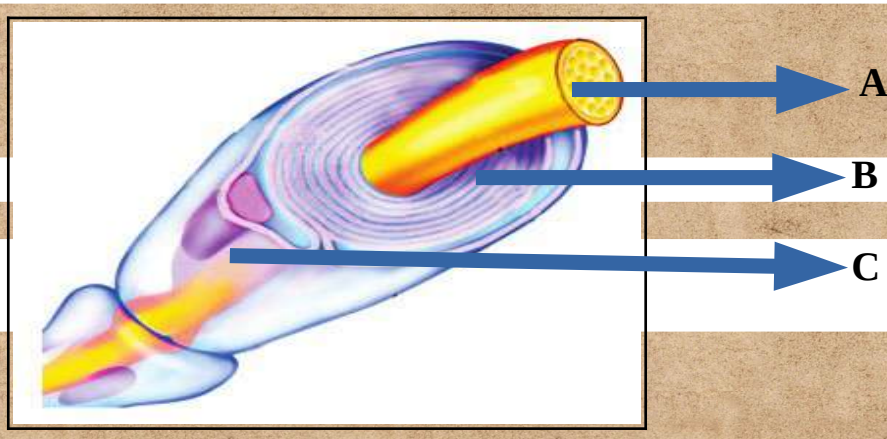
1.What is the difference between white matter and grey matter?

2. Observe the image and identify A, B and C



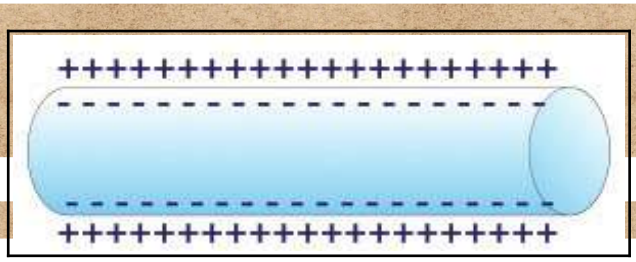
3. Identify the word pair relationship and fill in the blanks.

a) The part where myelinated nerve cells are present in abundance : White matter

b) The part where non-myelinated nerves cells are present :.....

4. What are the major functions of the myelin sheath?

5.

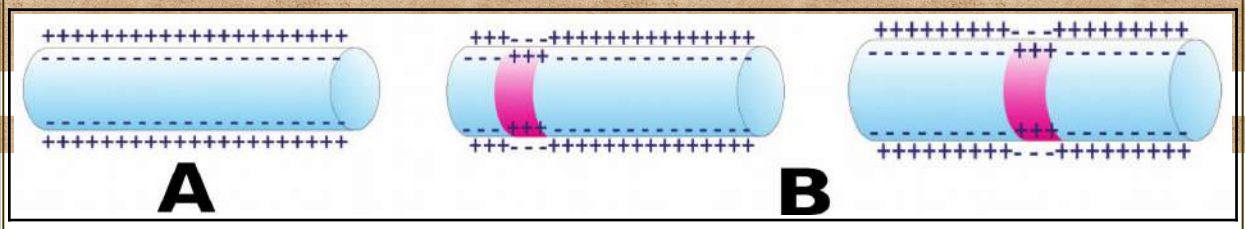


The following figure shows the distribution of ions on either side of the plasma membrane of the axon. Analyse the figure and answer the following

a) Why, there is a difference in charge distribution on either side of plasma membrane?
b) What changes do the stimulus create in the charger on either side of the plasma membrane?

6. Identify the specialized cells of Myelin sheath in the brain and the spinal cord is formed.

7. Analyse the illustration about impulse transmission through axon and answer the following questions.



a) What are the changes that takes place in illustration B when compared to A?
b) Explain how this change brings about the transmission of impulses through axon.

For watching online video class of this worksheet

1.

The flow chart given below indicates the transmission of impulse from one neuron to another. Complete the flow chart using the data given in the box.

Cell body, neurotransmitter, axon, synaptic nobe, axonite, dendron

Stimulus	→	Dendrite	→	A	→	B	→	C	→
→ D	→	E	→	F	→	Dendrite of the next neuron			

2.

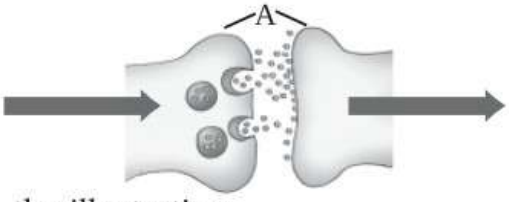
Examine the picture given below.

(a) Identify A and B.

(b) What is the role of A in the transmission of electric impulses?

3.

The illustration given below indicates the transmission of impulses from one neuron to another. Observe the illustration and answer the following question.



(a) Identify the part in the illustration.

(b) Identify the chemical substance which is secreted from A? Give one example for this chemical substance?

4.

Mohan lost his memory and was partially paralysed after he met with an acccident.

(a) Which part of Mohan's brain was affected?

(b) How is the brain protected?

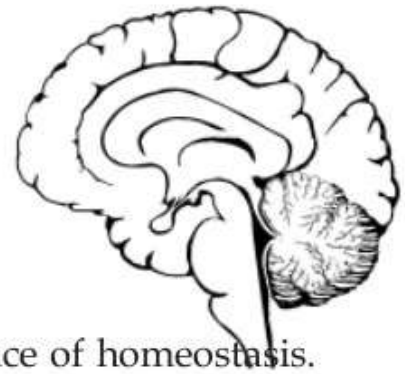
5.

Draw the diagram and label the following parts.

a) The part which secretes acetylcholine.
b) The part which receives impulses from the adjacent neuron.
c) The part which carries impulses from the cell body to outside.

6.

Draw the diagram and label the following parts.



a) The part that helps in the maintenance of homeostasis.
b) That acts as relay station of impulses to and from the cerebrum.
c) The second largest part of the brain.

7.

Balu : In the spinal cord and the cerebrum, white matter is seen outside and greymatter is seen inside.

Ramu : In the cerebrum, the grey matter is seen outside and the white matter is seen inside, But in the spinal cord, the white matter is seen outside and the grey matter is seen inside.

In the group discussion related to the nervous system, Balu and Ramu said so.

a) Whose opinion do you agree with?
b) Explain white matter and grey matter?

8.

Box A and Box B contains the parts of the brain and related informations respectively. Analyse the informations in the boxes and complete the table as per the model cited.

A	B
Cerebellum Hypothalamus Medulla oblongata Thalamus	• Situated behind the cerebrum • Controls involuntary actions • Maintains equilibrium of the body • Located near the cerebellum as a rod-shaped structure • maintains homeostasis • situated just below the thalamus • Acts as relay station of impulses • Situated below the cerebrum

Part	Location	Function
Hypothalamus	Situated just below the thalamus.	Maintains homeostasis
Thalamus		

9.

Identify the word pair relationship and fill in the blanks:

i) Sensory nerve : Carries impulses to the spinal cord.
..... : Carries impulses from the brain to various parts of the body

ii) Skull : Brain
..... : Spinal cord

iii) Hypothalamus : Maintains homeostasis
..... : Control centre of involuntary actions.

v) Dendrite : Receives impulses
..... : Carries impulses outside

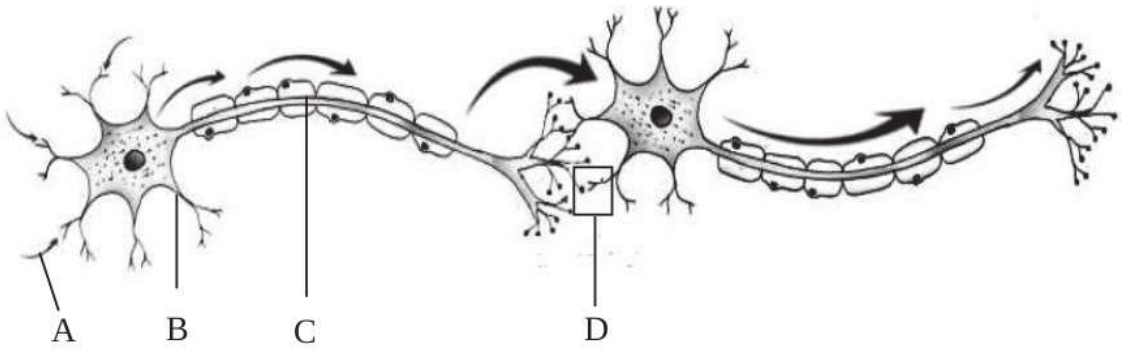
10.

Identify the parts of brain related to the following actions.

(a) Maintains the equilibrium of the body.	
(b) Controls breathing.	
(c) The three - layered membrane which helps in the protection of brain.	
(d) The Production centre of oxytocin and Vasopressin	
(e) Centre of thought, intelligence and memory.	

11.

Redraw the illustration and answer the questions given below.



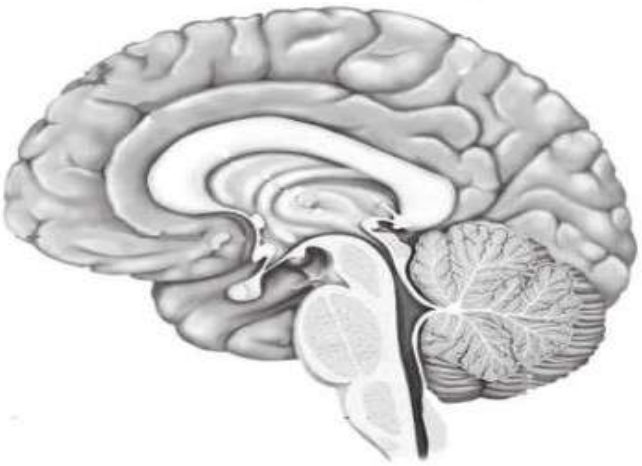
(a) Identify the parts A, B, C?

(b) Identify the part indicated by D? How impulses are transmitted through this part?

(c) Write the role of myelin sheath in the transmission of impulses?

12.

Redraw the picture, identify and label the parts which have the following functions.



(a) The part which controls involuntary actions.

(b) The part which coordinates muscular activities.

(c) The part which helps to feel senses.

(d) The part which acts as the relay station of impulses.

(e) The part which plays a major role in the maintenance of homeostasis.

13.

Write the different types of nerves and their functions like the example given below.

A.Mixed nerve	Carries impulses to and from the brain and spinal cord.
B.....	.....
C.	.....

14.

The symptoms of a disease that affecting nervous system is given below.

Loss of body balance, irregular movement of muscles, shivering of the body, profuse salivation.

(a) Identify the disease?

(b) Write the causes of the disease?

(c) Explain the other diseases that affecting nervous sysytem with their cause and symptoms?

15.

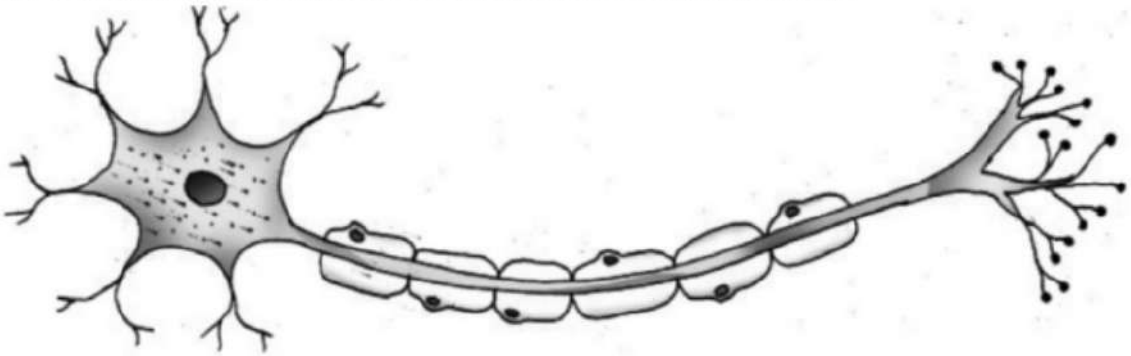
The following are the indications of some diseases affecting the nervous system. Analyze the symptoms and tabulate in A and B columns by giving the name of the disease as heading.

- **Distruction of Ganglions.**
- **Distruction of neuron.**
- **Accumulation of an insoluble protein in the neural tissues.**
- **Decreased production of dopamine.**
- **Loss of body balance.**
- **Loss of memory.**

A.....	B.....
•	•
•	•
•	•

16.

Copy the diagram and label the parts according to the indicators given below.



a) Part which receives impulses.

b) Part which carries impulses to the cell body.

c) Part which secretes neurotransmitters.

17.

Some parts of the central nervous system is given in the box. Arrange them suitably in the box provided.

Central canal, cerebrum, thalamus, hypothalamus, meninges, medulla oblongata.

Statement	Part
1. Part which controls involuntary actions.	1. .....
2. part which contain cerebrospinal fluid.	2. .....
3. Part which act as relay station of impulses.	3. .....
4. Largest part of the brain.	4. .....
5.Part which maintains homeostasis.	5. .....
6.Part which protects brain.	6. .....

18.

Copy the diagram and label the parts based on the indicators given below.

a) Part which coordinates muscular activities.

b) Rod shaped structure seen below the cerebrum.

c) Part which maintains homeostasis.

19.

The following are the indications of some diseases affecting the nervous system. Examine them and complete the table by giving the disease name as headings..

- Continuous and irregular flow of electric charges in the brain.
- Loss of body balance.
- Destruction of Ganglions.
- Loss of memory.
- Epilepsy due to continuous muscular contraction.
- Accumulation of an insoluble protein in the neural tissues.

A.....	B.....	C.....
• Loss of body balanance. •	• •	• Continuous and irregular flow of •

20.

The main symptoms of a disease affecting the nervous system are given below. Analyze the symptoms and answer the questions.

- Loss of body balance.
- Irregular movement of muscles.
- Profuse salivation.

a) Identify the disease.

b) Write the causes of this disease.

21.

Analyse the statements given tin the box , Give the name of the layers as heading and complete the table.

- Protects neuron from pressure ,shock etc..
- Increases the speed of impulses.
- Acts as electric insulator. .
- Layer which protects spinal chord.
- Contains three membranous layers.
- Layer which covers and protects the brain

.....	.....
• • •	• • •

22.

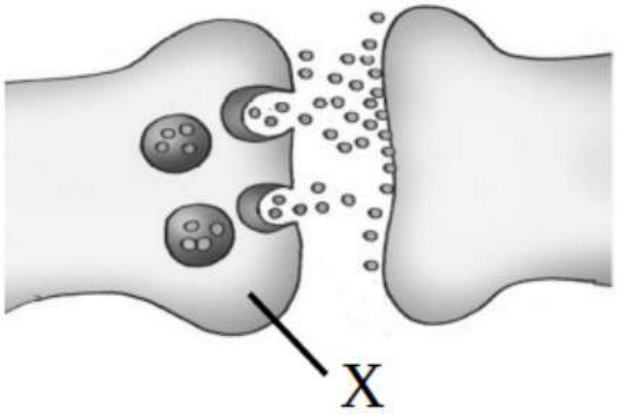
Identify the word pair relation ship and fill the blanks.

Myelin sheath : Covers and protects axon.

..... : Covers and protects brain

23.

Observe the following figure and answer the questions.



a) Name the part indicated by 'X'.

b) Write the name of the chemical released by this part and its function.

24.

Identify the parts of the nervous system with each of the following functions.

a) Plays a major role in the maintenance of homeostasis.

b) Acts as relay station of impulses

25.

Analyse the statements A and B and identify the suitable explanation from the following.

Statement A- Alzheimer's disease is due to the destruction of neurons.

Statement B- Accumulation of an insoluble protein in the neural tissues of the brain of Alzheimer's patient occurs.

i- Statements A and B are true and statement B is the cause of statement A.

ii- Statements A and B are incorrect.

iii- Statement A is correct and B is incorrect.

iv- Statements A and B are true, but statement B is not the cause of statement A.

26.

The following table includes the parts of brain and their functions. Identify the correct pair from them.

Parts of brain	Function
1) Cerebrum	i) Relay of impulses
2) Thalamus	ii) Maintenance of body equilibrium
3) Cerebellum	iii) Heart beat
4) Medulla oblongata	iv) Maintenance of homeostasis
	v) Sensory experiences

a) 1-i, 2-iii, 3-ii, 4-iv

b) 1-v, 2-i, 3-iv, 4- iii

c) 1-v, 2-ii, 3-ii, 4-i

d) 1-v, 2-i, 3- ii, 4- iii

27.

Define neurotransmitters .Give two examples of neurotransmitters?

What is the function of neurotransmitters.?

28.

How is the brain protected? .

29.

Analyse the table related to the parts of the brain and rearrange the column B in accordance with column A

A	B
The largest part of the brain	Thalamus
The second largest part of the brain.	Cerebrum
The rod shaped part is seen below the cerebrum, located near the cerebellum.	Cerebellum
The part situated just below the thalamus	Medulla oblongata
The part situated below the cerebrum	Hypothalamus

30.

