Science

Prep.1

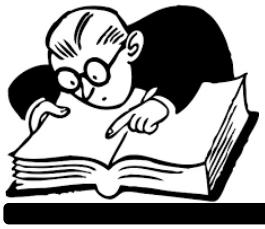
First Term 2020

Final Revision

Mr. Ahmed Elbasha

لمشاهدة شرح جميع الأسئلة الهامة في شرح فيديو على يوتيوب اضغط علي الرابط التالي :
http://bit.ly/340ZFlJ

* طبقاً لأخر تعديل فى الماده للعام الدراسى 2019-2020



Final Revision

Mr. Ahmed Elbasha

(1) Write the scientific term :

1)	Imaginary places in which electrons can move according to their energies.	(.....)
2)	The way by which the heat is transferred throw gasses and liquids.	(.....)
3)	An example of animal with external support.	(.....)
4)	The sum of potential energy and kinetic energy.	(.....)
5)	The basic classification unit of living organisms.	(.....)
6)	The result of combination between two or more atoms of different elements with constant weight ratios.	(.....)
7)	The gases that do not take part in the chemical reaction.	(.....)
8)	The stored energy in an object due to the work done on it.	(.....)
9)	It is the temperature at which a substance begins to change from a liquid state into a gaseous state.	(.....)
10)	It is a form of energy which transfers from a higher temperature object to a lower temperature object.	(.....)
11)	Animals have one pair of incisors in each jaw.	(.....)
12)	It is the amount of energy lost or gained by an electron when it transfers from one energy level to another.	(.....)
13)	The pollution produced from the networks of wireless transmitters of cellular phones.	(.....)
14)	The measuring unit of energy	(.....)
15)	The positively charges particles in the nucleus of an atom.	(.....)
16)	The spaces that found among the molecules.	(.....)
17)	The modification in the behavior of a living organism at specific times of the day or year.	(.....)

18)	The branch of biology that searches for the similarities and differences among living organisms	(.....)
19)	A group of animals that have one pair of incisors in each jaw.	(.....)
20)	Energy is neither created nor destroyed, but it is converted from one form to another.	(.....)
21)	The temperature at which matter starts to change from solid to liquid.	(.....)
22)	Ability to do work or to make a change.	(.....)
23)	The ability of some living organisms to be hidden from enemies or to capture the prey	(.....)
24)	The limited amount of energy needed or loss to transfer an electron from an energy level to another.	(.....)
25)	The process by which some animals hide in burrows to overcome low temperature.	(.....)
26)	The temperature at which a matter begin to change from the liquid state to gaseous state.	(.....)
27)	It is a basic classification unit for living organism.	(.....)
28)	A modification in a living organism or its body structure or even the biological function of its organs to become more adapted to the environmental conditions where it lives in.	(.....)
29)	The temperature at which matter changes from a solid phase into a liquid one.	(.....)
30)	The simplest pure form of a matter which can't be analyzed simpler.	(.....)
31)	The heat state of an object on which the transfer of heat from or to the object depends	(.....)
32)	The ability of some body organs and tissues to do a certain function .	(.....)
33)	A group of animals that have three pairs of jointed legs.	(.....)
34)	The fundamental building unit of matter that can take part in the chemical reaction.	(.....)
35)	Energy gained or lost to transfer an electron from one energy level to another.	(.....)
36)	Number of positive protons in nucleus of the atom.	(.....)

37) Energy stored in the object due to the work done on the object. (.....)

38) Plants can't be distinguished into roots, stems and leaves. (.....)

39) The mass of unit volume of the substances. (.....)

40) Sum of protons and neutrons in a nucleus. (.....)

41) The work done during the motion of an object. (.....)

42) The simplest pure substance that could not analyzed into simpler form. (.....)

43) The fundamental unit for natural classifying system in living organisms. (.....)

44) It is a permanent resource of energy. (.....)

45) An amount of energy that gained or lost to transfer an electron from one energy level to another. (.....)

46) The way of transferring the heat through solids. (.....)

47) The sum of potential and kinetic energies of a body. (.....)

48) A group of terrestrial plants that reproduce by formation spores. (.....)

49) Invertebrates that are characterized by having number of jointed legs. (.....)

50) Energy is neither created nor destroyed, but it is converted from one form to another. (.....)

51) The smallest part of matter that can exist freely having the properties of matter. (.....)

52) The monoatomic liquid. (.....)

53) The atom that gains a quantum of energy. (.....)

54) A device changes solar energy to electric energy. (.....)

55) The plants which devour insects to get protein. (.....)

56) A modification in behavior , structure , biological function of a living organism's organs . (.....)

57) The spaces between molecules. (.....)

58) The smallest building unit of matter which can exist freely. (.....)

59) The ability of some living organisms to hide from their enemies. (.....)

60) Pollution produced from the networks of cellular phone. (.....)

61) The sum of positive protons and neutral neutrons in the nucleus of atom. (.....)

62) Volume measuring unit. (.....)

63) Plants that can't be distinguished into roots, stems and leaves. (.....)

64) The type of adaptation when birds migrate from one place to another. (.....)

65) the transfer of heat from hot object to another without any need for a material medium through which heat transfers. (.....)

66) A group of similar living organisms in shape that can reproduce to give birth of new fertile individuals. (.....)

67) A liquid used to keep sodium and potassium metals from air. (.....)

68) It is the ability to do work or to make a change. (.....)

69) The matter which doesn't take the shape of the container. (.....)

70) Amount of energy which an electron loses or gains to transfer from an energy level into another one . (.....)

71) The result of combination between two or more different elements with constant weight ratios. (.....)

72) Mass measuring unit. (.....)

73) An alloy which is used in making heating coils. (.....)

74) It is the heat condition which determines whether heat transfers from or to an object when it comes in contact with another. (.....)

75) Energy stored in the object due to the work done on the object. (.....)

76) It is the mass of unit volume of the substance. (.....)

✹(2) Choose the right answer:

1.An object of mass 2 kg. is moving at a speed of 4 m/s. has a kinetic energy ..... joules.

a. 16 b.64 c. 32

2.In solar heater, solar energy is converted into ..... energy.

a. light b. electric c. heat

3.The colour property is a distinguishing factor between .....

a. Flour-sugar. b. silver-gold. c. oxygen-helium.

4.The third energy level is saturated by ..... electrons.

a. 2 b. 18 c. 8

5.A substance is solid and can't be soften by heating .....

a. copper. b. sulphur. c. aluminum.

6.Chemical energy can be stored in .....

a. car battery. b. raising a load up wards.

c. stretched spring. d. car lamps.

7.The chemical activity of the element depends on the number of .....

a. neutrons. b. protons. c. electrons in the outer level. d. levels filled with electrons.

8.An element has 2 electrons in the (L) level, so its atomic number is .....

a. 2 b. 4 c. 6 d. 8

9.All of the following are active elements except .....

a. $_{1}H$ b. $_{6}C$ c. $_{7}N$ d. $_{18}Ar$

10.Cooking pans are made up of .....

a. iron only. b. aluminium only. c. stainless steel only. d. (b) and (c)

11.The substances that float on water surface is ....

a. iron . b. cork. c. aluminium. d. copper.

12.The property of electric conduction is distinguishing factor between .....

a. iron and copper. b. wood and plastic.

c. iron and wood. d. no correct answer.

13.An object of 20 N. weight and it is placed at a height of 5 m. , so its potential energy is ..... joules.

a. 50 b. 150 c. 100 d.200

14.If you sit down beside an electric heater, heat is transferred to you by .....

a. convection. b. radiation. c. conduction. d. convection & radiation.

15.Scorpion belongs to .....

a. insects. b. arachnids. c. myriapods. d .mammals.

