt is found between the orbits of Earth and Mars.

32. Study the human digestive system below.



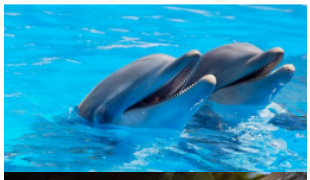
Which two parts –A, B, C, D – have digestive juices?

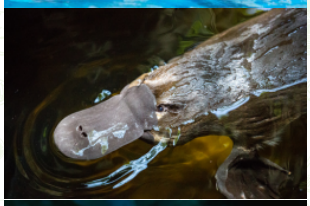
A. A and B
B. A and C
C. B and C
D. C and D

33. Which of the following animals is considered as oviparous?

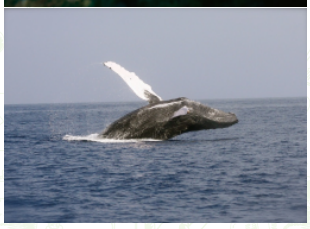
A. Cat
B. Crocodile
C. Dog
D. Whale

34. Which animal is not a mammal?

A. 

B. 

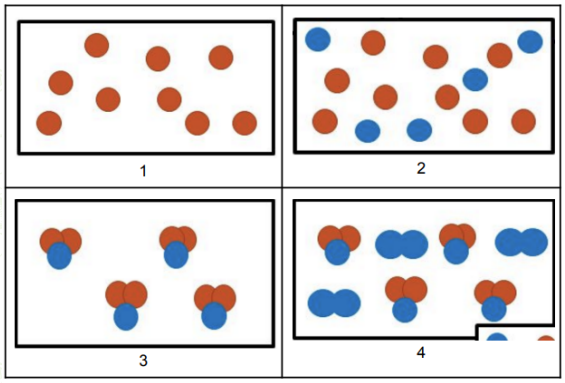
C. 

D. 

35. What phase change is involved in the given illustration?

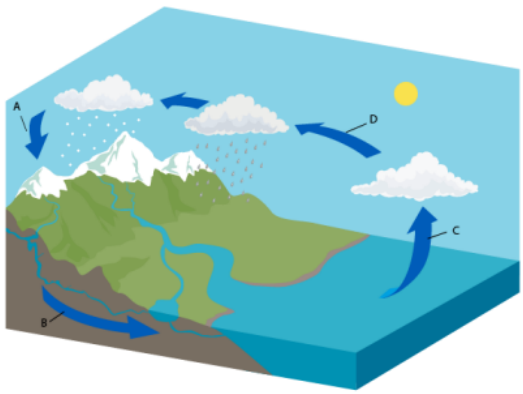
A. Condensation
B. Evaporation
C. Freezing
D. Sublimation

36. Analyze the given diagrams below.



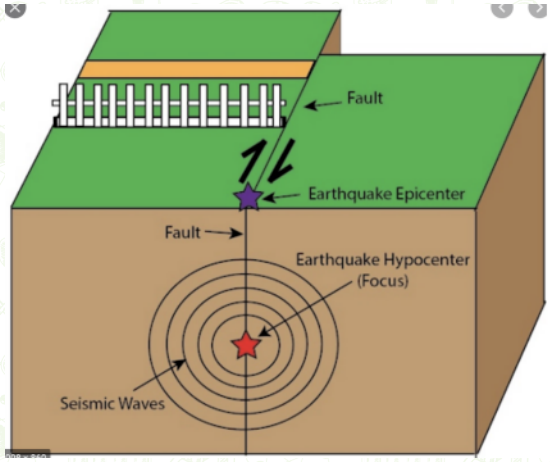
Which diagram represents a mixture?
A. Diagrams 1 and 2
B. Diagrams 2 and 4
C. Diagrams 3 and 4
D. Diagrams 1 and 3

37. Which cycle best represents the diagram?



A. Rock cycle
B. Carbon cycle
C. Nitrogen cycle
D. Water cycle

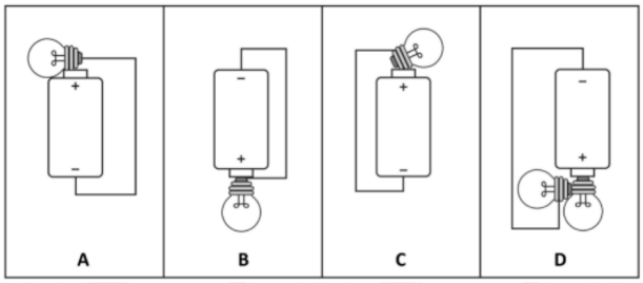
38. Analyze the given diagram below.