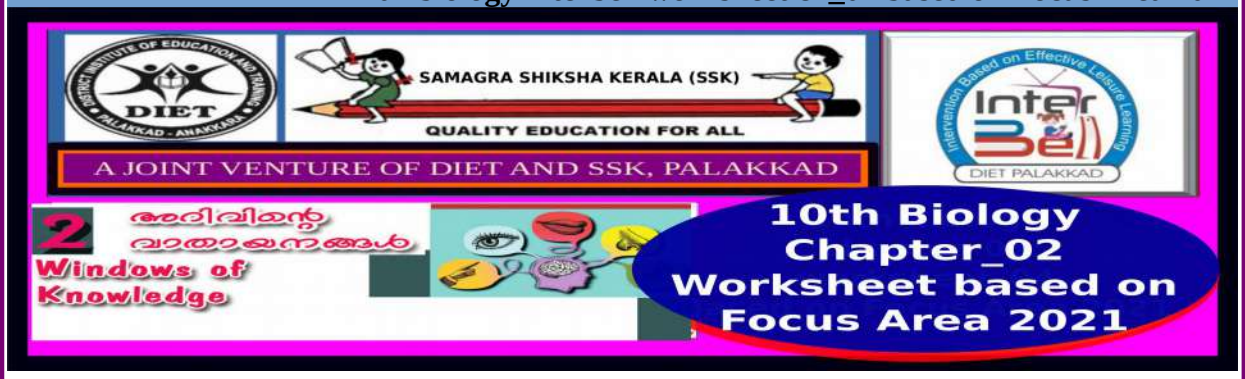
complete the table related to nerves and their function

Nerves and their peculiarities	Functions
Sensory nerve (formed of sensory nerve fibres)	----------
Motor nerve (formed of motor nerve fibres)	carries impulses from brain and spinal cord to various parts of the body.
Mixed nerve (----------)	----------

31.

A fluid is seen in the brain which is formed from the blood and reabsorbed into the blood and write

a) Name the fluid b)What are the fnctions of this fluid?



1.

Observe the figure given below and answer the question.

a) Identify A, B.

b) Which is the pigment in A?

c) Which is the eye disorder related to B?

2.

Vision is enabled when the impulse from the retina reaches the cerebrum through the optic nerve.

a) Draw a flow chart showing the pathway of light from cornea to retina.

b) There is no vision at the point where the optic nerve starts. Why?

3.

(a) Which are the photoreceptors present in the retina?

(b) How does the deficiency of vitamin A cause poor vision in dim light?

4.

Prepare two placards to be used in a rally organised by the school Science Club to propagate the importance of eye donation.

5.

Redraw the diagram and label the parts given below:

(a) Transparent anterior part of the sclera.

(b) Fluid that nourishes the tissues of the eye.

(c) The layer that has photoreceptors.

6.

Observe the figure given below and answer the questions:

(a) Which is the receptor seen in the figure?

(b) Which sense organ is this receptor seen in?

(c) What is the function of this receptor?

7.

Justify the statements given below:

(a) Smell can be detected only in the presence of mucus.

(b) Persons with colour blindness cannot distinguish between green and red colours.

8.

It is because of its taste that we like food. Given below are the different stages of experiencing taste. Analyse and arrange them in the correct order.

a) Experience of taste
b) Causes impulses
c) Food particles dissolve in saliva
d) Reaches taste buds
e) Impulses reach the brain
f) Chemoreceptors get stimulated

9.

Identify the word pair relatioship and fill in the blanks.

a) Retina : The inner layer which has photoreceptors
..... :The transparent anterior part of the sclera

b) Blind spot : The part from where the optic nerve begins
..... : The part where the image has maximum clarity

10.

Redraw the diagram and label the parts based on the functions given below.

a) The part which is adjusted with the intensity of light.
b) The part where photoreceptors are present.
c) The transparent anterior part of the sclera.
d) The muscles which help to alter the curvature of the lens
e) Transmits impulses from photoreceptors to the visual centre in the brain.
f) The chamber which is filled with a jelly like substance.
g) The layer made up of connective tissues which gives firmness to the eye.

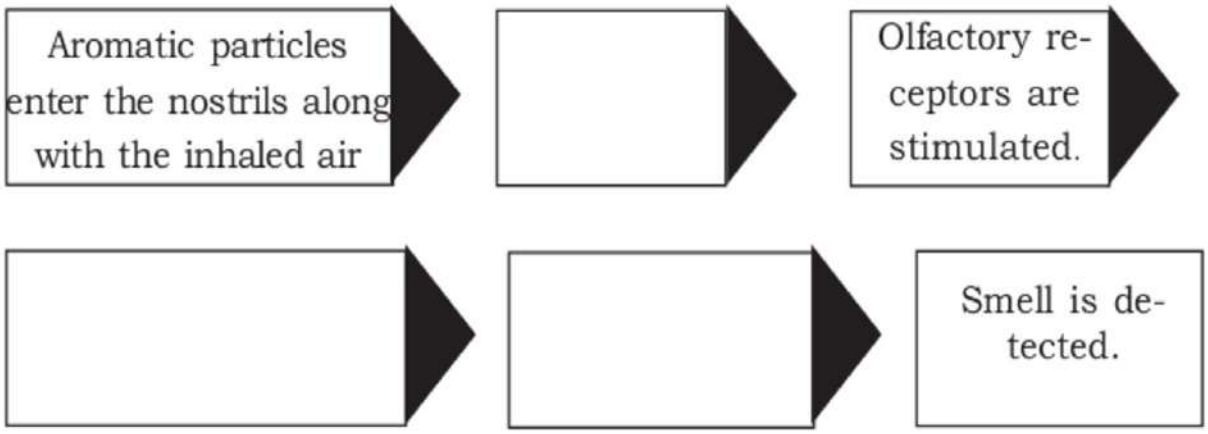
11.

Rearrange the flowchart related to sense of vision.

Light → Lens → Pupil → Vitreous humor →
Aqueous humor → Optic nerve → Retina →
Cerebrum → Cornea → Impulse → Sense of vision

12.

Complete the flowchart related to the sense of smell.



13.

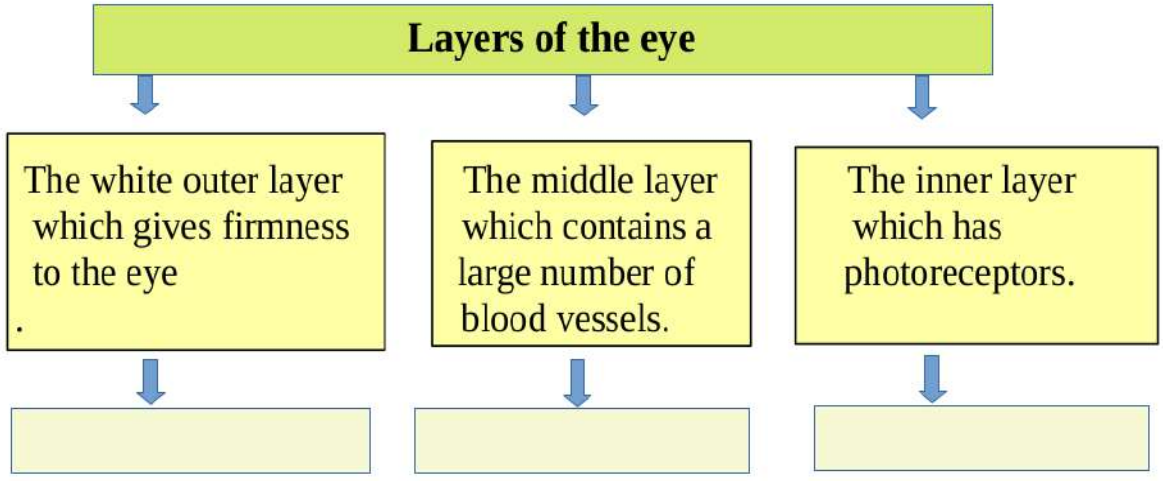
Which are the main tastes that stimulate our tastebuds ?

14.

3. Explain the necessity of including Vitamin A rich food items in daily diet for the health our eyes?

15.

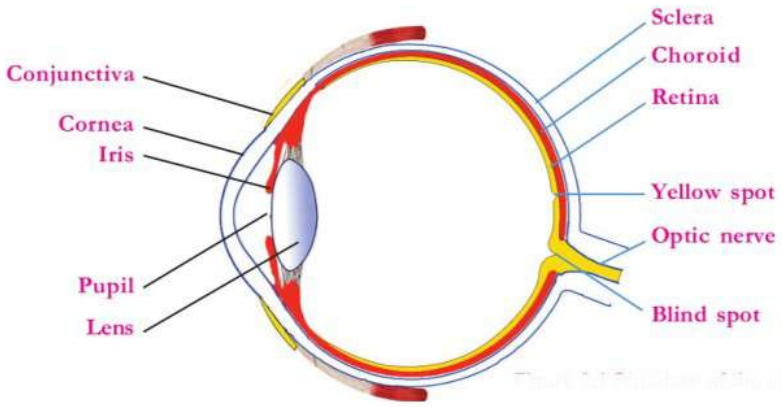
1. Complete the flow chart



16.

Observe the figure-Structure of the eye and complete the table given below

(TB- Figure 2.1)



Peculiarities	Parts
The projected transparent anteriorpart of the sclera	Cornea
The part of the choroid seen behind the cornea	
The layer which covers and protects the front part of sclera except the cornea.	
The aperture seen at the centre of the iris.	
Circular muscles seen around the lens	

17.

2. complete the table

	Rod cells	Cone cell
Pigment		Photopsin (Iodopsin)
Shape	Rod shape	
Function		Provide colour vision

18.

Give the reason and symptom of colour blindness

19.

Observe the given steps related to the experience of the smell and arrange them properly

- Aromatic particles diffuse in the air and enter the nostrils.
- The smell detecting olfactory receptors are stimulated
- Implses form in the olfactory receptors
- Forms the experience of the smell
- The impulses reach the brain through nerves
- These aromatic particles dissolve in the mucus inside the nostrils.

20.

There a possibility of not sensing the smell of food while suffering from common cold.Why?

21.

Observe the given steps related to the experience of the taste and arrange them properly

. The impulses reach the brain through nerves
. Substances responsible for taste dissolve in saliva
. The substances reach the taste buds through saliva
. Forms the experience of the taste
. The taste detecting chemoreceptors are stimulated
. Implses form in the chemical receptors

22.

Select suitable ones from the following and arrange them in the table given below.

a) Helps to detect colours.

b) Night Blindness

c) Rhodopsin

d) Helps in bright light vision

e) Photopsin

f) Helps in dim light vision

Rod cells	Cone cells

23.

The activities related to the sensation of taste is given below. Arrange them in the correct order.

1. Impulses are generated.
2. Taste receptors are stimulated.
3. Impulses reach the brain.
4. Experiences the sense of taste.
5. Tatste molecules dissolve in saliva.

24.

Qn.
Answer the following questions related to the sensation of tatste.

1. Where do the chemoreceptors related to the sense of tastes located?

2. Give the significances of taste buds.3. Name the tastes detected by the chemoreceptors in different taste buds.

25.

From the following box, select the the parts seen in the sclera, choroid and retina.

Conjunctiva, Blind spot, Cornea, Yellow spot, Pupil

26.

The possibility of occurrence of night blindness in Vitamin A deficient children is high. Based on this statement, answer the following questions.

a) How does the deficiency of vitamin A relate to night blindness?

b) Name any other disease caused by vitamin A deficiency.

27.

Analyse the following table and make suitable pairs based on the parts and their functions.

Part	Function
1 Optic nerve	1 The size of this aperture increases and decreases depending on the intensity of light.
2 Pupil	2 The point of maximum visual clarity.
3 Conjunctiva	3 Tha part that refracts light rays to focus on the retina.
4 Yellow spot	4 Alters the curvature of lens.
5 Ciliary nuscles	5 Covers and protects the front part of sclera except the cornea.
6 Cornea	6 Transmits impulses from photoreceptors to the visual centre in the brain.

28.

Compare the activities in identifying taste and smell and complete the table.

a) …… dissolves in mucus.	Food particles dissolve in saliva.
Olfactory receptors are stimulated.	b) …… are stimulated.
Impulses are formed.	Impulses are formed.
c) impulses reach the brain through the ……. nerve.	Impulses reach the d) ……. nerve.
e) Senses smell.	Senses taste.

29.

Arrange the following items related to the process of colour vision in a flow chart suitably.

- Photopsin is dissociated.
- Cone cells are stimulated in the presence of light.
- Impulses are generated.
- Form retinal and opsin.
- Forms the experience of vision.
- Impulses reach the brain through the optic nerve.

30.

Complete the following table related to photoreceptors.

Characteristics	Rod cells	Cone cells
Shape	……	……
Pigment	……	……
Function	……	……

31.

Copy the following figure and label the parts based on the hints.

a) Part where photoreceptors are seen.

b) The opening of the eye in the middle of the iris.

c) The part that focuses light rays in the retina.

32.

Analyse the following figure and answer the questions.

a) Identify the figure.

b) Name the vitamin necessary for the pigment in this cell.

33.

Find the word pair and fill.

The defect of cone cells: Colour Blindness

.....: Xeropthalmia.

34.

Correct the errors if any in the following statements related to the sensation of taste and arrange them in correct order.

1. Food particles dissolve in saliva.
2. Impulses reach the cerebrum.
3. Experiences the sense of taste.
4. Impulses form.
5. Chemo-receptors are stimulated.

35.

Using the following hints, prepare a flowchart showing the processes included in the sensation of smell.

a) Impulses reach the cerebrum through the gustatory nerve.

b) Smell particles dissolves in the mucus.

c) Gustatory receptors are stimulated.

d) Smell particles dissolves in the air.

e) Reaches the nasal cavity through inspiration.

f) Form impulses.

36.

Select the correct pair from the following.

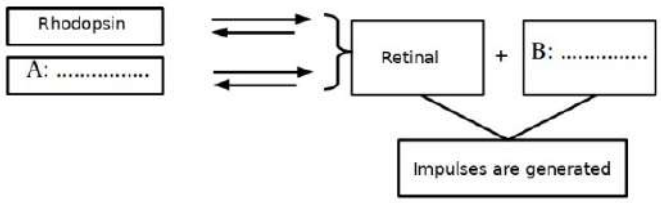
Night blindness: The deficiency of Vitamin A

Colour Blindness - The excess pressure experienced in the eye.

Xerophthalmia- No vision in in dim light.

37.

Complete the follwoing flow chart.



38.

A person is suffering from dryness of his cornea. Formulate any three hypothesis on the circumstamces that may lead to this condition.

39.

Observe the following figures and answer the questions.


Picture A


Picture B

a) Identify the picture A and B.

b) Deficiency of the pigment of which cell causes night blindness?

c) The defect of which cell causes color blindness.

40.

Answer the following questions.

a) Which is the photoreceptor that enables colour vision?

b) The change in aminoacids in the opsin protein has a crucial role in colour vision. Substantiate.

41.

The possibility of occurrence of night blindness in children with deficiency of vitamin A is high. Based on this statement, answer the following questions.

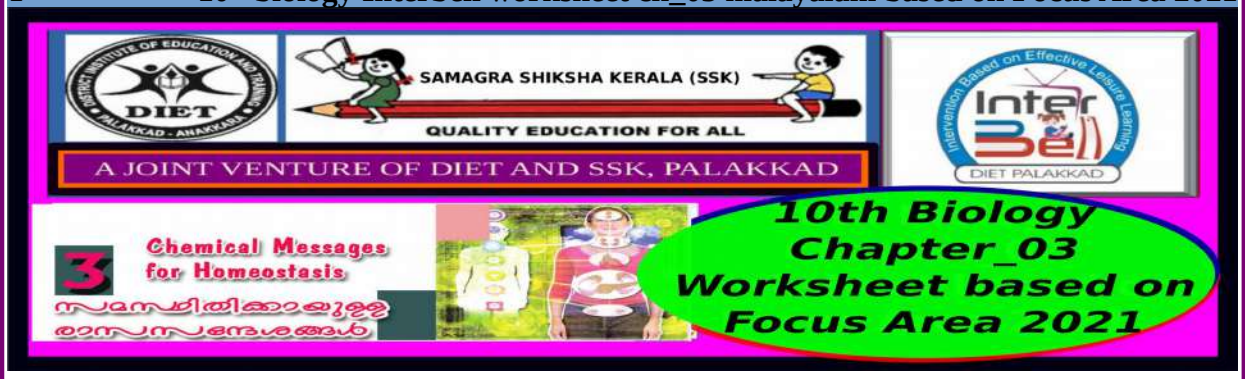
a) How does the deficiency of vitamin A relate to night blindness?

b) Name any other disease caused by vitamin A deficiency.

42.

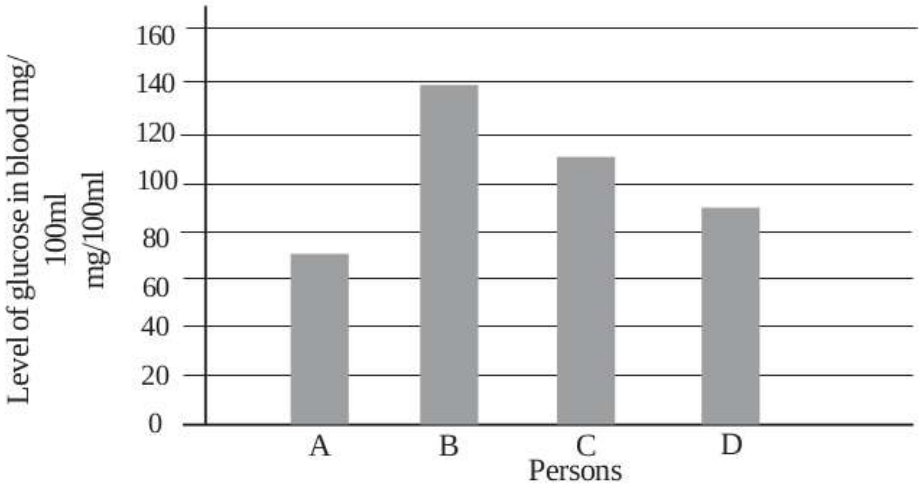
From the following, select the reason for the disease color blindness.

