

SECOND PERIODIC TEST 2019-20
SUBJECT: SCIENCE
CLASS IX

Time: 90 Minutes

Max Marks: 40

General Instruction:

The question paper divided into three sections

Section A: Questions carrying One 1 marks each.

Section B: Questions carrying 3 marks each.

Section C: Questions carrying 5 marks each.

Section A {marks 1}

1. Which organelle is called as power house of the cell ?
2. What is sublimation ? give examples.
3. A person having mass 60 kg at the pole of the earth then what will be the mass of the person at moon ?
4. If a cell is placed in hypertonic solution then what will be the effect –
a) Cell will be shrink b) cell will be swell c) no effect
5. Define Archimedes principal. With example.
6. Explain any one
) Colloid
) Suspension
7. D a well labelled diagram of neuron.
8. A ball is dropped from a height of 20m. if its velocity increases uniformly at the rate of 20m/s^2 . With what velocity will it strike the ground?

Section B {marks 3}

9. Who proposed binomial nomenclature? What are the convention followed while writing the scientific names.
10. Calculate the molar mass of-
) Ethyne
) Phosphorus
) Nitric acid

11. :
- (a) Define the universal law of gravitation. Write down the value and unit of gravitational constant.
 - (b) Why camel is called ship of desert. How can it easily walk in desert?
12. Who discovered the first vaccine? Differentiate between infectious and non-infectious disease?
13. Derive the mathematical formulation of second law of motion.

Section C {marks 5}

14. Who proposed five kingdom classification systems? Write down the names of kingdom with specification and explain the division of kingdom plantae with help of examples.
15. (a) What are polyatomic ions ? give examples.
- (b) Write the chemical formula of Calcium oxide" and "Copper nitrate"
- (c) Explain the key point of Dalton's atomic theory.
16. (a) When a carpet is beaten with a stick dust comes out of it . why ?
- (b) A stone of 1kg is thrown with a velocity of 20m/s across the frozen surface of a lake and comes to rest after travelling a distance of 50m. what is the force of friction between ice and stone?

Answer Key

Section A (Marks 1)

1. Mitochondria.
2. It is the process in which a solid directly changes into a gas or vice versa.
for eg - Camphor, Naphthalene ball etc.
3. No change. (60 kg).
4. Option A (Cell will be shrink).
5. "When an object is immersed inside a liquid fully or partially then it experiences an upward thrust also known as buoyant force which is equal to the amount of water that gets displaced by an object. This is called Archimedes' principle."

for eg - Air balloons, Ships.

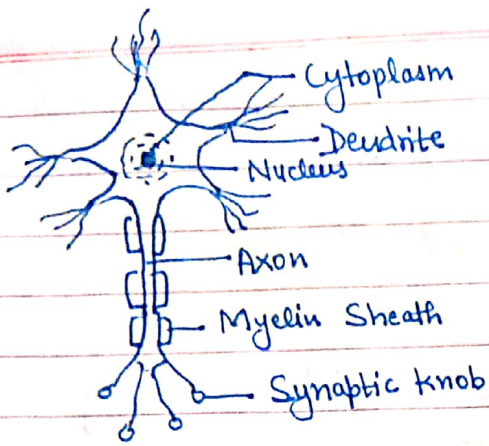
6. Explain one -

a) Colloid - A colloid is a kind of a solution in which the size of the particles is intermediate b/w those of true solutions and those in suspensions.

OR

b) Suspension - A suspension is a Heterogeneous mixture in which the small particles of a solid are spread throughout a liquid without dissolving in it.

7.



8. Height = 20 m. (h)

Acceleration = 20 m/s^2 (a)

Initial velocity (u) = 0

from the equation of motion -

$$v^2 = u^2 + 2as(h)$$

$$v^2 = (0)^2 + 2 \times 20 \times 20$$

$$v^2 = 400 \times 2$$

$$v = \sqrt{400 \times 2}$$

$$v = 20\sqrt{2}$$

$$v = 20 \times 1.414 \quad [\text{Value of } \sqrt{2} = 1.414]$$

$$= 28.28 \text{ m/sec.}$$

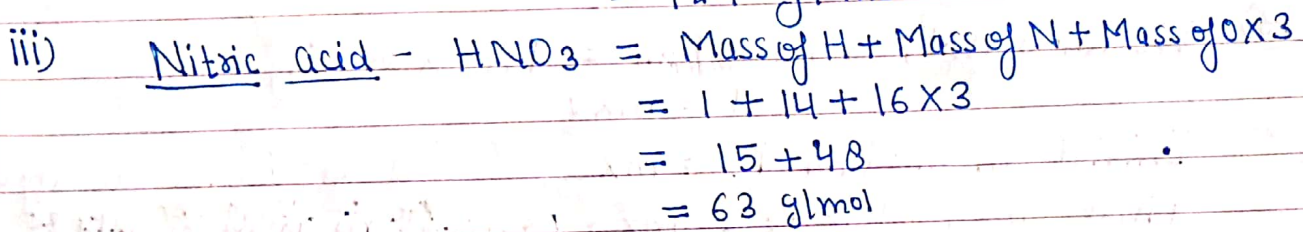
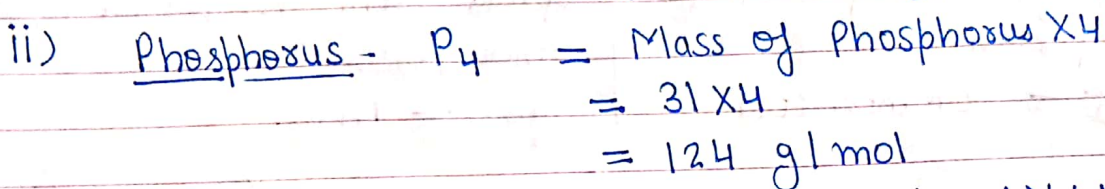
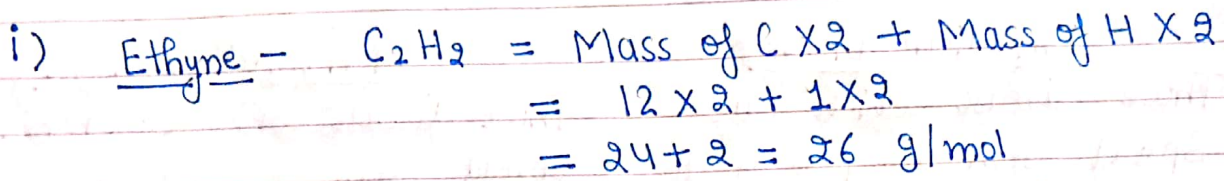
Section B (Marks 3)