In which part does an earthquake originate?

A. Epicenter
B. Fault
C. Focus
D. Seismic waves

39. Study the circuit diagrams below.



In which circuits would the bulbs light up?

A. A and B only
B. B and C only
C. C and D only
D. A and D only

40. Which term refers to the consumers that feed on both plants and animals?

A. Carnivores
B. Detrivores
C. Herbivores
D. Omnivores

41. When someone asks: How long will it take for you to reach a certain destination? What motion descriptor does the person asking pertains to?

A. Distance
B. Displacement
C. Speed
D. Time

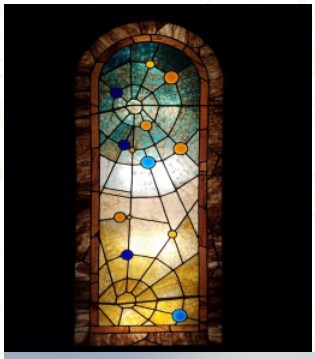
42. Which of the following can be classified as a chemical change?

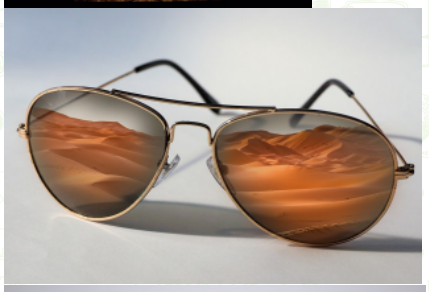
(1) Grilling of meat
(2) Digestion of food
(3) Chopping of wood
(4) Drying of puddle of water

A. 1 and 2
B. 2 and 3
C. 3 and 4
D. 1 and 4

43. In which material will light pass through completely?

A. 

B. 

C. 

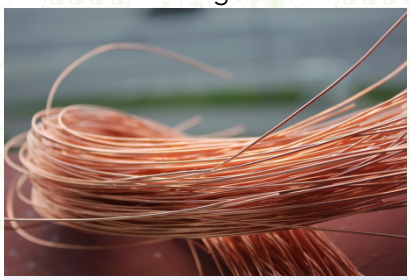
D. 

44. Which subatomic particle has a negative charge?
A. Electron
B. Hadron
C. Neutron
D. Proton

45. The crust of the Earth is divided into enormous pieces known as tectonic plates. The major tectonic plates of the Earth are depicted on this map. What kind of scientist examines the tectonic plate movement on Earth?
A. Astronomer
B. Geologist

C. Meteorologist
D. Oceanographer

46. Which of the following is not a conductor of electricity?

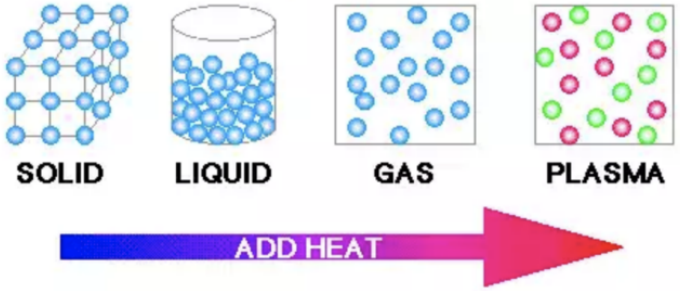
A. 

B. 

C. 

D. 

47. Analyze the diagram below.



What happens to the particles as heat is added to the matter?
A. Particles become loose.
B. Particles become stable.
C. Particles become compact.
D. Particles become stationary.

48. Below is an image of an aquarium ecosystem.

Which is an example of a biotic component?