1. **Due to less amount of Cone cells.**
2. **The defect of Cone cells**
3. **the defect of photosensitive cells.**
4. **The defect of rod cells.**



1.

Examine the graph indicating the blood glucose level of different individuals before breakfast.



a) Which individual is affected by diabetes mellitus?

b) Write two actions of insulin to prevent the rise in the level of glucose in blood.

c) Why do people having diabetes mellitus experience extreme fatique?

2.

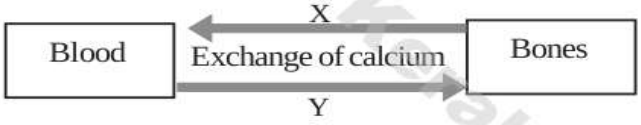
Honey bees and termites live in colonies.

a) Name the chemical substance which helps them to live together.

b) Mention two uses of these chemical substances.

3.

Maintenance of the level of calcium in the blood is illustrated below. Analyse it and answer the following questions.



(a) Name the hormone indicated as 'X'.

(b) Which gland produces the hormone 'Y'?

(c) Write another activity performed by 'X' to raise the level of calcium in blood.

4.

Given in the table below is to growth hormone. Complete the table suitably.

Disease	Condition of Hormone	Symptoms
(a)	Deficiency of growth hormone during growth phase.	Stunted growth
Gigantism	(b)	Excessive growth of the body
Acromegaly	(c)	(d) .....

5.

Given below is a doctor's comment at a seminar conducted as part of Diabetic day.

"In diabetic patients, the blood glucose level before breakfast is above 126mg/100ml.

Analyse the statement and enlist the reasons.

6.

Analyse the table and identify the correct pair.

a. Decrease in somatotropin during growth phase.	Dwarfism
b. Increase in somatotropin during growth phase.	Acromegaly
c. Increase in somatotropin after growth phase.	Gigantism

7.

Choose the correct statement related to pheromones from those given below.

(a) Pheromones are chemical substances secreted inside the body for communication.

(b) This is the message to attract mates, determining the path of travel etc.

(c) Musk in the civet cat is a pheromone.

(d) Bombaycol is the pheromone secreted by the female silk worm.

8.

Analyse the box given below and complete the table suitably.

civeton, glucagon, endolymph, bombycol
ethylene, calcitonin, auxin.

Hormone	Pheromone	Plant hormone

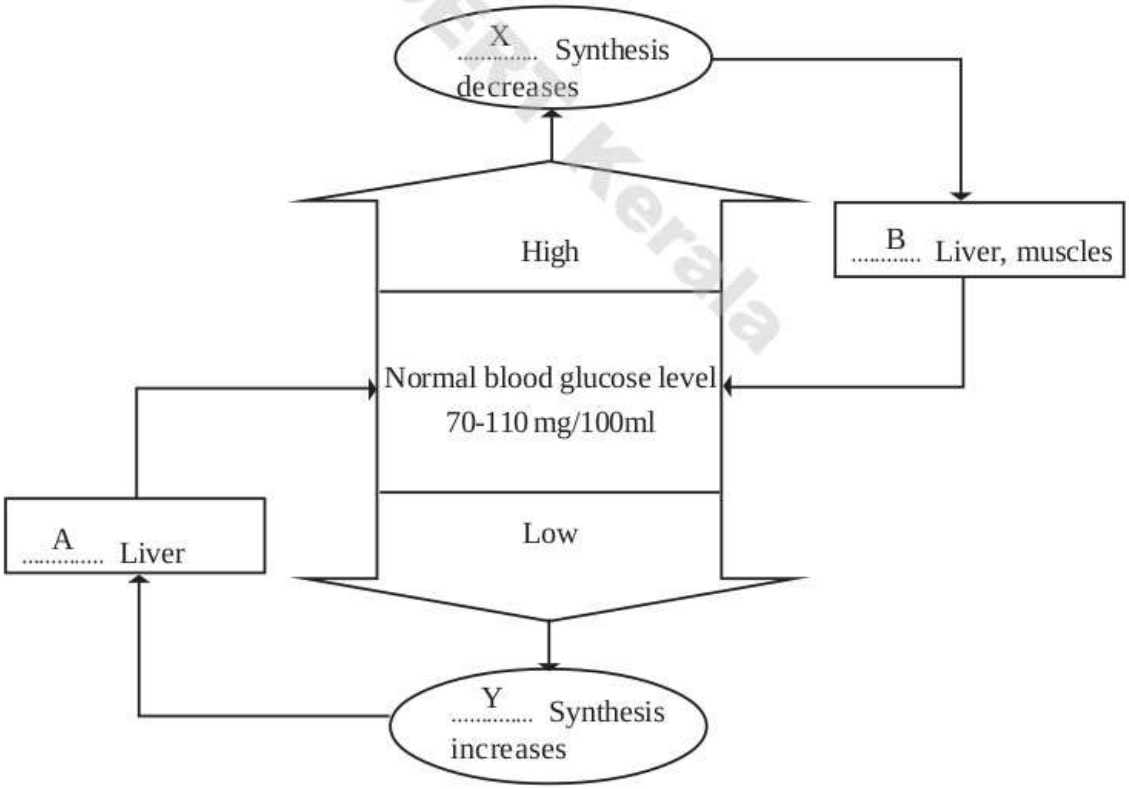
9.

Plant hormones and their functions are given in two boxes below. Pair them suitably.

Hormone	Functions
a. Auxin	i. Break down stored food in the seed.
b. Ethylene	ii. helps in ripening of fruits
c. Giberellins	iii. Dropping of leaves and fruits.
d. Abscisic acid	iv. Promoting growth of terminal bud.

10.

Observe the illustration given below and answer the questions.



(a) Write the names of the hormones 'X' and 'Y'.

(b) Mention two actions that take place in A and B.

(c) Name the gland which synthezises X and Y.

11.

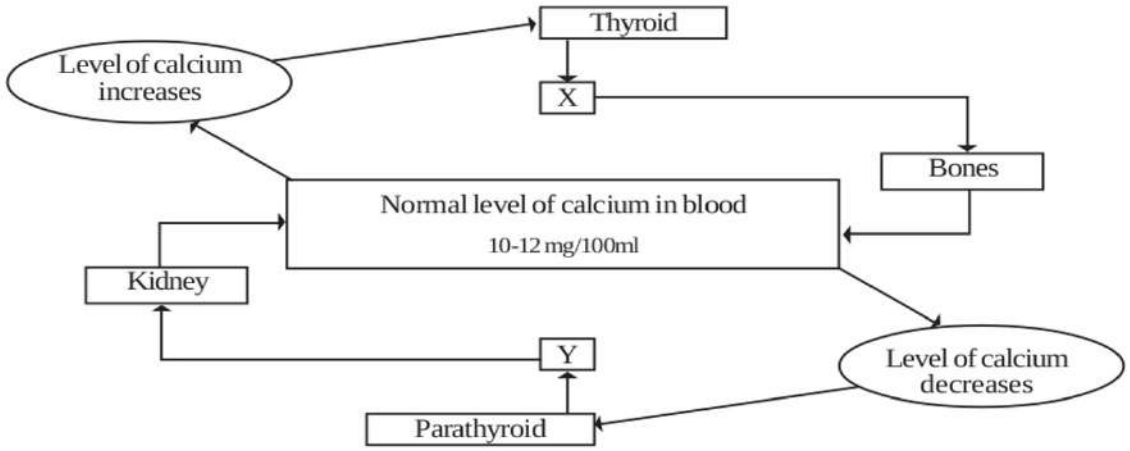
Identify the word pair relationship and fill in the blanks.

a) Civet cat : .....;
Silkworm : Bombycol

b) Breaks opstored food : Gibberellins
helps in fruit ripending : .....

12.

Maintenance of the level of calcium in blood is illustrated below. Analyse it and answer the questions.



(a) Which are the hormones indicated as 'X', 'Y'?

(b) Write the actions performed by 'X' in the bone and 'Y' in the kidney.

13.

Complete the table

Hormones	Functions
Insulin	1. cellular uptake of glucose molecules.
	2.
Glucagon	1. converts the glycogen stored in the liver to glucose.
	2.

14.

Write the reason for the increase of glucose level in blood.

15.

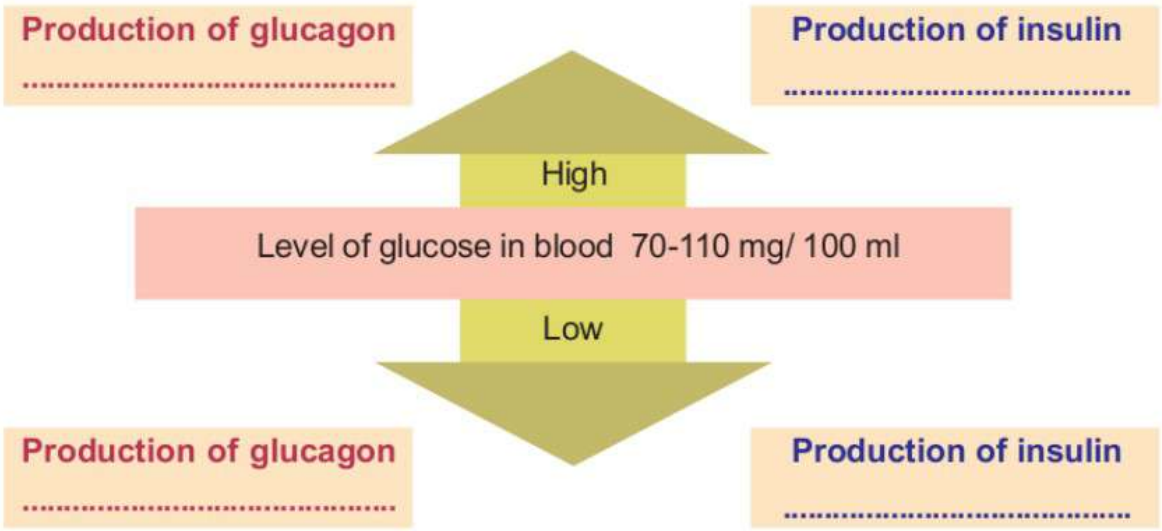
What are the symptomps of Diabetes?

16.

How Diabetes is diagnosed?

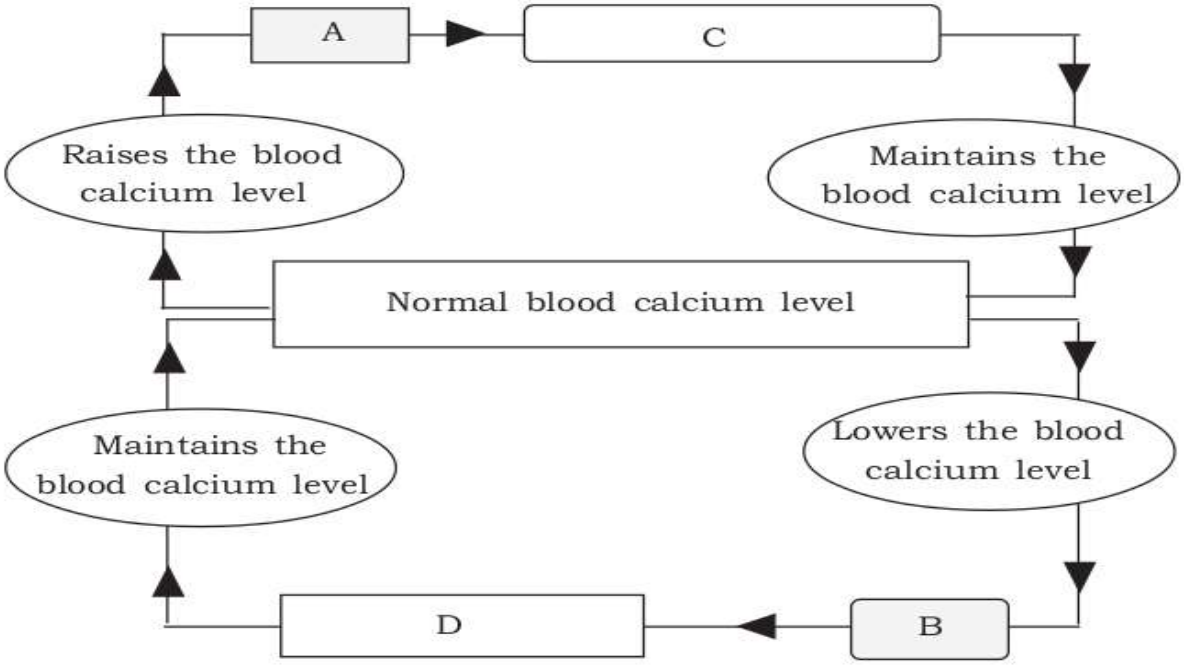
17.

Complete illustration by including the production of hormones that regulate the level of glucose



18.

Observe the illustration and answer the following questions.



a) What is the normal level of calcium in blood ?

b) Name the glands marked as A and B ?

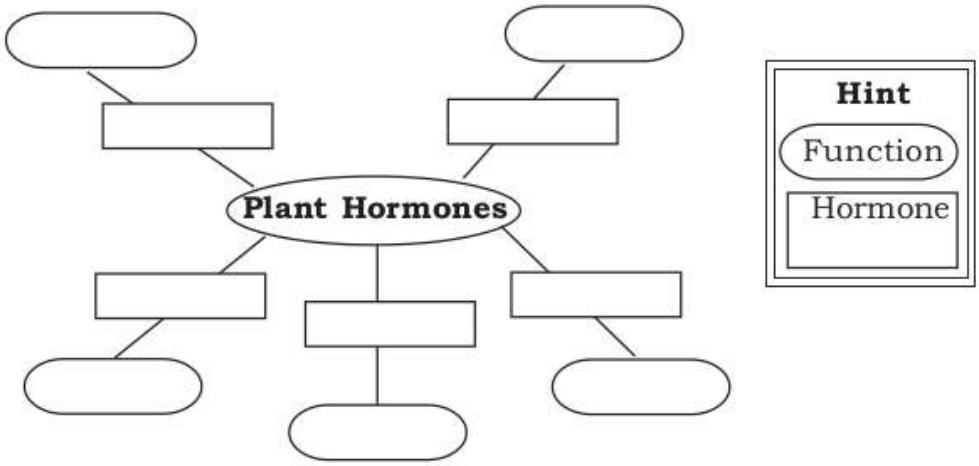
c) Name the hormones marked as C and D ?

d) What is the action of the hormones C and D in regulating the blood calcium level to normal?

19.

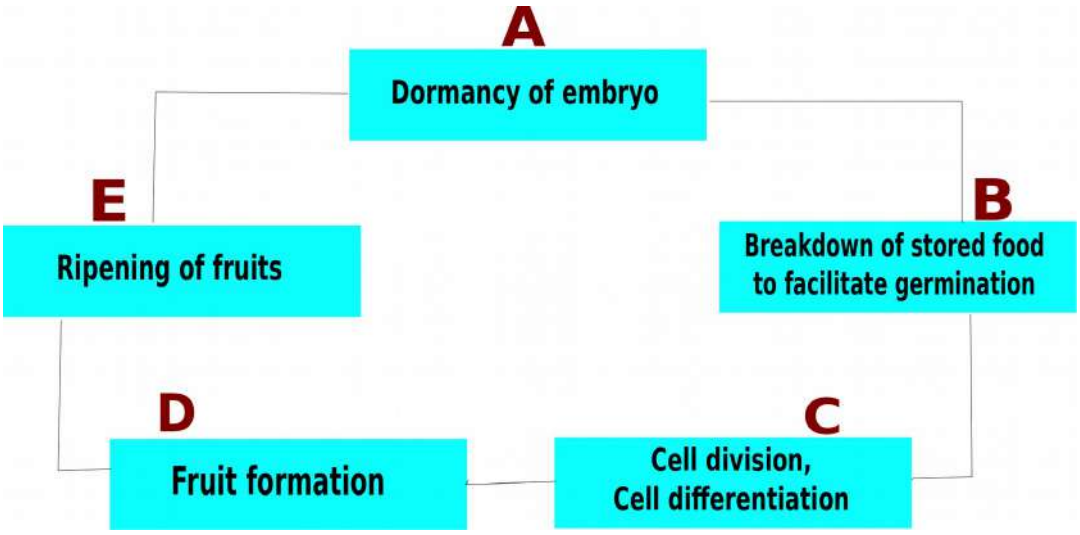
Complete the illustration using the words given in the box.

Abscisic acid, Inhibiting the growth of lateral buds by promoting the growth of terminal buds, Gibberellins, Auxin, Breaking up of stored food in seeds, Ethylene, Cell differentiation,Wilting of leaves, Cytokinin, Helps in ripening of fruits



20.

