CLASS – VII
SOLUTION OF [CHAPTER -12 [CONJUNCTIONS]
OF DATE (04/05/2020)
HOME ASSIGNMENT NUMBER- 7

SOLUTIONS

EX-F) Fill in the blanks with conjunctions :-

1. This is a small **but** interesting story.
2. Manu and Anu help **each other.**
3. **When** I was a child, I lived in Dubai.
4. Make hay while the sun shines.
5. We will visit **Paris or Rome** during the summer.
6. Let us wait here **until** the rain stops.
7. **Though** he worked hard he failed.
8. I regard my mother **as** my best friend.
9. **As** I was suffering from fever I couldn't attend the class.
10. My sister is not **so intelligent as** my brother.
11. He is **as tall as** his father.
12. Do your duty **as long as** you live.
13. He was treated **as** a guest.

EX- G) Choose the correct conjunction :-

1. _____ being very rich, he never shows off.	
Other than	Instead
Despite	Otherwise
2. I am not feeling well, _____I will come to the party.	
because	since
however	unless
3. _____ I had my lunch, I didn't miss Pizza.	
Although	Finally
Moreover	Already
4. She never helps anyone _____ having a lot of money.	

otherwise	**inspite of**
however	instead
5. You shouldn't go out _____ it's raining heavily.	
for	**because**
already	but
6. My mother _____ I went to the market for shopping.	
or	either
neither	**and**
7. Thomas was not telling the truth. _____ he was shouting at me.	
Provided	Although
Moreover	In order to
8. Please come on time, _____ we may miss the flight.	
otherwise	so
therefore	but
9. We should avoid oily food _____ be healthy.	
finally	consequently
in order to	for
10. I will give you my car _____ you come back before 5'o clock.	
as	although
because	**provided**

EX-H) Complete each sentence using the subordinating conjunction from the parenthesis :-

1. I visit the Grand Canyon _____ I go to Arizona. **whenever**
2. This is the place _____ we stayed last time we visited. **where**

3. _____ you win first place, you will receive a prize. **if**
4. You won't pass the test _____ you study. **unless**
5. I could not get a seat, _____ I came early. **though**
6. We are leaving Wednesday _____ or not it rains. **whether**
7. Pay attention to your work _____ you will not make mistakes. **so that**
8. The musicians delivered a rousing performance _____ they had rehearsed often. **as**
9. She's honest _____ everyone trusts her. **so**
10. Write this down _____ you forget. **lest**

EX-I) Complete each sentence using the correct correlative conjunction pair from the parenthesis:-

1. I plan to take my vacation _____ in June _____ in July. (whether / or**, either / or**, as / if)
2. _____ I'm feeling happy _____ sad, I try to keep a positive attitude. (either / or, **whether / or**, when / I'm)
3. _____ had I taken my shoes off _____ I found out we had to leave again. (**no sooner / than**, rather / than, whether / or)
4. _____ only is dark chocolate delicious, _____ it can be healthy. (whether / or, **not / but**, just as / so)
5. _____ I have salad for dinner, _____I can have ice cream for dessert. (**if /then**, when / than, whether / or)
6. _____ flowers _____ trees grow _____ during warm weather. (not only / or, **both / and**, not / but)
7. _____ do we enjoy summer vacation, _____ we _____ enjoy winter break. (whether / or, **not only / but also**, either / or)
8. Calculus is _____ easy _____ difficult _____ (**not / but**, both / and, either / or)
9. It's _____ going to rain _____ snow tonight. (as / if, **either / or**, as / as)
10. Savory flavors are _____ sweet _____ sour. (often / and, **neither / nor**, both / and)

EX-J) Complete each sentence using the correct coordinating conjunction from the parenthesis:-

1. My car has a radio _____ a CD player. **and**
2. Sharon hates to listen to rap music, _____ will she tolerate heavy metal. **nor**
3. Carol wanted to drive to Colorado, _____ Bill insisted that they fly. **but**

4. I'm afraid of heights, _____ I appreciate the view from the top of this building. **yet**
5. I have to be on time, _____ my boss will be annoyed if I'm late. **for**
6. Do you like chocolate _____ vanilla ice cream better? **or**
7. I have to go to work at six, _____ I'm waking up at four. **so**
8. I was on time, _____ everyone else was late. **but**
9. Nadia doesn't like to drive, _____ she takes the bus everywhere. **so**
10. Our trip to the museum was interesting, _____ there were several new artifacts on display. **for**

Cont……

STUDY MATERIAL NUMBER 8

EXPLANATION & HOME ASSIGNMENT

CHAPTER ACTIVE & PASSIVE VOICE

DATE 4/5/2020

English Grammar Active and Passive Voice

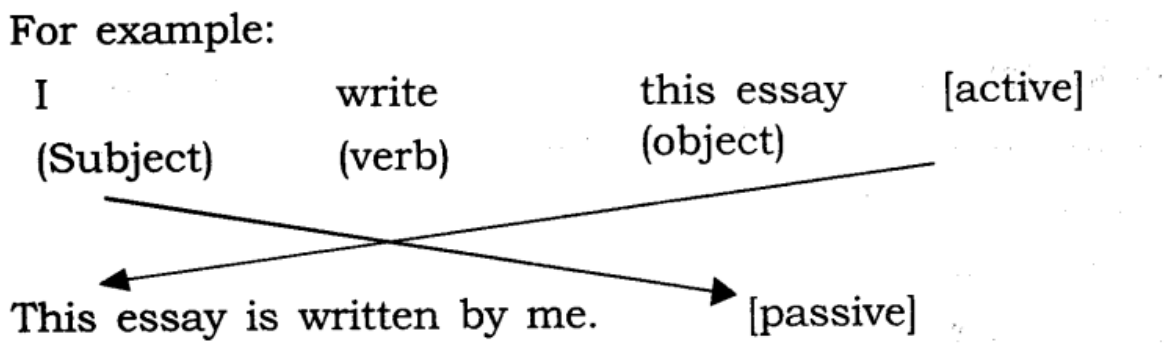
English Grammar Active and Passive Voice

There are two types of voice:

(i) Active voice – when the subject in the sentence acts; as:
I read a lesson.
(ii) Passive voice – when the subject in the sentence is acted upon; as:
A lesson is read by me.

For changing of voice, always remember:

- Change the subject into object and object into subject. Make the subject of active voice the object of passive voice and vice-versa.
- Always use the III form of the verb in passive voice. ;
- Use 'by' before the object in passive voice.



Change of Tense into Active and Passive

	Active	Passive
Present Simple	write, writes	is/am/are written
	Examples:	
	The maid **cleans** these rooms daily.	These rooms **are cleaned** by the maid daily.
	We **make** butter from milk.	Butter **is made** from milk.
	People never **invite** me to parties.	I am never **invited** to parties.
	How do they **make** butter?	How is butter **made**?
Past Simple	wrote	was / were written
	Examples:	
	I **misplaced** my keys yesterday.	My keys **were misplaced** by me yesterday.
	They **did not invite** me to the party.	I **was not invited** to the party.
	Somebody **stole** my car last week.	My car **was stolen** last week.
	When **did** they **build** these houses?	When **were** these houses **built**?
Present Continuous	is / am / are writing	is / am / are being written
	Examples:	
	They **are building** a new school.	A new school **is being** built by them.
	I **am reading** a book.	A book **is being read** by me.
	The teacher is **not revising** the course.	The course is **not being revised** by the teacher.
	Is the carpenter **not making** the chairs?	Are the chairs **not being made** by the carpenter?
Past Continuous	was / were writing	was / were being written
	Examples:	
	The student **was writing** the letter.	The letter **was being written** by the student.
	He **was not paying** attention.	Attention **was not being paid** by him.
	Were the boys playing the football?	Was the football **being played by the boys**?
Present Perfect	has / have written	has / have been written
	Examples:	
	The girls **have collected** the books.	The books **have been collected** by the girls.
	Parth **has got** the prize.	The prize **has been gotten** by Parth.
	I **have not invited** Mohan to my party.	Mohan **has not been invited** to my party.
	Has he **seen** the fair?	Has the fair **been seen** by him?
Past Perfect	had written	had been written
	Examples:	
	Madhu said that somebody **had stolen** her car.	Madhu said that her car **had been stolen**.
	I **had left** this place, before he came.	This place **had been left** by me before he came.
	The master **had not turned** the servant out because of suspicion.	The servant **had not been turned** out by the master because of suspicion.
	Had he not taken milk before he slept?	Had the milk not been taken by him before he slept?
Future Simple	**shall / will write**	**shall / will be written**
	Examples:	
	He **will not write** the letter.	The letter **will not be written** by him.
	Will Mohan **play on the flute**?	Will the flute **be played by Mohan**?
Future Continuous	shall / will be writing	No passive
Future Perfect	shall / will have written	shall / will have been written
	Examples:	
	He **will have taken** his meals before he goes to school.	The meals **will have been taken** by him before he goes to school.
	Shall we **have not completed** the journey by tomorrow?	**Will** the journey **have not been completed** by us by tomorrow?