16.Equal masses of different substances have ..... volumes.

a. different b. constant c. equal

17.When a substance sinks in water, that means its density is ..... the density of water.

a. equal to b. less than c. more than

18.The ..... matter doesn't take the shape of the container.

a. solid b. liquid c. gaseous

19.The molecule of oxygen is composed of ..... atom(s).

a. one b. two c. three

20.The particles which revolve around the nucleus of an atom of element are .....

a. neutrons. b. protons. c. electrons.

21..... are from the animals which don't have a body support.

a. Reptiles b. Snails c. Jellyfish

22.The number of energy levels in the heaviest atoms is .....

a. 7 b. 8 c. 32 d. 18

23.From inert gases .....

a. nitrogen. b. helium. c. oxygen. d. bromine

24.Heat transfers from Sun to Earth by .....

a. convection. c. conduction.

b. radiation. d. conduction and convection.

25.In car engine, ... energy of the fuel is changed into heat and mechanical energy.

a. chemical b. electric c. light d. solar

26.Amoeba, euglena and paramecium differ from each other in the .....

a. number of teeth. b. number of legs.

c. kind of support. d . way of movement.

27..... insect exactly looks like the plant branches.

a. Stick b. Beetle c . Leaf d. Locust

28..... is from teethless mammals.

a. Lion b. Cow c. Lizard d. Sloth

29..... is a permanent source of energy.

a. Wind b. Fuel c. Food d. The Sun

30.Electric energy is converted into sound energy in .....

a. car battery . b. car lamps. c. radio cassette. d. pendulum.

31.Taste property is a distinguishing factor between .....

a. copper and iron. b. vinegar and perfume. c. salt and sugar. d. gold and silver.

32..... belongs to the animals with no body support

a. Octopus b. Mussel c . Hedgehog d . Snake

33.Dynamo converts mechanical energy into energy .....

a. electrical b. nuclear c. solar d . chemical

34..... is a permanent source of energy

a. Wind b. Coal c. The Sun d . Water

35.Rat has .....

a. two pairs of incisors in each jaw. b. one pair of incisors in each jaw.

c. three pairs of incisors in each jaw. d . no correct answer.

36.The Sun is .....

a. resource of permanent energy. b. resource of non-permanent energy.

c. not an energy resource. d . (a) and (c).

37.In the radio cassette inside the car the .....

a. electric energy is converted into mechanical energy.

b. light energy is converted into heat energy.

c. electric energy is converted into kinetic energy.

d. electric energy is converted into sound energy.

38.Atom symbol of potassium element is .....

a. Hg b. Cu c. P d.K

39.Some substances need heat to get soften such as .....

a. coal. b. iron. c. sulphur. d. rubber.

40.Secreting sweat by skin is considered ..... adaptation.

a. structural b. functional c. behavioral d. no correct answer

41.An object of 10 N. weight is placed at 5 m. height, it has a potential energy .....

a. 50 joule. b. 150 joule. c. 100 joule. c. 200 joule.

42.The handles of cooking pots are made of .....

a. copper. b. aluminium. c. wood. d. iron.

43.The role of technological application is represented in .....

a. using energy resources and converting energy from form to another.
b. creating energy from nothing.
c. storing energy as its form is.
d. illustrating energy forms.

44.Solids have ..... intermolecular force.

a. strong b. weak c. medium d. no correct answer

45..... is an example for plants that reproduce by spores.

a. Pine b. Beans c. Vougheir d. Wheat

46.From the animals which don't have a body support is .....

a. snail. b.jellyfish. c. fish . d. cartilaginous fi sh.

47.Heat is transferred by convection through .....

a. liquids only . b. gases only . c. solid only. d. liquids and gases.

48.When the atomic number of element equals its mass number, this means that there is no .....

a. electrons. b. protons . c. neutrons. d. nucleus.

49.The third energy level in the atom contains ..... electrons.

a.2 b.18 c.8 d. 32

50.The colour property distinguishing factor between .....

a. flour and table salt. b. iron and gold. c. O_2 and CO_2 . d. salt and sugar.

51.The molecule of gaseous element that consists of one atom is .....

a. oxygen. b. hydrogen. c. helium. d. mercury.

52.Heat transfers through liquids by .....

a. conduction. b. convection.

c. radiation. d. convection and radiation.

53.The molecule of ammonia consists of ..... atoms.

a. 2 b. 6 c. 4 d. 1

54.In the rodent the number of incisors in the upper jaw is .....

a. one pair. b. two pairs. c. three pairs. d. none.

55.Heat transfers from Sun to Earth by .....

a. conduction. b. convection. c. radiation. d. no answer.

56.When the object is throw upward the ..... of object decreases.

a. mass b. heat c. potential energy d. kinetic energy

57.Spider belongs to .....

a. insects. b. arachnids. c. myriapods. d. vertebrates

58.The number of atoms is equal to the number of elements in ..... molecule.

a. water b. hydrogen chloride c. oxygen d . ammonia gas

59.The example of living organism that undergoes hibernation is the .....

a. desert snail. b. jerboa. c. frog. d. all the previous.

60.Heat transfer by radiation takes place through .....

a. liquids only. b. gases only.

c. material media and nonmaterial ones. d. metals only.

61.From the animals that undergo aestivation is .....

a. rat b. jerboa c. frog .

62.From the plant that reproduce by forming spores .....

a. pine. b. wheat. c. voughair.

63.Mammal animal that has one pair of incisors in each jaw .....

a. squirrel. b. rabbit. c. lion. d. no correct answer.

64.The nucleus of ..... atom doesn't contain neutrons.

a. neon b. hydrogen c. oxygen d . no correct answer

65.Heat transfers by ..... through liquid and gas.

a. conduction b. convection c. radiation d. no correct answer

66..... is from the animals that make hibernation in winter.

a. Desert snail b. Jerboa c. Frog

67.All of the followings belong to arachnids except .....

a. locust. b. scorpion. c. spider.

68.The electric lamp changes the ..... energy into light and heat energy.

a. sound b. electric c. mechanical

69.The smell property is a distinguishing factor between .....

a. iron and gold. b. wood and plastic. c. perfume and vinegar.

70.The energy level N is saturated by ..... electrons.

a. 8 b. 18 c. 32

71.The third energy level is saturated by ..... electrons.

a. 2 b. 10 c. 18 d. 8

72.Heating coils are made up of ..... alloy.

a. iron-copper b. nickel-iron c. chrome-copper d. nickel-chrome

73..... reproduce by forming spores.

a. Vougheir b. Pine c. Bean d. Wheat

74.Car engine changes at first chemical energy to ..... energy.

a. heat b. electric c. magnetic d. light

75.When air heats up its density .....

a. not change. b. increases. c. decreases. d. (b) and (c).

76.The electron is ..... charged particle.

a. positively b. negatively c. neutrally

77.The number of pairs of scorpion legs is .....

a. 4 b.3 c. 44

78.An object of weight 6 newton, moved to a height 5 m, its potential energy is .....

a. 30 b. 75 c. 11

79..... is the monoatomic liquid molecule.

a. Bromine b. Mercury c. Iodine

80..... is an example of plants that reproduce by seeds.

a. Adiantum b. Vougheir c. Bean

81.By increasing the kinetic energy of particles, their ..... increases.

a. weight b. temperature c. volume

82.The electric energy is converted into kinetic energy in .....

a. electric lamp. b. electric fan. c. electric heater.

83..... bird migrates in winter.

a. Quail b. Duck c. Sparrow

84.In the solar cell. the solar energy is converted into ..... energy.

a. kinetic b. light c. electric d . heat

85.Distance among molecules are very small in .....

a. water. b. copper. c hydrogen. d . oil.

86.Birds migration represents ..... adaptation.

a. anatomical b. functional c. structural d. behavioral

87.The number of electrons that saturates the level (K) is .....

a.8 b.2 c.32

88.Dynamo converts mechanical energy into ..... energy.

a. electric b. nuclear c. solar

89.The Sun is a ..... source of energy.

a. non-renewable b. renewable c. permanent d. all the previous

90.The density of petroleum oil is ..... that of water.

a. less than b. more than c. equal to d. no correct answer

91.Insectivorous plants cannot absorb the nitrogenous substances to make .....

a. carbohydrates. b. proteins. c. fats. d. vitamins.