Various stages of the formation of the next generation of seeds are illustrated.



Name the plant hormones A, B, C, D and E mentioned in the illustration

21.

The normal level of two components of human blood given in the table. Analyze them and answer the questions.

A	9-11 mg/100ml
B	70-110 mg/100ml

1. Identify A and B.

2. Name the hormones which maintains the normal level of A.

3. Write the disease caused by the excess level of B?

22.

Rearrange columns B and C according to column A.

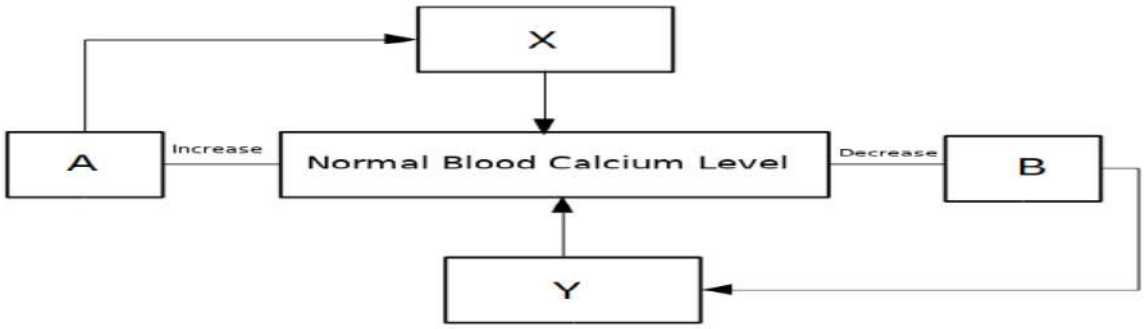
A	B	C
excessive production of somatotropin after the growth phase.	Stunted growth of the body	Myxoedema
production of somatotropin decreases during the growth phase	the growth of the bones on the face, jaws and fingers	Dwarfism
production of somatotropin increases during the growth phase	Normal growth of the body	Acromegaly
	excessive growth of the body	Gigantism.

23.

Maintenance of blood calcium level is illustrated below. Analyse it and answer the questions.

Hints - A,B Glands

X,Y Hormones



1. Write the normal blood Calcium level.
2. Identify the glands indicated as A and B.
3. Name the hormones mentioned as X and Y.
4. Write any one function of X in the regulation of blood calcium level.

24.

Analyse the table and give proper heading to columns A and B

A	B
Musk	Ethylene
Bombycol	Gibberellin

25.

Classify the given terms based on the similarities and give proper heading.

Ethylene, Civeton, Gibberellin, Bombycol

26.

Honey bees and termites are living in colonies.

1) Which chemical helps them to live in colonies?

2) Write other two functions of this chemical.

27.

"Diabetes patient should be more energetic as their blood glucose levels are higher."

What explanation will you give to this doubt?

28.

Observe the illustration and write answers to following questions.

Indicator: Hormone X

a) which is the hormone indicated as X.

b) Write two functions of X to maintain the blood glucose level.

ONLINE CLASS SUPPORTING MATERIALS
PALAKKAD DISTRICT

BIOLOGY STANDARD 10

CLASS:18 WORKSHEET :01

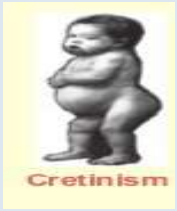
1.Identify the word relation and fill up the blank.

Thyroid gland : Thyroxine
Parathyroid gland : .....

2.write the functions of thyroxine in the blanks

a. Increases energy production.
b. .....
c. Accelerates the growth and development of the brain in the foetal stage and infancy.
d. .....

3.Complete the concept map.



Hypothyroidism
(the condition in which production of thyroxine decreases)

During foetal stage or infancy

.....

.....

Myxoedema

Hinders proper physical and mental development

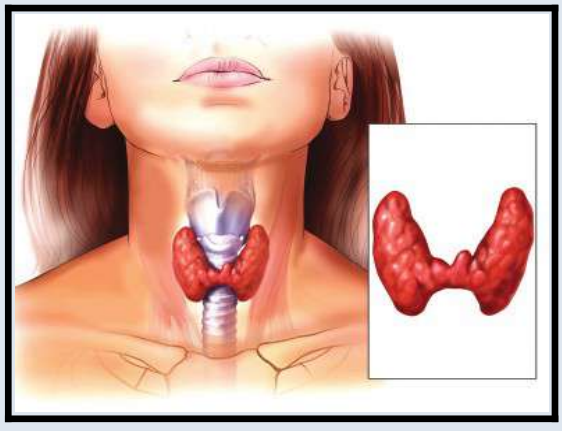
1.Low metabolic rate
2.High blood pressure
3,.....
4.....

4.Analyse the given symptoms and arrange them in the suitable box.

a.weight loss
b.Hinders proper physical and mental development.
c.Emotional imbalance
d.Inflammation in body tissues
e.Excessive sweating
f.Increase in body weight
g.Excessive production of thyroxine
h.Low production of thyroxine
i.Increased heart beat

Hypothyroidism	Hyperthyroidism

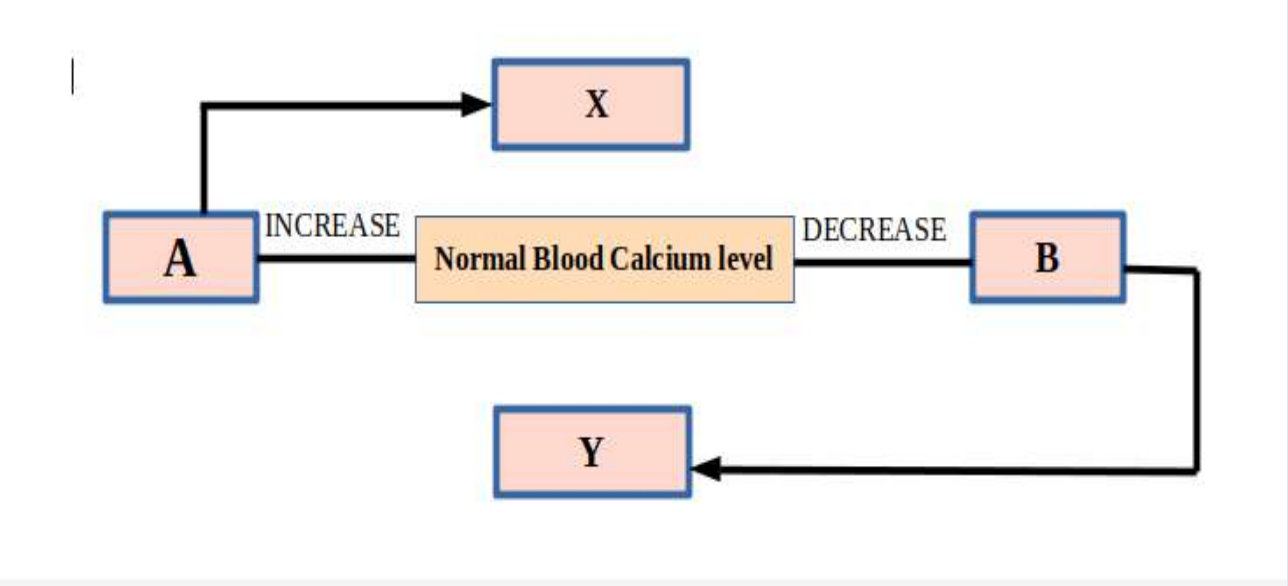
5.Analyse the picture and answer the following questions.



a. Which gland is indicated in the picture.
b. Iodine is essential for the production of the hormone of this gland. Name the hormone.
c. Write the condition in which that gland enlarges.

6. Maintenance of blood calcium level is illustrated below. Analyse it and answer the questions.

Hints - A,B Glands, X,Y Hormones



1.Write the normal blood Calcium level.

2. Identify the glands indicated as A and B.

3. Name the hormones mentioned as X and Y.

4. Write two functions each of X and Y in the regulation of blood calcium level.

BIOLOGY STANDARD 10

CLASS: 19
WORKSHEET: 02

3 Chemical Messages for Homeostasis

1. Observe the table and re-arrange the column B and C according to column A.

A	B	C
Adrenal gland	Thymosin	Youth hormone
Thymus gland	Cortisol	Emergency hormone
	Adrenalin	Growth hormone

2. Make suitable pairs using the information given in the box.

Thymus gland , Adrenal gland , Seen above the kidney , Located behind the sternum

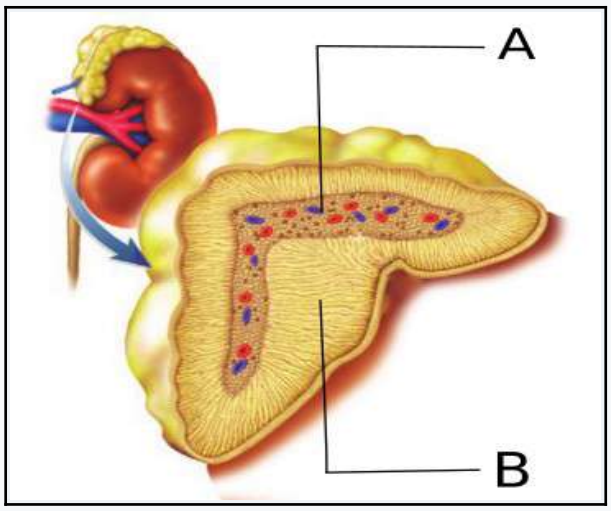
3. Few hints in relation to an endocrine gland are given below. Analyse them and answer the following questions .

- very active during infancy.
- constricts as we reach puberty.
- help to impart immunity.

(a) Identify the gland .Name the hormone produced by this gland

(b) Explain the role of this gland in providing immunity.

4. Observe the diagram of the endocrine gland given below and answer the questions.

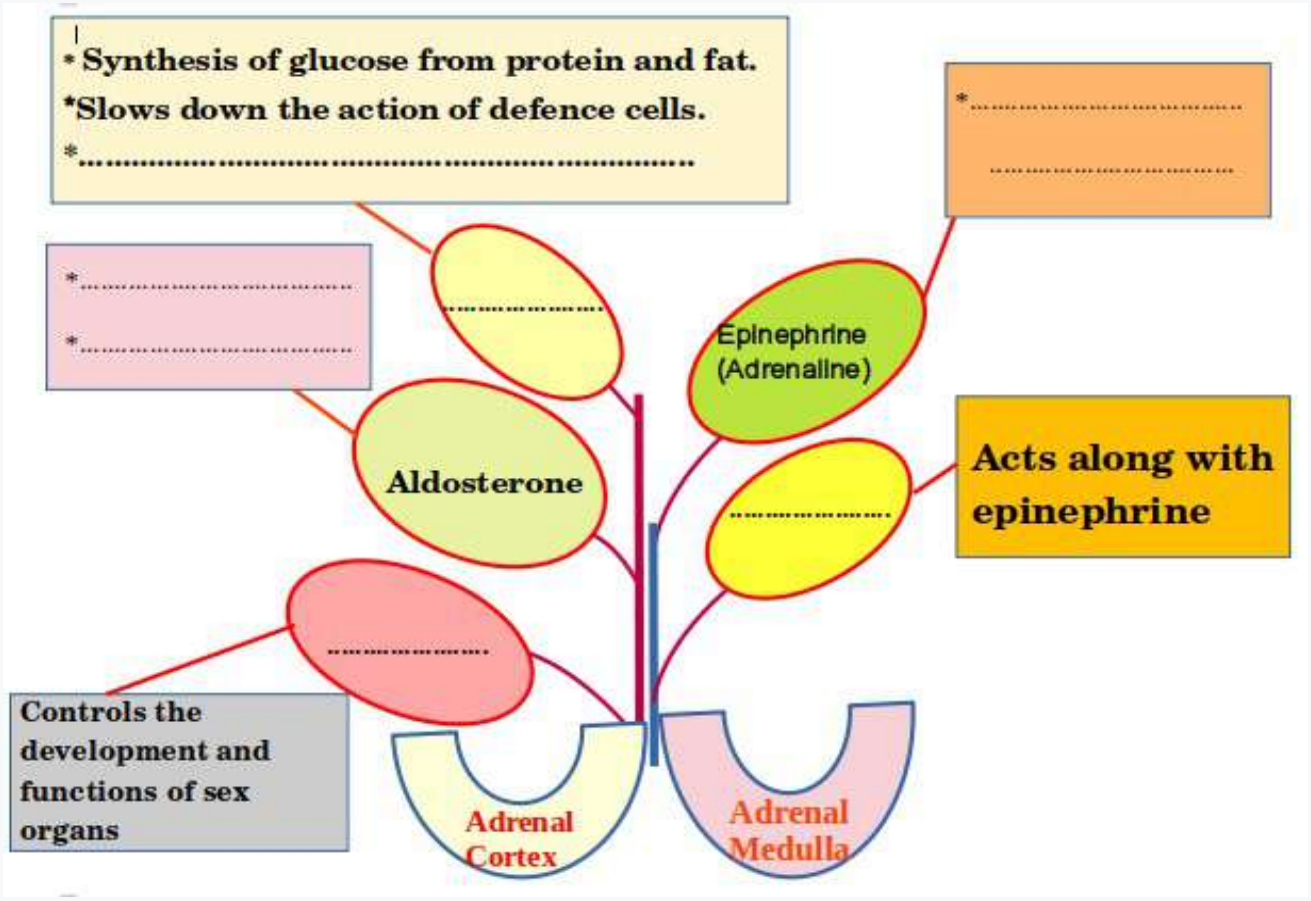


(a) Name the parts indicated as A and B.

(b) Name the hormone synthesized by A.

(c) Action of this hormone helps for the coordinated activity of the nervous and the endocrine system. Justify.

5. Given below is a word tree prepared by Appu for classroom presentation. Help him to complete the tree by choosing the words given in the box.



***Acts along with the sympathetic nervous system during emergency and can thus resist or withdraw ourself from such situations.**

***Cortisol**

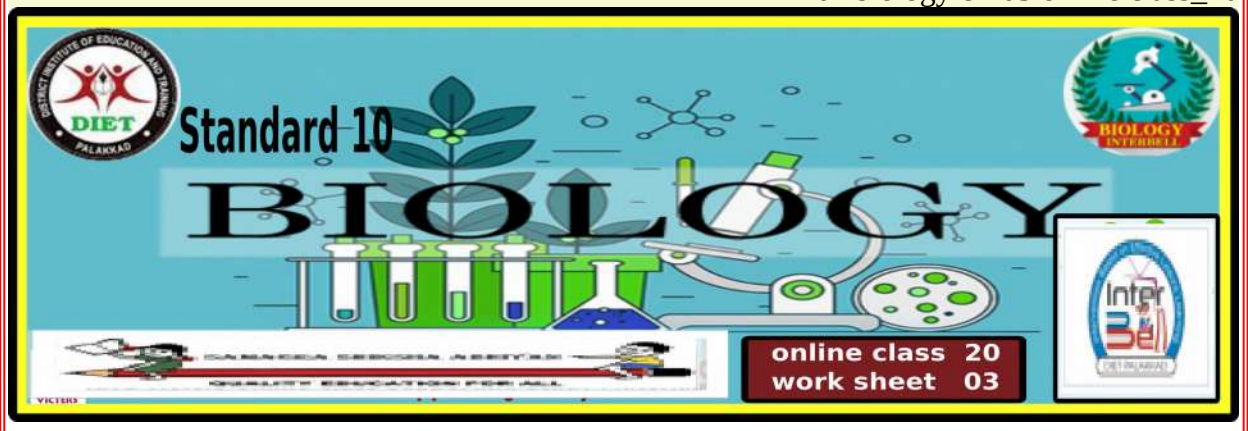
***Maintains the salt-water level by acting in kidneys .Maintains blood pressure.**

***Norepinephrine (Noradrenaline)**

***Sex hormones**

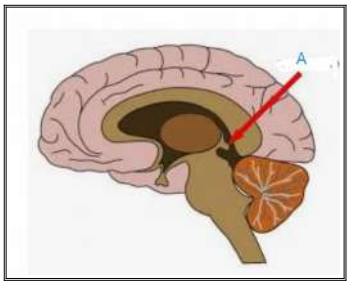
***Controls inflammation and allergy .**

CLASS 19 VIDEO LINK →



Q.1.Which gland is known as the biological clock in our body? How does the hormone produced by this gland influence sleep and waking up?

Q.2.Observe the figure and answer the following questions



(1) Identify the gland indicated as A
(2) Name the hormone synthesised by A
(3) Write the influence of this hormone in our body

Q.3.Which gland produces melatonin. Write the functions of melatonin.

Q.4.Which gland regulates the growth of the body? Name the hormone which promotes the growth.

Q.5.Production of somatotropin in persons A and B is given in the illustration.

A ← **Increases** **Somatotropin** **Decreases** → **B**

Identify the diseases of persons A and B?

