

DREAMLAND SCHOOL  
CLASS IX [2020-2021]  
ENGLISH LANGUAGE  
HOME ASSIGNMENT-2

I.Fill in the blanks with appropriate words:

1. Forests in Africa abound \_\_\_\_\_ wild animals.
2. The Viceroy said nothing in his speech \_\_\_\_\_ reference to foreign policy.
3. I am in favour \_\_\_\_\_ the proposition.
4. He should work instead \_\_\_\_\_ idling away his time.
5. I have nothing to say \_\_\_\_\_ regard \_\_\_\_\_ this matter.
6. Do not brood \_\_\_\_\_ your bad days.
7. The management is indifferent \_\_\_\_\_ public opinion.
8. She is desirous \_\_\_\_\_ having a big car.
9. Asis takes delight \_\_\_\_\_ classical music.
10. My neighbour has encroached \_\_\_\_\_ my land.
11. He very kindly acceded \_\_\_\_\_ my request.
12. The man was charged \_\_\_\_\_ theft.
13. The doctor cured her \_\_\_\_\_ the disease.
14. He is not afraid \_\_\_\_\_ the consequences.
15. The police are inquiring \_\_\_\_\_ the case.
16. Some people have a very strange attitude \_\_\_\_\_ animals.
17. The newspaper made a fierce attack \_\_\_\_\_ the speaker.
18. There was a steep rise \_\_\_\_\_ the cost of living last month.
19. People used to believe that air pollution was the cause \_\_\_\_\_ malaria.
20. Can you guess what he is aiming \_\_\_\_\_?

II. Your friend has invited you for her sisters wedding the following week. Your final exams are starting the same week. Write a letter to your friend expressing your regret at not being able to attend the wedding and also stating the reason for your absence.

XXXXXXXXXXXXXXXXXXXXXXXXXXXX

Prepared by: ANUSUA SABUI SANTANIL BHATTACHARYA

**SUBJECT-MATHEMATICS**

**CLASS-IX**

**Chapter:-Factorization**

**Assignment:-3**

Example1:-  $(x-y)^2-9$

$$=(x-y)^2-3^2$$

$$=(x-y+3)(x-y-3) \text{ (Ans)}$$

Example2:-  $20x^2-45y^2$

$$=5(4x^2-9y^2)$$

$$=5[(2x)^2-(3y)^2]$$

$$=5(2x+3y)(2x-3y) \text{ (Ans)}$$

Example3:-  $x^3-5x^2-x+5$

$$=x(x^2-1)-5(x^2-1)$$

$$=(x^2-1)(x-5)$$

$$=(x+1)(x-1)(x-5) \text{ (Ans)}$$

Example4:-  $2x^4-32$

$$=2(x^4-16)$$

$$=2[(x^2)^2-(4)^2]$$

$$=2(x^2-4)(x^2+4)$$

$$=2(x+2)(x-2)(x^2+4) \text{ (Ans)}$$

**HOME WORK** - EX.-4.3 [ Q4(ii), Q6(ii), Q8(ii), Q14(i) ]

**Today's home work for 18th April for class 9 commercial application:**

Answer the following questions after listening to the recording.

Q1: Define business?

Q2: Give two characteristics of business?

Q3: Distinguish between industry and commerce?

Q4: What are economic activities?

Q5: What are non economic activities?

Audio Link to Tutorial:



**Today's homework 18th April for class 9 Economics ..**

Ch-3 types of economies.

Please answer the following questions after listening to the explanations from the recording given below:

Q1: Define free market economy?

Q2: Define a centrally planned economy?

Q3: Define a mixed economy?

Q4: Give two features of capitalist economy?

Q5: Give two features of socialistic economy?

## Class 9 History (chapter Early Vedic Civilisation)

The Vedic Period at large is divided into two parts: Early & Later. In contrast to the Indus Valley Civilisation it was mostly agrarian in character. In order to gain knowledge about the Early Vedic Period we have to depend a lot on the literature of that time. Rigveda (contains-1028 hymns) which happens to be the oldest among the Vedas serves as a vital source of information. From this text we get the knowledge about the four varnas & also about the different Gods & Goddesses worshipped at that time-Indra being the one. People were not aware about the use of iron & women were treated equally with men & women were allowed to get educated. The base of the society had been family & cattle had been an important item of 'Dana(gift)' to the priests. Both the gender were involved in various crafts & barter system was used for trading activities. Few villages together were known as ➡ □ VISYA (led by Visyapati). The Visyas in turn form the ➡ □ JANA (led by Rajan). Sabha & Samiti was there in order to see that the King was not misusing the power of his post. Nature worship & sacrifices were common at that time.