Change of Person

Active	Passive
I	Me
you	You
he	Him
she	Her
they	Them
any name (Nikhil)	Name as it is (Nikhil)

Exercise 1

Put the verb into the correct form, present simple or past simple, active or passive:

1. It's a big company. Four hundred people …….. (employ) there.
2. Water …… (cover) most of the Earth's surface.
3. Most of the Earth's surface ……. (cover) by water.
4. The park gates ……. (lock) at 7 p.m. daily.
5. The letter…… (post) a week ago and it (arrive) yesterday.
6. The boat …….. (sink) quickly but fortunately everybody…… (rescue).
7. Raman's parents……. (die) when he was very young. He and his sister …….. (bring) up by their grandparents.
8. I was born in Mumbai but I ……. (grow) up in Delhi.
9. While I was on holiday, my camera …….. (steal) from my hotel room.
10. While I was on holiday, my camera…… (disappear) from my hotel room.
11. Why …….. (Sita / resign) from her job?
12. Why ……. (Sohan / sack) from his job?

Exercise 2

Complete the sentences using one of these verbs in the correct form:

cause damage hold include invite make overtake show translate write

1. Many accidents …… by dangerous driving.
2. Cheese …… from milk.
3. The roof of the building …….. in a storm a few days ago.
4. There is no need to leave a tip. Service …… in the bill.
5. You …… to the wedding. Why didn't you go?

6. A cinema is a place where …….films
7. In the United States, elections for President…….. every four years.
8. Originally the book…….. in Spanish and a few years ago it……. into English.
9. We were driving along quite fast but we ……..

Exercise 3

Change the following sentences from the active voice to the passive voice:

1. The man cut down the tree.
2. Columbus discovered America.
3. His teacher praised him.
4. The boy teased the dog.
5. The police arrested him.
6. Rama was making a kite.
7. The boy caught the ball.
8. My father will write a letter.
9. I will defeat him.
10. He kept me waiting.
11. He scored twenty runs.
12. manners reveal character.
13. Everyone loves him.
14. We expect good news.
15. I have sold my bicycle.
16. We must write to him.
17. They are doing the work.
18. The car hit the man.
19. Shyam eats an apple.
20. I had posted the letter before i meet him
21. How do they make coffee?
22. Rachna had made tea.
23. Abdul was watering the plants.
24. Surabhi will write a letter.
25. Mala has broken the window.

Exercise 4

Write these sentences in another way as shown in the following example:

- They didn't give me the money.
- I was not given the money.

1. 1. They asked me some difficult questions at the interview.

2. Janaki’s colleagues gave her a present when she retired.
3. Nobody told me that Jagdish was ill.
4. How much will they pay you?
5. I think they should have offered Om the job.
6. Has anybody shown you what to do?

Date: 04/05/20 **SOLUTION TO PREVIOUS ASSIGNMENT**

CLASS -7 SUB- PHYSICS

- **[Solution of Fourth assignment of Chapter-2 (Motion) Date : 29/04/20]**

1) Uniform Motion and Non – Uniform Motion:-

Uniform Motion	Non Uniform Motion
i)Here, body covers equal distances in equal intervals of time.	i) Here, body covers unequal distances in equal intervals of time.
ii) In this case, direction of motion remains the same.	ii) In this case, direction of motion changes.

2) Examples of Mixed Motion :-
   i) Wheels of a moving vehicle has both **Translatory Motion** and **Rotatory Motion.**
   ii) Drill Machine has both **Translatory Motion** and **Rotatory Motion.**

3) Average speed is calculated in case of a **Non-Uniform Motion.**

   Average Speed is calculated by dividing the total distance travelled by the body to the total time of its journey.

   So, Average Speed = $\frac{Total\ distance\ travelled}{Total\ time\ taken}$

4) Definations

   a) **Random Motion:-** Motion which neither follows a specific path nor has a specific direction is called Random motion. Example:- Smoke coming out of chimney.
   b) **Circular Motion:-** It is the motion of an object around a circular path . Example- Earth revolving around the sun.

5) i) Periodic Motion

   ii) Periodic Motion , Oscillatory Motion

   iii) Random Motion

   iv) Rotatory Motion

   v) Vibratory Motion

   vi) Circular Motion

   vii) Translatory Motion

4.05.2020
MONDAY

CLASS -7. SUB-PHYSICS
CHAPTER-2. MOTION

- **Relation between kgf(kilogramforce) and Newton(N):-**

1kgf=9.8 N. 1kgf=10N (approx.)

We generally consider the approx value for solving numericals of this chapter

- **Numericals on Average Speed:-**

1) A car travels 100 km with a speed of 50 kmh^{-1} and another 200 km with a speed of 20 kmh^{-1}.Is the motion uniform ? Find the average speed of car.

Solution: As the speed does not remain constant throughout the journey, motion is non-uniform

Speed = $\frac{Distance\ travelled}{Time\ taken}$

⇨ Time taken= $\frac{Distance\ travelled}{Speed}$

The journey of the car is considered in two parts

1st part , Time $t_1=\frac{d_1}{v_1} = \frac{2\ \cancel{100}\ km}{1\ \cancel{50}\ kmh^{-1}}$ =2 h

2nd part, Time $t_2=\frac{d_2}{v_2} = \frac{10\ \cancel{20}\ \cancel{0}\ km}{1\ \cancel{2}\ \cancel{0}\ kmh^{-1}}$ =10 h

Total distance travelled = (d_1+d_2)= (100+200) km=300 km.

Total time taken= (t_1+t_2)=(2+10)h=12 h

Average Speed= $\frac{Total\ distance\ travelled}{Total\ time\ taken} = \frac{25\ \cancel{300}\ km}{1\ \cancel{12}\ hr}$ = 25 kmh^{-1}

2) A man travels from Agra to Delhi with a constant speed of 50 kmh^{-1} and returns from Delhi to Agra with a constant speed of 40 kmh^{-1} .Calculate average speed of the train.

Solution: let distance between Agra and Delhi is d km.

Speed = $\frac{Distance}{Time}$

⇨ Time = $\frac{Distance}{Speed}$

In the 1st part , Time $t_1=\frac{d}{v_1} = \frac{dkm}{50kmh^{-1}} = \frac{d}{50}\ h$

In the 2nd part, Time $t_2=\frac{d}{v_2} = \frac{dkm}{40kmh^{-1}} = \frac{d}{40}$ h

Total distance travelled= d+d= 2d

Total time taken = $\frac{d}{50} + \frac{d}{40} = \frac{4d+5d}{200} = \frac{9d}{200}\ h$

Average Speed = $\frac{Total\ distance\ travelled}{Total\ time\ taken} = \frac{2d}{\frac{9d}{200}} = \frac{2\cancel{d}\times 200}{9\cancel{d}} = \frac{400}{9}$ kmh^{-1}= 44.4 kmh^{-1}

3) A boy walks from his home to post office at a distance of 0.5 km in 20 min .Then he returns to his tome in 25 min. Find average speed of the boy.