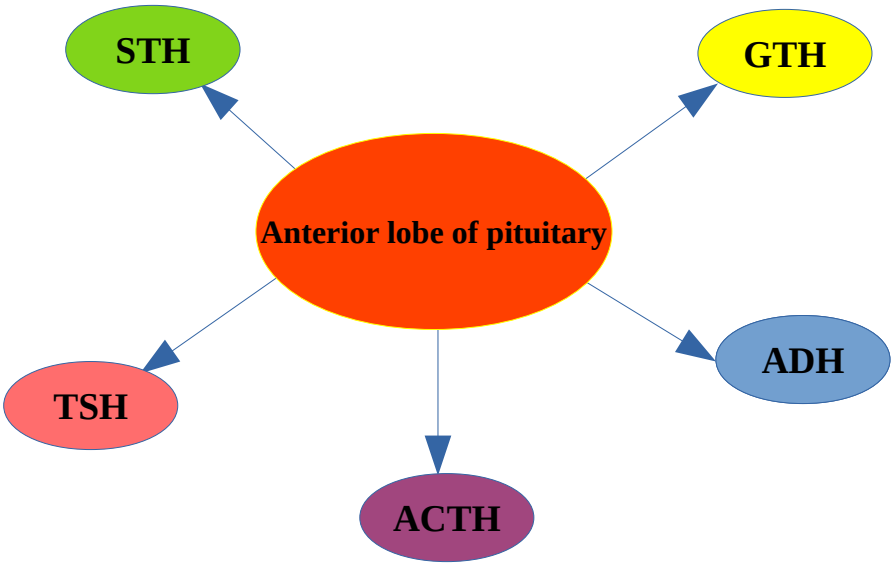
Q.6.Identify the hormonal disorders from the images given below

A. **B.** **C.**



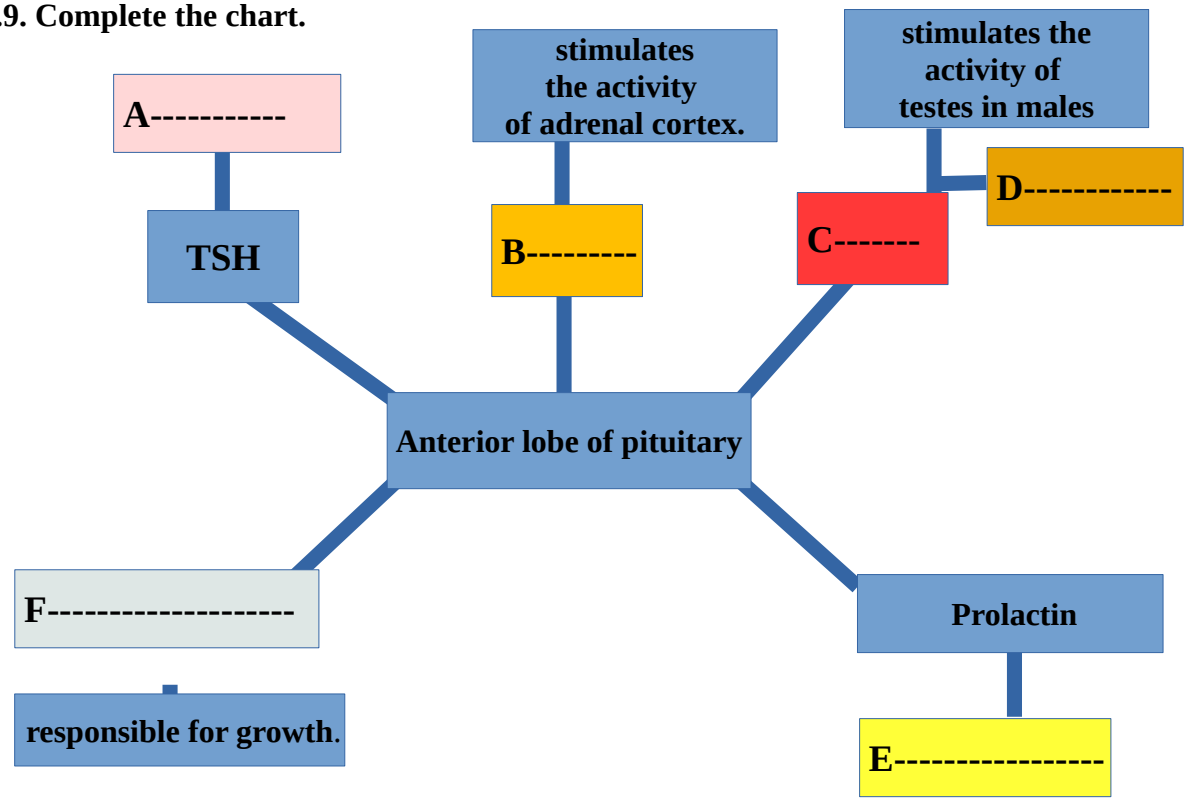
Q.7. Identify the odd one and write the common feature of others.
TSH, ACTH, GTH, ADH

Q.8.Observe the illustration.



a) which hormone is wrongly included in the illustration?

Q.9. Complete the chart.



Q.10.What role does prolactin hormone, produced by the anterior lobe of the pituitary, play in our body?

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VICTERS FIRSTBELL ONLINE CLASS SUPPORTING MATERIALS

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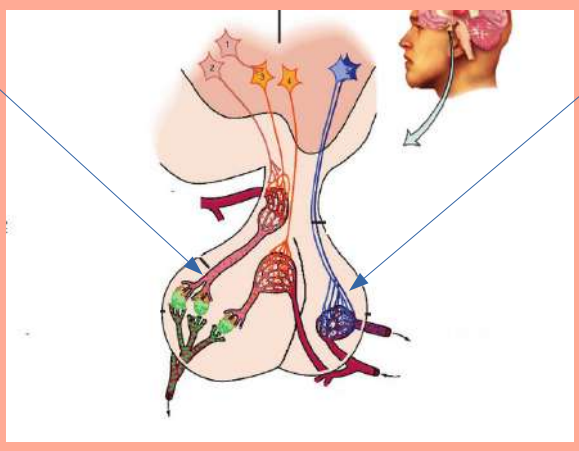
BIOLOGY X CLASS - 21 - 27-08-2020

1. Fill in the blanks according to the relation of the given pair

Oxytocin : Facilitates Lactation
..... : Helps in the reabsorption of water in the kidney

2. Observe the picture and find out A , B , C

Anterior lobe of Pituitary gland



A. .....

TSH , ACTH , GTH
Somatotropin, Prolactin

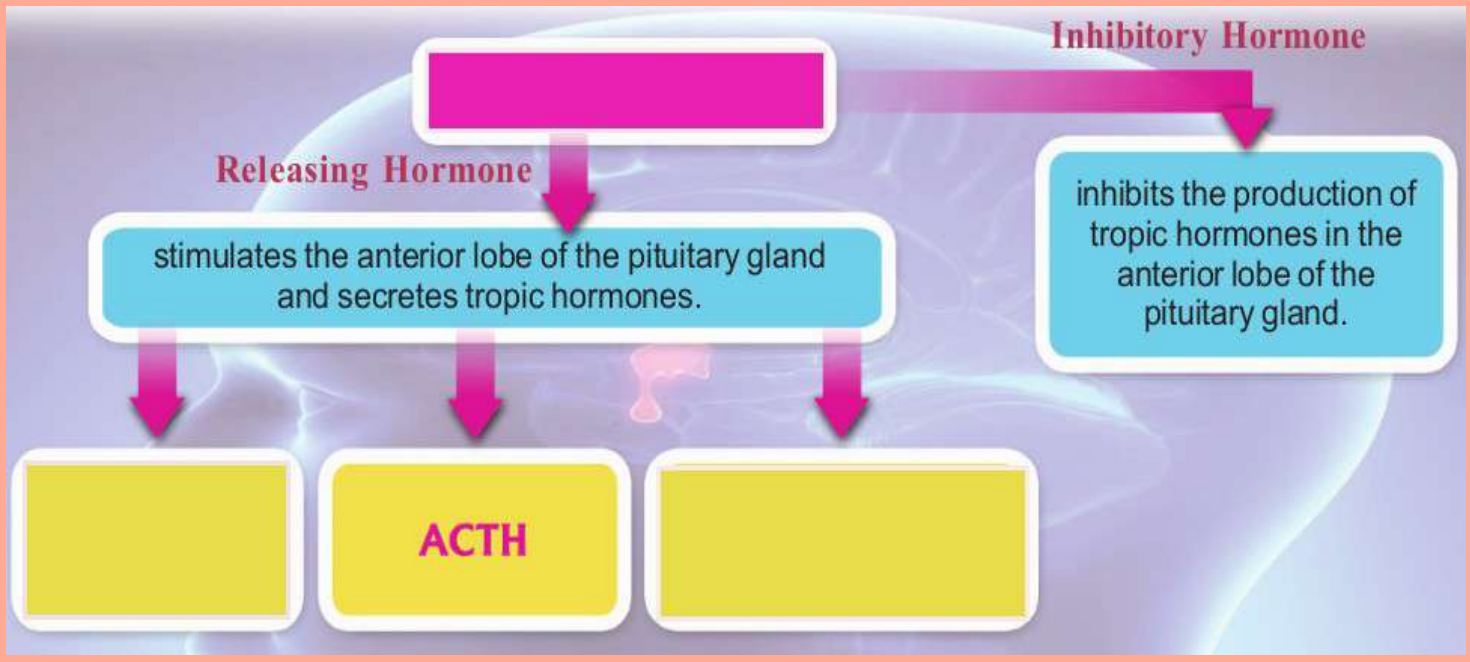
B. .....
C. .....

3. Analyse the given statements and arrange them in table by giving suitable titles as the name of hormones

a . Helps in the reabsorption of water in the kidney
b . Facilitates child birth by stimulating the contraction of smooth muscles in the uterine wall
c . Facilitates Lactation

4. Observe the illustration and fill in the blanks

(Hint - Relation between Hypothalamus and Pituitary gland)



5. Make word pairs from the following

Winter season , Production of Vasopressin increases , Summer season , Production of Vasopressin decreases

6. When the production of ..... decreases , it leads to the condition Diabetes insipidus

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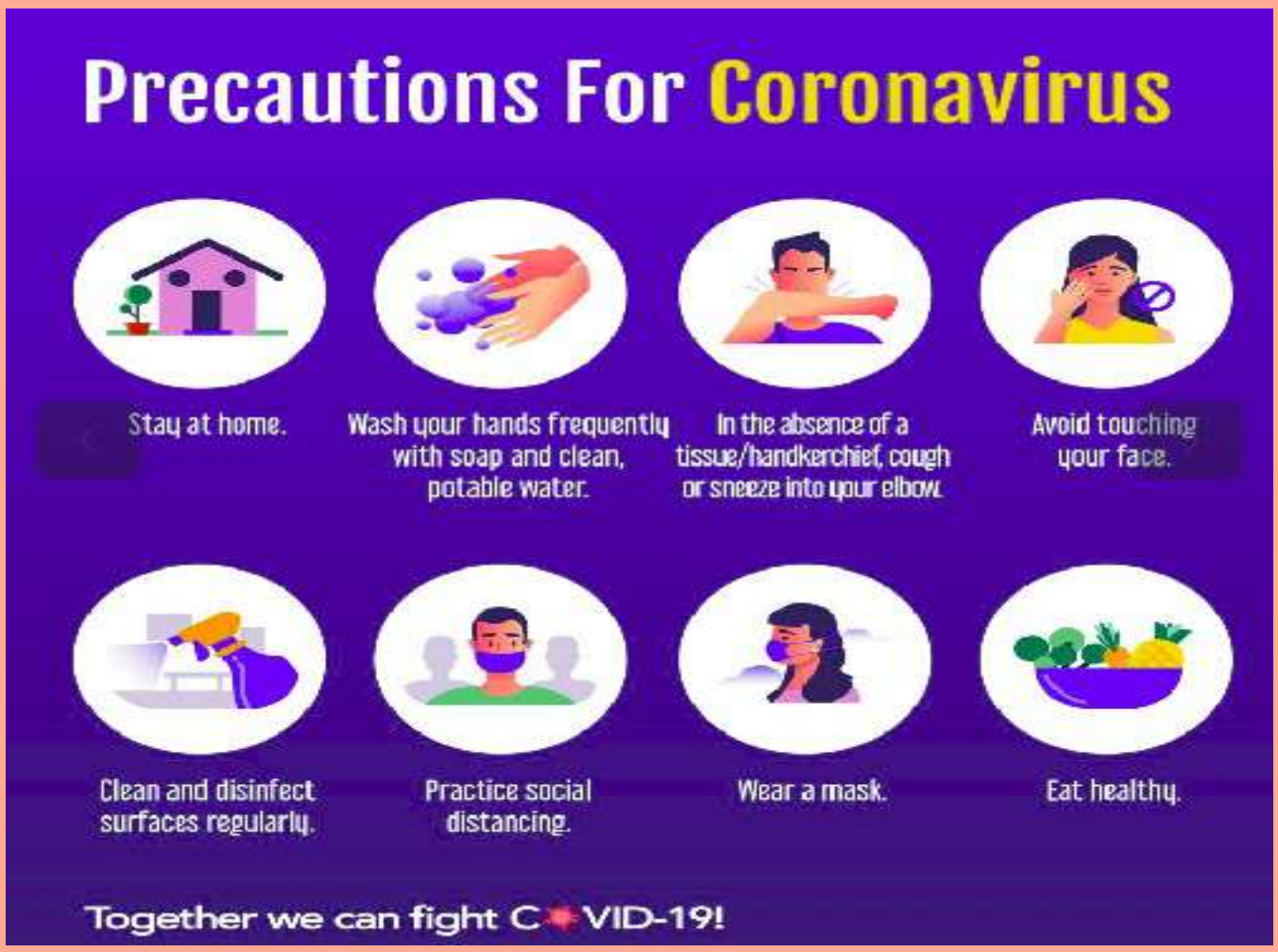
BIOLOGY X CLASS - 21 - 27-08-2020



SAMAGRA SHIKSHA ABHIYAN
QUALITY EDUCATION FOR ALL
A JOINT VENTURE OF DIET AND SSK, PALAKKAD

INTERBELL
INTERVENTION BASED ON EFFECTIVE LIESURE LEARNING

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PALAKKAD DISTRICT

STANDARD 10

BIOLOGY

11- 09 - 2020

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X BIOLOGY - 22 STD 10

1. Fill in the blanks according to the relation of the given pair

Ovary : Ovulation
..... : Sperm production

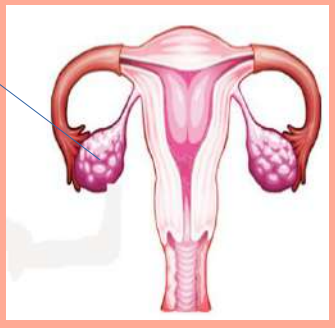
2. Observe the picture and find out A , B , C

A. .....

Testosterone

Ovary

B. .....
C. .....



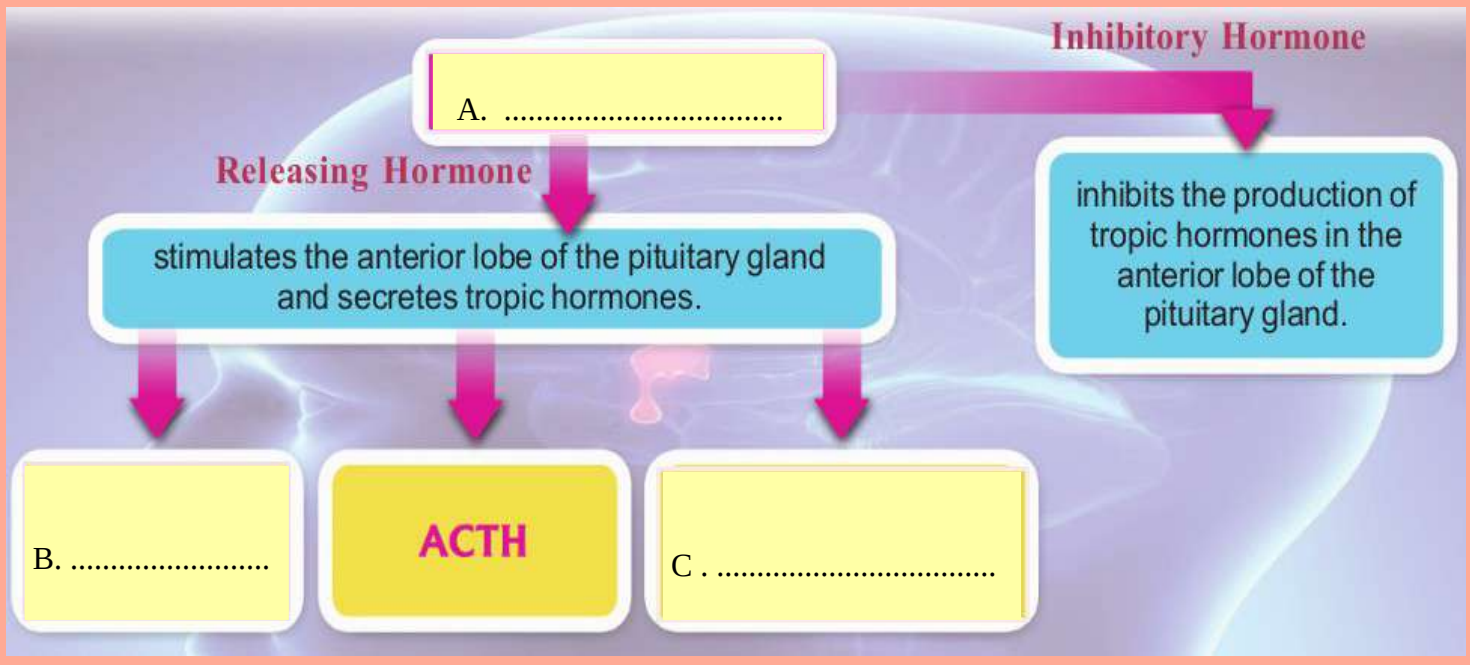
3. Analyse the given statements and arrange them in the table.

a . Ovulation
b . Production of Estrogen
c . Production of Testosterone
d . Sperm production
e . Production of Progesterone

Ovary	Testis

4. Observe the illustration and fill in the blanks

(Hint - Relation between Hypothalamus and Pituitary gland)



5. Hypothalamus is considered as the chief controller of the endocrine system : - Why ?

SAMAGRA SHIKSHA ABHIYAN

QUALITY EDUCATION FOR ALL

A JOINT VENTURE OF DIET AND SSK, PALAKKAD

STANDARD 10 BIOLOGY
CHEMICAL MESSAGES FOR HOMEOSTASIS

FIRST BELL ONLINE CLASS 23 STD 10

SUPPORTING MATERIAL PALAKKAD DIST

DATE : 16-09 2020

1. ***Identify the word pair relation and fill in the blanks***

(a) Civeton : Civet cat
--------- : Female silkworm moth

2. ***Bees and termites are maintaining the colony life by using some chemical substances as chemical messages***

(a) What are these chemical substances?