Questions:

- 1) Name the oldest Veda.
- 2) State all the four Varnas.
- 3) What do you understand by Sabha & Samiti?
- 4) State the total number of hymns in Rigveda.

## Class IX - Geography, ch - 3

### Home Assignment.....

- 1) What do you understand by rotation of the earth?
- 2) Give any three effects of the earth rotation.
- 3) What is the coriolis effect?
- 4) Why don't we feel the rotation of the earth even though it is spinning at great speed?
- 5) Why is the shape of the earth slightly bulging at the centre and flat at the poles?
- 6) What is a leap year? How does it occur?
- 7) How long does it take for the earth to make one complete revolution around the sun?
- 8) Mention any three points regarding the axis of the earth?
- 9) What is the circle of illumination?
- 10) What is the angle of incidence?

### Class- IX, Geo, Ch-3 Hnd part (Equinoxes And Solstices),

#### Home Assignment.....

- 1) How do equinoxes differ from solstices?
- 2) Describe the summer solstics.
- 3) Describe the winter solstics.
- 4) What do you mean by 'dawn' ?
- 5) Why is twilight of a longer duration at the poles than at the equator?.

Audio Link to the Chapter



## **Class - IX, EVS, ch- 3.... Home Assignment.....**

- 1) What is ecology?
- 2) What is a community?
- 3) What do you mean by habitat?
- 4) What are biotic factors?
- 5) What is an ecosystem?
- 6) What are the four types of ecosystem?
- 7) How is an ecosystem formed?
- 8) What do you mean by global warming ?
- 9) How pollution affects our ecosystem?
- 10) How pollution can be controlled?

Audio Link to the topic:





শিক্ষিত  
রাজস্বসহ  
সংস্কৃত

১) 'শিক্ষিত' শব্দটির অর্থ হলো শিক্ষিত ব্যক্তি। যিনি সঠিকভাবে শিক্ষিত হলে, তার জ্ঞান এবং চরিত্র উভয়ই উন্নত হয়।

- ১) রাজস্বসহ সংস্কৃত শব্দটির অর্থ হলো শিক্ষিত ব্যক্তি (৫)
- ২) তার অর্থ হলো,
- ৩) শিক্ষিত ব্যক্তি হলো যিনি সঠিকভাবে শিক্ষিত হলে।
- ৪) যিনি সঠিকভাবে শিক্ষিত হলে, তার জ্ঞান এবং চরিত্র উভয়ই উন্নত হয়।

উত্তর

১) 'শিক্ষিত' শব্দটির অর্থ হলো শিক্ষিত ব্যক্তি। যিনি সঠিকভাবে শিক্ষিত হলে, তার জ্ঞান এবং চরিত্র উভয়ই উন্নত হয়।

২) শিক্ষিত ব্যক্তির জ্ঞান এবং চরিত্র উভয়ই উন্নত হয়।

৩) শিক্ষিত ব্যক্তি হলো যিনি সঠিকভাবে শিক্ষিত হলে। তার জ্ঞান এবং চরিত্র উভয়ই উন্নত হয়।

৪) যিনি সঠিকভাবে শিক্ষিত হলে, তার জ্ঞান এবং চরিত্র উভয়ই উন্নত হয়।



## Class-9

### HINDI

{First assignment में 'साखी' का पूरा भावार्थ समझा दी, और second assignment- दिए गए प्रश्नों के उत्तर लिखो।}

### साखी

1): "गुरु गोबिंद..... दियो बताया।"

क) प्रस्तुत दोहे के लेखक का नाम लिखिए। इन्होंने अपने दोहों के माध्यम से समाज को क्या सीख दी है?

ख) इनकी वाणी के संग्रह को किस नाम से जाना जाता है? उसके कौन कौन से भाग हैं?

ग) गुरु तथा गोबिंद में कवि ने किसे बड़ा बताया है तथा क्यों?

घ) कवि किस पर बलिहारी है और क्यों? स्पष्ट कीजिए।

### काकी

**"सुखिया दासी का लड़का भोला, श्यामू का समवयस्क साथी था। श्यामू ने उसे चवन्नी देकर कहा, 'अपनी जीजी से कहकर गुपचुप एक पतंग और डोर मंगा दो। देखो, खूब अकेले में लाना कोई जान न पाया।"**

क) श्यामू कौन था? उसका परिचय दें।

ख) श्यामू ने अपने पिता से क्या आग्रह किया?

