**NAAHAR PUBLIC SCHOOL CBSE SENIOR SECONDARY**
**ACADEMIC YEAR (2022-2023)**
**NOVEMBER MONTH PERIODIC TEST**
**CLASS: IX** **ANSWER KEY**

**SUBJECT: PHYSICS (TOTAL: 17)**

**DATE: 17.11.2022**

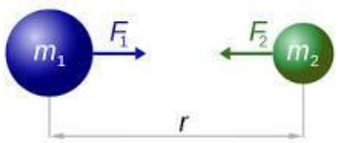
I.

3. The weight of an object at the centre of the earth of radius R is
a) Zero
b) Infinite
c) R times the weight at the surface of the earth
d) $1/R^2$ times the weight at surface of the earth
**Answer:**zero

5. An object weighs 10 N in air. When immersed fully in water, it weighs only 8 N. The weight of the liquid displaced by the object will be:
a)2 N b) 8 N c) 10 N d) 12 N
**Answer:** 2 N

II.

13. State the universal law of gravitation.
**Answer:**The universal law of gravitation states that any two bodies in the universe attract each other with a force that is directly proportional to the product of their masses and inversely proportional to the square of the distance between them. F1=F2=Gm1×m2r2.




15. What do you mean by acceleration due to gravity?
**Answer:**When an object falls freely towards the surface of earth from a certain height, then its velocity changes and this change in velocity produces acceleration in the object which is known as acceleration due to gravity denoted by g. The value of acceleration due to gravity is
$g=9.8m/s^2$

III.

18. What are the differences between the mass of an object and its weight?
**Answer:**

| S.No. | Mass | Weight |
|---|---|---|
| I. | Mass is the quantity of matter contained in the body. | Weight is the force of gravity acting on the body. |
| II. | It is the measure of inertia of the body. | It is the measure of gravity. |
| III. | Mass is a constant quantity. | Weight is not a constant quantity. It is different at different places. |
| IV. | It only has magnitude. | It has magnitude as well as direction. |
| V. | Its SI unit is kilogram (kg). | Its SI unit is the same as the SI unit of force, i.e., Newton (N). |

20. You have a bag of cotton and an iron bar, each indicating a mass of 100kg when measured on a weighing machine. In reality, one is heavier than the other. Can you say which one is heavier and why?

**Answer:**In reality, the cotton bag is heavier .
This is because the cotton bag has more volume than that
Of an iron bar so it displaces more air and hence the buoyant
Force acting on the cotton bag due to the air is more than that
Acting on the iron bar (by Archimedes' principle) and
True weight = Apparent weight + Buoyant force
Apparent weight = 100 kg for both but buoyant forces are different.

**IV.**

**1x5=5**

24. a.Why does an object float or sink when placed on the surface of water? (3)
**Answer:**If the density of an object is more than the density of the liquid, then it sinks in the liquid. Archimedes' principle reasons this statement. This is because the buoyant force acting on the object is less than the weight of the object. If the density of the object is less than or equal to the density of the liquid, then it floats on the surface of the liquid. This is because the buoyant force acting on the object is equal to the weight of the object.

**b. You find your mass to be 42 kg on a weighing machine. Is your mass more or less than 42kg?** **(2)**

**Answer:**
A weighing machine measures the weight of a body and iscalibrated to indicate mass. When we stand on a weighing machine, our weight acts downwards while upthrust due to air acts upwards. As a result, our apparent weight becomes less than the true weight. The weighing machine measures this apparent weight and hence the mass indicated by it is less than the actual mass. Our actual mass will be more than 42 kg.
(Or)
Why is the weight of an object on the moon 1/6 th its weight on the earth? (5)
**Answer:**

**Step 1: Parameters at Moon**

Mass of the moon $m_m = \frac{1}{100} m_e$

Radius of the moon $R_m = \frac{1}{4} R_e$

**Step 2: Calculate the value of $g$at moon's surface**

the value of $g$ at surface of earth,

$g_e = \frac{GM_e}{R^2_e}$

the value of $g$on surface of moon,

$g_m = \frac{GM_m}{R^2_m}$

$g_m = \frac{G \times \frac{1}{100} M_e}{\frac{1}{16} \times R^2_e}$

$g_m \simeq \frac{1}{6} \times \frac{GM_e}{R^2_e}$

$g_m = \frac{1}{6} g_e$

Hence, the weight of an object on the moon $\frac{1}{6}$ times its weight on the earth.

**SUBJECT: BIOLOGY (MARKS-17)**

I.