A. Air
B. Fish
C. Pebbles
D. Water

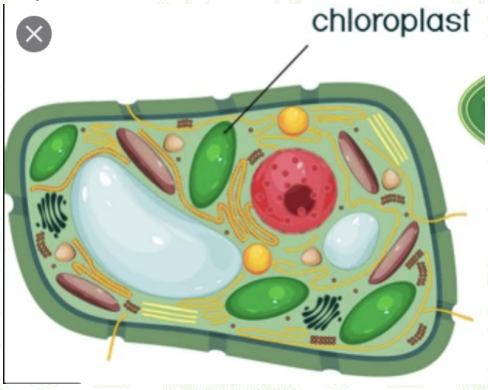
49. Which state of matter has a definite shape and fixed volume?

A. Gas
B. Liquid
C. Plasma
D. Solid

50. Which of the following is not an example of freshwater?

A. Gulf
B. Lake
C. River
D. Stream

51. Analyze the given diagram of a plant cell below.



Part X contains the green pigment that is responsible for photosynthesis to take place. What part of the plant cell is X?

A. Cell membrane
B. Cell wall
C. Chloroplasts
D. Cytoplasm

52. What kind of scientist deals with the study of fossils?

A. Fossilogist
B. Geologist
C. Paleontologist
D. Seismologist

53. What period of ancient Egyptian history were Pyramids of Giza built?
   A. The First Dynasty
   B. The Old Kingdom
   C. The Late Kingdom
   D. The Middle Kingdom

54. In mummification, which organ was deliberately left in the body for the afterlife?
   A. Brain
   B. Heart
   C. Liver
   D. Lung

55. What type of star is the sun?
   A. Neutron star
   B. Red giant
   C. White dwarf
   D. Yellow star

56. What is the term used to describe the explosion on the sun's surface?
   A. Flare
   B. Plage
   C. Prominence
   D. Sunspot

57. What are the two gases that mainly compose the sun?

   (1) Helium
   (2) Hydrogen
   (3) Methane
   (4) Oxygen

   A. 1 and 2
   B. 1 and 3
   C. 3 and 4
   D. 2 and 4

58. How does the sun generate energy?
   A. By generating plasma
   B. By burning hydrogen gas
   C. By splitting helium atoms
   D. By fusing hydrogen atoms

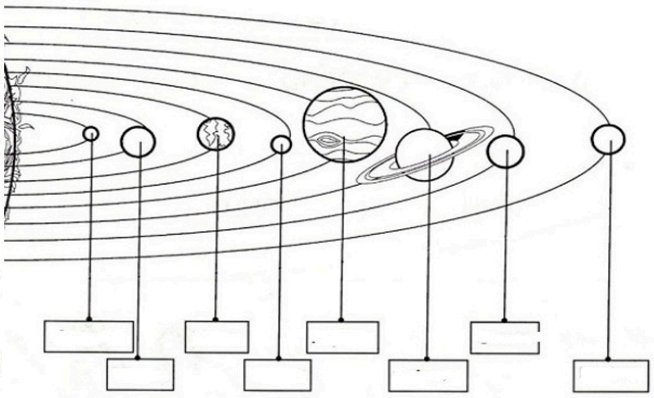
59. Which phrase describes a nebula?
   A. A galaxy
   B. A kind of star
   C. A cloud of gas and dust
   D. A system of planets and stars

60. What theory best explains the birth of the solar system?
   A. Big Bang Theory
   B. Galaxy Theory
   C. Nebular Theory
   D. Tidal Theory

61. Which statement defines a true planet?
A. It has attained a sufficient mass.
B. Its gravity is sufficient to trap moons.
C. It has cleared its orbit of significant debris.
D. It is composed of several combined planetesimals.

62. Why are planets layered?
A. Each layer forms separately during formation.
B. When they are molten, denser materials sink.
C. Meteoroids inject new material inside, creating the layers.
D. Layers are due to the successive freezing events inside planets.