ग) श्यामू ने चवन्नी किस प्रकार और कहा से प्राप्त की थी?

घ) पतंग और डोर के विषय में श्यामू की क्या योजना थी? उसने भोला को पतंग को एकान्त में लाने को क्यों कहा था?

## Chapter 3:THE FLOWER

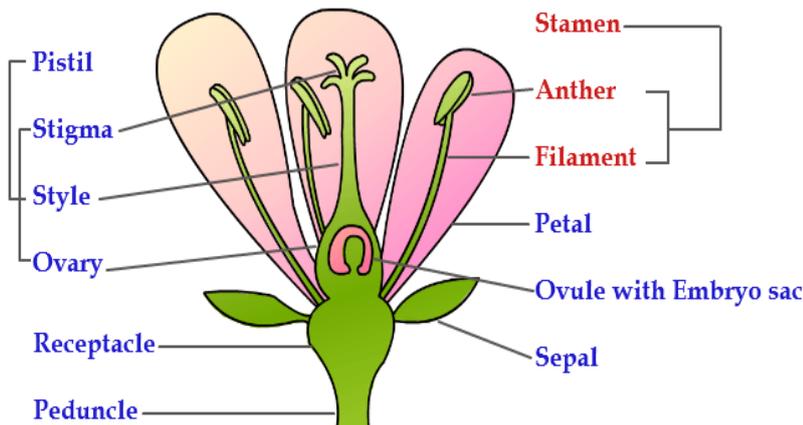
### Quick Review of the chapter

- **Flower**, the characteristic reproductive structure of angiosperms. As popularly used, the term “flower” especially applies when part or all of the reproductive structure is distinctive in colour and form.

The essential parts of a flower can be considered in two parts:

1. The vegetative part, consisting of petals and associated structures in the *perianth*.
2. The *reproductive* or *sexual* parts.

**Perianth**:-Collectively the calyx and corolla form the perianth. If perianth is non-green, then it is called petaloid. If green in colour then it is called sepaloid.



### The non-reproductive structures of a flower:

- **Calyx:**

The outermost whorl consisting of units called *sepals*; these are typically green and enclose the rest of the flower in the bud stage, however, they can be absent or prominent and petal-like in some species. Sepals are capable of photosynthesis due to the presence of chlorophyll. They protect the bud of the flower. In hibiscus, a second layer of sepals called epicalyx is seen. Flame of the forest flowers has coloured petal-like sepals or petaloid sepals. Sepals may persist when flower blooms or they may fall off.

Two patterns can be seen in Calyx as follows

1. **Gamosepalous:** Sepals fused to form a cup-like structure.
  2. **Polysepalous:** Sepals are separate.
- **Corolla**-The next whorl toward the apex, composed of units called *petals*, which are typically thin, soft and colour attract animals that help the process of pollination. Corolla may be scented, coloured, showy to attract insects for pollination. Protect the inner essential layers of a flower. May be arranged in one layer or whorl, two layers or double whorl (Poppy) or as a spiral (Water lily).

Two patterns can be seen in corolla as follows:

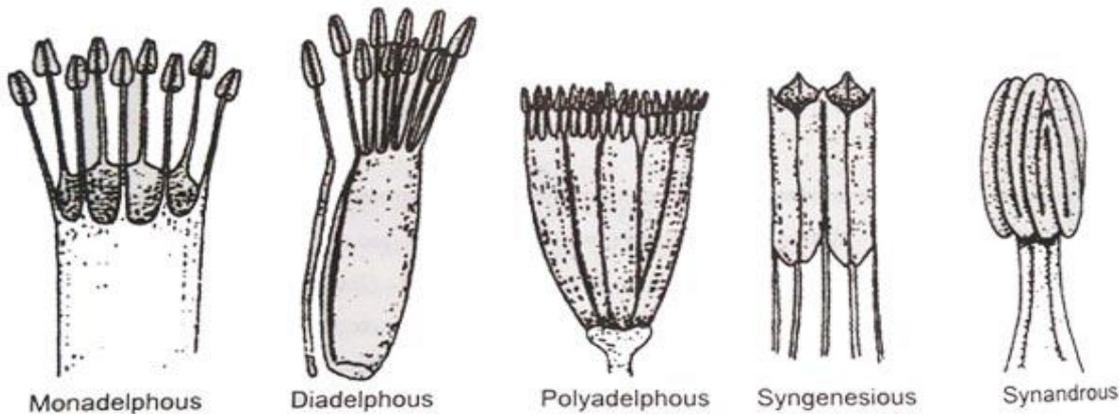
1. **Gamopetalous:** Petals unite to form a tube. Example: Ipomea, Nerium
2. **Polypetalous:** Petals are free. Example: Rose, Mustard.