2. Select the incorrect statement about the working of vaccine.

a) The immune system remembers the microbe encountered the first time.

b) There are vaccines against tetanus and cancer.

c) The immune system acts with more vigour, everytime it encounters a specific microbe.

d) Weakened sample of the pathogen is inserted in the body.

ANS: b) There are vaccines against tetanus and cancer.

6.DIRECTIONS: Read the following statements carefully and choose the correct options.

Which of the following statement shows that common cold is differenmt from pneumonia?

a)Pneumonia is caused by a virus while the common cold is caused by the bacterium Haemophilum influenza.

b) Pneumonia is a communicable disease whereasthe common cold is a nutritional deficiency disease.

c) Pneumonia pathogen infects alveoli whereas the common cold affects nose and respiratory passage but not the lungs.

d) Pneumonia cannot be prevented by any vaccine whereas the common cold is always prevented by a vaccine.

ANS: )Pneumonia pathogen infects alveoli whereas the common cold affects nose and respiratory passage but not the lungs.

8.Which species of bee is commonly known as the Indian bee?

*(a) Apisceranaindica(b) Apisdorsata(c) Apismellifera(d) Apis florae*

*ANS: (a) Apisceranaindica*

II.

11**. What are the advantages of inter-cropping?**

Inter-Cropping

- Checks pests and rodents and hence decreases the chances of spoiling of whole crops.
- Decreased chances of soil erosion.
- Reduced loss of crops with high yield.
- Less water requirement.

14. **What is immunisation?**

The method to boost our immune system with the help of vaccines that help the body to fight against infectious diseases is called immunisation.

16. **State any two conditions essential for being free of diseases.**

Two conditions essential for being free of disease are:

1. Personal and domestic hygiene.

2. Clean environment and surroundings.

III.

19. **Why should preventive measures and biological control methods be preferred for protecting crops?**

ANS: Over exposure of chemicals leads to environmental problems hence, biological methods are preferred for protecting crops from pathogens, insects and rodents along with increasing the production. Since chemicals are harmful for plants and also for the animals which feed on it, hence bio-pesticides are used as the safe way of crop protection.

IV.

22.A) i)Which of the following pathogen cannot be responsible for causing X? (3)
*(a) Streptococcus pneumonia (b) Ascarislumbricoides*
*(c) Plasmodium vivax*(d) All of these.

ii)Which one of the following is an example of 'X'?
(a) Filariasis(b) Leprosy (c) Cholera (d) Typhoid

iii) Which of the following is an example of disease 'Y'?
(a) Pneumonia (b) Marasmus(c) Pellagra (d) Goitre

**(B)What are the benefits of cattle farming? (2)**

Benefits of cattle farming are:

- Cattles are used in agricultural purpose
- Generation of good quality cattle
- Milking and meat purpose
- Skin of cattle is used for leather and wool industry

**SUBJECT : CHEMISTRY ( MARKS-16)**

I.

1.a) 305K

4.c.Chair

7.b.Colloid

9.a.Iodine and alcohol

II

10. When water changes to stream it observed latent heat of vaporization thus stream contains more heat when boiling water so stream causes more severe burns Compared to boiling water

12. Water is a compound because of the following reasons

i) It is composed of 2 different elements hydrogen and oxygen which cannot be separated by physical methods they can be separated only by electrolysis

ii) The physical and chemical properties of hydrogen and oxygen or entirely different from properties of water

III)

17.a) Saturated solution

The solution in which no more salute can be dissolved in the same amount of solvent 30 a particular temperature is called saturated solution

ii) Suspension

It consist of particles which are larger in size and are visible to naked eye it is heterogeneous example chalk powder in water

iii) Pure substance

The Substance which always have the same characteristic at a given temperature and pressure is called pure substance example distilled water

IV

21.

| SOLIDS | LIQUIDS | Gases |
|---|---|---|
| Particles are closely packed | Particles are loosely packed | Particles are at a sufficient distance support |
| Attraction forces are highest | Attraction forces are less than that of solids | Attraction forces are minimum |
| They possess definite shape mass and volume | They do not possess definite shape but possess definite massand volume | They possess neither definite shape nor definite volume but possess definite mass |
| The particles or fixed and possess the least energy | particles are free to move and have higher energies than that of solids | The particles have maximum freedom of motion and forces maximum energies |
| They have least compressibility | They have Higher compressibility than that of solids | They have the highest compressibility |
| they possess the highest rated city | They possess Lower density than that of solids | they possess least density |