9. Proposed by Carolus Linnaeus.

Convection -

- Biological Names are in Latin and are written in italics.
- The first word of name indicates the genus, while the second word denotes its specific epithet.
- The first letter of the genus always written in capital, while the first letter of the specific epithet is small.
- When the name is handwritten, both the words are separately underlined and if printed, the name is in italics. for eg. Homo sapiens

10. Molar Mass of -



11. a) "Any two objects in the universe having mass attract each other by force of attraction known as gravitational force."

This force is directly proportional to the product of mass of the objects and inversely proportional to the square of distance between the objects."

This is called universal law of gravitation.

$$\text{force} \propto m_1 \times m_2 \quad \text{--- (1)}$$

$$\text{force} \propto \frac{1}{r^2} \quad \text{--- (2)}$$

Combining equation (1) & (2) -

$$\text{Force} \propto \frac{m_1 m_2}{r^2}$$

$$F = \frac{G \cdot m_1 m_2}{r^2}$$

'G' is Universal Gravitational Constant. Its value is $6.67 \times 10^{-11} \text{ Nm}^2/\text{Kg}^2$.

b) Because it can easily survive in desert. There is a pad present on its feet which increase the surface area due to which pressure is decreases, therefore it can easily walk in deserts.

12) Edward Jenner.

Infectious Disease
Those disease which can spread from one person to other person.
for eg. - Common cold.

Non-infectious Disease
Those disease which can not be spread from one person to other person.
for eg. - AIDS.

13) We know that, momentum = Mass \times Velocity.

$$P = m \times v$$

Initial momentum $P_1 = m \times u$ (u is initial velocity)

final momentum $P_2 = m \times v$ (v is final velocity & m is mass)

Change in momentum = $P_2 - P_1$

$$= mv - mu = m(v - u)$$

Rate of Change of Momentum = $\frac{m(v - u)}{t}$

Acc. to Newton's second Law - "Rate of Change of Linear momentum is directly proportional to the force applied."

$$F \propto \frac{m(v - u)}{t} \quad \text{--- (1)}$$

from 1st equation of motion -

$$a = \frac{v - u}{t} \quad \text{--- (2)}$$

Put the value of (2) in equⁿ (1) -

$$F \propto m \times a$$

$$F = K \cdot m \cdot a$$

where K is constant and its value is 1 in M.K.S. Syst

$$\boxed{F = ma}$$

Section - C

14) R.H. Whittaker. Five Kingdoms are -

a) Monera - unicellular, Prokaryotic eg. - Bacteria

b) Protista - unicellular, Eukaryotic eg. - Amoeba

c) Fungi - Multicellular, Eukaryotic & Heterotrophic eg. - Yeast

d) Plantae - Multicellular, Eukaryotic & Autotrophic eg. - All plants

e) Animalia - Multicellular, Eukaryotic & Hologeic eg. - All animals

Plantae have five divisions -

- a) Thallophyta
 - b) Bryophyta
 - c) Pteridophyta
 - d) Gymnosperm
 - e) Angiosperm
- } Explain any two.

15) a) These ions which has more than 2- atoms are called polyatomic ions. eg. - PO_4^{3-} , SO_4^{2-} etc.

- b) Calcium oxide - CaO
Copper Nitrate - $\text{Cu}(\text{NO}_3)_2$

c) Any 2 of the following -

- i) All matter is made up of ions.
- ii) Atoms can not be created or destroyed (Law of Conservation of Mass)
- iii) Atoms of Same element have identical mass and Chemical properties.
- iv) Atoms of different element have different Mass & different properties.
- v) Atoms combine in a ratio of small whole No. to form compounds. (Law of constant proportion)

16) a) because it has inertia of rest (1st law of Newton)

- b) $m = 1 \text{ Kg}$, $u = 20 \text{ m/s}$, $v = 0$, $S = 50 \text{ m}$.

Acc. to III equaⁿ of Motion -

$$v^2 = u^2 + 2as$$

$$0 = (20)^2 + 2 \times a \times 50 = 400 + 100a$$

$$a = -\frac{400}{100} = -4 \text{ m/s}^2 \quad (\text{Negative sign is due to retardation})$$

$$\begin{aligned} \text{Friction force (F)} &= m \times a \\ &= 1 \times 4 = 4 \text{ (N)} \end{aligned}$$