

**East point school**  
**Assignment -15**  
**chp- Tissue**

**Assignment -**

1. Differentiate between bone and cartilage
2. What are the specialized cells of cartilage called as -----
3. Matrix of bone is composed of -----
4. Name the cells of bone -----
5. What is the function of bone

6. Why is cartilage called as fibrous connective tissue

Ans Bcz composed closely packed collagenous fibre in chondrin

7. Name the tissue that smoothens bones surfaces at joints. Describe its structure with the help of diagram .

8.

Which of the following is the predominant cell type in connective tissue proper?

- A . Fibroblasts
- B . Lymphocytes
- C . Macrophages
- D . Mast cells

9.. Which of the following statement is/are not correct regarding connective tissue?

- (i) They are the most abundant and widely distributed in the body of complex animals.
- (ii) They connect and support other tissues.
- (iii) They include diverse tissues such as bones, cartilage, tendons, adipose, and other loose connective tissues.
- (iv) They form the internal and external lining of many organs.
- (v) In all connective tissues except blood, the cells secrete fibres of structural proteins like collagen and elastin.

Ans IV

10. Match the following and choose the correct option:

(A) Adipose tissue	(i) Nose
(B) Stratified epithelium	(ii) Blood
(C) Hyaline cartilage	(iii) Skin
(D) Fluid connective tissue	(iv) Fat storage

A . A- (i); B- (ii), C- (iii); D- (iv)

B . A- (iv); B- (iii), C- (i); D- (ii)

C . A- (iii); B- (i), C- (iv); D- (ii)

D . A- (ii); B- (i), C- (iv); D- (iii)

**Video link:-** <https://www.khanacademy.org/science/high-school-biology/hs-human-body-systems/hs-the-musculoskeletal-system/v/cartilage>

## Conservation of Mass

### Worksheet

#### Background

Antoine Lavoisier was a French chemist who did most of his work between 1772-1786. He built a magnificent laboratory in Paris, France and invited scientists from around the world to come and visit. Lavoisier conducted numerous controlled experiments. He published two textbooks that helped organize chemistry into a comprehensible science. Based on his contributions to chemistry, Lavoisier is commonly known as the Father of Modern Chemistry.

Lavoisier's most famous experiments involved the combustion of substances such as phosphorus, sulfur, and mercury. He proposed that air is composed of two parts, one of which combines with metals to form new products. This part was later named oxygen. Lavoisier believed that when a substance burns, oxygen from air combines with that substance to form a new substance. His experiments showed that the new product weighed more than the original substance by a mass equal to the amount of oxygen that reacted with the substance.

These experiments led to what is currently known as The Law of Conservation of Mass. This law states that mass can neither be created nor destroyed. It can only be converted from one form to another. Initially, Lavoisier's conclusions were not accepted by the scientific world but they eventually led to a revolution in chemical thought. His work ultimately led to the basis of Dalton's Atomic Theory.

#### Directions

Examine the data for each of the following combustion experiments and answer the questions based on analysis of the data.

#### EXPERIMENT #1

REACTANT(S)				PRODUCT(S)
Magnesium	+	Oxygen	----->	Magnesium Oxide
48.6 g	+	32.0 g	----->	80.6 g

- (1) a. What is the mass of each reactant? \_\_\_\_\_
- b. What is the mass of the product? \_\_\_\_\_
- c. What is the total mass of reactants? \_\_\_\_\_
- d. Does this experimental data support the Law of Conservation of Mass? Explain.

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**EXPERIMENT #2**

REACTANT(S)				PRODUCT(S)
Magnesium	+	Oxygen	----->	Magnesium Oxide
? g	+	16.0 g	----->	40.3 g

- (2) Based on the Law of Conservation of Mass, predict the minimum amount of magnesium that will react with all 16.0 grams of oxygen to produce 40.3 grams of magnesium oxide.
- 

**EXPERIMENT #3**

REACTANT(S)				PRODUCT(S)
Magnesium	+	Oxygen	----->	Magnesium Oxide
12.2g	+	8.0 g	----->	? g

- (3) Assuming that magnesium and oxygen will react completely with one another, predict the mass of magnesium oxide that will be produced.
- 

**EXPERIMENT #4**

REACTANT(S)				PRODUCT(S)
Magnesium	+	Oxygen	----->	MagnesiumOxide + Oxygen
48.6g	+	50.0 g	----->	80.6 g + ?