92.Secretion of poison in some snakes is an example of ..... adaptation.

a. structural b. behavioral c. functional d. all of them

93.Positive charged particles in the nucleus of atom are .....

a. neutrons. b. protons. c. electrons.

94.Potassium is symbolized by .....

a.P b. K c. B

95.From gymnosperms plants: .....

a. wheat. b. pine plant. c. maize.

96.Density measuring unit .....

a.cm3. b. gm. c. gm./cm3

97.Heat is transferred by radiation through .....

a. liquids only. b. gases only. c. material media and non-material ones.

98.The monoatomic liquid is .....

a. Hg b. Ag c. Mg d.Br

99.The rule which is used to find the electronic configuration for the first four energy levels is .....

a. 22n b. $2n^2$ c. 2n d. n^2

100.An object of mass 1 kg moves at speed 4 m/s., so it has a kinetic energy= ..... joule.

a. 16 b. 8 c.64 d.4

101.The scorpion belongs to .....

a. insect. b. myriapods. c. arachnids. d. mammals.

102.Heat transfers from heater by .....

a. conduction and radiation. b. radiation and convection.

c. conduction and convection. d. radiation only.

103.As doubling height to which an object is raised from ground. so the .....

a. kinetic energy is increased to its double value.

b. potential energy is increased to 3 times.

c. potential energy is increased to its double value.

d. mechanical energy is increased to 4 times.

104.Energy is neither created nor destroyed, but it can be transformed into another form of energy. this law is known as law of .....

a. conservation of energy. b. conservation of matter.

c. kinetic energy. d. Earth's gravity.

105.The symbol which represents silver element is.....

a. S b. Si c .Au d. Ag

✹(3) Complete the following :

1. The liquid element its molecule is composed of one atom is ..... , while that composed of two atoms are .....
2. ..... and .....are teeth less mammals.
3. Heat is carried from the electric heater to our body by ..... and .....
4. Some solutions are good conductors of electricity as ..... and ..... , while others are bad conductors of electricity as .....
5. Heat is transferred in gases by ..... , while transferred in solids by .....
6. From plants that have large leaves ..... and from that have small leaves.....
7. Secretion of sweat in humans is a ..... adaptation .
8. Hawks have ..... beaks to tear the prey, whereas ducks have ... . beaks to filter food from water.
9. Electrons have ..... charge, while protons have ..... charge.
10. A piece of metal its mass is 25 g. and its volume is 10 cm^3 , when it is placed in water it will ..... (water density 1 g/cm^3.)
11. Kinetic energy increases by increasing ..... and ..... of the object.
12. The density is directly proportional to ..... and inversely proportional to .....
13. Drosera and Dieonea are examples for .....
14. Substances are solids which cannot be soften if heated as ..... and .....
15. The networks of wireless transmitters of cellular phones cause ..... pollution but car exhaust causes ..... pollution.
16. Density is the ..... of unit volume of a substance and its measuring unit is.....
17. An alloy of ..... is used in making jewels, while an alloy of ..... is used

in making coils.

18. Smallest part of the element that can take part in a chemical reaction is .....

19. The symbol of sodium atom is ..... while that of sulphur atom is .....

20. ..... is the basic unit of classification in living organisms.

21. The front limbs of dolphins are modified into ..... to take the role of .....

22. ..... and ..... are from micro-organisms .

23. Heat is transferred through liquids by ..... , while through space by .....

24. The ..... belongs to insects, whereas the ..... belongs to arachnids.

25. In the dynamo, ... energy changes into ..... energy.

26. The cockroach belongs to ..... , whereas the scorpion belongs to ..... although both of them are arthropods.

27. Heat is transferred through air by ..... and .....

28. The monoatomic liquid is ..... , while ..... is diatomic liquid.

29. Some solutions are good conductors of electricity as ..... solution, while some solutions don't conduct electricity as ..... solution.

30. Hawks have ..... beaks to tear the prey, whereas ducks have ..... beaks to filter food from water.

31. Holders of light bulbs are painted from time to time in order to protect it from .....

32. The hydrogen molecule is consisted of ..... atoms, while the argon molecule (inert gas) is consisted of ..... atom.

33. If the speed of an object increases into the double, its kinetic energy increases into.....

34. The cockroach belongs to ....., whereas the scorpion belongs to .....

35. ..... is from the plants that reproduce by formation of spores, while ..... is from the plants that reproduce by formation of seeds inside cones.

36. Mechanical energy = ... + ...

37. The whale's front limbs are modified into ..... to take the role of .....

38. ..... and ..... are teethless mammals.

39. When a body raised up, the potential energy ..... , while the kinetic energy.....

40. ..... and ..... are used in classifying plants.

41. The matter is composed of small units called ..... , while these units are consisted of smaller units called .....

42. Frictions turns ..... energy into ..... energy.

43. The chemical symbol of iron element is ..... , while S is the chemical symbol for ..... element.

44. The horse foot ends with ..... and this type of ..... adaptation .

45. The water molecule consists of one atom from ..... and two atoms from

46. ..... and ..... are considered as forms of energy.

47. The oxygen molecule consists of two ..... atoms, while the ammonia molecule consists of one ..... atom and three hydrogen atoms.

48. Limbs are modified into wings in bats for ....., while into paddles in whales and dolphins for ..... in water.

49. The attraction force among the molecules of copper is ..... than that between molecules of water is .....

50. The heat transfers by convection through ..... and ..... materials.

51. The matter in ..... state has a definite shape and definite volume.

52. In the simple electric cell, ... energy is converted into ..... energy.

53. The pendulum can convert potential energy into ..... energy.

54. Liquid element its molecule is composed of one atom is ..... , while that composed of two atoms is .....

55. ..... is the amount of energy gained or lost to transfer an electron from an energy level to another.

56. The electron has ..... charge, while the proton has ..... charge .

57. From the examples of dicotyledon plants are ..... and .....

58. ..... is the way of transferring heat through space.

59. ..... is an animal from edentates.

60. ..... is the sum of protons and neutrons.

61. ..... is the sum of potential and kinetic energy

62. The liquid that is consists of one atom is .....

63. In dry electric cell, ... energy changes into ..... energy.

64. At highest point of the pendulum, the ..... energy is maximum.

65. In solar cell, ... energy changes into ..... energy.

66. The animals with external support such as ..... and ..... .

67. Silver symbol is ..... whereas sodium symbol is .....

68. The potential energy of an object depends on ..... and .....

69. ..... and ..... are very active metals.

70. An animal which has no body support such as.....

71. The atom nucleus contains ..... and .....

72. Scolopendra belongs to .....

73. Plants reproduce by formation of seeds divided into ..... and .....

74. ..... has an internal support, while ..... has an external support.

75. When an object is launched upwards. its speed .....

76. ..... is soft at room temperature, while ..... can't be soften.

77. In the simple cell, ... energy changes into ..... energy.

78. The symbol of potassium atom is ..... , while the symbol of silver atom is .....

79. ..... is from very active metals but ..... is from inactive metals.