63. Label the planets in the solar system.



64. What are the only two planets in our solar system without moons?

65. Which animals breathe through gills?

(1) Platypus
(2) Salmon
(3) Shark
(4) Turtle

A. 1 and 3
B. 2 and 3
C. 3 and 4
D. 1 and 4

66. Which of the following is not a mollusk?
A. Clam
B. Octopus
C. Snail
D. Turtle

67. Which of the following characteristics make a grasshopper an arthropod?
(1) Having paired legs
(2) Presence of vertebra
(3) Presence of antenna
(4) Presence of wings

A. 1 and 2
B. 1 and 3
C. 2 and 3
D. 3 and 4

68. What kind of animal has a body temperature that is dependent on the temperature of their surroundings?
A. Aquatic
B. Cold-blooded
C. Warm-blooded
D. Terrestial

69. Which of the following is produced by green plants during photosynthesis?

(1) Glucose
(2) Oxygen
(3) Carbon dioxide

A. 1 only
B. 2 only
C. 1 and 2
D. 1 and 3

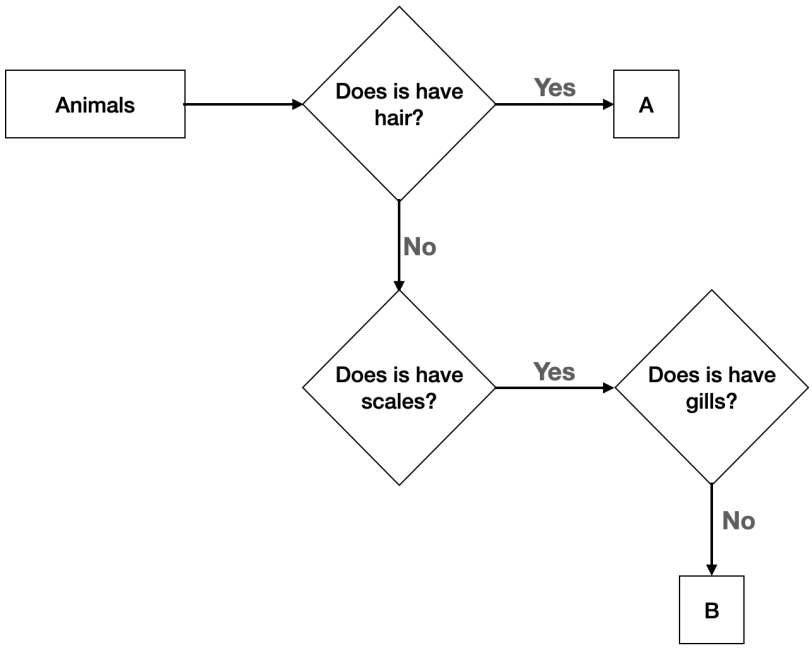
70. Which statement is true about the following organisms?

	
fern	mushroom

A. Both grow on land only.
B. Both can make their own food.
C. Both are non-flowering plants.
D. Both can reproduce through spores.

71. Which shows the correct pathway of food in the human digestive system?
A. mouth → stomach → intestines → anus
B. anus → intestines → stomach → mouth
C. mouth → intestines → stomach → anus
D. stomach → mouth → anus → intestines

72. Study the flowchart below.



A. A is insect, B is reptile
B. A is mammal, B is fish
C. A is insect, B is fish
D. A is mammal, B is reptile

73. Animal X is a bilaterally symmetrical invertebrate with jointed appendages and tough exoskeleton. To what group of invertebrates does it belong?

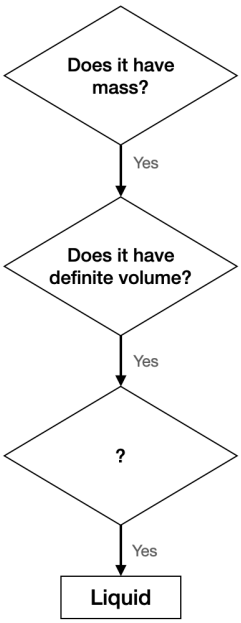
74. An unidentified animal has hair, mammary glands, and lungs. Which specific animal group does it belong to?

75. What phase change is involved in the given illustration?

A. Condensation
B. Evaporation
C. Freezing
D. Melting

76. of the following is not a property of metals?
A. Ductility
B. Dullness
C. Luster
D. Malleability

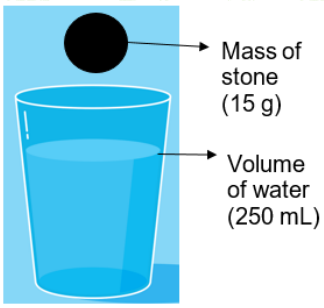
77. Study the flowchart below.