Solution: Total distance travelled = (0.5+0.5) = 1.0 km= 1000 m.

Total time taken = (20+25) =45 min = 45 × 60 sec = 2700 sec

Average Speed = $\frac{Total\ distance\ travelled}{Total\ time\ taken} = \frac{10\cancel{00}\ m}{27\cancel{00}\ s} = \frac{10\ m}{27\ s} = 0.37\ ms^{-1}$.

- **Numericals on Weight:-**

Weight of a body on moon = $\frac{1}{6}\ th\ of\ weight\ of\ same\ body\ on\ earth$

1) A body is of mass 40 kg. If pull of gravity on 1 kg on earth surface is 9.8 N and at surface of moon is 1.6 N, find a)weight of boy at earth's surface b) mass and weight of boy at moon's surface .

Solution:- a) At earth's surface

Weight = 40 kgf

According to question, 1kgf = 9.8 N

40 kgf= $\frac{4\cancel{0}\times 98}{1\cancel{0}}$ = 392 N

b) At moon's surface

According to question, 1 kgf = 1.6 N

40 kgf= $\frac{4\cancel{0}\times 16}{1\cancel{0}}$ = 64 N

2) On earth the weight of a body of mass is 1.0 kg is 10 N. What will be weight the boy of mass 37 kg is a) kgf b) N?

Solution: a) Weight= 37kgf

b) According to question, 1 kgf= 10 N

Therefore, 37 kgf = 37 × 10 = 370 N .

3) The weight of a body of mass 6.0 kg on moon is 10 N. If a boy of mass 30 kg goes from earth to moon's surface , What will be his a) mass b) weight

Solution: a) Mass remains same it does not change

On moon's surface

Mass =30 kg

b) Weight changes

On moon's surface

Weight= $\frac{1}{1\ \cancel{6}} \times 5\ \cancel{30}$ kgf = 5 kgf

Now, 1kgf= 10 N

Therefore, 5 kgf = 5 × 10 = 50 N

So, Weight = 50 N

- **5th Home Assignment:**

1) **Solve Numericals** :

   i) A car travels with a speed of 30 kmh^{-1} for 30 minutes and then with a speed of 40 kmh^{-1} for 1 hour . Find:
      a) Total distance travelled by car
      b) Total time of travel.
      c) Average Speed of Car
   ii) A train travels with a distance of 300 km with an average speed of 60 kmh^{-1} . How much time does it take to cover the distance ?
   iii) A boy goes from his house to school by bus at a speed of 20 kmh^{-1} and returns back through the same route at a speed of 30 kmh^{-1} .Calculate average speed of the journey.
   iv) A girl travels with an average speed of 10 ms^{-1} for 20 min. How much distance does she travel?
   v) A girl of mass 60 kg goes from earth to moon surface .If 1 kgf = 10 N , then calculate her
      a) Mass on moon's surface
      b) Weight on moon's surface

2) **Name the type of motion in each case :**

   i) A stone falling from a certain height.
   ii) Hands of athlete in a race.
   iii) Pedal of bicycle in motion.
   iv) Plucked string of a sitar.
   v) Motion of train on a mountain road.

Class - 7 Maths Date - 4.5.20

Ch - 4 (Exponents & Powers)

Laws of exponents :- when multiplying like bases, keep the base the same and add the exponents. When raising a base with a power to another power, keep the base the same and multiply the exponents. When dividing like bases, keep the base the same and substract the denominator exponent from the numerator exponent.

1. Multiplying powers with same base :-

example,

(1) $2^3 \times 2^2 = (2\times2\times2) \times (2\times2)$

$= 2^{(3+2)} = 2^5$

(2) $(-3)^3 \times (-3)^4 = (-3)^{3+4} = (-3)^7$

From the above example, we can generalise that, $a^m \times a^n = a^{(m+n)}$.

Note :- Exponents can not be added if the bases are not same. like, $m^5 \times n^7$, $2^3 \times 3^4$.

2. Dividing powers with the same base.

For example, $3^5 \div 3^1 = 3^{5-1} = 3^4$

$10^5 \div 10^3 = 10^{5-3} = 10^2$

Thus, in general, for any non-zero integer, a, $a^m \div a^n = a^{m-n}$

3. Power of a Power :-

For example, $(2^3)^2 = 2^{3\times2} = 2^6$

$(5^3)^6 = 5^{3\times6} = 5^{18}$

In general, ~~as~~ for any non zero integer a, $(a^m)^n = a^{mn}$, where, m and n are whole numbers.

4. Multiplying Powers with the same exponents.

Example, $3^2 \times 2^2 = (3 \times 3) \times (2 \times 2)$

$= (3 \times 2) \times (3 \times 2)$

$= 6 \times 6$

$= 6^2$

here, we observe that in 6^2, the base is the product of bases 3 and 2

Again, $4^3 \times 2^3 = (4 \times 4 \times 4) \times (2 \times 2 \times 2)$

$= (4 \times 2) \times (4 \times 2) \times (4 \times 2)$

$= 8 \times 8 \times 8$

$= 8^3$

$\therefore$ In general, for any non-zero integer, a, b, $a^m \times b^m = (a \times b)^m = (ab)^m$, m is any whole number.

5. Negative Exponents

If the exponenet is negative, we need to change it into positive exponent by writing the same in the denominator and 1 in the numerator.

so, $2^{-3} = \frac{1}{2^3}$

$\left(\frac{p}{q}\right)^{-m} = \frac{1}{\left(\frac{p}{q}\right)^m} = \left(\frac{q}{p}\right)^m$

6. Power with exponent zero.

If the exponent is '0', then you get the result 1, whatever the base is.

$\therefore a^0 = 1$.

11.a^b . Ex - 4.2

Q.1 Using laws of exponents, simplify and write the following in the exponential form.

(i) $2^7 \times 2^4$ (ii) $(-7)^5 \times (-7)^{11}$,

(iii) $\left(\frac{3}{5}\right)^6 \div \left(\frac{3}{5}\right)^2$, (iv) $(-6)^7 \div (-6)^3$

Q.2 Simplify and write the following in the exponential form.

(i) $5^3 \times 5^7 \times 5^{12}$, (ii) $(7^{12} \times 7^3) \div 7^4$

Q.3 Simplify and write the following in the exponential form.

(i) $(2^2)^{100}$, (ii) $(3^2)^5 \times (3^4)^7$

Q.4 Simplify and write in exponential form. (i) $\frac{a^3 \times a^5}{(a^3)^2}$ (ii) $(2^3)^4 \div 2^5$,

(iii) $[(6^2)^3 \div 6^3] \times 6^5$

Q.5 Simplify and write in the exponential form.

(i) $5^4 \times 8^4$ (ii) $(-3)^6 \times (-5)^4$,

(iii) $\cancel{\left(\frac{3}{10}\right)^5}$ $\left(\frac{3}{10}\right)^5 \times \left(\frac{2}{15}\right)^5$

Q.6 Simplify and express each of the following in the exponential form.

(i) $\frac{2^4 \times 2 \times 7^3 \times 7^6}{2^3 \times 7^4}$ (ii) $\frac{(3^2)^3 \times (-2)^5}{(-2)^3}$

(iii) $\frac{3 \times 7^2 \times 11^8}{21 \times 11^3}$ (iv) $3^0 \times 4^0 \times 5^0$

CLASS- VII
STUDY MATERIAL & HOME ASSIGNMENT [V]
SUBJECT- BIOLOGY CHAPTER-2 (ANIMAL TISSUE) DT - 04/05/2020

EXPLANATION OF THE REST PART OF CHAPTER 2

- ***CONNECTIVE TISSUE*** *:* (Continued…)

III. SKELETAL TISSUE

Bone and Cartilage are the two specialized forms of connective tissues which are composed of cells embedded within an extracellular matrix. Both bone and cartilage play an important role in protecting the internal organs of our body, providing support and surfaces for the muscle attachment.