### The reproductive structures of a flower:

- **Androecium:**

It consists of units called *stamen* which is male part of a flower. Stamens consist of two parts: a stalk called a *filament*, which supports *anther* where pollen is produced by meiosis and eventually dispersed. The filament positions the anther to maximise pollination. The entire male part of a flower is called the androecium. Based on the arrangement of the filaments, stamens may be classified into 4 types:

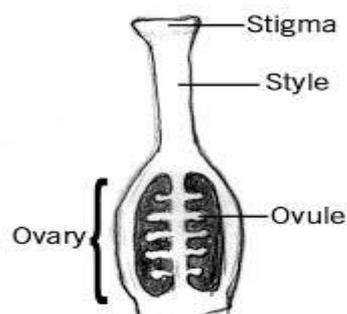
1. **Monadelphous:** The anthers are free but filaments are united to form one compound structure called a stamina tube. Example: China rose.
2. **Diadelphous:** The filaments are joined partially to form two bundles. In some cases, one stamen may be free while the rest are joined to form one bundle. Example: Pea.
3. **Polyadelphous:** The filaments are grouped into more than two bundles. Example: Bombax



### Gynoecium:

The innermost whorl of a flower, consisting of one or more units called *Carpels*. Carpels are female part of a flower. Carpels are each composed of a *stigma*, *style*, and an *ovary* which contains ovules. An alternative terminology for innermost whorl is *pistil*.

A pistil may consist of a single carpel or a number of carpels fused together. The sticky tip of the pistil, the *stigma*, is the receptor of pollen. The supportive stalk, the *style*, becomes the pathway for pollen tubes to adhere to the stigma. The ovary is the swollen basal part of the pistil. Ovules are arranged in specific ways on the wall of the ovary, this is called placentation. It may vary from flower to flower.



Classification of ovaries on the basis of carpels:

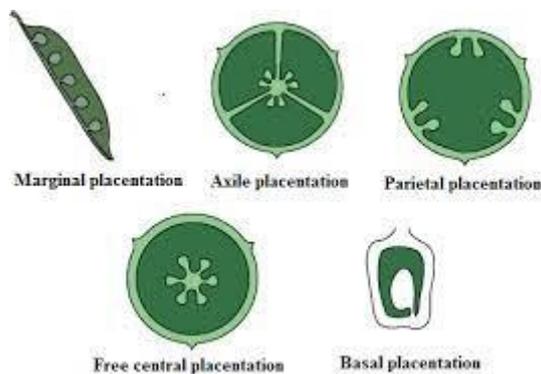
- **Bicarpellary Ovary:** Have two carpels.
- **Tricarpellary Ovary:** Have three carpels.
- **Tetracarpellary Ovary:** Many carpels.

Classification of flowers based on the type of carpels:

- **Monocarpous:** Contains one pistil.
- **Apocarpous:** More than one pistil is present which is free.
- **Syncarpous:** More than one pistil is present. Only the stigma is free, the styles are fused.

## Placentation

The arrangement of ovules inside the ovary is called Placentation. The different types of placentation are as follows:



- **Marginal Placentation** – The ovary is monocarpellary and single chambered. The placenta, along with the ovules develop along the margins of the carpel. Examples: Pea
- **Axile Placentation** – The ovary is two-chambered or many-chambered, in which the margins of the carpels fuse together. The fused margin grows inwards to meet in the centre of the ovary, forming a central axis. The placenta, along with the ovules, develops from this axis. Examples: China rose, Lemon, Orange
- **Parietal Placentation** – In flowers with parietal placentation, the ovules are attached to the walls of a unilocular ovary. The ovules are borne on the inner surface of the ovary wall. Examples: Mustard, Argemone
- **Free Central** – In flowers with free central placentation, the ovules are attached on the prolongation of the floral axis. Examples: Primulaceae.