- (4) Predict the mass of oxygen that will be left over after the reaction of 48.6 grams of magnesium with 50.0 grams of oxygen.

VIDEO LINK: <https://www.youtube.com/watch?v=i2OE9ljBKD8&feature=youtu.be>

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## Revision Notes:

### ❖ Production

- The main activity of Palampur village is farming. Other activities include small-scale manufacturing, dairy and transport.
- Palampur has a well-developed system of roads, transport, electricity, irrigation, schools and a health centre.
- Let us understand how these production activities are undertaken with the various resources available in this village.
- There are four **main factors of production** of goods and services. These are land, labour, capital and enterprise/human capital.
- First, **land** is required to produce goods. Second, **labour** is involved to execute production activities. Third, **physical capital**, which is classified into **fixed** and **working** capital, is required at every stage of production. Finally, **enterprise and knowledge** are able to form all the inputs together to produce goods for self-use or to sell in the market

### Assignments

- 1) **What is the main production activity in villages across India?** (1)
- 2) **Name any three non-farming activities in Palampur village.** (1)
- 3) **Who owns the majority of land in Palampur village?** (1)
- 4) **What health facilities are available in Palampur village?** (1)
- 5) **What is called 'Working Capital'?** (1)
- 6) **What does "Human Capital" mean?** (1)

### Video Links

- <https://www.youtube.com/watch?v=NT89K-NQNyo>
- <https://www.youtube.com/watch?v=cUoTuu1regE&t=16s>
- <https://www.youtube.com/watch?v=qPDeIGpElg0>
- <https://www.youtube.com/watch?v=2ZQbjraZfPI&t=143s>
- <https://www.youtube.com/watch?v=k-iWtZeIgYY&t=161s>
- <https://www.youtube.com/watch?v=XXxZzWoNa>
- <https://www.youtube.com/watch?v=Qk2yfGiB1pY&t=185s>
- <https://www.youtube.com/watch?v=VtW3I3r0xj4>

## **EAST POINT SCHOOL**

### **ENGLISH ASSIGNMENT**

**Q1. Read the following passage carefully and answer the questions given below.**

- I. During my growing years, my siblings and I were taught — both at home and school – to worship the photos and idols of the deities of our respective religions. When we grew a little older, we were introduced to scriptures like the Bhagwad Gita, Bible, Quran, we were told that there are lot of life lessons to be learnt from these holy books. We were then introduced to mythological stories, through which we learnt about ethics and morality. I also learnt to be respectful towards my parents who made my life comfortable with their love and sacrifice, and my teachers who guided me to become a good student and responsible citizen.
- II. Much later in life, I realised that though we learn much from our respective scriptures, there is a lot to learn from our surroundings. This realisation dawned upon me when I learnt to enquire and explore. Everything around us — sun, moon, stars, rain, rivers, stones, rocks, birds, plants and animals – teach us many valuable life lessons.
- III. No wonder that besides the scriptures, in many cultures, nature is also worshipped. The message that is transmitted is that of maintaining environment and ecological balance. People are taught to live in harmony with nature and, recognise that divinity is there every-where.
- IV. Nature is a great teacher. A river never stops flowing. If it finds an obstruction in the form of a heavy rock, the river water fights to remove it from its path or finds an alternative path to move ahead. This teaches us not only to be nurturing but also to be progressive in life; keeping the fighting spirit alive.
- V. We learn a lot in nature's lap but are unwilling to comprehend it. Rather than being considerate to our surrounding and environment, we are being senselessly insensitive. Overcome with greed, we are destroying nature, the extent of which is so profound that we are frequently facing natural disasters like droughts, floods and landslides. We refuse to accept that nature is angry with us. We forget that if the dam of patience bursts, the result is destruction.
- VI. However, it is never too late to learn, if we imbibe the life-giving and nurturing aspects of Mother Nature, the quality of our life will improve dramatically.

