KENDRIYA VIDYALAYA SITAPUR (FIRST SHIFT)

Periodic Test – 3 (Session 2022 – 2023)

Class – IX

Subject – Science

Time – 90 minutes. M.M. – 40

Note :

1) All questions are compulsory.
2) There are 25 questions in a paper divided into five sections.
3) Section - A contain 10 questions of MCQ based 1 mark each .
   Section - B contain 2 questions of case study based 3 marks each.
   Section – C contain 8 very short questions 1 mark each.
   Section – D contain 3 short questions 2 marks each .
   Section – E contain 2 long questions 5 marks each.

Section – A

MULTIPLE CHOICE QUESTIONS

Q.1) The inter particle space is minimum in :

(a) Solid (b) Liquid (c) Gas (d) All of these

Q.2) Rusting of an article made up of iron is called :

(a) corrosion and it is a physical as well as chemical change

(b) dissolution and it is a physical change

(c) corrosion and it is a chemical change

(d) dissolution and it is a chemical change

Q.3) Law of constant proportion was proposed by :

(a) Lavoisier (b) Proust (c) Dalton (d) Benzelius

Q.4) The number of valence electrons in Al are :

(a) 1 (b) 2 (c) 3 (d) 4

Q.5) Which of the following is called power house of cell :

(a) Lysosome. (b) Mitochondria (c) Nucleus (d) Golgi body

Q.6) In the following which is not an example of simple permanent tissue :

(a) Parenchyma (b) Collenchyma (c) Sclerenchyma (d) Phloem

Q.7) A physical quantity which cannot be negative is :

(a) distance (b) displacement (c) velocity (d) acceleration

Q.8) There will be a change in the speed or in the direction of motion of a body when it is acted upon by:

(a) zero force (b) balanced force (c) unbalanced force (d) uniform force

Q.9) The gravitational force between two objects is F. If masses of both objects are halved without changing distance between them then the gravitational force would become :

(a) F/4 (b) F/2 (c) F (d) 2F

Q.10) When a body falls freely towards the earth then its total energy :

(a) increases (b) decreases (c) remains constant (d) first increases and then decreases

Section – B

CASE STUDY BASED QUESTIONS

Q.11) Many scientists contributed in revealing the presence of charge particles in an atom. It was known by 1900 that the atom was indivisible particle but contained at least one sub-atomic particle - the electron identified by J.J. Thomson. Even before the electron was identified, E. Goldstein in 1886 discovered the presence of a new radiations in a gas discharge and called them canal rays. These rays were positively charged radiations which ultimately led to the discovery of another sub-atomic particle. This sub-atomic particle had a charge, equal in magnitude but opposite in sign to that of the electron. Its mass was approximately 2000 times as that of the electron. It was given the name of proton. In general, an electron is represented as 'e' and a proton as 'p' . The mass of a proton is taken as one unit and its charge as +1 . The mass of an electron is considered to be negligible and its charge is -1 .

1) Who discovered electron ?

(a) Bohr (b) J.J. Thomson (c) E. Goldstein (d) J. Chadwick

2) Which of the following has a charge of +1 and a mass of 1 amu ?

(a) A proton (b) A neutron (c) An electron (d) A helium nucleus

3) Which statement is true ?

(a) The nucleus of an atom contains only neutrons.

(b) The nucleus of an atom contains only protons and electrons.

(c) The nucleus of an atom contains only protons and neutrons.

(d) The nucleus of an atom contains only electrons and neutrons.

Q.12) Newton's second law of motion gives us a relationship between force and acceleration. The acceleration produced in a body is directly proportional to the force acting on it and inversely proportional to the mass of the body. Therefore, if the mass of a body is doubled, it's acceleration will be halved and if the mass is halved then acceleration will get doubled provided the force remains the same.

1) Newton's second law of motion tells us that :

(a) all forces in the universe occur in equal but oppositely directed pairs.

(b) The rate of change of linear momentum is equal to the force acting on the body.

(c) an object will remain at rest or in uniform motion in a straight line unless acted upon by an external force.

(d) None of the above.

2) The incorrect statement about Newton's second law of motion is that :

(a) it provides a measure of inertia. (b) it provides a measure of force.

(c) it relates force and acceleration. (d) it relates momentum and force.

3) During athletics meet, a high jumping athlete is provided either a cushion or a heap of sand on the ground to fall upon. Which law is used to explain it ?

(a) Law of inertia (b) Newton's first law of motion

(c) Newton's second law of motion (d) Newton's third law of motion

Section – C

VERY SHORT ANSWER QUESTIONS

Q.13) Define boiling point.

Q.14) What is a solution ?

Q.15) State the law of conservation of mass.

Q.16) Which organelle is known as Suicide bag of a cell ?

Q.17) Write the name of the tissue which is responsible for movement in our body .

Q.18) What is the S.I. unit of acceleration ?

Q.19) What do you mean by free fall ?

Q.20) What is mechanical energy ?

Section – D

SHORT ANSWER QUESTIONS

Q.21) Write down the symbol for the following elements :

a) Iron (b) Sodium (c) Potassium (d) Gold

Q.22) Which of the following has more inertia ?

(a) A rubber ball and a stone of same size.

(b) A five- rupee coin and a one- rupee coin.

Q.23) A lamp consumes 1000 J of electrical energy in 10 s . What is its power ?

Section – E

LONG ANSWER QUESTIONS

Q.24) State the universal law of gravitation. Derive the formula for the gravitational force using the factors on which it depends by drawing suitable diagram.

Or

a) Define pressure. Write its formula and S.I. unit
b) Explain buoyancy and buoyant force .

Q.25) a) Define kinetic energy . Write its formula and S.I. unit.

b) An object of mass 15 kg is moving with a uniform velocity of 4 m/s . What is the kinetic energy possessed by the object ?

Or

a) Define potential energy. Write its formula and S.I. unit.
b) An object of mass 12 kg is at a certain height above the ground. If the potential energy of the object is 480 J , find the height at which the object is with respect to the ground . Given g = 10 m/s^2 .