## Nectarines:

Present at the base of the petals, produce sweet, fragrant liquid called nectar to attract insects for pollination. Maybe prominent in some plants like Nasturtium, or absent in some flowers

## **Assignment Questions-**

### **A. Give one word answers:-**

1. Filaments are united to form a single staminal tube-
2. Undifferentiated sepal and petal-
3. Unisexual flower bearing only gynoecium-
4. A pistil consisting of two carpels-

### **B. Define the following:-**

1. Inflorescence,
2. Monocarpellary ovary,
3. Placentation,
4. Bract,
5. Incomplete flower.

### **C. Differentiate between the following:-**

1. Sepal and Petal (Origin),
2. Inferior and Superior ovary (types of flowers and position of other whorls)
3. Flower and Inflorescence (Definition)
4. Polypetalous and Gamopetalous corolla (Examples and Definition)
5. Monadelphous and Diadelphous (Definition with examples)
6. Monoecious plants and Dioecious plants (Floral parts)

### **D. Draw and label the different parts of a complete flower:-**

### **E. Write exact location of the following structures:-**

1. Thalamus,
2. Anther,
3. Style,
4. Placenta.

## Chemistry Class 9

### Chapter 3: Water

- Water is the most important natural resources and cover 70% of the world's surface. Water occurs in both free and combined states. The ability of water to form solution is responsible for all life processes occurring in nature and for sustenance of life on earth.
- Under normal pressure pure water boils at 100°C. It is directly proportional to pressure thus greater the pressure, higher is the boiling point. This is the principle by which pressure cooker works. In hills water boils at a temperature lower than 100°C with atmospheric pressure being low and so the food is not cooked properly there. Therefore pressure cooker is useful in hills.
- Freezing point of water decreases with increase of pressure. It also decreases due to presence of dissolved impurities.
- Water has an unusual physical property. When cooled it first contracts in volume like other liquids but below 4°C it starts expanding and continues to do so till the temperature reaches 0°C. This property enables marine life to exist in the colder regions because even when the water freezes at top, it remain liquid below the ice layer.
- Latent heat of fusion is the amount of heat required to change a substance from solid state to its liquid state at its melting point without change in temperature. It is on account of high specific latent heat of solidification that lakes and rivers do not freeze suddenly
- Latent heat of vaporisation is the energy required to change water into its vapour at its boiling point without any change in temperature is called latent heat of vaporisation of water. The same amount of heat is released when steam condenses known as latent heat of condensation. It is the sudden release of latent heat of condensation that causes the violence associated with torrential rain.
- Specific heat capacity is the amount of heat absorbed by 1g of water when heated through 1°C. Due to high specific heat capacity land breeze and sea breeze is caused.
- Water is a universal solvent because it has the ability to dissolve wide range of substances. The salts dissolved in water are essential for growth, development of plant, add taste to water, supply essential nutrient to body. The air dissolved in water helps marine life by providing oxygen for respiration and carbon dioxide for photosynthesis. Carbon dioxide also reacts with limestone to form calcium bicarbonate which is required for shell building of marine mollusc.
- Solution is the homogeneous mixture of 2 or more components whose composition may

gradually change by changing the amount of components.

- A solution that cannot dissolve any more solute at a given temperature is saturated solution. The solubility decreases with fall in temperature. So if the temperature of saturated solution is lowered a part of dissolved solute separated in crystal form. If a saturated solution is heated it becomes unsaturated (a solution where more solute can be added at a given temperature).
- A supersaturated solution at a particular temperature is one that is more concentrated than its saturated solution at that temperature.

## ASSIGNMENT

1. How marine life survive in cold region?
2. Give 2 importance of dissolved salts in water.
3. Why boiled or distilled water taste flat
4. Water is a universal solvent. Why
5. What causes violence associated with torrential rain
6. Rivers and lakes do not freeze easily. Why
7. What is anomalous expansion of water. Give its utility
8. Why pressure cookers are useful in hills.
9. Differentiate between saturated and unsaturated solution
10. What is the effect of pressure on boiling point and freezing point of water.

**CLASS-IX**  
**SUBJECT-PHYSICS**  
**CHAPTER-3: LAWS OF MOTION**

**Newton's First Law of Motion**

If a body is in a state of rest, it will remain in the state of rest and if it is in the state of motion, it will be in motion in the same direction with the same speed unless an external force acts on it.

Newton's first law of motion is also called **Law of Inertia**.

The tendency of a body to oppose or resist any change in its state of rest or uniform motion is called inertia of body. It is the inherent property of each object.

e.g. A book lying on a table will remain placed at its place unless it is displaced.



Book lying on table

A ball rolling on a horizontal plane keeps on rolling unless the force of friction between the ball and the plane stops it.



**Relation between Mass and Inertia**

The property of inertia is because of the mass of the body. Greater the mass, greater is the inertia of the body. Inertia is directly proportional to mass of the body.