**Q. Answer the following questions:**

1. What do the mythological stories teach us?
2. What is the message given by the writer about nature?
3. What lesson of life do we learn from rivers?
4. What are the causes of frequent natural disasters?

**Q. Choose the correct alternatives:**

1. Find a word in Para I which means the same as 'Gods'.

- a) worship
  - b) ethics
  - c) deities
  - d) scriptures
2. Which word in Para II means the same as 'examine'?
- a) enquire
  - b) learn
  - c) explore
  - d) lessons
3. Find a word in Para III which is the antonym of 'received'.
- a) transmitted
  - b) maintaining
  - c) balance
  - d) divinity
4. Find a word in Para VI which means the same as 'assimilate'.
- a) dramatically
  - b) quality
  - c) nurturing
  - d) imbibe

**Q2. Complete the following passage by choosing the most appropriate options from the ones given below.**

If the officer (1) \_\_\_\_\_ the bribe, he (2) \_\_\_\_\_ arrested. Now his family will also (3) \_\_\_\_\_ suffer. He must (4) \_\_\_\_\_ careful about it.

**Options:**

- 1. would not have taken / has not taken / did not take / had not taken
- 2. wouldn't have been / is not / will not be / wouldn't be
- 3. had to / get to / is to / have to
- 4. has been / have been / will have been / had been

**Q3. The following paragraph has not been edited. There is an error in each line against which a blank is given.**

Could you do something for me?

I have left mine blue bag on the 1. \_\_\_\_\_  
table at the drawing room 2. \_\_\_\_\_

Please go till my house tomorrow and 3. \_\_\_\_\_  
got it from my mother. 4. \_\_\_\_\_

**Q4. Rearrange the jumbled words and phrases into meaningful sentences.**

1. after / a / years / four / comes / leap / year
2. are / there / month / February / of / a / nine / in / year / twenty / days / leap / the / in
3. are / and / hundred / days / in / year / that / sixty six / there / three
4. increases / their / it / rating / T.V. / time / in / prime

**Q5. Read the following instructions for making ‘cheese omelette’ and complete the passage.**

- *Take two eggs*
- *Take 1 slice of ham and wash it and slice it properly.*
- *Take 50 ml of milk.*
- *Take green onion, chop them into very small slices.*
- *Mix all the above ingredients in a bowl*
- *Margarine is heated in a skillet.*
- *Melt it l Take ½ stalk of cheese*
- *Grate the cheese and spread it on the omelette*
- *Take salt 1 tsp*
- *Take pepper 1 tsp*

First (1) ..... bowl. In the bowl, take ham, eggs, salt, onion, pepper, and milk, (2) ..... this mixture well. Now margarine (3) ..... in a skillet on medium flame till it melts completely. Into a skillet, pour egg mixture and when the omelette sets lift edges using egg flipper. (4) ..... some part of the cheese all over it. Fold 1 edge of the omelette over cheese and then sprinkle the leftover cheese on it. Slide omelette onto a dish and cut into parts.

**PACKING**

**Introduction**

The lesson ‘Packing’ is an extract taken from Jerome K. Jerome’s novel Three Men in a Boat. It describes humorously the incident that takes place when the narrator and his two friends get engaged in packing their things before going on for a boating trip. It focuses on the fact that packing is an art and very few people are gifted with this art.

**Theme**



'Packing' is based on the theme that routine tasks are not as easy as they seem to be. The humorous account amuses the readers with the chaotic and confusing situations created by the clumsiness of three friends, all of whom consider packing to be child's play.

### **Message**

The chapter humorously describes the do's and don'ts of packing. Packing should not be treated as a frivolous activity but as a serious task that involves concentration and deftness. Another message the account gives is that if we have a pet, it should be well-trained.

### **Summary**

The narrator of the story, Jerome, was proud of his packing skills. He was supposed to go on a trip with his friends George and Harris. He told them to leave the whole matter of packing to himself, to which they readily agreed. George sat on the easy chair and Harris cocked his legs on the table and watched Jerome do the packing. But this wasn't what Jerome wanted. When he said that he wanted to do all the packing himself, what he meant was that he was willing to be in charge of everything and direct his friends to work efficiently under his supervision. He was really pissed at them for just sitting about watching him work. It was uncomfortable for Jerome to just sit idle and see another person work alone. His energetic nature made him want to get up and superintend.