- **BONE :**

It is a highly rigid connective tissue that forms the skeleton of vertebrates. Bone is made up of cells and extra cellular matrix. Cells of bone are called osteoblast and osteocytes. They are the type of tissues which comprises of blood vessels and cells. Overall a newborn baby will have around 300 bones and is reduced to 206. The femur is the longest bone in the human body and the shortest bone is the stapes found in the middle ear.

The major component of bone is calcium phosphate. It also includes calcium carbonate, magnesium phosphate and sodium chloride. These salts are collectively known as hydroxyapatites. It forms the major part about 2/3 of the body weight. The matrix consists of 67% mineral salts and 33% collagenous protein fibres.

The traverse section of bone shows the following layers:

- **Periosteum**
  The outer most covering part of bone is hard, dense and made up of **white fibrous connective tissue** i.e. known as perioteum.
  It contains blood vessels and nerve fibres. Just below the periosteum, there is presence of osteoblast cells which divide to form new bone cells.
- **Endosteum**
  In the centre of compact bone consists of a bone marrow cavity which is lined by endosteum.
- **Matrix**
  The matrix of the bone is called **osssein**, deposited in concentric rings called Lamellae which is situated between

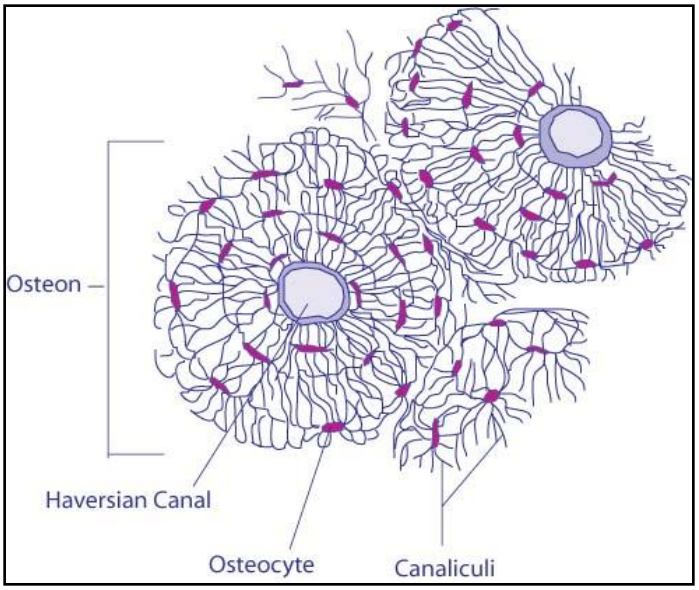


FIG : TRANSVERSE SECTION OF BONE

periosteum and endosteum. Between the adjacent lamellae are numerous small cavities called **lacunae**. The lacuna gives off numerous small, branchess like tubules called **canaliuli**. Each lacuna encloses a **single osteocyte cell**. The canaliculi are interconnected with other lacunnae in matrix.

Compact Bone, Dried: An Osteon (transverse section). High magnification.

- **Haversian canal**
  The central part of compact bone consist narrow tube like structure i.e called haversian canal. The haversian canal consists of blood vessels, lymph vessels and nerve fibres.
  The Lamallae, canaliuli and osteocyte cell in the lacunae are arranged concentrically like ring and surrounding the haversian canal and forms a system i.e. collectively known as **Haversian system**. The haversian system is absent in **spongy bones** of mammals.

Bones serve several vital functions:

Mechanical

1. Bones provide a frame to support the body. Muscles, tendons, and ligaments attach to bones. Without anchoring to bones, muscles could not move the body.
2. Some bones protect the body's internal organs. For instance, the skull protects the brain, and the ribs protect the heart and lungs.

Synthesizing

3. Cancellous bone produces red blood cells, platelets, and white blood cells. Also, defective and old red blood cells are destroyed in bone marrow.

Metabolic

4. **Storing minerals:** Bones act as a reserve for minerals, particularly calcium and phosphorous.
5. They also store some growth factors, such as insulin-like growth factor.
6. **Fat storage:** Fatty acids can be stored in the bone marrow adipose tissue.
7. **pH balance:** Bones can release or absorb alkaline salts, helping blood to stay at the right pH level.
8. **Detoxification:** Bones can absorb heavy metals and other toxic elements from the blood.
9. **Endocrine function:** Bones release hormones that act on the kidneys and influence blood sugar regulation and fat deposition.
10. **Calcium balance:** Bones can raise or reduce calcium in the blood by forming bone, or breaking it down in a process called resorption.

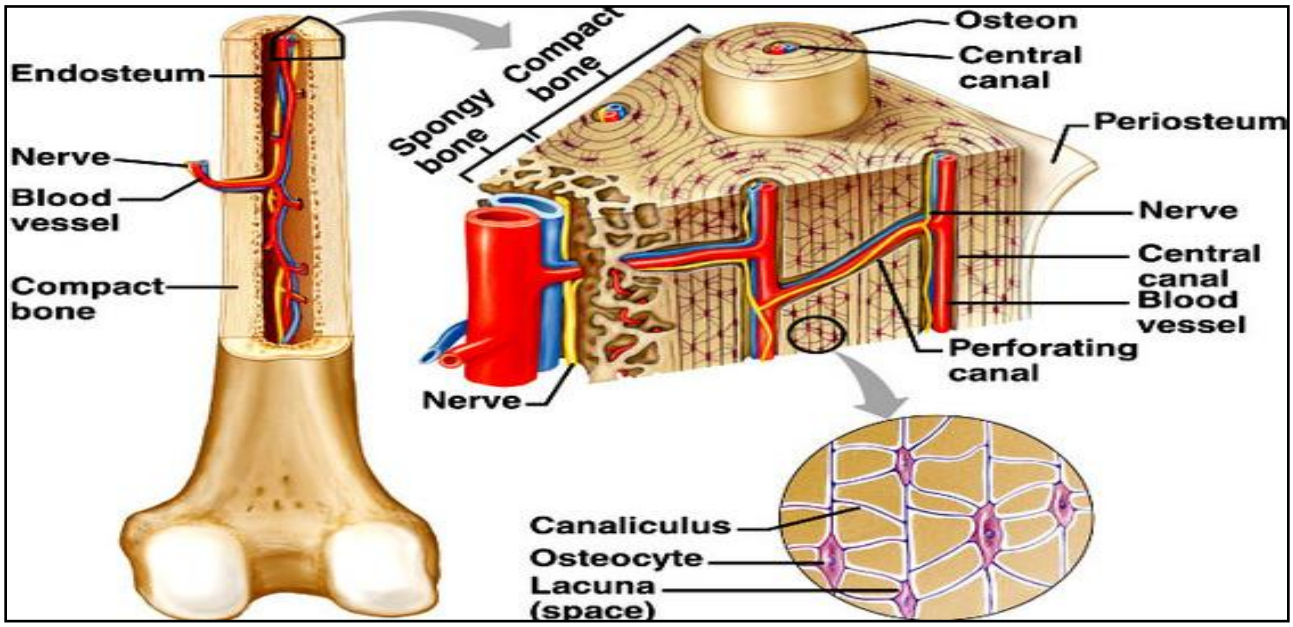


FIG : PARTS OF BONE AND INNER STRUCTURE

- **CARTILAGE :**

Cartilage is the kind of connective tissue, but they are soft, firm tissue and are responsible for the flexibility, bending, and muscles stretching. So these are found at the place where along with the support, flexibility is needed like the joints, ears, nose, as well between the spinal column.