Thus, a lighter body has lesser inertia than a heavier body. More the mass of a body, more difficult it is to move the body from rest or to stop the motion of the body.

Thus, mass is a measure of inertia.

**Newton's Second Law of Motion**

The rate of change of momentum of a body is directly proportional to the force applied on it and change in momentum, is in the direction in which force is applied.

Newton's Second Law of motion means that the force produces acceleration in the body.

When a force F is applied on a moving body, its velocity changes. Due to change in velocity of the body, its momentum will change.

Initial momentum of body = mu

Final momentum = mv

Change in momentum of body in 't' second = mv - mu = m (v - u)

**Rate of change of momentum** = change in momentum / Time =  $m(v - u) / t$

$$F \propto \frac{dp}{dt}$$

$$= K \frac{m(v-u)}{t}$$

$F = K ma$ , where a = acceleration

K = constant = 1

$F = ma$

**Unit of force**

S.I. unit of force is **newton (N)**. One newton is the force, which when acts on a body of 1 kg, produces an acceleration of  $1 \text{ ms}^{-2}$ .

$$1 \text{ newton} = 1 \text{ kg} \times 1 \text{ ms}^{-2}$$

**Newton's Third law of Motion**

To every action there is an equal and opposite reaction.

One force is known as **action force** and other as **reaction force**. The action and reaction never act on the same body, but they always act simultaneously on two different bodies.

**Examples of Third law of motion in daily life**

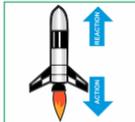
When you exert a force (action) on a wall by pushing the palm of your hand against it, you experience a force (reaction) exerted by the wall on your palm.



When a gun is fired, it exerts a forward force on the bullet. The bullet exerts an equal and opposite reaction force on the gun. This results in the recoil of the gun. Since the gun has a much greater mass than the bullet, the acceleration of the gun is much less than the acceleration of the bullet.



In a rocket, the fuel is burnt inside the rocket and burnt gases at high pressure and high temperature are expelled out of the rocket through a nozzle. Thus, the rocket exerts a force (action) on the gases to expel them through the nozzle backwards. The outgoing gases exert an equal and opposite force (reaction) on the rocket due to which it moves in the forward direction.



**Universal Law of Gravitation**

The force of attraction between any two particles in the universe is called gravitation or **gravitational force**.

According to **Universal law of Gravitation**, the force of attraction between two particles or bodies is

- directly proportional to the product of their masses and
- inversely proportional to the square of the distance between these particles or bodies.

Consider two bodies A and B having masses  $m_1$  and  $m_2$  respectively. Let the distance between these bodies be r.

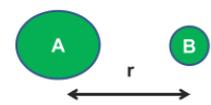
According to the law of gravitation, the force of attraction (F) or the force of gravitation between these bodies is given by

$$F \propto m_1 m_2 \dots \dots \dots (1)$$

$$F \propto \frac{1}{r^2} \dots \dots \dots (2)$$

Combining (1) and (2), we get

$$F \propto \frac{m_1 m_2}{r^2} \quad \boxed{F = G \frac{m_1 m_2}{r^2}} \quad G = \text{Universal Gravitational Constant}$$



**Acceleration due to Gravity**

The falling of a body (or object) from a height towards the earth under the gravitational force of earth (with no other forces acting on it) is called free fall and such a body is called 'freely falling body'.

If a body is falling freely under the influence of earth's gravity, its velocity increases i.e. has acceleration acting towards the surface of the earth. **This acceleration is due to earth's gravity, hence known as acceleration due to gravity, denoted by g. Its value is  $9.8 \text{ m/s}^2$  on earth surface. Its value changes from place to place.**

Formula to calculate g

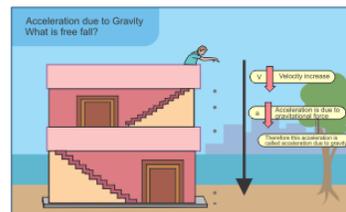
$$g = G \frac{M}{R^2}$$

G = Gravitational Constant

M = mass of the earth

R = Radius of the earth

$$g = 9.8 \text{ m/s}^2$$



Thus, all bodies irrespective of their masses fall down with constant acceleration.

CLASS-IX  
SUBJECT-PHYSICS  
ASSIGNMENT-3  
CHAPTER-3: LAWS OF MOTION  
(F.M.-25)

**Question-1**

[5×1=5]

1. What is Galileo's law of inertia?
2. The separation between two masses is reduced to half. The magnitude of gravitational force between them is.....
3. A force of 15 N acts on a body of mass 2 kg. Calculate the acceleration produced.
4. The relation  $\Delta p = \Delta(mv)$  is valid under what condition?
5. What is conservation of momentum?

