

Aadhvan
Verma

(CA)

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PERIODIC TEST-3 – 2023-24
CLASS - IX
SUB. - SCIENCE

Time : 1.30 Hrs.

M.M. : 40

General Instructions :

- (i) All the questions are compulsory.
- (ii) Internal choices are given.
- (iii) Marks are indicated against each question.

- Q.1 Which of the following represent 1amu ? (1)
(a) Mass of hydrogen molecule (b) 1/12th of mass of C-12 atom
(c) Mass of O-12 atom (d) Mass of C-12 atom
- Q.2 The chemical symbol for nitrogen gas is ? (1)
(a) Ni (b) N₂ (c) N⁺ (d) N
- Q.3 Rutherford's alpha particles scattering experiment resulted into discovery of - (1)
(a) Electron (b) Proton (c) Nucleus in the atom (d) Atomic mass
- Q.4 When a body falls freely towards the earth, then its total energy ? (1)
(a) Increases (b) Decreases
(c) Remains constant (d) First increases then decreases
- Q.5 The work done on an object does not depend upon the - (1)
(a) Displacement (b) Force applied
(c) Angle between force and displacement (d) Initial velocity of the object
- Q.6 Which of the following nutrient is not available in fertilizers ? (1)
(a) Nitrogen (b) Phosphorous (c) Potassium (d) Iron
- Q.7 Which of the following is not a source of carbohydrate ? (1)
(a) Millets (b) Gram (c) Sorghum (d) Rice
- Q.8 The work done by force of gravity when it moves upon object of mass 1kg through 1m is - (1)
(a) 1.0J (b) 10.0J (c) -1.05J (d) -10.0J

Each of these questions contains two statements Assertion (A) and Reason (R). Each of these questions also has four alternative choices, any one of which is the correct answer. You have to select one of the codes (a), (b), (c) and (d) given below.

- (a) Both A and R are true and R is the correct explanation of A
 - (b) Both A and R are true, but R is not the correct explanation of A
 - (c) A is true, but R is false
 - (d) A is false, but R is true
- Q.9 Assertion - Atom is electrically neutral. (1)
Reason - A neutral particle, neutron is present in the nucleus of the atom.
- Q.10 Assertion : Work is done on a box when it is lifted through a height. (1)
Reason : Work is said to be done by a force on an object if the force applied causes a displacement in the object. (P.T.O.)

(2)

Q.11 Assertion : When an object falls freely its kinetic energy remains constant. (1)
Reason : Energy possessed by an object by virtue of its motion is called its kinetic energy.

Q.12 Assertion : When the force retards the motion of a body, the work done is negative. (1)
Reason : Work done does not depend on angle between force and displacement.

SECTION-B

Q.13 A person weighing 600N carries a load of 200N up to the stairs 15m high in 30s. Calculate the power of the person. (2)

OR

How much kinetic energy does an object of mass 2kg moving with a speed of 1metre per second have? Justify your answer.

Q.14 What is intercropping explain with an example. (2)

Q.15 What is atomicity? Write the atomicity of – (2)
(i) Ozone (ii) helium

Q.16 Write the molecular formula of :- (2)
(i) Calcium sulphate (ii) Magnesium phosphate

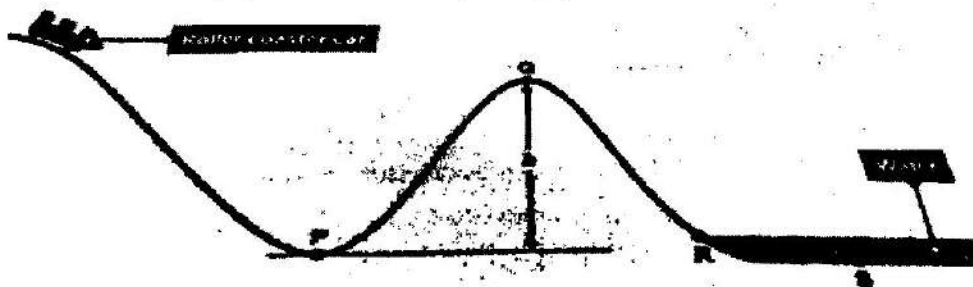
Q.17 In a reaction 5.3 gram of sodium carbonate reacted with 6 gram of ethanoic acid the products were 2.2 gram of carbon dioxide 0.9 gram water and 8.2 gram sodium Ethanoate. Show that these observations are in agreement with the law of conservation of mass. (2)