80. Friction turns kinetic energy into ..... energy.

81. The whale front limbs are modified into .....

82. Scolopendra belongs to ..... , whereas spider belongs to .....

83. When a body raised up, the potential energy ..... , while the kinetic energy .....

84. Silver symbol is ..... ,whereas sulphur symbol is .....

85. The number of energy levels in the largest known atom is .....

86. The molecule of water consists of two ..... atoms and one ..... atom.

87. Kinetic energy = $\frac{1}{2}$ x ..... x .....

88. Energy is the ability to do ..... and its measuring unit is .....

89. Insects have ..... pairs of jointed legs

90. Plants may carry large-sized leaves such as ..... and some has small-sized leaves such as .....

91. In the melting process, solid molecules ..... energy and change into ..... state.

92. Birds migration is ..... adaptation.

93. The energy stored in the food is ..... energy, while ..... energy is produced from the dry cell.

✹(4) Correct the underlined words:

1	The solar cell changes the solar energy into **heat** energy.	(.....)
2	Vougheir is the fern plant that reproduces by formation of **seeds**.	(.....)
3	Heat is transferred from the Sun to the Earth by **convection** .	(.....)
4	Banana tree carries **small-sized** leaves.	(.....)
5	Maize is from **dicotyledonous** plants.	(.....)
6	Octopus is from **supported** body animals.	(.....)
7	A horse hoof is an example on **behavioral** adaptation.	(.....)
8	**Octopus** is from myriapods.	(.....)
9	**Hydrogen** is from inert gases.	(.....)
10	**Bromine** is the only liquid metal that its molecule consists of one atom.	(.....)
11	**Kinetic** energy is stored in the object due to a work done on it.	(.....)
12	In rodents the incisors number in the lower jaw is **three pairs.**	(.....)
13	Some animals undergo **hibernation** to overcome the high temperature.	(.....)
14	Measuring unit of weight is **joule**.	(.....)
15	**Gold** is from very active metals .	(.....)
16	**Electric energy**= Potential energy+ Kinetic energy.	(.....)
17	**Wind** is a permanent source of energy.	(.....)
18	**Ammonia** consists of one oxygen atom and two hydrogen atom.	(.....)
19	**Lagomorphs** have one pair of incisors in each jaw.	(.....)

20	**Mass number** is known as the number of protons existed in an atom nucleus of an element.	(……)
21	An atom third level is saturated with **8** electrons.	(……)
22	The liquid element which its molecule consists of two atoms is **mercury**.	(……)
23	Transfer of heat by **conduction** does not need a material medium.	(……)
24	The relation $2n^2$ determines the number of **neutron** in energy level.	(……)
25	The networks of cellular phone cause **noise** pollution.	(……)
26	**Copper** rode is the negative pole in the simple electric cell .	(……)
27	Frogs undergo **aestivation** in winter to overcome the decreasing of temperature.	(……)
28	**Boiling** point is the temperature at which matter changes from solid into liquid state.	(……)
29	**Wood** is a good conductor of heat and electricity.	(……)
30	The mechanical energy is the sum of **heat** energy and **light** energy.	(……)
31	The density equals mass divided **area**.	(……)
32	Heat is transferred through the space by **conduction**.	(……)
33	From plants reproduce by formation of spores **palms** plant.	(……)
34	Heat transfers through solids by **convection**.	(……)
35	Work-= force x **time**.	(……)
36	Bean plant belongs to **gymnosperms** plants .	(……)
37	The molecules of inert gases consist of **two** atoms.	(……)
38	Friction turns the mechanical energy into **magnetic** energy.	(……)
39	Iron and copper are **bad** conductors of heat.	(……)

40	The rat belongs to the **lagomorphs**.	(.....)
41	The kinetic energy **decreases** by increasing the mass and speed of objects.	(.....)
42	The chemical symbol of silver is **Si**.	(.....)
43	**Ammonia** molecule consists of two atoms of hydrogen and one atom of oxygen.	(.....)
44	The electron can transfer to a higher energy level if it **loses** energy.	(.....)
45	**Rat** is considered from teeth less mammals.	(.....)
46	The **camel's** limbs end with strong hoofs.	(.....)
47	Carbon is symbolized by **Ca**.	(.....)
48	Animals with external support are such as **reptiles**.	(.....)
49	Resource of permanent energy is **nuclear energy.**	(.....)
50	Aluminum is from **liquid** elements.	(.....)
51	The atom mass is concentrated inside the **electrons**.	(.....)
52	Measuring unit of weight is **joule**.	(.....)
53	**Gold** is from very active metals.	(.....)
54	The relation ($2n^2$) is not applied to energy level higher than **5^{th}** level.	(.....)
55	In solar cell the solar energy is changed into **magnetic** one.	(.....)
56	In simple cell the positive pole is a rode of **zinc**.	(.....)
57	Secreting poison in snakes is considered as a **behavioral** adaptation.	(.....)
58	Insectivorous plants catch and pounce insects to get **starch**.	(.....)

✹(5) Give reason for:

1.The motion of the children's swing is like that of the pendulum.

.....

2.The atom is electrically neutral.

.....

3.Technology has negative effects in the environment.

.....

4.The rule ($2n^2$) is not applied on the energy levels greater than four.

.....

5.Wood piece floats on water surface

.....

6.Equal volumes of different substances have different masses.

.....

7.Camel's legs end with broad pad.

.....

8.Some plants catch and feed on insects.

.....

9.The freezer is found at the top of fridge.

.....

10. The volume of a mixture of water with alcohol is less than sum of their volumes before being mixed together.

.....

11. Neon is an inert gas.

.....

12. Heater is put at the bottom of the room.

.....

13. Spiders are from arachnids.

.....

14. Water is not used to put out petroleum fire.

.....

15. Handles of cooking pans are made up of wood or plastic.

.....

16. Solar heater is preferred to gas heater.

.....

17. It is easy to divide an amount of water into smaller parts.

.....

18. Spider is not from insects.

.....

19. Forelimbs of whale are modified into paddles.

.....

20. The kinetic energy will increase four times as the speed of the moving object is doubled.

.....

21. Car exhaust is considered from the negative effects of technological applications.

.....

22. Inert gases can't share in chemical reactions.

.....

23. Camel limbs end in a thick flat pad .

.....

24."K" energy level is filled with electrons before "L" energy level

.....

25. The predatory birds have sharp and strong crocked beak .

.....

26. Piece of iron sinks in water.

.....

27. On adding 50 cm^3 of alcohols to 50 cm^3 of water the total volume not equal 100 cm^3

.....

28. Frogs hibernate in winter.

.....

29. The nucleus of the atom is positively charged.

.....

30. Some animals undergo hibernation.

.....

31. There are front teeth extending outward in hedgehog .

.....

✹(6) What happen if:

1. Three atoms of hydrogen combine with one atom of nitrogen.
.....
2. An object is thrown upwards.
.....
3. Doubling the weight of an object (concerning its potential energy).
.....
4. Using water in putting out petrol fires.
.....
5. Leaving a piece of iron exposed to air.
.....
6. Friction of the bicycle wheels to a rough surface.
.....
7. If the front limbs of the bat are not modified into wings.
.....
8. The front teeth of hedgehog are not extending outwards.
.....
9. Doubling the height of an object (concerning its potential energy).
.....
10. Dipping two different metals connected by copper wire in an acidic solution.
.....
11. The electron gains a quantum of energy.
.....
12. The pendulum passes its rest position (concerning potential and kinetic energy).
.....
13. Rubbing your hands together.
.....
14. Friction between the frames of bicycle's wheel with the brake.
.....
15. A liquid substance is heated.
.....
16. You open a perfume bottle in a closed room for a while.
.....
17. Putting of a drop of ink in water.
.....
18. The bones of the front limbs and fingers of monkey are not elongated.
.....
19. You inserted two different metallic rods in a lemon connected by a wire.
.....
20. Using water in putting out petrol fires.
.....