When Jerome packed the bag, Harris pointed out that Jerome had forgotten to pack the boots. So, he had to open the bag again and pack his boots in and just he was going to close it, he doubted if he had packed his toothbrush. Whenever he would be about to travel, he would get nightmares of forgetting to pack his toothbrush. Then he would wake up and go on to hunt for it. Then, in the morning, he would pack it before he used it and then he had to unpack again to get it and would repack, forgetting to put the toothbrush in again. Then, he had to rush upstairs to fetch it. He always ends up carrying the toothbrush wrapped up in his pocket-handkerchief.

As usual, Jerome had to search the whole bag. He found George's and Harris's toothbrushes eighteen times over, but he couldn't find his own toothbrush. At last, he found it inside a boot and he had to repack once more. After he was done, George asked him if the soap was in, but Jerome was so exhausted that he just didn't seem to care. But after he strapped the bag again, he noticed that he had packed his spectacles inside and he had to open the bag again. Finally, he finished packing at 10:05 pm and now George and Harris decided to pack the food hampers.

George and Harris started by showing that they were better than Jerome at packing. Jerome was excited to see how they would proceed. As he anticipated, they started with breaking a cup. Then, Harris accidentally squashed a tomato by placing strawberry jam on top of it and then he had to pick out the tomato with a teaspoon. Moreover, George stepped on the butter. Now it was Jerome's turn to sit back and watch them which irritated them. They stepped on things, put things behind them, and then they were unable to find them when they needed them. They put the pie at the bottom and put heavy things on top of it, which ended up ruining the pies. They poured salt all over the place and did wonders with the butter.

George got the butter stuck to his slippers. After he got it off his slippers, they attempted to put it in the kettle, but it wouldn't go in. Then they put it down on a chair, but Harris sat on it

and the butter stuck to his back. Then they went around looking for it. After a lot of searching, George discovered that it was at the back of Harris the whole time and finally they packed it in the teapot.

And then their pet dog, Montmorency, came into the scene only to add to the commotion. Montmorency was a naughty dog whose aim in life was to create hurdles and get scolded. It was only when he was screamed at that he felt that his day had not been wasted. So, just when things were ready to be packed, he came into the room and sat on them. Whenever Harris or George extended their hand for anything, Montmorency made it a point that they reach for his nose. He put his leg into the jam, disorganized the teaspoons and hampered the lemons.

After uncountable obstacles and tremendous efforts, finally, the packing was done at 12:50 and Harris sat on the hamper hoping that nothing was broken. George consoled himself and Harris by saying that if anything was found broken then it would be because it was already broken.

They all were ready for bed and decided to wake up at half past six. George was already asleep by then. So, George and Jerome placed the bath where he could tumble into on getting up in the morning and went to bed themselves.

### **Video Link**

<https://www.youtube.com/watch?v=YumFbtAemn4>

## East point school

### Class IX-Geography

#### Study Notes

#### Chapter 4 Climate

### **The Indian Monsoon**

The climate of India is strongly influenced by monsoon winds.

- The seasonal reversal of the wind system is known as “**monsoon**”
- . The monsoons are experienced in the tropical area roughly between 20° N and 20° S.

#### **Mechanism of the monsoon**

1. The **differential heating and cooling of land and water** creates low pressure on the landmass of India while the seas around experience comparatively high pressure.
  2. The **shift of the position of Inter-Tropical Convergence Zone (ITCZ)** in summer, over the Ganga plain, is also known as the monsoon-trough during the monsoon season.
  3. The presence of the **high-pressure area, east of Madagascar**, approximately at 20°S over the Indian Ocean affects the Indian Monsoon.
  4. The **Tibetan plateau gets intensely heated** during summer, which results in strong vertical air currents and the formation of low pressure over the plateau at about 9 km above sea level.
  5. The **movement of the westerly jet stream to the north of the Himalayas** and the **presence of the tropical easterly jet stream over the Indian peninsula** during summer also impact the Indian Monsoon.
- The changes in the pressure conditions over the southern oceans also affect the monsoons

#### **The Onset of the Monsoon and Withdrawal**

- The duration of the monsoon is between 100-120 days from early June to mid-September.
- Around the time of its arrival, the normal rainfall increases suddenly and continues constantly for several days, which is known as the “**burst**” of the monsoon.