Basic structure

Cartilage is nothing but the **extracellular matrix** present in the connective tissue. This matrix is produced by specialized cells called as **chondroblasts**. These chondroblasts are found in the matrix of chondrocytes, while lacunae are the space where these cells lie. Unlike bone, cartilage does not have calcium in the matrix. Instead, it contains high amounts of chondroitin, which is the material that provides elasticity and flexibility. Haversian system is absent in cartilage.

The chondrocytes determine the level of flexibility of the cartilage. These are found in the body like the end of the ribs, ears, and nose, bronchial tubes, joints between bones like of elbows, knees, and ankles.

These cartilages lack blood vessels, therefore the growth and development of these tissues are slower compared to the other tissues. Cartilage does not contain nerves; it is a aneural The pain, if any, associated with pathology involving cartilage is most commonly due to irritation of surrounding structures,

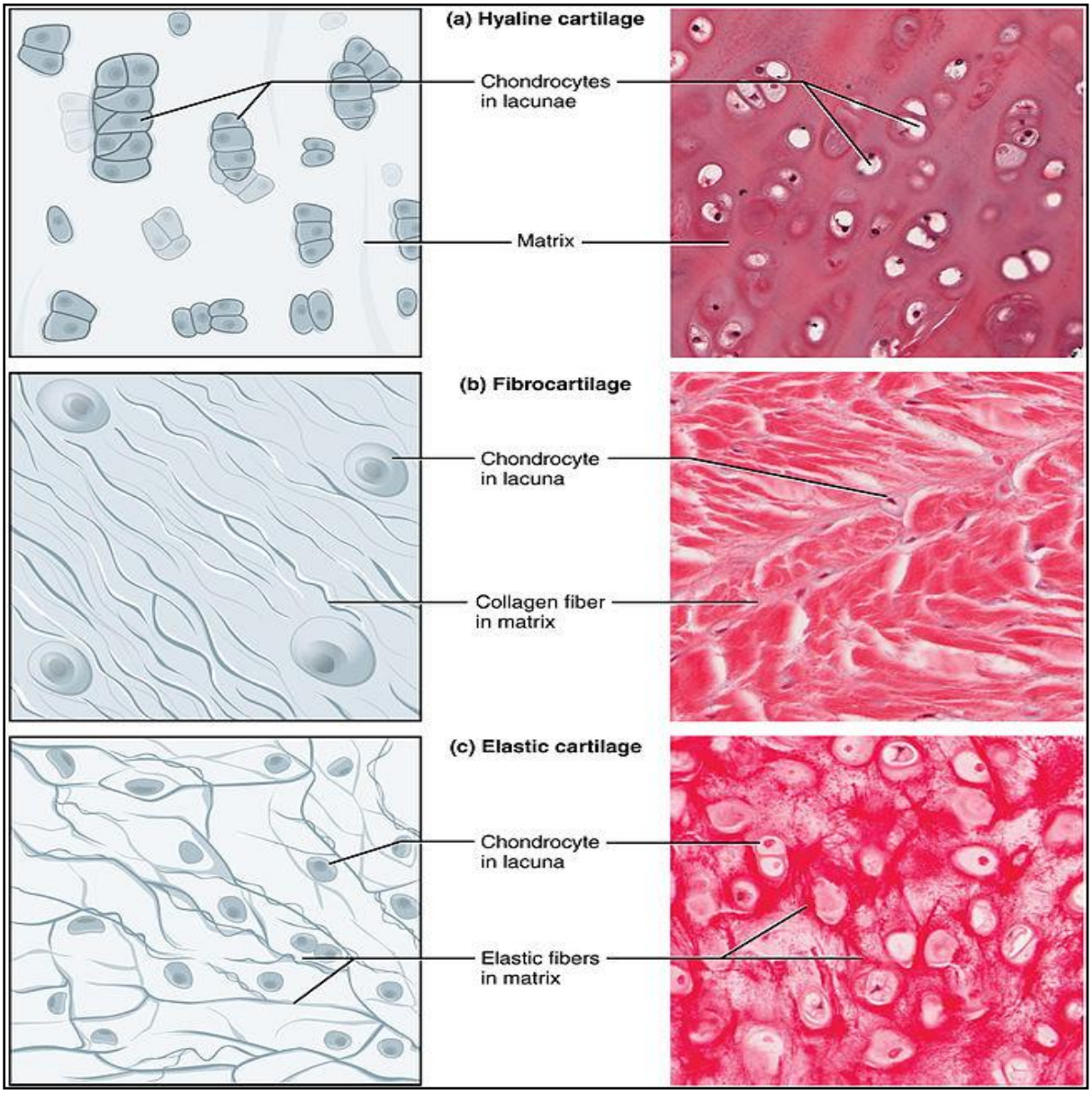
Altogether there are three different types of cartilages and it includes:

1. Hyaline cartilage: It serves as a shock absorber and allows the smooth movement of the bones at joints. They are mainly found in the nose, respiratory tract, and joints
2. Fibrocartilage is found in the knee, and it is tough and inflexible.
3. Elastic cartilage is found in-ear, epiglottis, and larynx. It is the most flexible cartilage.

Cartilage serves several vital functions:

Functions of cartilage

- Due to ECM, it allows the tissue to bear mechanical stress
- In respiratory tracts, ears, nose, cartilage forms framework supporting soft tissues
- Cartilage provides shock absorbing and sliding regions with in joints and facilitate bone movements due to smooth lubricated surface and resiliency



- ## Difference between Bone and Cartilage

Bones and cartilage differ by structure, types, and function. The main difference between bone and cartilage are listed below.

Bones	Cartilage
Bones are the hard, inelastic and a tough organ that forms part of the vertebral skeleton.	Cartilage is a soft, elastic and flexible connective tissue that protects the bone from rubbing against each other.
Bones are of two types: compact or spongy.	Cartilage is of three types: Hyaline cartilage, fibrocartilage, and elastic cartilage.
Bone cells are known as osteocytes.	Cartilage cells are known as chondrocytes.
Presence of blood vessels.	Absence of blood vessels.
The matrix is both organic and inorganic.	The matrix is completely organic.
Has deposits of calcium salts.	May or may not have deposition of calcium salts.
The bones have a rich blood supply.	Lacks blood supply except in few cartilages.
The growth pattern of the bone is bidirectional.	The growth pattern of the cartilage is unidirectional.
Presence of calcium phosphate in the matrix.	Has no calcium phosphate in the matrix.
Haversian canal system is present.	Haversian canal system is absent.
Protect the body from mechanical damage, provide a framework and shape for the body, helps in the movement of the body, store minerals, and produce both RBC – red blood cells and WBC – white blood cells.	Supports the respiratory tract, acts as shock absorbers between weight-bearing bones, maintains the shape and flexibility of fleshy appendages and reduces friction at joints.

➢ *NERVE TISSUE :*

Nervous tissue is one of four major classes of tissues. It is specialized tissue found in the central nervous system and the peripheral nervous system. It consists of neurons and supporting cells called neuroglia. The nervous system is responsible for the control of the body and the communication among its parts. Nervous or the nerve tissue is the main tissue of our nervous system. It monitors and regulates the functions of the body. Nervous tissue consists of two cells: nerve cells or neurons and glial cells, which helps transmit nerve impulses and also provides

nutrients to neurons. Brain, Spinal Cord, and nerves are composed of nervous tissue, they are specialized for being stimulated to transmit stimulus from one to another part of the body rapidly.

Neurons are the fundamental unit of the nervous system specialized to transmit information to different parts of the body."

The sensory neurons carry information from the sensory receptor cells present throughout the body to the brain. Whereas, the motor neurons transmit information from the brain to the muscles. The interneurons transmit information between different neurons in the body.

Structure Of Nervous Tissue

A neuron varies in shape and size depending upon their function and location. All neurons have three different parts – dendrites, cell body and axon.