SECTION-C

Q.18 A Roller coaster is a machine that uses gravity and inertia to send a train of cars along a winding track. The combination of gravity and inertia gives the body certain sensations as the coaster moves up and down and around the track. It gives a feeling of joy in some rides and nausea in others. The car is pulled to the top of the first hill and released, after which it rolls freely along the track for the remainder of the ride. The initial hill is the tallest in the ride. Purpose of the coaster's initial ascent is to build up a sort of reservoir of potential energy. The concept of potential energy, often referred to as energy of position, is very simple: As the coaster gets higher in the air, gravity can pull it down a greater distance. You experience this phenomenon all the time. Think about driving your car, riding your bike or pulling your sled to the top of a big hill. The potential energy you build going up the hill can be released as kinetic energy -- the energy of motion that takes you down the hill.

Once you start cruising down that first hill, gravity takes over and all the built-up potential energy changes to kinetic energy. Gravity applies a constant downward force on the cars. The coaster tracks serve to channel this force and they control the way the coaster cars fall. If the tracks slope down, gravity pulls the front of the car toward the ground, so it accelerates. If the tracks tilt up, gravity applies a downward force on the back of the coaster, so it decelerates.

Based on the above paragraph answer the following questions.



(3)

- (i) Which of the following shows the energy conversion involved in a Roller Coaster as it starts to descend from the hill? (1)
- (a) Kinetic energy is decreasing
 - (b) Both potential and kinetic energy is increasing and potential energy is decreasing
 - (c) Potential energy is decreasing and kinetic energy is increasing
 - (d) Both potential and energy is increasing
- (ii) At the point in the above figure, the car is slowed down by a shallow tank of water and the kinetic energy of the car is reduced to zero. Give two suggestions for what happens to this kinetic energy. (1)
- (iii) Give two reasons: Seat belts are a must for the riders in the Roller Coasters. (1)

Q.19 Crops require different climatic conditions, temperature and photoperiods for their growth and completion of their life cycle. Photoperiods are related to the duration of sunlight. Growth of plants and flowering are dependent on sunlight. As we all know, plants manufacture their food in sunlight by the process of photosynthesis. There are some crops, which are grown in rainy season, called the kharif season from the month of June to October, and some of the crops are grown in the winter season, called the Rabi season from November to April. Paddy, soyabean, pigeon pea, maize, cotton, green gram and black gram are kharif crops, whereas wheat, gram, peas, mustard, linseed are Rabi crops.

In India there has been a four times increase in the production of food grains from 1952 to 2010 with only 25% increase in the cultivable land area. This increase in production been achieved through the practices involved in farming, we can divide it into three stages. The first is the choice of seeds for planting. The second is the nurturing of the crop plants. The third is the protection of the growing and harvested crops from loss. Thus, the major groups of activities for improving crop yields can be classified as: • Crop variety improvement • Crop production improvement • Crop protection management.

- (i) What is kharif season period? (1)
- (a) June to July
 - (b) June to October
 - (c) June to November
 - (d) June to December
- (ii) What is Rabi season period? (1)
- (a) November to April
 - (b) November to March
 - (c) November to February
 - (d) November to January
- (iii) Plants manufacture their food in sunlight by the process called _____. (1)
- (a) Photosynthesis
 - (b) Photoperiod
 - (c) Photolysis
 - (d) None of the above
- (iv) Enlist two examples of Kharif crops. (1)

SECTION-D

- Q.20 State the postulates of Dalton's atomic theory. (3)
- Q.21 What is weeding? Give two examples of weeds. Why it is important to remove weeds from the crop? (3)

SECTION-E

- Q.22 What do you mean by organic farming? Compare the use of manure and fertilizers in maintaining the soil fertility. (5)