## Arrival of the Monsoon in different parts of India

The monsoon arrives at the southern tip of the Indian peninsula generally by the 1st week of June. Subsequently, it proceeds into two – the Arabian Sea branch and the Bay of Bengal branch.

- The Arabian Sea branch reaches Mumbai on approximately the 10th of June.
- The Bay of Bengal branch arrives in Assam in the 1st week of June.
- By mid-June, the Arabian Sea branch of the monsoon arrives over Saurashtra-Kuchchh and the central part of the country.
- The Arabian Sea and the Bay of Bengal branches of the monsoon merge over the northwestern part of the Ganga plains.
- Delhi receives the monsoon showers from the Bay of Bengal branch by the end of June.
- By the first week of July, western Uttar Pradesh, Punjab, Haryana and eastern Rajasthan experience the monsoon.
- By mid-July, the monsoon reaches Himachal Pradesh and the rest of the country.

## Withdrawal of the Monsoon

- The withdrawal of the monsoon begins in northwestern states of India by early September.
- By mid-October, it withdraws completely from the northern half of the peninsula.
- From north to the south, withdrawal of monsoon takes place from the first week of December to the first week of January.
- By early December, the monsoon has withdrawn from the rest of the country.

## Important Features of Monsoon

The important features of monsoon are as follows

- The monsoon is also known for its uncertainties.
- There is an alteration of dry and wet spells which vary in intensity, frequency and duration.
- While it causes heavy floods in one part, it may be responsible for drought in other parts.
- Its irregular arrival and retreat (sometimes due to the effect of EL Nino), causing disruption of farming schedules and causing droughts in certain areas of the country.
- 

## Important Terms

- **Inter Tropical convergence Zone:-**

The ITCZ (Intertropical Convergence Zone) play important role in the global circulation system and also known as the Equatorial Convergence Zone or Intertropical Front. It is a basically low pressure belt encircling Earth near the Equator. It is a zone of convergence where the trade winds meet.

➤ **El Nino**

This is a name given to the periodic development of a warm ocean current along the coast of peru as a temporary replacement of the cold Peruvian current .

### **Short Answer Questions**

1. Why does India have a monsoon type of climate ?
2. Define monsoon ?
3. What do you understand by "break" in monsoon.
4. What do you mean by coriolis force.
5. Mention any three characteristics of the monsoon.

### **Long answer question.**

1. Discuss the mechanism of the monsoon.

**Activity:- find out which songs , dancers , festivals & special foods preparations are associated with certain sessions in your region. Do the have some commonality with other regions of India.**

### **Video link:-**

<https://www.youtube.com/watch?v=Fo8nlearLZQ&feature=youtu.be>

[https://www.youtube.com/watch?v=OOEYzsUwh\\_0&feature=youtu.be](https://www.youtube.com/watch?v=OOEYzsUwh_0&feature=youtu.be)

[https://www.youtube.com/watch?v=LuOL\\_jPoQvM&feature=youtu.be](https://www.youtube.com/watch?v=LuOL_jPoQvM&feature=youtu.be)

[https://www.youtube.com/watch?v=GP\\_aPO0yOM8&feature=youtu.be](https://www.youtube.com/watch?v=GP_aPO0yOM8&feature=youtu.be)

(HISTORY)