Following are the different parts of a neuron:

Dendrites

These are branch-like structures that receive messages from other neurons and allow the transmission of messages to the cell body.

Cell Body

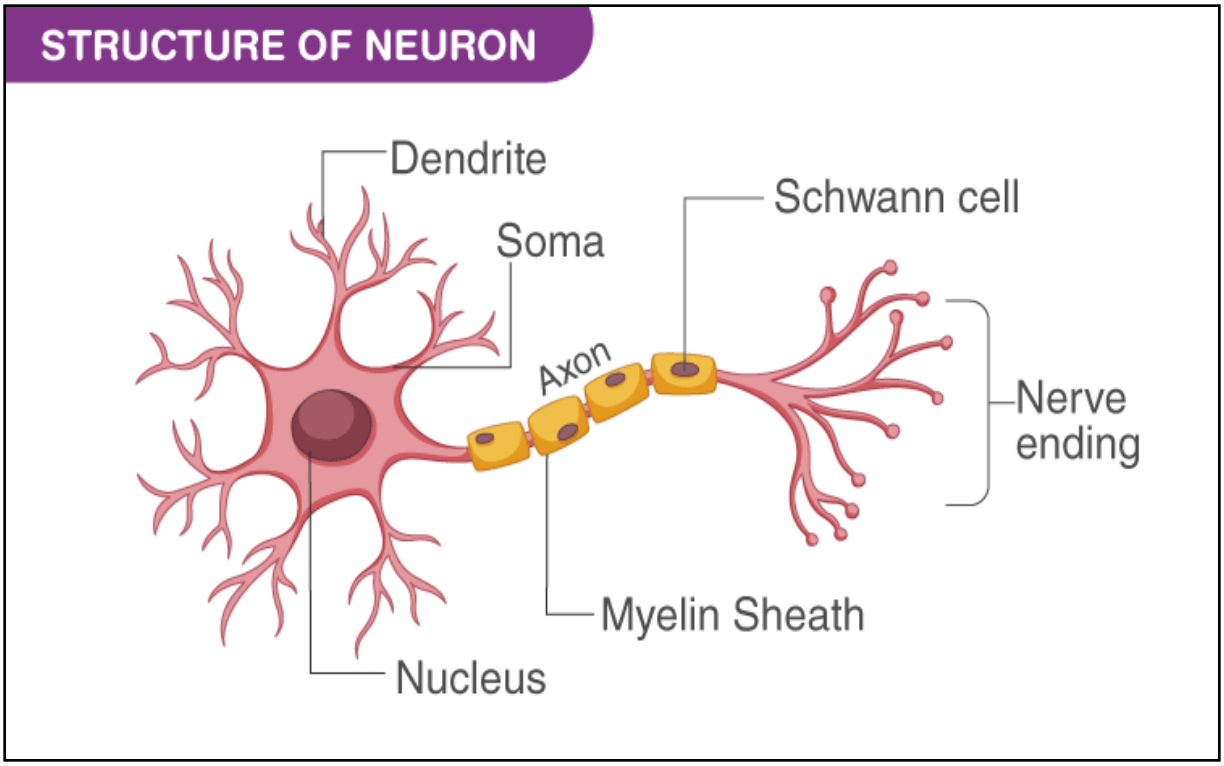
Each neuron has a cell body with a nucleus, golgi body, endoplasmic reticulum, mitochondria and other components.

Axon

Axon is a tube-like structure that carries electrical impulse from the cell body to the axon terminals that passes the impulse to another neuron.

Synapse

It is the chemical junction between the terminal of one neuron and dendrites of another neuron.



Characteristics Of Nervous Tissue

- Nervous tissue makes up for the CNS and PNS of the nervous system
- Contains two distinct cells – neurons and glial cells
- It consists of the dendrites, cell body, axon and nerve endings.
- Neurons secrete chemical neurotransmitters which are responsible for stimulating other neurons as a result of a stimuli
- Presence of specialization at axonal terminals called synapse
- Nerve cells live long, cannot be divided and replaced (except memory cells)

Function Of Nervous Tissue

- Neurons generate and carry out nerve impulses. They produce electrical signals that are transmitted across distances, they do so by secreting chemical neurotransmitters.
- Responds to stimuli
- Carries out communication and integration
- Provides electrical insulations to nerve cells and removes debris
- Carries messages from other neurons to the cell body.

HOMEWORK QUESTIONS :

1. Write down two functions of each of the following.

a) Cartilage.
b) Neuron
c) Bone
d) Epithelial tissue
e) Cardiac muscle

2. Mention three different types of cartilages and their respective locations.

3. Why the growth and development of cartilage tissue is slower than that of bone tissue?

4. Define the following.

a) Canaliculi
b) Lacunae
c) Haversian canal

5. Name the following.

a) Cell of bone.
b) A system which is present in bone but not in cartilage.
c) Cell of cartilage.
d) It is the chemical junction between the terminal of one neuron and dendrites of another neuron.
e) Neurons transmit information from the brain to the muscles.

6. Explain the structure of neuron with proper diagram.

CLASS 7
HISTORY

DATE: 4/05/20

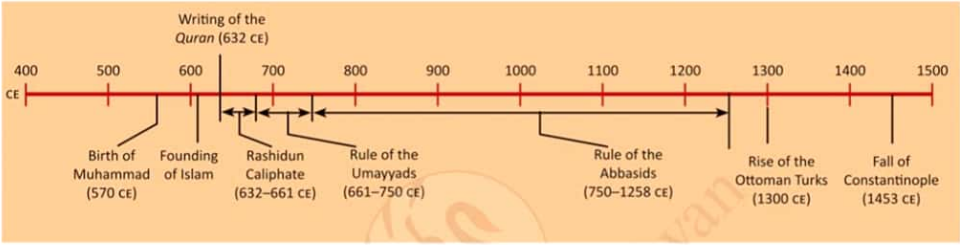
ISLAM AND ITS IMPACT

During the Medieval Period another new religion was founded by **Prophet Muhammad** in the 7th century AD. This religion swept across Asia, Africa and Europe in less than 200 years.

Prophet Muhammad was born in 570 CE in **Mecca**, a small town in **Arabia.** His teachings laid the foundation for a new religion that came to be called as **ISLAM.** This religion stands on the five pillars known **as Shahadah, Salat, Zakat, Sawm,** and **Hajj.** The followers of this religion are known as **Muslims**. Muhammad's teachings are collected in a book called the **'QURAN'**. This book is the guide to the religion and to everyday life for all the Muslims. Their Muslim Calendar is known as **Hijri** and it started with **Hijrat** – the migration of Prophet Muhammad from Mecca to Medina in 622 CE.

After the death of Prophet Muhammad, the rule of the **'Caliphs'** began.
Caliphs were successors of Muhammad, who were both the religious and the civil leader of the community. Different dynasties followed one after the other and this whole period is thus recognised as the period of the **'Caliphate'**. The four main Caliphates were made up of the **Rashidun, Umayyad, Abbasid** and **Ottoman** dynasties. This Caliphate period was responsible in the spread of Islam with its impact on trade, culture and science.
The people of Arabs were traders and they provided a crucial link between the goods and products of the East and the markets of the West till the 15th century CE. The Arab people also made a significant contribution to the fields of science and astronomy and also learnt a lot from India, especially in the fields of astronomy and medicine.

3 Islam and its Impact



Islam is one of the major religions of the world today, practised by over 1.6 billion people. From the deserts of Arabia, where **Prophet Muhammad** laid down the tenets of Islam in the 7th century CE, this religion swept across Asia, Africa and Europe in less than 200 years.

The Great Mosque at Mecca—the most holy place for the followers of Islam

Before the coming of Islam, the Arab world was ruled by many warlike tribal groups. Some of these groups were **nomads**; others led settled lives near **oases** (places in the desert where water is found) or in coastal towns. These people became the first followers of Prophet Muhammad.