What question should replace? for the above flowchart to be accurate?

A. Does it float?
B. Can it be compressed?
C. Does it have a definite shape?
D. Does it take the shape of the container?

78. Analyze the given diagram below.



What will happen to the water level and the volume of water when a 15-g stone is dropped into the container with water?

A. The water level increases but the volume of water remains the same.
B. The volume of water increases but the water level remains the same.
C. Both the water level and volume of water increase.
D. Both the water level and volume of water remain the same.

79. Which of the following is not an element?

A. Carbon
B. Hydrogen
C. Methane
D. Oxygen

80. A group of 6th graders shared what they know about elements.

Ali	Elements can be separated into simpler substances.
Baste	Elements are made up of different kinds of atoms.
Caryl	Elements that combine together form a mixture.
Denny	Elements are pure substances.

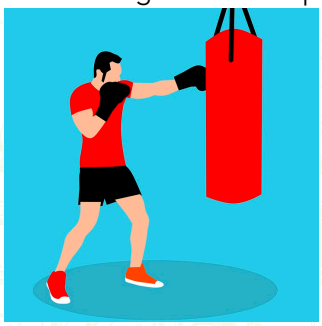
Who among the students shared factual information about elements?

A. Ali and Baste
B. Ali and Denny
C. Baste and Caryl
D. Caryl and Denny

81. When oil and water are mixed together, two layers of liquids are formed. What kind of mixture is this?

A. Alloy
B. Colloid
C. Solution
D. Suspension

82. A punching bag is a sturdy material that is designed to be repeatedly punched.



The table below shows properties of four materials –1, 2, 3, and 4. A tick (✓) shows that the material has the property.

Property	Material			
	1	2	3	4
Strong	✓		✓	
Flexible	✓	✓		
Transparent		✓		✓
Ability to float			✓	

Which material is most suitable for making the punching bag?

A. 1
B. 2
C. 3
D. 4

83. The table below shows the melting and boiling point of four substances – Aa, Bb, Cc, and Dd.

Substance	Melting Point (°C)	Boiling Point (°C)
Aa	10	78
Bb	0	100
Cc	44	280
Dd	110	180

Which among the given substances is/are liquid(s) at 30^0C?

84. Which of the following is **not** a mixture?

A. Air
B. Milk
C. Steel
D. Water

85. Which of the following is an abiotic factor in an ecosystem?
A. Air
B. Animals
C. Bacteria
D. Plants

86. In which stage in water cycle does water turn into gas?
A. Condensation
B. Evaporation
C. Precipitation
D. Runoff

87. Which of the following is defined as the long-term interaction of organisms in an ecosystem where an organism may benefit, harmed, or unharmed as they interact with each other?
A. Competition
B. Parasitism
C. Predation
D. Symbiosis

88. What is the term used for an organism that is being harmed in a parasitic relationship?
A. Commensal
B. Host
C. Parasite
D. Vector

89. An orchid attached to the tree trunk shows what kind of symbiotic relationship?
A. Commensalism
B. Mutualism
C. Parasitism
D. Predation

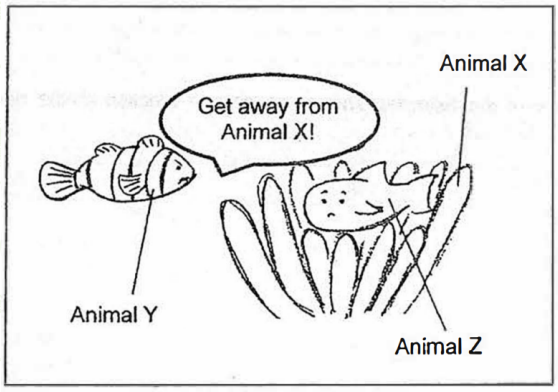
90. What interaction exists as grasses outgrow other grasses for sunlight?
A. Commensalism
B. Mutualism
C. Parasitism
D. Predation

91. Which describes mechanical weathering?

(1) A rock scrapes the surface of another rock.
(2) The minerals inside the rock slowly dissolve in water.
(3) A rock breaks into pieces when it falls and hits another rock.
(4) The iron in the exposed surface of the rock turns the rock into a reddish brown color.