**Question-2**

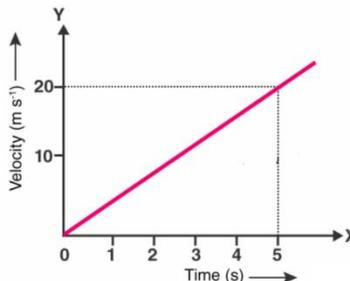
[4×2=8]

1. A ball is hanging by a string from the ceiling of the roof. Draw a neat labeled diagram showing the forces acting on the ball and the string.
2. Find the relation between universal gravitational constant G and gravitational acceleration g from the laws of gravitation.
3. State the effect of force applied on (i) rigid body, and (ii) non-rigid body.
4. Obtain Newton's 1<sup>st</sup> law of motion from Newton's 2<sup>nd</sup> law of motion.

**Question-3**

[4×3=12]

1. (i) An aero plane is moving uniformly at a constant height under the action of two forces upward force and downward force. What is the net force on the aero plane?  
(ii) 'It is advantageous before taking a long jump' - Explain.
2. (i) Differentiate between Newton's 1<sup>st</sup> law of motion and Newton's 2<sup>nd</sup> law of motion.  
(ii) Under what condition the relation  $F=ma$  is valid?
3. (i) Figure below shows the velocity-time graph of a particle of mass 100g moving in a straight line. Calculate the rate of change of momentum of the particle.



- (ii) Write the unit of impulse.
4. A ball is thrown vertically upwards from the top of a tower with an initial velocity of 19.6 m/s. The ball reaches the ground after 5s. Calculate; (i) the height of the tower, (ii) the velocity of ball on reaching the ground. [take  $g=9.8\text{m/s}^2$ ]

CLASS-IX  
SUBJECT-PHYSICS  
CHAPTER-4: PRESSURE IN FLUIDS AND ATMOSPHERIC PRESSURE

**Pressure**

The **force acting on a unit area of a surface** is called **pressure**. The force acting normally on a surface is known as **thrust**.

**Pressure depends on two factors:**

1. **Force:** more the force applied, more pressure
2. **Area:** Greater the surface area on which the pressure is applied, lesser the pressure. Lesser the surface area more the pressure.

$$\text{Pressure} = \frac{\text{Force}}{\text{Area}}$$

SI unit: **pascal**, denoted by **Pa**

$$1 \text{ Pa} = \frac{1 \text{ newton}}{1 \text{ m}^2}$$

**Pressure examples in daily life :**

- 1) School bags have wider straps :



- 2) Sharp knife cuts better than blunt knife:



Blunt Knife: more area  
Sharp knife: less area

- 3) Buildings have wider foundation:



Broader foundation  
Less pressure on ground

- 4) Easier to walk on sand with flat shoes rather than shoes with sharp heels:

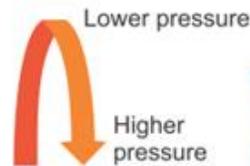
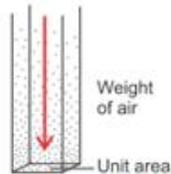


**Atmospheric Pressure**

The atmospheric air extends up to many kilometers above the surface of the earth. The pressure exerted by this air is known as **atmospheric pressure**.

**Atmospheric pressure is the weight of air in a column of unit area.**

Atmospheric pressure is measured by **Barometer**.

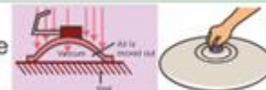


Atmospheric pressure decreases as the altitude increases.

**Understanding Atmospheric pressure**

- 1) **We get ear ache when we travel by airplane:** When the airplane lands air pressure increases, which increases pressure on eardrum causing ear pain.

- 2) **A rubber sucker pressed on a surface sticks to it:** When sucker is pressed air between surface and sucker moves out. Outside there is atmospheric pressure acting on it. So it sticks to the surface.



- 3) **When drinking with a straw, one has to suck the straw.** This causes the pressure in the straw to decrease. The external atmospheric pressure, which is greater, will then act on the surface of the water in the glass, causing it to rise through the straw.