THE BIRTH OF ISLAM

Prophet Muhammad was born around 570 CE in Mecca, a small town in Arabia. His father died before he was born and his mother died when he was six years old. He was brought up by an uncle.

When Muhammad grew up, he married a widow named **Khadija**, and spent several years managing her business affairs.

In the course of his work, he went on long trading journeys, thus coming into contact

with a variety of people and customs. His gentle and honourable nature won him the affection of the citizens of Mecca, and by common consent he received the title of **Alameen**, 'the faithful one'.

Around 610 CE, when Muhammad was around 40 years old, his life changed. One day, as he sat meditating in a cave, he went into a trance and realised that there was only one god, **Allah**, who had chosen Muhammad as his **prophet**. (A prophet is a person who explains the words and the will of god to the common people).

TEACHINGS OF PROPHET MUHAMMAD

Muhammad started teaching his new beliefs to an increasing circle of followers. They accepted his command to put away their idols and surrender to the formless Allah—'he who is greater than all else'.

- The main concept of Islam is the oneness of god. Muhammad taught that there was only one god, Allah.
- He believed that, after death, there was a life of eternal happiness for those who were faithful and righteous, and a life of eternal suffering in hell for those who were faithless and evil. Gambling, drinking and lending money on interest were prohibited.
- All true believers were equal, said Muhammad.
- The religion Muhammad preached was simple, without elaborate rituals.

Believers in Allah had to follow five simple rules, which were called the **Five Pillars of Islam**.

The Five Pillars of Islam

1. ***Shahadah* or declaration of faith:** This refers to the belief that 'There is no god but Allah, and Muhammad is his Prophet.' This is a declaration of faith, which all the faithful are expected to say.
2. ***Salat* or prayer:** Muslims are expected to pray five times a day, at fixed times, facing Mecca. They can pray anywhere as long as the place is clean. On Fridays and during festivals, Muslims should, ideally, say their prayers or *namaz* in a mosque.

Muslims in prayer—*salat*

3. ***Zakat* or charity:** This rule refers to the giving of alms. Alms is money or objects donated to the poor. Muhammad taught that everything belongs to God. So, by giving away a part of their belongings as alms to the needy, people can both purify themselves and help others.

Zakat—doing charity

The Great Mosque at Mecca is built around the *Kaaba*, a square-shaped stone building. The *Kaaba* is the holiest place for Muslims. During the *Hajj*, Muslims go around the *Kaaba*. When Muslims offer prayer, they do so facing the direction of the *Kaaba*.

All pilgrims who go on the *Hajj* wear the *ihram*, a dress consisting of two pieces of white cloth, one wrapped around the waist, and the other thrown over the left shoulder—this dress ensures that there is no distinction between the rich and the poor.

4. ***Sawm* or fasting:** In the month of Ramadan (the ninth month of the Muslim calendar), Muslims traditionally fast from dawn to dusk. Fasting is a form of self-purification.
5. ***Hajj* or pilgrimage:** *Hajj* is the pilgrimage to Mecca that all able-bodied Muslims are expected to make, at least once in their lifetime.

Muhammad's increasing popularity upset the priests of Mecca and so, in 622 CE, he had to migrate to Medina. This migration was called the ***Hijrat***, and it became the starting point of the Muslim calendar, ***Hijri***. At Medina, Muhammad became the religious head of the people. In 630 CE, he re-entered Mecca, and made it one of the central sanctuaries of Islam.

After Muhammad's death in 632 CE, his teachings were collected in a book called the ***Quran***, which is the guide to religion and to everyday life for all Muslims.

Go further...

It is said in the *Quran* that: *'... whoever enjoins alms giving and kindness and peacemaking among mankind, and does that seeking the good pleasure of God, God will bestow on him (her) a vast reward.'*
(*Quran* 4:114).

An illustrated copy of the *Quran*

THE EXPANSION OF ISLAM

By the time Prophet Muhammad died, Islam had spread throughout the Arab world. The Arabs traded with India, China, Europe, and East and West Africa. They took the message of Islam to these places.

Within 120 years it had spread to Iran,

Egypt, Syria and the northern coast of Africa. Islam even reached Spain under the **Caliphs** (the successors of the Prophet). Afghanistan and Balochistan soon came under the influence of Islam. By the end of the 8th century CE, the religion had spread to India as well.

THE CALIPHS

Muhammad's death gave rise to the rule of the Caliphs. Caliphs were successors of Muhammad, who were both the religious and the civil leader of the community. Different dynasties of Caliphs followed one after the other and this whole period is thus recognised as the period of the Caliphate.

THE RULE OF THE CALIPHATE

The Rashidun Caliphate

Upon Muhammad's death, his father-in-law, **Abu Bakr**, was elected to be the leader of Islam. He was the first Caliph. He was followed in turn by **Umar**, **Usman (Uthman)** and **Ali**. Together, they came to be known as the Rashidun Caliphate and ruled from 632 to 661 CE.

The Umayyad Caliphate

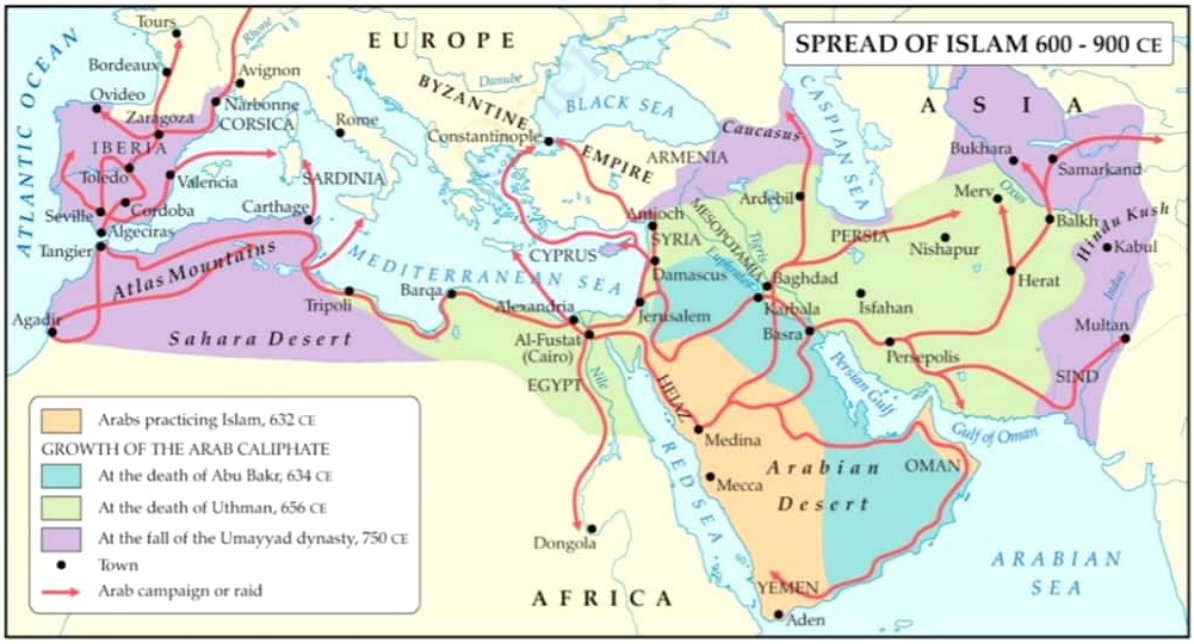
The Rashidun Caliphs were followed by the **Umayyads** who ruled from 661 to 750 CE. Under them, the administrative centre of Islam shifted from Medina to Damascus in Syria. By 712 CE, the Islamic Empire stretched from Spain to the river Indus.