✹(7) Put (√) or (X) :

1. In solar cells, the solar energy is converted into heat energy. ( )

2. The intermolecular spaces among molecules of solids very large. ( )

3. Scorpion has three pairs of jointed legs. ( )

4. Heating coils are made up of nickel-chrome alloy. ( )

5. Temperature is directly proportional to the kinetic energy of particles. ( )

6. Intermolecular spaces are tiny in solids. ( )

7. Insectivorous plants can absorb nitrogenous substances from insects. ( )

8. From substances that float on the surface of water is copper. ( )

9. Molecules of the same substance are different from each other. ( )

10. Work done = Force x Displacement. ( )

11. The electrons are distributed to fill the "K" level before filling the "L" level. ( )

12. Argon atom ($_{18}Ar$) has four energy levels . ( )

13. The melting point of wax is equal to the melting point of table salt. ( )

14. In the electric cell, the electric energy is converted into chemical energy. ( )

15. The energy level "K" has the highest energy. ( )

16. The fuel inside the car is similar to the food inside the body of a living organism. ( )

17. Heat is transferred in solid materials by radiation. ( )

18. When air is cooled, density decreases, so it falls down. ( )

19. Gymnosperms are classified into monocotyledon and dicotyledon plants. ( )

20. In solar cells, the solar energy is converted into heat energy. ( )

21. Angiosperms are called flowering plants. ( )

22. The motion of gaseous molecule is limited. ( )

23. The distance among solid molecules is very large. ( )

24. In car lamps, electric energy changes into light energy. ( )

25. The compound consists from a combination of atoms of one element. ( )

26. bird activity during the day and the bat during night is from functional adaptation. ( )

27. Iron rusts when it is exposed to dry air. ( )

28. As we go further from the nucleus , the energy of the energy level decreases. ( )

29. Mercury is a liquid element that its molecule composed of one atom. ( )

30. Scolopendra and euglena are from myriapods. ( )

31. Secreting poison in snakes is a behavioral adaptation. ( )

32. Amoeba is from unicellular micro-organisms. ( )

33. Oxygen gas from monoatomic active gases. ( )

34. Gymnosperms are flowering plants. ( )

35. Heat is transferred through solids by conduction. ( )

36. Inert gases are monoatomic. ( )

37. In solar cells, the solar energy is converted into heat energy. ( )

38. Jewels are made up of copper-gold alloy. ( )

39. Insectivorous plants get the nitrogenous substances through photosynthesis. ( )

40. Angiosperms are flowering plants. ( )

41. The birds activity during the daylight is considered a functional adaptation. ( )

42. Friction turns mechanical energy to electric energy. ( )

43. Euglena from multicellular living organisms. ( )

44. The transfer of heat through copper is by conduction. ( )

45. Water is used to put out petrol fires. ( )

46. Chemical energy can be stored in stretched spring. ( )

47. Fuel in a car as food for a man. ( )

48. The measuring unit of potential energy is the joule. ( )

49. The hydrogen molecule consists of two hydrogen atoms. ( )

50. The intermolecular forces are very strong in gases. ( )

51. In the car dynamo electric energy is changed into kinetic energy. ( )

52. Bean plant is a dicotyledon plant. ( )

53. The mass number is the number of protons and electrons. ( )

54. Potential energy of an object decreases by increasing its height. ( )

55. The motion of gases is completely free. ( )

✹(8) What is the function (use) of ... ?

1. Simple electric cell.

.....

2. Nickel-chrome alloy.

.....

3. The palm legs in geese.

.....

4. The front teeth of hedgehog.

.....

5. The thick flat pad at the end of camel's limb.

.....

6. Gold-copper alloy.

.....

7. Car dynamo

.....

8. The sharp and crooked beaks in hawks.

.....

✹(9) Give one difference between each of the following :

1. Bean plant and maize plant.

.....

.....

2. Neutron and proton.

.....

.....

3. Fish and snail.

.....

.....

4. Intermolecular forces in solids and in gases.

.....

.....

5. Beans and wheat.

.....

.....

6. Ammonia molecule and nitrogen molecule.

.....

.....

7. Rabbit & squirrel.

.....

.....

8. Rodents and lagomorphs.

.....

.....

9. Element and compound.

.....

.....

10. Potential and kinetic energies of an object.

.....

.....

11. Potassium and gold. (according chemical activity).

.....

.....

12. Bat and whale (according to the adaptation of the front limbs).

.....

.....

13. Kinetic energy of an object at maximum height and on reaching the ground.

.....

.....

14. Insects and arachnids. (According to the number of legs)

.....

.....

15. Hydrogen and Helium. (According to the number of atoms in its molecule)

.....

.....

✹(10) What is meant by ... ?

1. Boiling point.

.....

.....

2. Heat energy.

.....

.....

3. Matter.

.....

.....

4. Kinetic energy.

.....

.....

5. Adaptation.

.....

.....

6. Transfer of heat by radiation .

.....

.....

7. The law of conservation of energy.

.....

.....

8. Quantum.

.....

.....

9. The excited atom.

.....

.....

10. Atom.

.....

.....

11. Species.

.....

.....

12. The melting point of ice= zero degree Celsius.

.....

.....

13. The kinetic energy of an object= 400 joule.

.....

.....

14. Aestivation.

.....

.....

15. Temperature.

.....

.....

16. Mass number of sodium is 23.

.....

.....

17. The melting point.

.....

.....

18. Mechanical energy.

.....

.....

19. The density of water is 1 gm/cm^3

.....

.....

✹(11) Mention one example for each of the following :

1. An animal with external supported body.
.....

2. A teethless animal.
.....

3. A plant that reproduces by spores.
.....

4. A mammal which its front limbs are modified into wings.
.....

5. Molecules of gaseous elements are composed of one atom.
.....

6. A device converts electric energy into mechanical energy.
.....

7. Micro-organisms.
.....

8. Camouflage in insects.
.....

9. Aestivation in rodents.
.....

10. A device changes kinetic energy into electric energy.
.....

11. A permanent source of energy.
.....

12. A device that produces heat energy.
.....

13. A very active metal.
.....

14. A gas its molecule consists of two similar atoms .
.....

15. Solid substance has low melting point.
.....

16. Insectivorous plants.
.....

17. Unicellular organism.
.....

18. Alloy used in making heating coils.
.....

19. A plant reproduces by formation of spores.
.....

20. The liquid element consists of two atoms.
.....

21. A solution that is good conductor of electricity.
.....

22. Very active metal.
.....

✹(12) Problems :

1

Write the electronic configuration :

1. $^{23}_{11}Na$ 2. $^{20}_{10}Ne$

Then determine each of the following :

1. Atomic number.
2. Mass number.
3. Number of electrons.
4. Number of Neutrons.
5. Number of energy levels.
6. Chemical activity.

.....

.....

.....

.....

2

Transfer the following table to your answer paper and fill it :

Element symbol	Atomic number	Mass number	Number of protons	Number of electrons	Number of neutrons
$^{14}_{7}N$	.....	.....	.....	.....	.....
$^{12}_{6}C$	.....	.....	.....	.....	.....

.....

.....

.....

.....

3

Find the weight of an object its mass 50 kg, knowing that the Earth's gravitational acceleration is 9.8 m/sec^2

.....

.....

.....

.....

4

On determining iron density using a piece of iron of mass 78 gm. The piece is immerged in 100 cm^3. of water, the water increases up to 110 cm^3. Calculate iron density.

.....

.....

.....

.....

5

Draw a diagram to show the simple electric cell.

.....

.....

.....

.....

.....

6

A ball was launched upwards and vertically at a speed 3 m/sec. up to a height 4m. **Calculate the mechanical energy** (work done) of the ball if its weight is 5 newton and has a mass of 0.5 Kg.

.....

.....

.....

.....

7

(A)	(B)
1. Migration of quail bird	a. Scorpion.
2. Soft bodies	b. Mosquitoes.
3. Insects	c. Behavioral adaptation.
4. Myriapods	d. Armadillo.
	e. Scolopendra.
	f. Earthworm.

1. **2.** **3.** **4.**

8

Choose from column (B) what suits it in column (A) :

(A)	(B)
1. Wind generator	a. is a source of nuclear energy.
2. Radio cassette	b. is a source of heat energy.
3. Electric lamp	c. is a source of electric energy.
4. Oven	d. is a source of light energy.
	e. is a source of sound energy.