(b) Write the other uses of these chemical substances

(c) Give two examples for these chemical substances

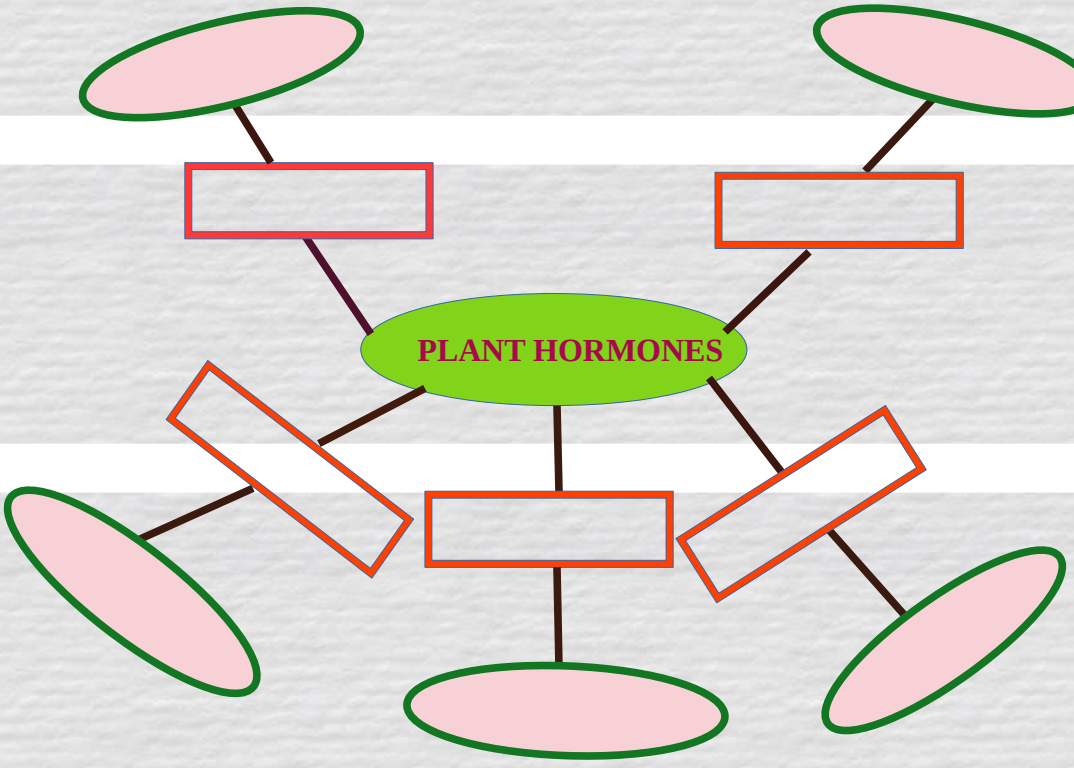
3. ***How are artificial pheromones helpful in agricultural fields?***

4. *Ants can follow one after another during their trail. How is it possible?*

5. *How the life activities are controlled and coordinated in plants?*

6. *Complete the illustration using the words given in the box*

Abscisic acid, promoting the growth of terminal buds,
Gibberellins, Auxin,
Breaking up of stored food in seeds, Ethylene,
Cell differentiation, Dropping of ripened fruits and leaves,
Cytokinin, Helps in ripening of fruits



HINTS
-----Hormone
--Functions

7. Write the difference between pheromones and hormones

8. *Analyse the box given below and complete the table by giving appropriate title*

Civeton, Auxin, Bombykol, Insulin, Ethylene, Prolactin

9. Choose the correct statements related to pheromones from the options given below

(a) Pheromones are chemical substances secreted inside the body for communication

(b) This is the message to attract mates , determining the path of travel etc

(c) Musk in civet cat is a pheromone.

(d) Bombykol is the pheromone secreted by the female silk worm moth

10. Match the artificial plant hormones and their functions

Hormone	*Functions*
Ethyphone	*Used for increasing fruit size in grapes and apple*
Auxins	*To increase latex production in rubber*
Ethylene	*Used for harvesting fruits at the same time*
Gibberellins	*To induce flowering of pineapple plants and ripening of fruits*
Abscisic acid	*To sprout roots*

For online Class Link
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X BIOLOGY –CLASS 23

1.

Analyse the statements related to the spread of AIDS and classify them suitably.

a) Through mosquitoes & houseflies.
b) Through body fluids.
c) Through extramarital sexual contact.
d) By touch, shaking hands, coughing etc.
e) From HIV infected mother to foetus.
f) When you sit near an HIV infected friend in the school.

Situations where HIV spreads	Situations where HIV does not spread
•	•
•	•
•	•

2.

An interview with the doctor of the Primary Health Centre regarding tuberculosis, organised by the Health Club is given below. What is your explanation for the questions asked by the children?

(a) Which bacteria causes this disease.
(b) Write two symptoms of this disease.
(c) Name the vaccine used to prevent tuberculosis.

3.

Anjana gets wounded on her foot while playing with her friends. Due to continuous bleeding, her parents take her to the hospital. The doctor's diagnosis after thorough investigation, is given below.

"This has happened as the blood is not clotting. This is a genetic disease."

a. What is Anjana's disease?
b. How can temporary relief be brought about for the disease?

4.

You are invited to prepare a presentation slide for the Cancer awareness class, conducted by the Health Club. What explanation will you give to the ideas given below?

1) The disease cancer.
2) Reasons for cancer.
3) Treatment for cancer.

5.

An early diagnosis of the disease is crucial in the treatment of cancer. Why?

6.

You are invited to prepare a presentation slide for the Cancer awareness class, conducted by the Health Club. What explanation will you give to the ideas given below?

1) The disease cancer.
2) Reasons for cancer.
3) Treatment for cancer.

7.

. The symptoms of a communicable disease are given below.

Loss of body weight, fatigue, persistent cough

(a) Name the disease?

(b) Identify the pathogen?

(c) How this disease is transmitted?

8.

Identify the diseases given and complete the table giving the causative organism and the symptoms of diseases.

Disease	Pathogen	Symptom
AIDS		
Tuberculosis		
Malaria		

9.

Identify the mode of spread of the following diseases and list suitable preventive measures.

1. **AIDS**
2. **Tuberculosis**
3. **Malaria**

10.

Chematherapy and radiation therapy are used in the treatment of which disease?

What are the factors which lead to this disease?

11.

Write four concepts which can be included in the poster prepared by the school health club as part of tuberculosis awareness program.

12.

News report

School authorities refused the stay of HIV infected student in school hostel,
as the disease may get transmitted to other students.

a) What is your to response as a science student to this news report ?

b) What kind of approach is needed towards HIV positive individuals?

13.

A micro organism reduces the immunity of the body by reducing the number of lymphocytes

a) Which microbe is this ?

b) Name the disease caused by this microbe.

c) What are the different means of transmission of this disease ?

14.

.Complete the table

diseases	Caused by	spreads through	symptoms
Tuberculosis	A	Through air	B
Malaria	C	Through mosquito	D

15.

The pathogen enters the body and multiplies its number by utilising the genetic mechanism of the lymphocytes.

a) Which microbe is mentioned here ?

b)Name a disease caused by this pathogen ?

c) write four modes of transmission of this disease..

16.

Haemophilia is an incurable disease. Why?

17.

Why do Haemophilia patients loose blood excessively through minor wounds ?

18.

Find the word pair relationship and fill in the blanks appropriately.

Tuberculosis:Bacteria

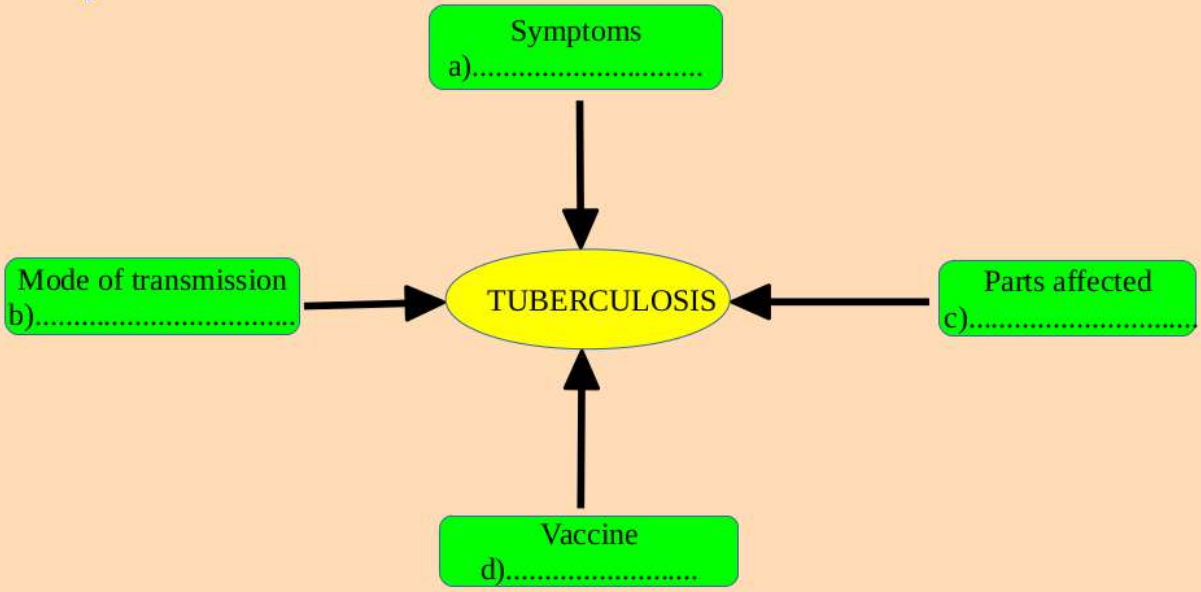
AIDS :----------

19.

Prepare a short note about Haemophilia

20.

Complete the word web related to Tuberculosis



21.

Identify the figure and answer the following.

a) Name this micro organism.

b) Name the disease caused by this.

c) Which type of defence cells are affected by this pathogen?

22.

This microbe disrupts the immunity power of the body.
No need to worry.... Let's live carefully.

Shown above is one of the presentation slides prepared by Pradeep, as part of the International year of Microbes.

a) Which is the microbe mentioned in the slide?

b) Which disease is caused by this microbe?

c) How does this affect the immunity of the body?

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BIOLOGY STD 10 CLASS 24 07 – 10 - 2020

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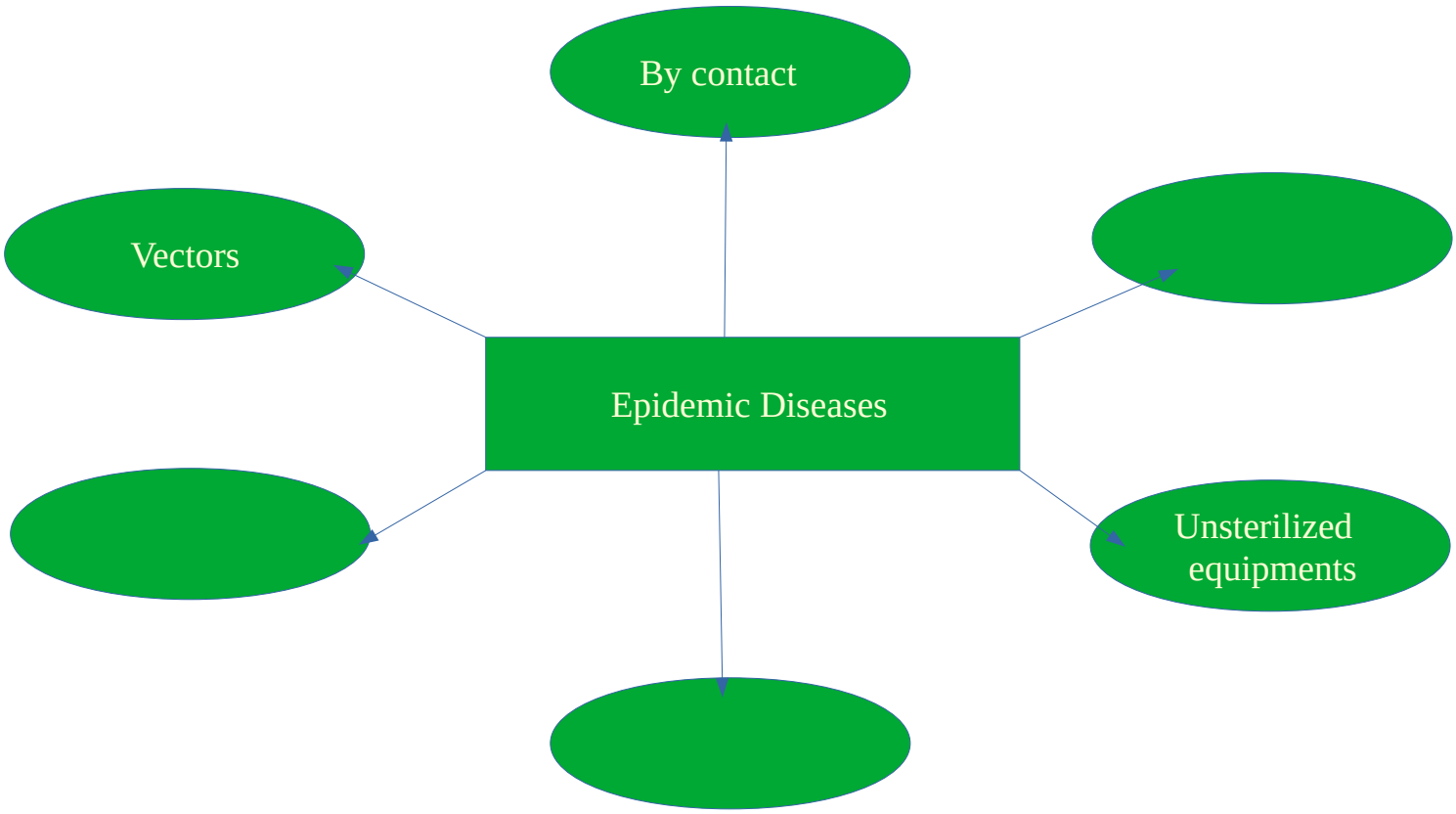
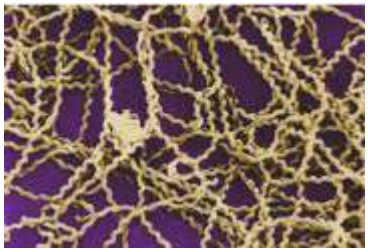
1. Complete the illustration regarding the transmission of pathogen



2. Wear mask , maintain social distance , keep personal hygiene . How do these measures help to prevent the spread of communicable diseases ? By analysing other circumstances in the text book figure 4.1 give a short account of the same

3. Observe the picture and name the micro organism. Write a disease caused by it.



4. A patient has the symptoms of severe fever , internal bleeding , headache , muscle pain, redness in eyes etc. Write the answers for the following questions

a) Name the disease
b) What are the causes of the disease ?
c) How can we prevent it ?

5. Read the newspaper cuttings. Analyse the circumstances and answer the questions

Prevent Rat Fever :

Alert Recommended

Thiruvananthapuram: The number of rats is likely to increase in the flood affected areas within six months. Therefore the department of health has suggested to take up preventive measures against rat fever. The distribution of preventive medicines

United in its sanitation campaign, Kerala becomes a role model

Measures to ensure drinking water in flood affected areas

Alappuzha : The District Collector has informed that the availability of drinking water would be ensured in flood affected areas. Preparations for this has been started under the auspices of the District Disaster Management Authority. Revenue department has taken steps to supply pure water to rehabilitation camps in the district

Counselling to strengthen the mental health of children in flood affected areas

Kalpatta : The department of health has announced that counselling would be ...ded to school ... flood affected ...uip them for

Contagious diseases follow floods

Kerala shows its strength in preventing the spread of diseases

Do these circumstances cause the spread of various epidemics ?
If yes , What are the recommendations given by the department of health to prevent the spread of diseases after overcoming emergencies ?