CLASS- 9

Sub Teacher–PoonamPathak

## TOPIC:-SOCIALISM IN EUROPE AND THE RUSSIAN REVOLUTION

METHODOLOGY:- You tube link:-<https://www.youtube.com/watch?v=pYHp3xBGdNA>

:- PPT

SUB TOPIC:-The 1905 Revolution and Bloody Sunday

BLACK BOARD SUMMERY:-

### ❖ The 1905 Revolution

- Liberals in Russia wanted the abolition of autocracy of the Tsar.
- **1905:** Liberals and the social democrats and the socialist revolutionaries along with the peasants and the workers revolted for a constitution.
- They were supported by nationalists in the empire and by *JADidists* (wanted modernized Islam to lead their societies) in Muslim-dominated areas.
- **Causes**
  - **1904:** Prices of the essential goods increased while the real income declined by 20%.
  - The dismissal of four members of the Assembly of Russian Workers at the Putilov Iron Works called for industrial action.
  - **Bloody Sunday:** 10,000 workers in St Petersburg went on strike demanding the reduction in the working day to 8 hours, and increase in wages and improvement in working conditions. Over 100 workers were killed and about 300 wounded. This incident is known as the **Bloody Sunday** and is responsible for the 1905 revolution.
- Strikes took place all over the country, universities closed down, and student bodies staged walkouts, complaining about the lack of civil liberties.
- Lawyers, doctors, engineers and other middle-class workers established the Union of Unions and demanded a constituent assembly.
- The Tsar allowed the creation of an elected consultative Parliament or *Duma*.
- The Tsar did not want any questioning of his authority or any reduction in his power; he changed the voting laws and packed the third Duma with conservative politicians.

**Assignment:- (below)**

## **Assignment:-**

1. Mention the causes of 1905 Revolution in Russia?

2. Which event in Russian history is known as Bloody Sunday ?and why?

Or

How did the 1905 Revolution in Russia prove to be a dress rehearsal of October 1917 Revolution ?

3. Describe reforms introduced by the Russian Tsar Nicholas II after the Revolution.

4. State any three events after the Bloody Sunday which led to the revolution of 1905 in Russia.





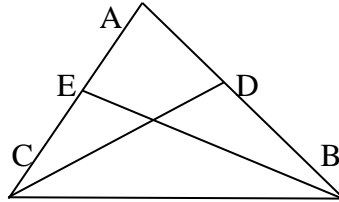
EAS POINT SCHOOL

MATHEMATICS

ASSIGNMENT

Q1) In  $\triangle ABC$ ,  $\angle A = 100^\circ$  and  $AB = AC$ . Find  $\angle B$  and  $\angle C$ .

Q2) In the given figure,  $AE = AD$  and  $BD = CE$ . Prove that  $\triangle AEB \cong \triangle ADC$



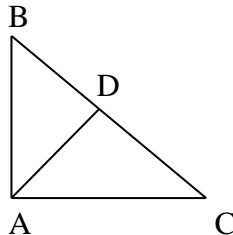
Q3) In  $\triangle ABC$ , if  $AB = AC$  and  $\angle B = 70^\circ$ . Find  $\angle A$ .

Q4) The vertical angle of an isosceles triangle is  $100^\circ$ . Find its base angles.

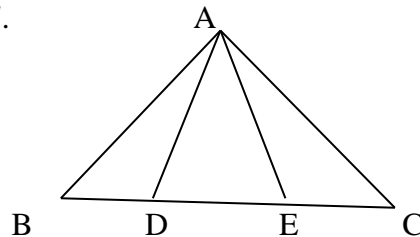
Q5) Find the measure of each exterior angle of an equilateral triangle.

Q6) If the altitude from one vertex of a triangle bisects the opposite side, then the triangle is isosceles.

Q7)  $\triangle ABC$  is a right-angled triangle with  $AB = AC$ . If the bisector of  $\angle A$  meets  $BC$  at  $D$ , then prove that  $BC = 2AD$ .



Q8) In the figure  $D$  and  $E$  are points on side  $BC$  of a  $\triangle ABC$  such that  $BD = CE$  and  $AD = AE$ . Show that  $\triangle ABD \cong \triangle ACE$ .



VIDEO LINK: <https://youtu.be/xEzm8wBSpAc>

# EAST POINT SCHOOL

CLASS- IX SUBJECT- PHYSICS

CHAPTER- THREE LAWS OF MOTION

LINK | <https://youtu.be/TVAxASr0iUY>

## Question 1.

(a) Define momentum. Write its SI unit.

(b) A bullet of mass 0.02 kg is fired from a gun weighing 7.5 kg if the initial velocity of bullet is 200 m/s. Calculate the speed with which the gun recoils.

## Answer

a. Momentum is defined as the product of mass and velocity and it is a vector quantity. SI unit of momentum is kg m/s

b. Applying law of conservation of momentum

$$0 = 7.5v + 0.02 \times 2000 = 7.5v + 0.02 \times 200$$

$$v = -0.53 \text{ m/s}$$

## Question 2.

Why is it advised to tie the luggage with a rope on the roof buses?