1. **2.** **3.** **4.**

9

Your classmate has seen a bird, he doesn't knows this bird's name but he managed to describe it as a bird with a sharp beak and the legs end in fingers with strong claws. According to your classmate story, answer the following questions :

1. What is the type of adaptation in both the beak and leg of this bird ?
2. How many fingers are in each leg ?
3. What type of food does this bird feed on ?

.....

.....

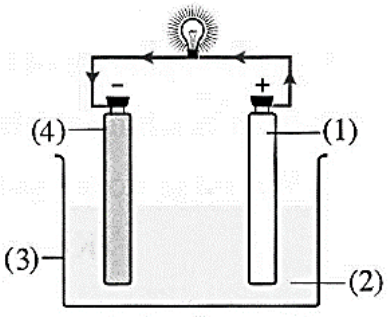
.....

.....

10

From the opposite figure answer the following questions :

1. Mention the name of the opposite device.
2. Label the fig.
3. Mention the idea of its operation.



.....

.....

.....

.....

11

In an experiments to determine water density, the following results are recorded :

1. Mass of an empty glass beaker= 56 g.
2. Mass of the beaker containing water = 156 g.
3. Volume of the water measured by a graduated cylinder= 100 cm^3.

Calculate the water density.

.....

.....

.....

.....

12

Draw the electronic configuration for each of the following elements :

1. $^{40}_{18}Ar$ 2. $^{7}_{3}Li$ 3. $^{24}_{12}Mg$ 4. $^{19}_{9}F$

.....

.....

.....

.....

13

Choose from column (B), what suits column (A) :

(A)	(B)
1. Banana plant	a. is from gymnosperms.
2. Wheat plant	b. has small sized leaves.
3. Pine plants	c. is from monocotyledon.
4. Molukhiyah plant	d. is from dicotyledon.
	e. has large sized leaves.

1. **2.** **3.** **4.**

14

When a piece of iron its mass 156 gm. is put in a graduated cylinder containing 100 cm^3 of water the reading becomes 120 cm^3 **Calculate the density of iron.**

.....

.....

.....

15

Write the electronic configuration of the following atoms :

1. $^{23}_{11}Na$ 2. $^{40}_{20}Ca$

.....

.....

.....

.....

16

Write the electronic configuration of the following elements, then :

1. $^{7}_{3}Li$ 2. $^{24}_{12}Mg$

- Find the number of electrons in the outermost energy level in each atom.
- Calculate the number of neutrons in each atom.

.....

.....

.....

.....

17

State the energy transformation in each of the following :

1. Dynamo. 2. Electric lamp. 3. Motor. 4. Electric bell.

.....

.....

.....

.....

18

Write the electron configuration of the following :

1. $_{11}Na$ 2. $_{17}Cl$ 3. $_{12}Mg$ 4. $_{3}Li$

.....

.....

.....

19

Calculate the potential energy of an object its weight is 20 N., placed at 5 m height from the ground.

.....

.....

.....

20

Calculate the potential energy of an object of weight 50 newtons that placed at height 5 meters.

.....

.....

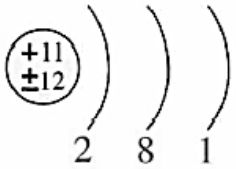
.....

21

The figure represents the electronic configuration of the atom of an elements

Determine :

1. The atomic number.
2. The mass number.
3. The number of energy levels.
4. The number of electron in the last energy level.



.....

.....

.....

22

Match from column (B) what is suitable for column (A) :

(A)	(B)
1. Chameleon	a. reproduce by formation of spores.
2. Voughair	b. colours itself with the dominant colours of surrounding environment to capture the prey.
3. The jerboa	c. from the insectivorous plants.
4. Drosera	d. undergoes aestivation in summer to escape from high temperature.
5. Rat	e. is an example of rodents.

1. **2.** **3.** **4.** **5.**

23

A force of 20 newton acts on a body to move it a distance 1.5 m. in the same direction of force. **Calculate the work done.**

.....

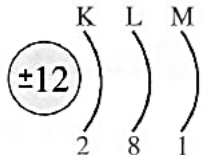
.....

.....

24

Look at the opposite figure, then answer :

1. Find number of protons.
2. Find the mass number.
3. Find the atomic number.
4. Find this element activity.



.....

.....

.....

25

Write electronic configuration for :

1. $_{19}K$ 2. $_{9}F$ 3. $_{13}Al$ 4. $_{10}Ne$

.....

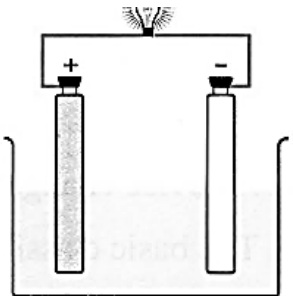
.....

.....

.....

26

1. The name of the opposite device is .....
2. The positive pole is .....
3. The negative pole is .....
4. The liquid in the basin is .....



.....

.....

.....

.....

Model Answer

(1) Write the scientific term :

1. Energy level
2. Convection
3. Snail
4. Mechanical energy
5. Species
6. Compound
7. Inert gas
8. Potential energy
9. Boiling point
10. Heat energy
11. Rodents
12. Quantum
13. Electromagnetic pollution
14. Joule
15. Protons
16. Intermolecular space
17. Behavioral adaptation
18. Taxonomy
19. Rodent
20. Conservation law of energy
21. Melting point
22. Energy
23. Camouflage
24. Quantum
25. Aestivation
26. Boiling point
27. Species
28. Adaptation
29. Melting point
30. Element
31. Temperature
32. Functional adaptation
33. Insect
34. Atom
35. Quantam
36. Atomic number
37. Potential energy
38. Algae
39. Density
40. Mass number
41. Kinetic energy
42. Element
43. Species
44. Sun
45. Quantam
46. Conduction
47. Mechanical energy
48. Ferns
49. Arthropods
50. Conservation law of energy
51. Molecule
52. Mercury
53. Excited atom
54. Solar cell
55. Insectivores plants
56. Adaptation
57. Intermolecular species
58. Molecule
59. Camouflage
60. Electromagnet
61. Mass number
62. Cm^3
63. Algae
64. Behavioral adaptation
65. Radiation
66. Species
67. Kerosene
68. Energy
69. Solid
70. Quantum
71. Compound
72. Gram
73. Nickel-chrome
74. Temperature
75. Potential
76. Density

(2) Choose the right answer:

1. A	**21.** C	**41.** A	**61.** B	**81.** B	**101.** C
2. C	**22.** A	**42.** C	**62.** C	**82.** B	**102.** B
3. B	**23.** B	**43.** A	**63.** A	**83.** A	**103.** C
4. B	**24.** B	**44.** A	**64.** B	**84.** C	**104.** A
5. B	**25.** B	**45.** C	**65.** B	**85.** B	**105.** D
6. A	**26.** D	**46.** B	**66.** C	**86.** D	
7. C	**27.** A	**47.** D	**67.** A	**87.** B	
8. B	**28.** D	**48.** C	**68.** B	**88.** A	
9. D	**29.** D	**49.** B	**69.** A	**89.** C	
10. D	**30.** C	**50.** B	**70.** C	**90.** A	
11. B	**31.** C	**51.** C	**71.** C	**91.** B	
12. C	**32.** A	**52.** B	**72.** D	**92.** C	
13. C	**33.** A	**53.** C	**73.** A	**93.** B	
14. D	**34.** C	**54.** A	**74.** A	**94.** B	
15. B	**35.** B	**55.** C	**75.** C	**95.** B	
16. A	**36.** A	**56.** D	**76.** B	**96.** A	
17. C	**37.** D	**57.** B	**77.** A	**97.** C	
18. A	**38.** D	**58.** B	**78.** A	**98.** A	
19. B	**39.** B	**59.** C	**79.** B	**99.** B	
20. C	**40.** B	**60.** C	**80.** C	**100.** B	

✹(3) Complete the following :