STUDENT SUPPORT MATERIAL FOR CLASS 10

BIOLOGY

SAMAGRA SHIKSHA ABHIYAN

QUALITY EDUCATION FOR ALL

A JOINT VENTURE OF DIET AND SSA,PALAKKAD

INTERBELL

INTERVENTION BASED ON EFFECTIVE LEISURE LEARNING

CHAPTER 4

KEEPING AWAY DISEASES

WORKSHEET FOR CLASS 25

DATE:12.10.2020

ACTIVITY :1

Identify the relation between the word pair and fill in the blanks

a)Diphtheria : Corynebacterium diphtheriae :: Tuberculosis: .....

ACTIVITY: 2

Figure given, shows the symptom of a bacterial disease.
Observe the figure and answer the following.
a)Identify the disease
b)Name the pathogen
c) Give reason for the given symptom

ACTIVITY : 3

Information regarding two bacterial diseases are given in the box below. Analyse the box and complete the table giving appropriate title.

Corynebacterium diphtheriae

Ash coloured thick coating in the throat

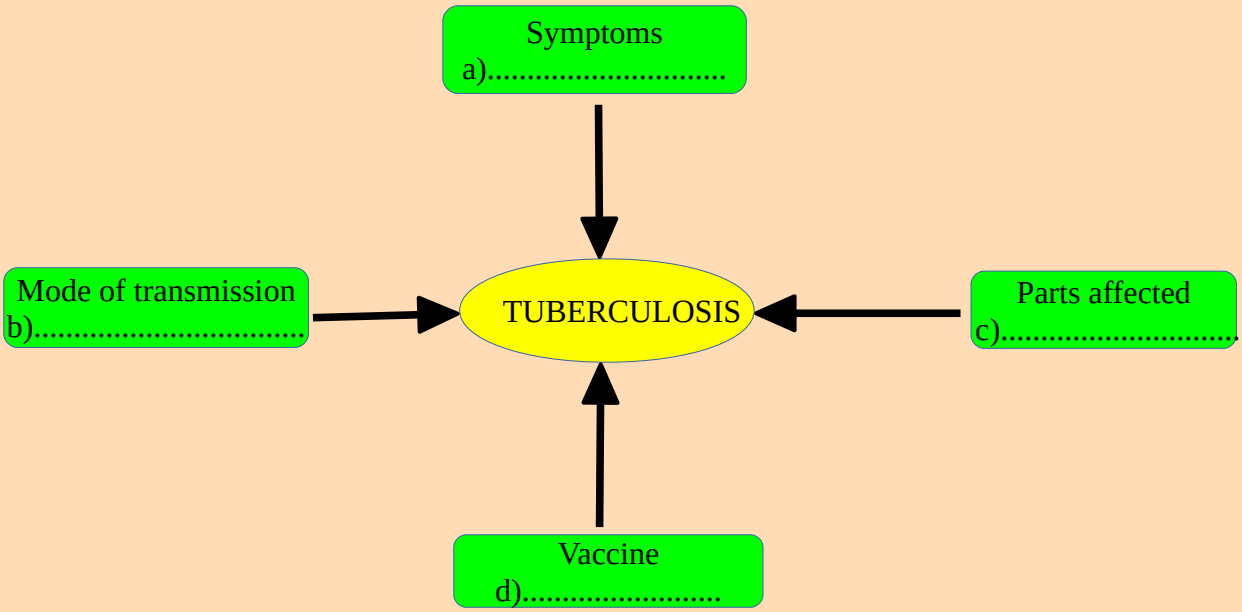
Fever,throat pain, inflammation in the lymph glands of the throat

BCG Vaccine **Mycobacterium tuberculosis**

Loss of body weight, persistant cough

ACTIVITY : 4

Complete the word web related to Tuberculosis



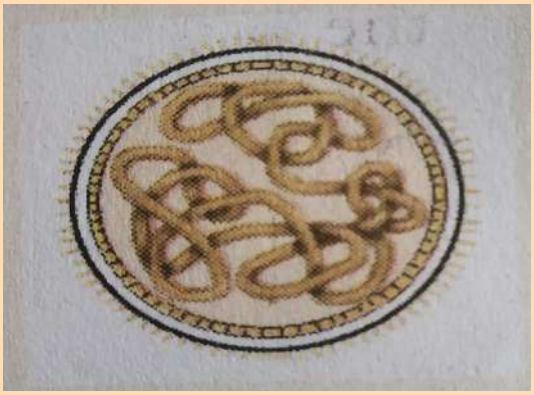
ACTIVITY : 5

Complete the table related to Diphtheria

Mode of transmission	
Symptom	
Action of pathogen	
Treatment	

ACTIVITY : 6

Identify the pathogen in the given figure ,write the peculiarities of it.



FOR ONLINE CLASS LINK
CLICK HERE
X- BIOLOGY CLASS 25

Inter Bell – a DIET and SSK Palakkad Initiative

Student support Material

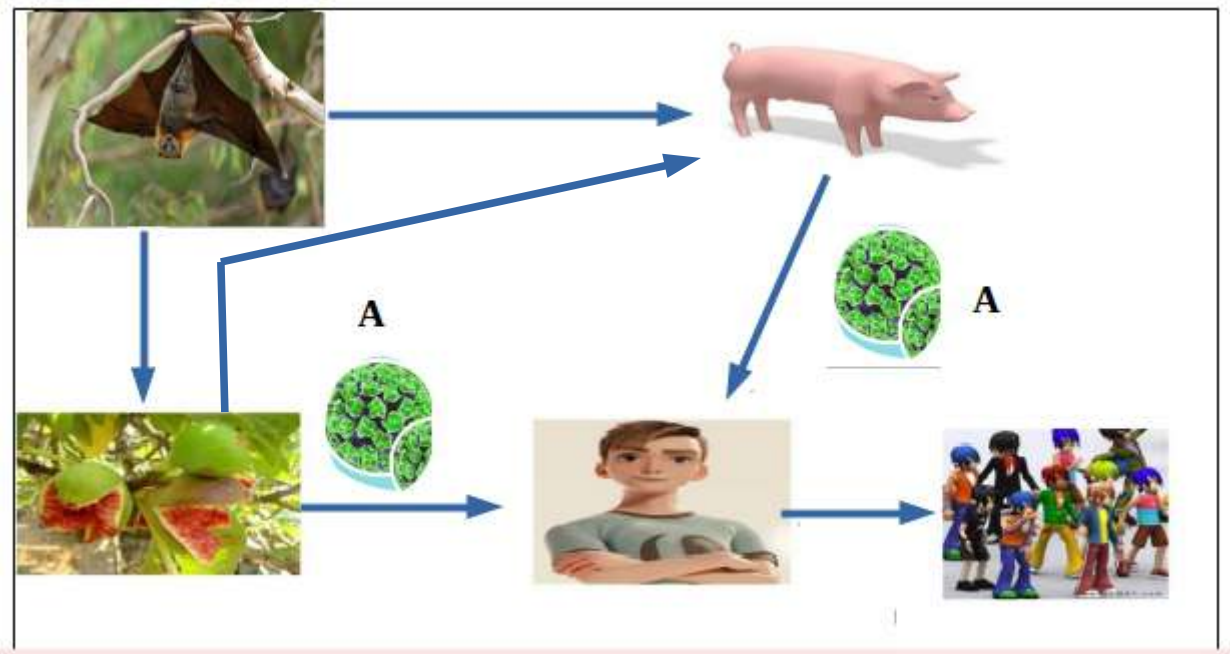
BIOLOGY

STD 10

Victers Digital Class
Part No. 26

4 Keeping Diseases Away

1. Observe the illustration and answer the following questions.



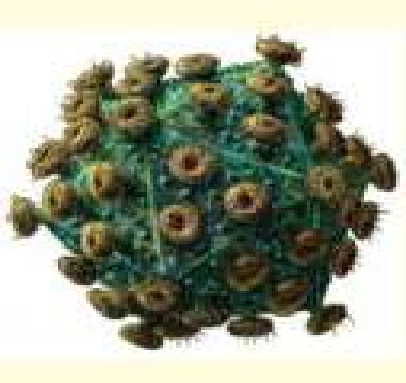
a) Name the disease having this mode of transmission.

b) Identify 'A' in the illustration.

c) Name the natural vector of this disease.

d) List the circumstances through which the pathogen reach human beings.

2. Identify the figure and answer the following.



a) **Name this micro organism.**

b) **Name the disease caused by this.**

c) **Which type of defence cells are affected by this pathogen?**

d) **List out the circumstances responsible for the spread of this disease from the following table.**

1. mosquito bites
2. reception of blood and organs contaminated with HIV
3. sharing needles and syringes
4. touch or shaking hands
5. from HIV infected mother to the foetus
6. taking bath in the same pond.
7. sexual contact with HIV infected person
8. using the same toilets

3. **Case sheet of a patient is given below.**

> * **Inflammation of liver**
>
> * **yellow colour in mucous membrane, white portion of the eyes and nails**

a) **Identify the disease affected this person.**

b) **Name the pathogen responsible for the disease.**

c) **Give reason for the yellow colour in mucous membrane, white portion of the eyes and nails**

4. **Read the news report and answer the questions.**

News Report

Wayanad: On fear of AIDS transmission, the school authority denied admission for two students affected with AIDS to the school hostel.

a) **Do you agree with the action of the school authority?**

b) **As a science student, express your comment on this incident.**

5. **Find the odd one and write down the common character of others.**

Dengue fever, Leptospirosis, AIDS, Hepatitis

6. Analyse the information given in the box and answer the given questions.

a) These are having simple structure.

b) A DNA/RNA molecule is found covered with a protein coat.

c) Normal cell organelles are not found.

d) Multiply by using the genetic material of the host cells.

a) Name the microorganisms mentioned here.

b) Give examples for diseases in human beings caused by them.

Click the link for watching the Victers Digital Biology Class No. 26:

https://www.youtube.com/watch?v=Dy_QDlOu9bI

A JOINT VENTURE OF DIET AND SSK, PALAKKAD

BIOLOGY
STANDARD 10

4 Keeping Diseases Away

VICTERS CLASS -27
DATE:22/10/20

1.Observe the figures

a) Identify the causative organism of these diseases

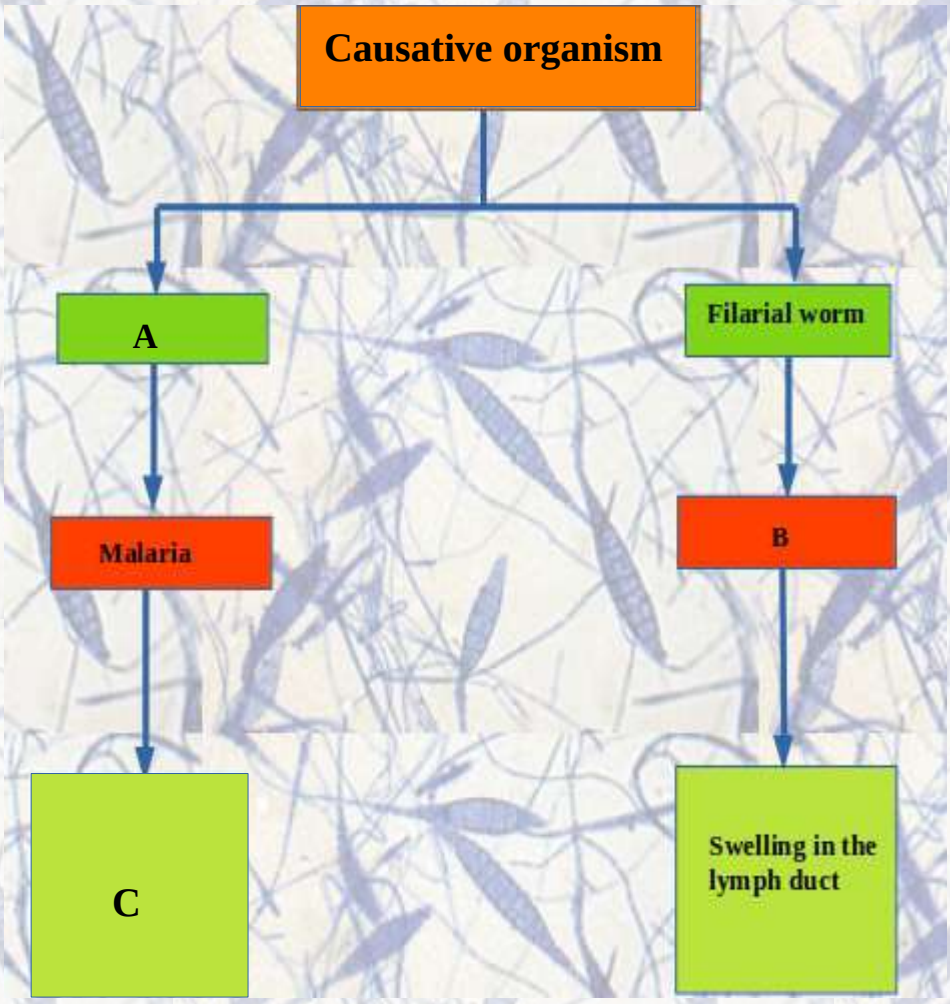
b) Complete the table given below by identifying A,B and C.

Disease	Symptom	Mode of Transmission
 Athletes' foot	B _____	Through contact
 A _____	Round red blisters on the skin	C _____

2. Separate the statements related to protozoa from the given items.

1)Protozoans are unicellular prokaryotes.
2)Fungi comes under protozoa.
3) Protozoans are unicellular eukaryotes.
4)Plasmodium is a protozoa.
5)Filarial worm is a protozoa.
6) They have definite nucleus.

3. Complete the flowchart given below.



4. Identify the word pair relationship and complete it.

Malaria : Female Anopheles mosquito

Filariasis : _____

5. Observe the figure and answer the questions given below.

1) Identify the disease.

2) Write down the reason for swelling in the lymph duct when a person affected with this disease.

6. Analyse the given statements and correct the underlined part ,if there is any mistake.

1.<u>Ring worm</u> infection is caused due to protozoa and it is transmitted by mosquitoes.

2.Athletes' foot is a fungal disease and it is transmitted through <u>touch.</u>

3. Filariasis is a disease caused by <u>fungi</u> and are spread by mosquitoes.

4. Malaria is a disease caused by protozoa and its <u>vector</u> is man.

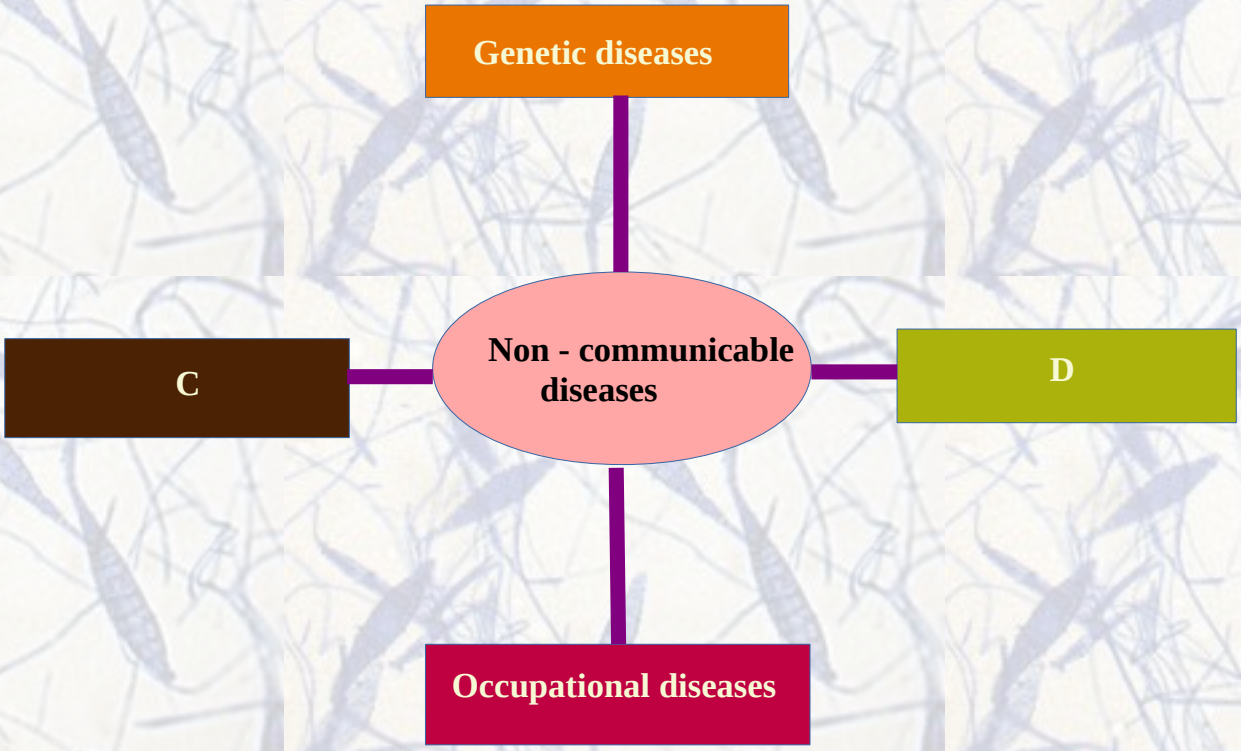
7. Analyse the News paper report and answer the questions

> **Thiruvananthapuram**:Health department of Kerala, told the public to observe "Dry day",in order to control the spread of communicable diseases.it is necessary to avoid situations that lead to the multiplication of pathogens and vectors cause various communicable diseases.

a) Observing 'Dry day' to control communicable diseases.What is your opinion in this regard? Why?

b) Your school health club is conducting a seminar competition in connection with "World mosquito day"(August 20).You are a participant.Suggest any four important concepts which will you present in that seminar.