The Abbasid Caliphate

The **Abbasids** were descendants of the paternal uncle of Prophet Muhammad. They overthrew the last of the Umayyads in 750 CE. They moved their capital from Damascus to Baghdad and ruled for more than 500 years. The dynasty fell to a Mongol attack in 1258 CE.

The Ottoman Empire

After the fall of the Abbasids, the Seljuk Turks and then the Ottomans came to



The Baghdad Gate: remains of one of the Abbasid Palaces in Iran

The Hagia (pronounced 'Aya') Sophia in Istanbul was a church; it was turned into a mosque by the Ottomans. Today it is also a museum.

power in the Middle East. Under them, Islam grew in strength and expanded its reach. Several madrasas (Islamic colleges) were founded, and many mosques built. In 1453 CE, the Ottomans took over Constantinople, the capital of the Eastern Roman Empire, or the Byzantine Empire. They renamed it **Istanbul** and made it the capital of the vast and powerful Ottoman Empire.

THE IMPACT OF ISLAMIC CIVILISATION ON TRADE

Between the 7th and the 10th centuries CE, Arab traders dominated the trade routes from the Persian Gulf as Iraq, Persia, Central Asia, and parts of the Indian subcontinent were under their political control. The Silk Route was disrupted by the Mongol raids from Central Asia. (The Silk Route, as you learnt last year, was the land route connecting China to India, the Middle East, and the Mediterranean region.) This encouraged sea-borne trade, with the Arab traders providing a crucial link between products of the East and markets of the West.

The expulsion of the Arabs from Spain in 1492 CE finally put an end to international sea trade. They were replaced by the European traders, the earliest of whom were the Portuguese.

Go further...

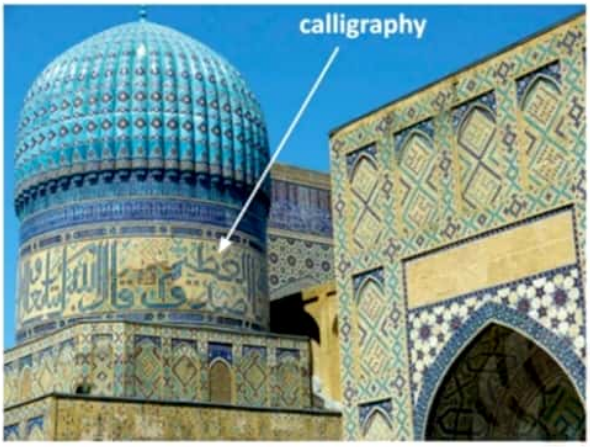
Harun al-Rashid was the fifth and most famous Abbasid Caliph (786–809 CE). He was a great general and a patron of art. He is the Caliph referred to in most of the stories of *The Arabian Nights*. *The Arabian Nights* (or *The Book of One Thousand and One Nights*) is a literary epic which tells the story of Queen Scheherazade and King Shahryar. The story of Aladdin and his magic lamp is one of the famous stories in this book. Can you name two other stories from this book that you have read or heard of?

ISLAMIC ART

Early Islam forbade the painting of humans as it was thought to lead to the worship of idols. Hence, unlike in Hindu and Christian art, Islamic art rarely depicted human beings in the early years. It focussed instead, on art that was mostly abstract and decorative with geometric patterns or calligraphy.

Go further...

Once when Muhammad was in Mecca, a poor shepherd came to worship in the mosque. The shepherd offered prayer in a simple manner. This offended the priests and they were about to drive him out of the mosque when the Prophet stopped them.
The Prophet said, *'Within the mosque it does not matter how you pray, as long as you have love and reverence (respect). This poor shepherd's simple prayer entered directly into the ears of Allah more clearly than yours, as it was uttered from his heart with intense love, faith, sincerity and reverence. Make room for God's poor lover near me. Let no one be ashamed to have his company. He is humble and pure, and an exalted soul.'*



Calligraphy on the walls of a mosque

Geometric patterns like this were commonly used in Islamic art.

THE CONTRIBUTION OF THE ARABS TO SCIENCE AND LITERATURE

The Arabs absorbed the best of Greek, Indian and Chinese inventions in science and astronomy and made further advances in all these fields.

Alberuni (973–1048 CE), a famous astronomer and mathematician, determined the circumference of the Earth. **Ibn Sina's** masterful medical encyclopaedia, ***Al Qanun***, earned him the title of 'Prince of Physicians'. He also recognised the infectious nature of tuberculosis and phthisis (pronounced, thy-sis).

The House of Wisdom in Bagdad

The House of Wisdom that was established in Baghdad during the rule of the Abbasids was a famous library and a centre for translation. Works of the Persians, the Greeks and the Indians were translated into Arabic.

Works of literary beauty created by the Arabs include **Omar Khayyam's** (1048–1131 CE) book of poetry—the ***Rubaiyat***. The evergreen tales of adventure, ***The Arabian Nights***, are also examples of Arabic contribution to literature.

Omar Khayyam

INDIA AND THE ARABS

Islam first came to India through Arab traders, who settled in the Malabar Coast of Kerala around the 7th century CE. These traders received the patronage of the local rulers. India's contact with Islamic culture increased greatly after the arrival of the Muslim invaders, who went on to become rulers of India, starting with **Qutbuddin Aibak** in 1206 CE.

Our heritage

By the time the medieval period began, Indians had already made significant advances in fields such as astronomy, medicine and mathematics. Indian mathematics helped the Arabs establish the position of stars. The Arabs also borrowed the decimal system and the concept of zero from India and passed it on to the West. Various books were translated into Arabic including those of Varahamihira and Aryabhata.

A painting depicting a surgery by Arab physicians—the Arabs are believed to have learnt of these surgical methods from the ancient Indian medical treatises of Sushruta and Charaka.

Date: 04.05.2020

COMPUTER (HOME ASSIGNMENT – 5)
CLASS – 7
CHAPTER: 1 (COMPUTER HARDWARE COMPONENTS)
STUDY MATERIAL NO. – 1.5

Home Work:-

1. Why mouse is important now a day?
2. Write down the full form of - a) OLED b)LCD c)VoIP d)USB
3. Write any 4 uses of microphone.
4. Except printing what are the other functions of printer?
5. What is the difference between speaker and microphone?
6. What are the two verities of headphone?

12) MODEM:-

Modem stands for modulator and demodulator, which converts the digital data into analog so that it transmits over the phone line because the phone line transmits analog data. In the same way on the other hand when data is received modem again converts this analog data into a digital single so that computer store and process on this information.

Modulator means that converts digital signals into analog signals and send it over telephone lines. This process is known as modulation.

Demodulator means that receiving modem converts analog signals into digital signals and this process is known as demodulation.

It helps us to transmit data from one computer to another computer using standard telephone lines.

The rate at which a modem converts digital signals into analog signals and sends them over transmission media and modem converts analog signals into digital signals is called modem speed. It is measured in bits per second (bps).

The modems are of various types.

1. Internal modem
2. External modem
3. USB modem.

- **Internal modem:-**

  Internal Modem is the device installed in the desktop or laptop computer to communicate over a network with other connected computers. These are cheaper than external modems as they do not required power supply.

There are two types of internal modems: i) Dial-up and ii) Wi-Fi (wireless). Dial up works on the telephone cables and requires a network access phone number and log on ID to make a connection.
And, Wi-Fi modem comments to the network without filling these credentials.

Picture of Internal modem.

- **External modem:-**

External modems are the simplest type of the modem to install this kind of modem you didn't open the computer. The telephone line plugs into a socket on the rear panel of the modem. As external modems have their own power supply you can turn off the modem quickly to break the connection. The examples of these modems are the DSL modems which are used in the broadband connections.

Picture of External modem.

- **USB modem:-**

USB modem is a small portable USB device, usually the size of a USB flash drive that functions as a modem and plugs into a laptop or desktop computer. One end has a USB interface while the opposite end has an RJ-11 port for connecting to a telephone line.

Picture of USB modem.