1. Mercury – bromine
2. Sloth – armadillo
3. Convection – radiation
4. Acidic - alkaline - Sugary solution
5. Convection – conduction
6. Banana – molokhiya
7. Functional
8. Sharp – wide
9. Negative – positive
10. Sink
11. Mass – speed
12. Mass - Volume
13. Insectivorous plant
14. Sulfur – coal
15. Electromagnet – chemical
16. Mass – gm/cm^3
17. Gold-copper - nickel-chrome
18. Atom
19. Na – S
20. Species
21. Paddle – swimming
22. Amoeba – euglena
23. Convection – radiation
24. Ant – spider
25. Kinetic – electric
26. Insect – arachnid
27. Convection – radiation
28. Mercury – bromine
29. Salt – sugary
30. Sharp – wide
31. Rust
32. Two – one
33. 4 times
34. Insect – arachnid
35. Voughair – pine
36. Kinetic + potential
37. Paddle – swimming
38. Sloth – armadillo
39. Increase – decrease
40. External shape – way of reproduction
41. Molecule – atom
42. Kinetic – heat
43. Fe – sulfur
44. Strong hoofs – structural
45. Oxygen – hydrogen
46. Heat – light
47. Hydrogen - Nitrogen
48. Flying – swimming
49. Strong – weak
50. Liquid – gas
51. Solid
52. Chemical – electric
53. Kinetic
54. Mercury – bromine
55. Quantum
56. Negative – positive
57. Pea – bean
58. Radiation
59. Sloth
60. Mass no.
61. Mechanical energy
62. Mercury
63. Chemical – electric
64. Potential
65. Solar – electric
66. Snail – mussel
67. Ag – Na
68. Weight – height
69. Sodium – potassium
70. Jelly fish
71. Proton – neutron
72. Myriapods
73. Gymnosperm – angiosperm
74. Fish – snail
75. Decrease
76. Rubber – carbon
77. Chemical – electric
78. K – Ag
79. Sodium – silver
80. Heat
81. Paddles
82. Myriapods - arachnide
83. Increase – decrease
84. Ag – S
85. Seven
86. Hydrogen – oxygen
87. $M * V^2$
88. Work – joule
89. Three
90. Banana – molokhyia
91. Gain – liquid
92. Behavioral
93. Chemical – electric

✹(4) Correct the underlined words:

1. Electric
2. Spores
3. Radiation
4. Large size
5. Monocotyledon
6. Soft bodies
7. Structural
8. Julius
9. Helium
10. Mercury
11. Potential
12. One pairs
13. Aestivation
14. Newton
15. Sodium
16. Mechanical
17. Sun
18. Water
19. Rodents
20. Atomic number
21. 18
22. Bromine
23. Radiation
24. Electrons
25. Electromagnetic
26. Zinc
27. Hibernation
28. Melting
29. Iron
30. Kinetic – potential
31. Volume
32. Radiation
33. Pine
34. Conduction
35. Displacement
36. Angiosperm
37. One
38. Heat
39. Good
40. Rodents
41. Increase
42. Ag
43. Water
44. Gain
45. Sloth
46. Horse
47. C
48. Snail
49. Sun
50. Solid
51. Nucleus
52. Newton
53. Sodium
54. 4^{th}
55. Electric
56. Copper
57. Functional
58. Protein

✹(5) Give reason for:

1. Because in both of them, the potential energy and kinetic energy are interchanged
2. Because the number of negative electrons which revolve around the nucleus is equal to the number of positive protons in the nucleus.
3. Because some of technological applications cause environmental pollution as Electromagnetic pollution, Noise pollution. and Chemical pollution of air, water and soil.
4. Because the atom becomes unstable if the level contains more than 32 electrons.
5. Because the density of wood is less than that of water
6. Because the difference in density.
7. To enable the camel wandering through the hot desert sand
8. To absorb the nitrogenous substances that their bodies to make protein
9. Because when air is cooled, its density increases, so it falls down to cool the food in the refrigerator (or the room) and the hot air rises up to be cooled again and so on
10. Because some molecules of alcohol enter the intermolecular spaces among water molecules
11. Because the outermost energy level of argon atom is completely filled with electrons (contains 8 electrons).
12. Because when air around the heater is heated its density decreases so it rises up to warm the room, while the cold air falls down to be heated again and so on.
13. Because they are arthropods that have four pairs of jointed legs
14. Because the density of petrol is less than that of water so, petrol floats on water surface and water doesn't put out the petrol fires
15. Because each of them is a bad conductor of heat
16. Because solar energy is a clean source of energy which doesn't pollute the environment
17. Because there are weak attraction forces among water molecules
18. Because they are arthropods that have four pairs of jointed legs
19. To perform the function of swimming and diving in water.
20. Because the kinetic energy of a moving body is directly proportional to the square of its speed.
21. Because it causes chemical pollution of air.
22. Due to filling of their outermost energy levels with electrons
23. To enable the camel wandering through the hot desert sand
24. Because the energy of (K) level is less than that of (L) level
25. To tear their prey's flesh
26. Because the density of iron is more than that of water
27. Because some molecules of alcohol occupy the intermolecular spaces among water molecules
28. To overcome the decrease in temperature
29. Because it contains protons which are positively charged and neutrons which are electrically neutral
30. To overcome the decrease in temperature
31. To capture insects.

✹(6) What happen if:

1. Ammonia molecule is formed
2. Its potential energy increases
3. Its potential energy is doubled
4. The petrol floats on water surface, so the fires don't put out.
5. It rusts due to its reaction with atmospheric oxygen
6. The mechanical energy changes into heat energy by friction
7. They become unable to fly.
8. It is unable to capture insects.
9. Its potential energy is doubled.
10. An electric current flows through the wire.
11. It transfers to a higher level and the atom becomes excited atom
12. Its kinetic energy is maximum, while its potential energy is minimum
13. The mechanical energy changes into heat energy by friction
14. The mechanical energy changes into heat energy by friction
15. Its molecules gain more energy and their speed increases and at the boiling point some of them overcome the intermolecular forces and the intermolecular spaces increase, so they escape in the form of vapour.
16. The odour of the perfume spreads all over the room
17. The colour of ink spreads through all the water
18. They become unable to climb trees and catch objects
19. An electric current flows through the wire.
20. The petrol floats on water surface, so the fires don't put out

✹(7) Put (√) or (X) :

1. (X)	**12.** (X)	**23.** (X)	**34.** (X)	**45.** (√)
2. (X)	**13.** (X)	**24.** (√)	**35.** (√)	**46.** (X)
3. (X)	**14.** (X)	**25.** (X)	**36.** (√)	**47.** (√)
4. (√)	**15.** (X)	**26.** (X)	**37.** (X)	**48.** (√)
5. (√)	**16.** (√)	**27.** (X)	**38.** (√)	**49.** (√)
6. (√)	**17.** (X)	**28.** (X)	**39.** (X)	**50.** (X)
7. (√)	**18.** (X)	**29.** (√)	**40.** (√)	**51.** (X)
8. (X)	**19.** (X)	**30.** (X)	**41.** (X)	**52.** (√)
9. (X)	**20.** (X)	**31.** (X)	**42.** (X)	**53.** (X)
10. (√)	**21.** (√)	**32.** (√)	**43.** (X)	**54.** (X)
11. (√)	**22.** (X)	**33.** (√)	**44.** (√)	**55.** (√)

✹(8) What is the function (use) of ... ?

1. To convert chemical energy into electric energy
2. Used in making nickel-chrome
3. To help them in swimming.
4. To capture insects
5. To enable the camel wandering through the hot desert sand.
6. Used in making jewels
7. To convert kinetic energy into electric energy
8. To tear the preys flesh .