## Answer

Reason is given as

When a moving bus suddenly stops, the luggage on its roof still tends to continue in the state of motion due to inertia of motion. Thus, to avoid the falling of the luggage, it is tied with a rope on the roof of a bus.

## Question 3.

State any three changes that a force brings about on a body. Give one example of each.

## Answer

a. It can change the speed of the object. A ball slows down on the surface due to friction

b. It can change the direction of the object. In cricket, batsman hit the ball to change the direction of ball

c. It can change the shape of the object. Example stretched spring

## Question 4.

Tabulate two differences between balanced and unbalanced forces. Write one example of each.

## Question 5.

A book slides down a table top and comes to rest position after a certain distance.

Name the force acting on the book. What types of forces are acting on the book?

(Balanced/ unbalanced). Which force brought the book to rest?

## Answer

When the book slides down the table top, two forces are acting

a. Friction force in upward direction

b. Gravitational force in downward direction.

The two forces are not equal and thus unbalanced force is there which moves the book downward.

Frictional force is responsible for bringing the book to rest position after certain distance after sliding

### **Question 6..**

The mud particles sticking on the rim of a bicycle wheel leave the rim of the wheel tangentially when it starts moving. Explain.

#### **Answer**

This happens because of inertia of direction. When the bicycle wheel rotates, centripetal force is not exerted on the mud particles, so mud particles because of inertia of direction continue to move in straight line tangential to the wheel

### **Question 7.**

When a motor car makes a sharp turn at a high speed, we tend to get thrown to one side. Why?

#### **Answer**

This can again be explained on the basis of the law of inertia. We tend to continue in our straight-line motion. When an unbalanced force is applied by the engine to change the direction of motion of the motorcar, we slip to one side of the seat due to the inertia of our body

### **Question 8..**

What do you understand by inertia? Do all bodies have the same inertia? Illustrate giving an example.

### **Question 9..**

State reason for the following:

a. A person is hit harder, when the person falls on a hard floor than when he falls on sand or cotton.

b. A gunman gets jerk in backward direction while firing a gun.

c. A bullet fired on a glass window makes a fine hole while a stone smashes when hits it.

#### **Answer**

a. In hard surface, the body comes to rest in shorter time than fall on cotton or sand, so force is more

b. The gun exerts force on the bullet. Now by Newton third law, an equal and opposite force acts on the gun and which is turned is exerted on the gunman

c. When the bullet strikes the glass window, the part of the glass window which comes in contact with the bullet immediately shares the large velocity of bullet and makes a hole, while the remaining part of the glass remains at rest and is therefore not smashed due to inertia of rest.

But when a slow moving stone strikes the same glass window, the various parts of the glass window gets enough time to share the velocity of the stone, and the glass is smashed.

**Question 10.**

A passenger in a moving train tosses a coin which falls behind him. It means that motion of the train is

- (a) accelerated
- (b) uniform
- (c) retarded
- (d) along circular tracks

**Answer**

Answer is (a)

**Question 11.**

A stone of mass 1 kg is thrown with a velocity 20 m/s across the frozen surface of a lake and comes to rest after travelling a distance of 50 m. what is the force of friction between the stone and ice?

**Answer**

$m=1 \text{ kg}, u=20 \text{ m/s}, a=? , s=50 \text{ m}, v=0$

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

$$a = -4 \text{ m/s}^2$$

$$\text{Force of friction} = 1 \times 4 = 4 \text{ N} \quad 1 \times 4 = 4 \text{ N}$$

**Question 12.**

State Newton's second law of motion and prove that Newton's first law of motion is a special case of Newton's second law of motion.

**Question 13.**

Answer the following:

- (i) What is meant by momentum of a body? How can it be measured? Write its SI units.
- (ii) Explain how does Newton's first law give the qualitative definition of force?

**Question 14.**

Two objects A and B, having mass 100 kg and 75 kg, moving with velocity 40 km/hr and 6 km/hr respectively. Answer the following:

- a. Which will have greater inertia?
- b. Which will have greater momentum?
- c. Which will stop first if equal negative acceleration is applied on both?
- d. Which will travel greater distance?
- e. Which will impart greater impulse if collides with a wall?