A. 1 and 2 only
B. 1 and 3 only
C. 2 and 4 only
D. 3 and 4 only

92. In the ocean, Animal Y is protected from its predator by the stinging tentacles of Animal X. Animal Z feeds on Animal X. Animal Y will chase away Animal Z to prevent it from eating Animal X as shown in the diagram below.

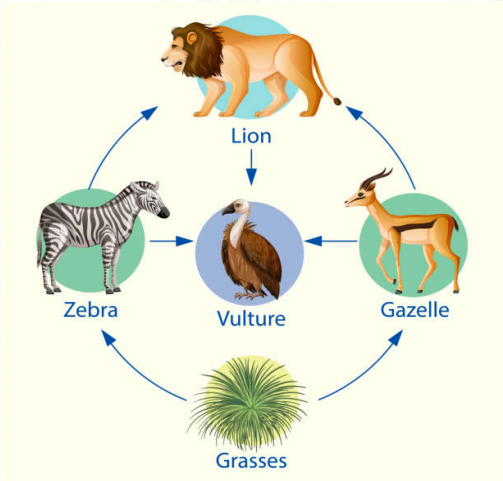


Which of the following statements correctly describe the relationship among Animal X, Animal Y and Animal Z?

(1) Animal Z feeds on Animal X.
(2) Animal X protects Animal Y from predators.
(3) Animal Y helps protect Animal Z from Animal X.
(4) Animal X and Y help each other to survive in the ocean.

A. A and D only
B. B and C only
C. A, B, and D only
D. A, B, C, and D

93. Which is/are primary consumer(s) in the food chain below?



94. A construction worker was digging the ground when he hit a very large boulder of rock. He noticed that there were no plant roots in the said area. The rock is so hard that he cannot even break it. What soil horizon do you think he has reached already?

95. Which of the following is a simple machine?
A. Bicycle
B. Mechanical rock
C. Ramp
D. Scissors

96. Which color absorbs most light?
A. Black
B. Blue
C. Orange

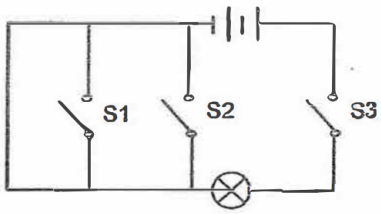
D. White

97. Which of the followings are first-class levers?

(1) Bottle opener
(2) Fishing rod
(3) Pliers
(4) Scissors

A. 1 and 2 only
B. 2 and 3 only
C. 3 and 4 only
D. 1 and 4 only

98. Below is a circuit diagram.



What is the minimum number of switch(es) that need(s) to be closed for the bulb to light up?
A. 0
B. 1
C. 2
D. 3

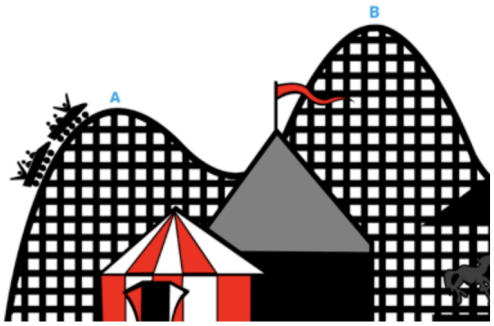
99. What usually happens to absorbed light?
A. It will bounce back.
B. It will be converted to heat.
C. It will pass through the object.
D. It will bend away from the object.