✹(9) Give one difference between each of the following :

1	Bean plant	maize plant.
Type	dicotyledon	monocotyledon
2	**Neutron**	**proton**
charge	Neutral	Positive
3	**Fish**	**snail**
Support	Internal support	External support
4	**solid**	**Gas**
Intermolecular forces:	Very strong.	Very weak
5	**Beans**	**wheat**
Type	dicotyledon	monocotyledon
6	**Ammonia molecule**	**nitrogen molecule.**
no. of atoms	Four atoms.	Two atoms.
7	**Rabbit**	**squirrel**
Type	Lagomorphs	Rodents
8	**Rodents**	**lagomorphs**
Examples:	squirrel.	Rabbit.
9	**Element**	**compound**
Definition	It is the simplest pure form of matter which can't be analyzed chemically into simpler form by simple chemical methods	It is a substance which is formed from combination of atoms of two or more different elements with constant weight ratios
10	**Potential**	**kinetic**
Factors affecting it :	•Weight of the body. • Height from the ground.	• Mass of the body. •Speed of the body.
11	**Potassium**	**gold**
Chemical activity :	Active	Inactive
12	**Bat**	**whale**
Adaptation of upper limbs	wings	paddles
13	**maximum height**	**on reaching the ground**
Kinetic energy	zero	maximum
14	**Insects**	**arachnids**
No. of jointed legs :	3 pairs.	4 pairs.
15	**Hydrogen**	**Helium**
No of atoms	2	1

✹(10) What is meant by ... ?

1. It is the temperature at which the matter begins to change from the solid state to the liquid state.
2. It is a form of energy which is transferred from an object of higher temperature to that of lower temperature
3. It is anything that has a mass and a volume.
4. It is the work done during the motion of an object.
5. It is a modification of a living organism's behaviour, body structure, or organs biological functions to become more adapted to the environmental conditions where it lives in.
6. It is the transfer of heat from a hot object to another without any need for a material medium through which heat transfers.
7. Energy is neither created nor destroyed, but it is converted from one form to another.
8. It is the amount of energy lost or gained by an electron when it transfers from one energy level to another.
9. It is the atom that gains a quantum of energy.
10. It is the fundamental building unit of matter.
11. It is the basic classification unit for living organisms
12. The ice begins to change into water at 0°C.
13. The work done during the motion of the object is 400 joules
14. It is the behaviour through which some animals dormant and stop most of their vital activities to avoid the extreme rise in temperature in summer and shortage of water and rains
15. It is the heat condition which determines the direction of heat energy whether from or to the object when it comes in contact with another.
16. The sum of the numbers of protons and neutrons in the nucleus of sodium atom equals 23
17. It is the temperature at which the matter begins to change from the solid state to the liquid state.
18. It is the sum of potential and kinetic energies of the body
19. The mass of one cubic centimeter ($1cm^3$) of water is 1 gm.

✹(11) Mention one example for each of the following :

1. Snail
2. Sloth
3. Voughair
4. Bat
5. Argon
6. Electric fan
7. Amoeba
8. Chameleon
9. Jerboa
10. Dynamo
11. Sun
12. Solar oven
13. Sodium
14. Hydrogen
15. Sulphur
16. Drosera
17. Amoeba
18. Nickel-chrome
19. Adiantam
20. Bromine
21. Acidic solution
22. Sodium

✹(12) Problems :

1

1. $^{23}_{11}Na$ — K: 2, L: 8, M: 1

1. The atomic number = 11
2. Mass number = 23
3. Number of electrons = 11
4. Number of neutrons = 12
5. Number of energy levels = 3
6. Chemical activity : Active

2. $^{20}_{10}Ne$ — K: 2, L: 8

1. The atomic number = 10
2. Mass number = 20
3. Number of electrons = 10
4. Number of neutrons = 10
5. Number of energy levels = 2
6. Chemical activity : Inactive

2

Element symbol	Atomic number	Mass number	Number of protons	Number of electrons	Number of neutrons
$^{14}_{7}N$	7	14	7	7	7
$^{12}_{6}C$	6	12	6	6	6

3

Weight = Mass × Acceleration due to gravity

= 50 × 9.8 = 490 newton

4

The volume of the iron piece =

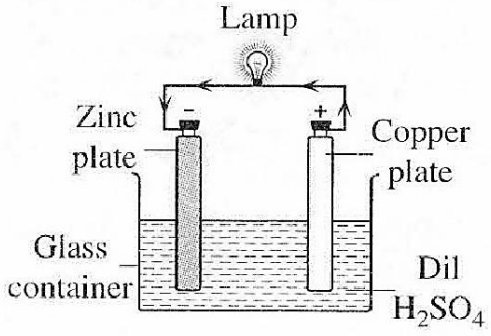
The volume of water and the iron piece –

The volume of water = 110 – 100 = 10 cm^3.

The density of the iron piece (D)

$= \frac{M}{V} = \frac{78}{10} = 7.8$ gm/cm^3.

5



6

1. Kinetic energy $= \frac{1}{2} \times$ Mass $\times$ (Speed)^2

$= \frac{1}{2} \times 0.5 \times (3)^2$

= 2.25 joule

Potential energy = Height × Weight

= 4 × 5 = 20 joule

Mechanical energy = Potential energy + kinetic energy = 20 + 2.25 = 22.25 joule

7

1. c 2. f 3. b 4. e

8

1. c 2. e 3. d 4. b

9

1. Structural adaptation.
2. Four fingers. 3. Meat.

10

1. Simple electric cell.
2. (1) Copper plate.
   (2) Dil. sulphuric acid.
   (3) Glass container.
   (4) Zinc plate.
3. It converts the chemical energy into electric energy.

11

The mass of water = the mass of the beaker – the mass of the empty beaker

= 156 – 56 = 100 gm.

The density of water $= \frac{\text{Mass}}{\text{Volume}} = \frac{100}{100}$

= 1 gm/cm^3.

12

1. $^{40}_{18}Ar$ (K 2, L 8, M 8)
2. $^{7}_{3}Li$ (K 2, L 1)
3. $^{24}_{12}Mg$ (K 2, L 8, M 2)
4. $^{19}_{9}F$ (K 2, L 7)

13

1. e 2. c 3. a 4. b

14

∵ The volume of the piece of iron $= 120 - 100 = 20\ cm^3$.

∴ The density of iron $= \frac{Mass}{Volume}$

$= \frac{156}{20} = 7.8\ gm/cm^3$.

15

1. $^{23}_{11}Na$ (K 2, L 8, M 1)
2. $^{40}_{20}Ca$ (K 2, L 8, M 8, N 2)

16

1. $^{7}_{3}Li$ (K 2, L 1)
   - The number of electrons in the outermost energy level = 1
   - The number of neutrons = 4
2. $^{24}_{12}Mg$ (K 2, L 8, M 2)
   - The number of electrons in the outermost energy level = 2
   - The number of neutrons = 12

17

1. Kinetic energy is transformed to electric energy.
2. Electric energy is transformed to heat and light energies.
3. Electric energy is transformed to kinetic energy.
4. Electric energy is transformed to sound energy.

18

1. $^{23}_{11}Na$ (K 2, L 8, M 1)
2. $^{35}_{17}Cl$ (K 2, L 8, M 7)
3. $^{24}_{12}Mg$ (K 2, L 8, M 2)
4. $^{7}_{3}Li$ (K 2, L 1)

19

Potential energy = Weight × Height

$= 20 \times 5 = 100$ joules

20

Potential energy = Weight × Height

$= 50 \times 5 = 250$ joules

21

1. 11 2. 23 3. 3 4. 1

22

1. b 2. a 3. d 4. c 5. e

23

Work = Force × Displacement

$= 20 \times 1.5 = 30$ joules

24

1. 11 2. 23 3. 11 4. Active.

25

1. $^{39}_{19}K$ (K 2, L 8, M 8, N 1)
2. $^{19}_{9}F$ (K 2, L 7)
3. $^{27}_{13}Al$ (K 2, L 8, M 3)
4. $^{20}_{10}Ne$ (K 2, L 8)

26

1. simple electric cell.
2. copper. 4. zinc.
5. dil. sulphuric acid.