**Answer**

$M_a=100 \text{ kg}, M_b=75 \text{ kg}, v_a=40 \text{ km/hr}, v_b=6 \text{ km/hr}$

a. Now  $M_a > M_b$ , So Object A has more inertia

b.  $p_a = M_a v_a = 4000 \text{ kg km/hr}, p_b = M_b v_b = 450 \text{ kg km/hr}$   
 $p_a > p_b$

Clearly  $p_a > p_b$

c. Since velocity of object B is less than velocity of object A, Object B will stop first if equal negative acceleration is applied on both

- d. Object A
- e. Object A

**Question 15.**

- (i) Define momentum. Write its SI unit.
- ii) How much momentum will an object of mass 10 kg transfer to the floor if it falls from a height of 5 m? ( $g = 10 \text{ m/s}^2$ )
- (iii) Explain how a karate player can break a pile of tiles with a single blow of his hand.

**Answer**

ii.  $s = 5\text{m}$  ,  $a = g = 10 \text{ m/s}^2$  ,  $u = 0$  ,  $v = ?$

$$v^2 = u^2 + 2as \quad v^2 = 0 + 2 \times 10 \times 5$$

$$v = 10 \text{ m/s}$$

Momentum of object when it touches the floor =  $10 \times 10 = 100 \text{ kgm/s}$   $10 \times 10 = 100 \text{ kgm/s}$

This same momentum will get transferred to the floor

iii. karate player strikes the pile with his hand very fast. The large momentum of his hand is reduced to zero in a very short time. This exerts a large force on the pile of tiles which is sufficient to break them apart.

**Question 16.**

A truck of mass  $M$  is moved under a force  $F$ . If the truck is then loaded with an object equal to the mass of the truck and the driving force is halved, then how does the acceleration change?.

**Answer**

Acceleration will be one -fourth

**Question 17.**

Do action and reaction act on the same body or on different bodies? Explain your answer with the help of example. How are they related in magnitude and direction? Write the total momentum of the gun and the bullet before firing.

**Question 18.**

State reason for the following:

- a. A runner presses the ground with his feet before he starts his run.
- b. To take the boat away from the bank of a river, the boat man pushes the bank with an oar.

**Answer**

a. The runner pushes the ground with his feet and in turns , the ground applies the force on the runner to starts his run

b. When the boat man exerts a force of action on the bank with his ore, the bank exerts an equal and opposite force of reaction on the boat. Hence, the boat moves away from the bank.

**Question 19.**

Give an example to show that friction is an important factor in satisfying Newton's third law of motion.

**Question 20.**

(a) State the law of conservation of momentum.

(b) A boy of mass 60 kg running at 3 m/s jumps on to a trolley of mass 140 kg moving with a velocity of 1.5 m/s in the same direction.

Find their common velocity.

**Answer**

1. Write a note on the Assembly Election in Haryana.
2. Why do we need Elections?
3. Elaborate on the Code of Conduct.
4. Is there a democratic way of selecting representatives without elections?
5. How do we distinguish democratic elections from any other election? Give examples.
6. What is Reserved Constituency?
7. Describe the various limitations and challenges of Indian elections.
8. What is our system of elections? Can we say that Indian elections are democratic? Explain.
9. Why are the candidates nominating their name for the elections required to give a detailed statement of their property?
10. What happens during the election campaigns?
11. It is good to have political competition. Do you agree? Justify your answer with reasons.
12. Define the terms "Election" and "By-Election."
13. Mention the Model Code of Conduct for the guidance of political parties and candidates during elections.
14. Write a note on "General Elections."
15. Elaborate on the Independent Election Commission.
16. Are election campaigns necessary for democracy? Why?
17. Explain the term "Rigging."
18. Here we are listing all the different election-related activities:
  - (a) releasing election manifestos
  - (b) counting of votes
  - (c) making of voters' list
  - (d) election campaign
  - (e) declaration of election results
  - (f) casting of votes
  - (g) ordering of re-poll

(h)announcing the election schedule

(i)filing nomination

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