100. Which of the following possesses chemical energy?

(1) Battery
(2) Food
(3) Gasoline
(4) Wood

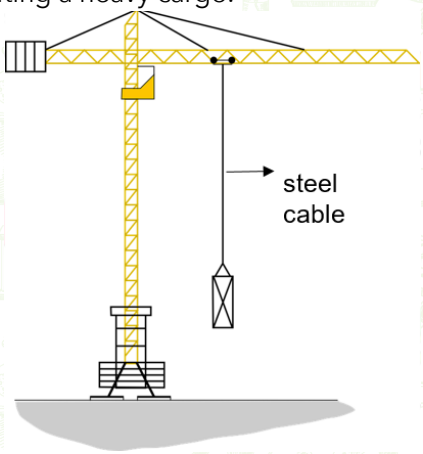
A. 1 and 2 only
B. 2 and 3 only
C. 1, 3, and 4 only
D. 1, 2, 3, and 4

101. Study the given figure of a roller coaster below. Which of the following statements best explains the energy transformation from point A to point B?



A. Kinetic energy at point A transforms to potential energy at point B.
B. Kinetic energy at point A transforms to potential energy as it goes down and transforms to potential energy again as it reaches point B.
C. Potential energy at point A changes to kinetic energy as it goes down then becomes potential energy as it goes up to point B.
D. Potential energy at point A transforms to kinetic energy as it goes down and up and then transforms to potential energy at point B.

102. Below is a diagram of a crane lifting a heavy cargo.

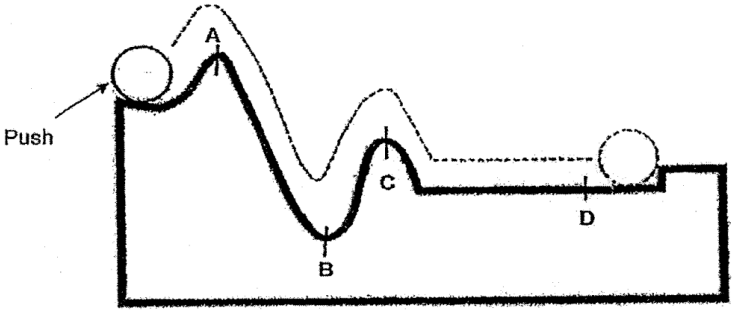


What force/s is/are acting on the steel cable?

(1) Elastic spring force
(2) Electrical force
(3) Frictional force
(4) Gravitational force

A. 1, 2, and 4 only
B. 3 and 4 only
C. 1 and 4 only
D. 1, 2, 3, and 4

103. A ball is pushed in the direction shown and it rolls towards the end of the slope. At which point of slope does the ball have the greatest amount of kinetic energy?



104. Some fruits fall from trees when they ripen. Give **two (2)** forces that act on falling fruits.

Natural Science Discipline
Category 2 - Sample Questions
ANSWER KEY

No	Answer	No	Answer	No	Answer	No	Answer
1	B	27	B	53	B	79	C
2	D	28	B	54	B	80	B
3	B	29	Ligaments connect bone to bone. Tendons connect muscle to bone.	55	D	81	D
4	A – Water; B – Starch; C – Carbon dioxide; D - Oxygen	30	C	56	A	82	A
5	1 – Orchid; 2 – Mushroom; 3 – Bread mold; 4 – Bacteria	31	B	57	A	83	Aa and Bb only
6	D	32	A	58	D	84	D
7	C	33	B	59	C	85	A
8	D	34	C	60	C	86	B
9	C	35	D	61	C	87	A
10	A	36	B	62	B	88	B
11	P is solid. Q is liquid.	37	D	63	From the left: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune	89	A
12	B	38	C	64	Mercury and Venus	90	A
13	A	39	D	65	B	91	B
14	D	40	D	66	D	92	C
15	C	41	D	67	B	93	Gazelle and Zebra
16	C	42	A	68	B	94	Bedrock
17	B	43	A	69	C	95	C
18	B	44	A	70	D	96	A
19	C	45	B	71	A	97	C

20	1 – Crust; 2 – Mantle; 3 – Outer core; 4 – Inner core	**46**	D	**72**	D	**98**	B
21	B	**47**	A	**73**	Arthropods	**99**	B
22	B	**48**	B	**74**	Mammals	**100**	D
23	C	**49**	D	**75**	D	**101**	D
24	B	**50**	A	**76**	B	**102**	B
25	B	**51**	C	**77**	D	**103**	Point A
26	C	**52**	C	**78**	A	**104**	Gravitational force and air resistance