**Principle of Hydraulic machines**

$$\frac{F_1}{A_1} = \frac{F_2}{A_2}$$

CLASS-IX  
SUBJECT-PHYSICS  
ASSIGNMENT-4  
CHAPTER-4: PRESSURE IN FLUIDS AND ATMOSPHERIC PRESSURE  
(F.M.-25)

**Question-1**

[5×1=5]

1. 25 Pascal=.....bar
2. Write two applications of Pascal's law.
3. Pressure of a liquid at a given depth is.....to the density of liquid.
4. How is the pressure  $P_1$  at the top of a dam and  $P_2$  at a depth  $h$  from the top inside water are related with each other?
5. How is the barometric height of a simple barometer affected if a drop of liquid is inserted inside the tube?

**Question-2**

[4×2=8]

1. Explain why a gas bubble released at the bottom of a lake grows in size as it rises to the surface of lake.
2. The area of base of a cylindrical vessel is  $300 \text{ cm}^2$ . Water (density= $100 \text{ kg/m}^3$ ) is poured into it up to a depth of 6 cm. Calculate: (i) the pressure and (ii) the thrust of water on the base. ( $g=10 \text{ m/s}^2$ )
3. 'Water does not run out of a dropper unless its rubber bulb is pressed'-Explain.
4. How will you show there is vacuum above the surface of mercury in a barometer? What name is given to this vacuum?

**Question-3**

[4×3=12]

1. (i) The diameter of neck and bottom of a bottle are 2cm and 10cm respectively. The bottle is completely filled with oil. If the cork in the neck is pressed in with a force of 1.2 kgf, what force is exerted on the bottom of the bottle?  
(ii) Name the law/principle you have used to find the force in part (i)
  2. Explain the working of a hydraulic brake with a simple labeled diagram.
  3. Deduce an expression for the pressure at a depth inside a liquid.
  4. (i) Give two reasons for the use of mercury as barometric liquid.  
(ii) What is aneroid barometer?
-

## COMPUTER APPLICATION

### CLASS 9

#### VARIABLES IN JAVA

Variables are containers for storing data values. A variable is a name given to a memory location. It is the basic unit of storage in a program.

- The value stored in a variable can be changed during program execution.
- A variable is only a name given to a memory location, all the operations done on the variable effects that memory location.
- In Java, all the variables must be declared before use.

#### Way to declare variables:

##### Example:

int age;

type            name

**type:** Type of data that can be stored in this variable.

**name:** Name given to the variable.

In this way, a name can only be given to a memory location. It can be assigned values in two ways:

- Variable Initialization
- Assigning value by taking input

#### Way to initialize variables:

int age = 15 ;

datatype            value  
                                 variable\_name

**datatype:** Type of data that can be stored in this variable.

**variable\_name:** Name given to the variable.

**value:** It is the initial value stored in the variable.

#### Types of variables

There are three types of variables in Java:

- Local Variables

- Instance Variables
- Static Variables

### **Explanation of the types of variables:**

#### **Local Variables**

A variable declared inside the body of the method is called local variable. You can use this variable only within that method and the other methods in the class aren't even aware that the variable exists. A local variable cannot be defined with "static" keyword.

#### **Instance Variables**

A variable declared inside the class but outside the body of the method, is called instance variable. It is not declared as static. It is called instance variable because its value is instance specific and is not shared among instances.

#### **Static Variables**

A variable which is declared as static is called static variable. It cannot be local. You can create a single copy of static variable and share among all the instances of the class. Memory allocation for static variable happens only once when the class is loaded in the memory.

### **ASSIGNMENT III:**

1. Define variables in java.
2. How many types of variables are there in java? Name them.
3. Difference between local variables and instance variables.
4. Explain with an example how to initialize a variable.
5. How to declare a variable?

Class – IX

Subject- SUPW

DATE – 21.04.2020(Tuesday)

Project Topic – **GARDENING**

Students I hope all of you are aware of what gardening is and it's my belief that all of you at some point of time have done some gardening. Therefore the topic for your half yearly exam is "GARDENING".

So, in this project you have to elaborately write about gardening and you have to mention about seeds, plants, flowers, manure etc. There are different types of seeds, manures and other things which we all use in our daily gardening process so, everything should get mentioned in your project the project and it should be done in a neat and clean way. Photographs of gardening are to be pasted in your project and the photographs of materials used should also be passed in a neat way.

The Formation of your project should be:-

1. Preface
2. Acknowledgement
3. Topic Name(GARDENING)
4. Introduction
5. About Gardening
6. Conclusion
7. Bibliography

Students you all should do gardening in your spare time at home and do your project nicely as per instructions written above.