8. Complete the illustration by identifying C and D.



9. Pick out the odd one and write the common features of others.

Asbestosis,Filariasis,Pneumoconiosis,Silicosis

10. A patient is suffering from excess loss of blood even from minor wounds.

1) Identify his disease
2) In which category does this disease include?
3) Write the cause of this disease.
4) What is the treatment for this disease?
5) How can we help such patients?

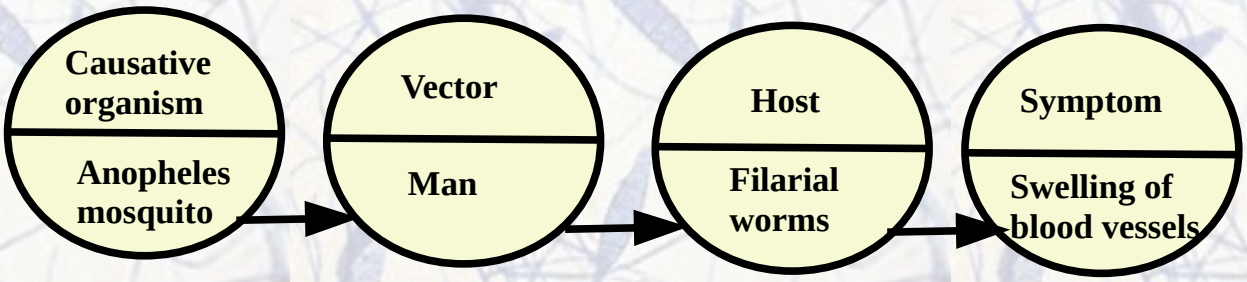
11. Observe illustration and answer the questions given below.

1) **What difference can you notice in the shape of RBC in figure A and B ?Write down the reason for this.**
2) **Name the disease to which B is related.**
3) **How does this deformity in shape of RBC affect patients body?**

12. Identify the right pair

1	Haemophilia	:	Non-communicable disease
2	Silicosis	:	Communicable disease
3	Athletes' foot	:	Genetic disease
4	Sickle cell anaemia	:	Occupational disease

13. Do you find any mistake in the flowchart prepared by Amal ,related to Filariasis.If so, can you help him?



14. "All diseases in men are due to micro organisms".Do you agree with this?Justify with example.

SAMAGRA SHIKSHA KERALA (SSK)

QUALITY EDUCATION FOR ALL

A JOINT VENTURE OF DIET AND SSK, PALAKKAD

അകറ്റി നിർത്താം രോഗങ്ങളെ

Keeping Diseases Away

English medium

10th Biology
Chapter_04
Online class_28
work sheet_28
28th October 2020

1) Make a poster to provide awareness about the health issues due to smoking.

2) Arrange the links in human life style diseases appropriately:

Indicators

*Deficiency of insulin or its malfunctioning.

*Deposition of excess fat in the liver.

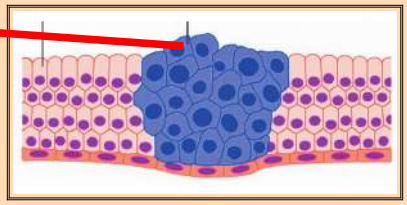
*Rupture of blood vessels in the brain, lack of blood flow.

*Decrease in the diameter of arteries due to deposition of fat.

*Block of blood flow due to deposition of fat in coronary arteries which carry blood to the heart.

Heart attack	A
Stroke	B
Diabetes	C
Hypertension	D
Fatty Liver	E

3) Observe the diagram and answer the following questions.



a)Identify the cells A in the labelled part.

b)What is the diseased condition caused by these cells?

4) Arrange columns B and C based on A.

A	B	C
i. Blight disease	a. Virus	P. Pepper
ii. Quick wilt	b. Bacteria	Q. Paddy
iii. Bud rot	c. Fungus	R. Banana

5) Analyse the word pair relationship and fill in the blanks.

Inflammation of udder … Bacteria

Foot and mouth disease…----------

6) Identify the odd one. Write the common feature of others.

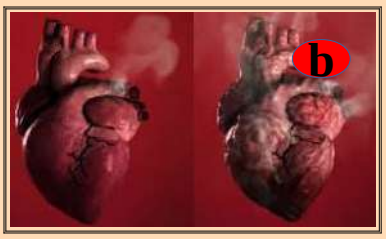
Blight disease, Anthrax, Bud rot, Quick wilt.

7) 'Now a days cancer is one of the most dreadful diseases in the world.'

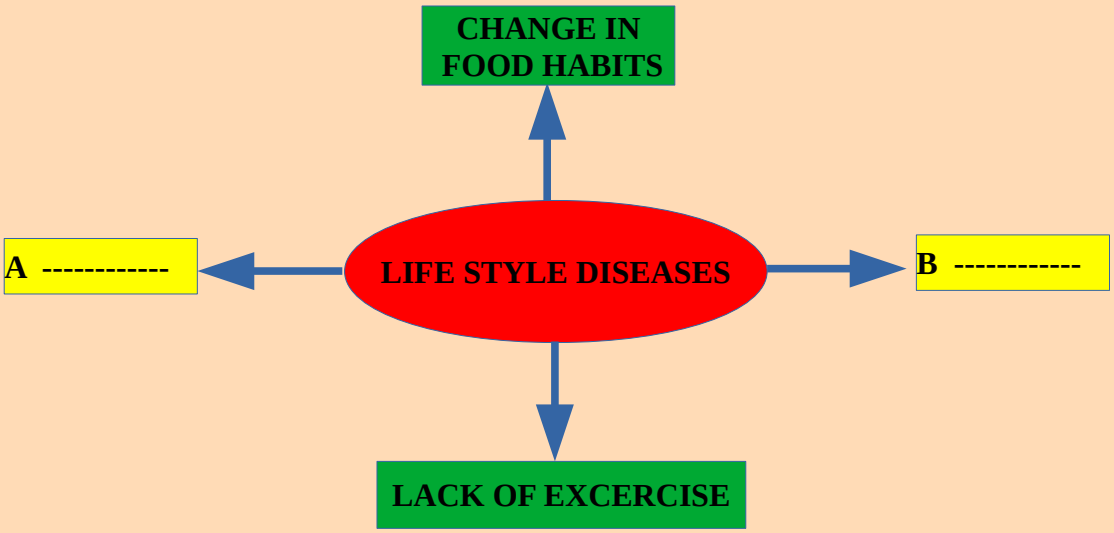
a)List any four reasons for the transformation of normal cells to cancer cells.

b)What are the methods used for the treatment of Cancer?

8) Observe the given images and write the health problems associated with smoking.



9) Complete the illustration.



FOR ONLINE CLASS OF THIS WORKSHEET

FOR PREVIOUS ONLINE CLASSES WORKSHEET

For FirstBell 0nline classes link

1.

Skin is the largest sense organ of the body. It helps us to sense heat, cold, touch, pressure etc and it acts as a soldier of defense of the body.

a) Does the skin have significance in defense as mentioned above? Justify.

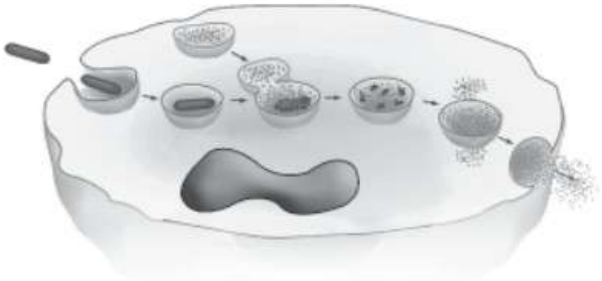
2.

A table indicating primary level defense is given below. Arrange column B based on column A.

A	B
i. Skin	a) Wax
ii. Trachea	b) Hydrochloric acid
iii. Ear	c) Sebum
iv. Stomach	d) Cilia

3.

Observe the given illustration and answer the following questions



a) Which is the process indicated in the illustration?

b) Which are the white blood cells involved in the process?

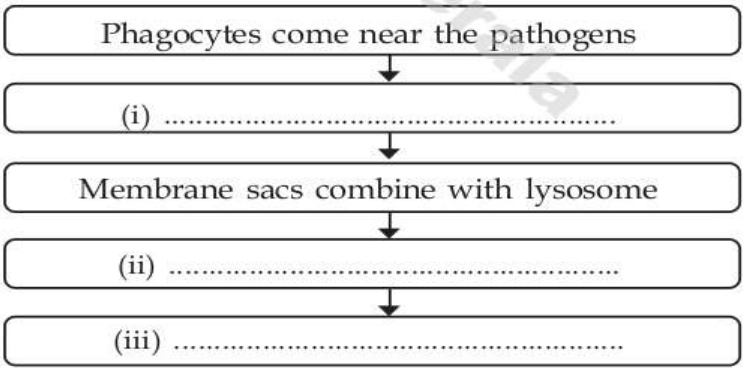
c) Is it a specific defense mechanism? Justify

4.

18. Fever is a defense mechanism. Is the statement correct? Justify your answer.

5.

The flow chart given below indicates a type of defense mechanism occuring in the body.



(a) Complete the flow chart

(b) Which process is it related to?

6.

Enlist the demerits of antibiotics for Jose who is preparing for a seminar on the topic "The merits and demerits of Antibiotics."

7.

Ashiq who met with an accident, was in need of blood. Antigen A and D and Antibody b was identified in his blood.

(a) Name his blood group?

(b) Whose blood, among the following can be accepted by ashiq?

(i) Venu = A^+ (ii) Amal - AB^+ (iii) Suhara - AB^- (iv) Anoop - A^-

8.

The table given below indicates blood groups.

Blood group	Antigen	Antibody
A	(i)	b
B	B	(ii)
(iii)	A, B	(iv) .....
.....(v).....	.....(vi).....	a, b

9.

It is not necessary to detect blood groups if we can accept blood from anyone"

This was an argument put forward by Sivaprasad in a discussion on blood transfusion.

(a) What is the base of blood group determination?

(b) Can a person receive any blood from anyone ? Why?

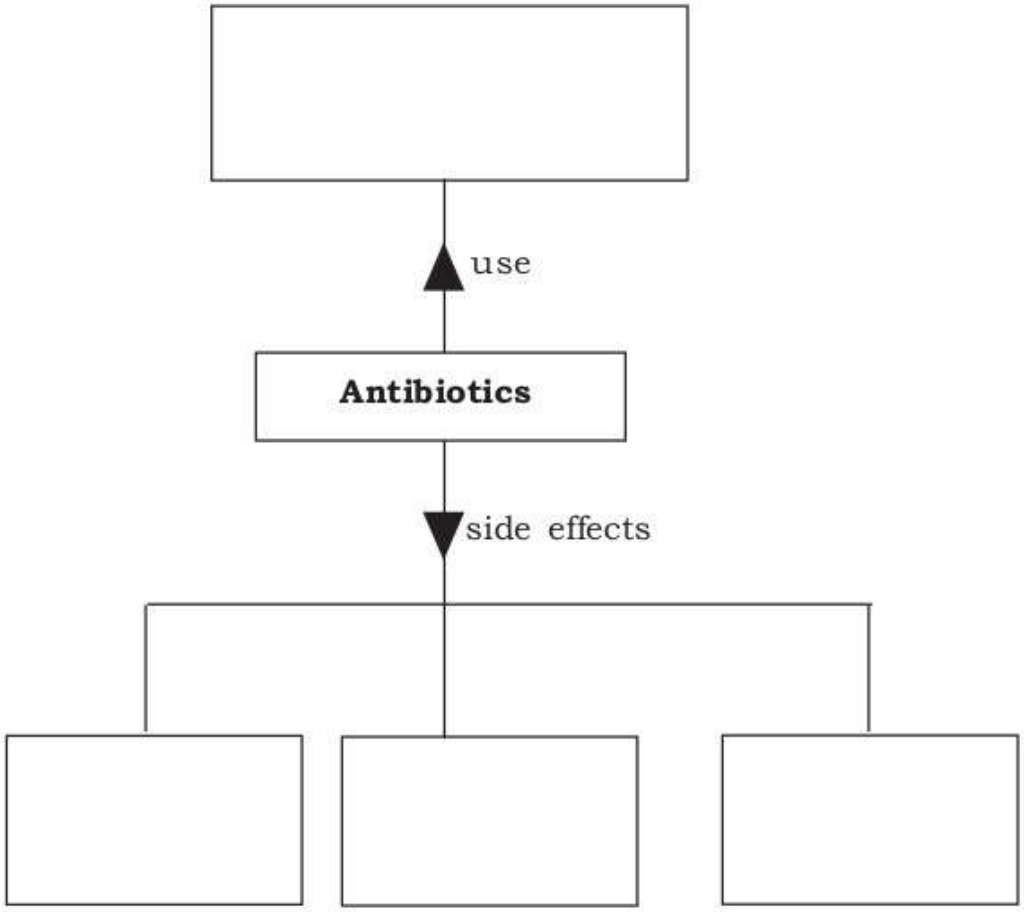
10.

The basis of blood grouping is the presence of antgens in red blood cells. Complete the table given below based on this satement.

Blood groups	Antigen	Antibody
A^{+VE}	.....	.....
B^{-VE}	.....	.....
AB^{+VE}	.....	.....
O^{-VE}	.....	.....
B^{+VE}	B, D	.....

11.

Complete the illustration suitably related to antibiotics.



12.

There are four main types of blood group in human beings

a) What is the basis of giving separate names to each of them?

b) What is the basis for classifying blood group into positive and negative?

c) What is the importance of antibodies in blood transfusion

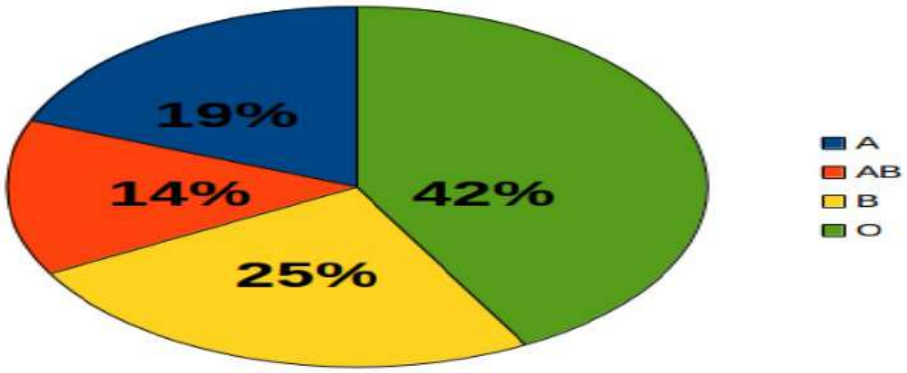
13.

Name the antigens which help to detect A positive blood group.

14.

A pie diagram showing the blood group of the people of a particular area is given below.

Analyse it and answer the questions.



a)What is the percentage of blood group having only antibody 'a' ?

b) Write the percentage of blood group with both the antigens

15.

Analyse the blood groups and answer the questions

AB+ve, AB-ve, B+ve, A+ve, O-ve

a) Choose the blood group which contain "Rh" factor and antibody "a" .

b)Choose the blood group in which Rh factors is absent and two types of antibodies are present.

16.

A blood group without antigens is used in blood transfusion in some instances. Name the blood group?

17.

Some defence mechanisms which prevent the entry of germs are given in column A.

Complete column B writing the functions of the defence mechanisms given in column A

Defence mechanism	Function
sebum	
keratin	
mucus in the respiratory tract	
Wax in the ear	

18.

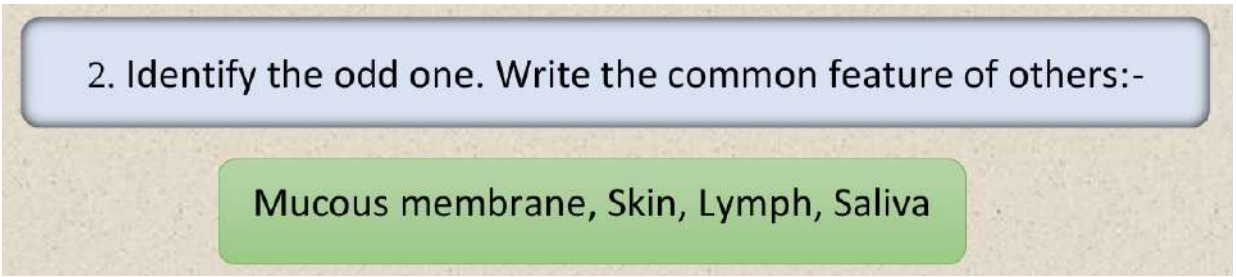
Name the secretions which destroy pathogens which are present in each the parts given below

a) Skin

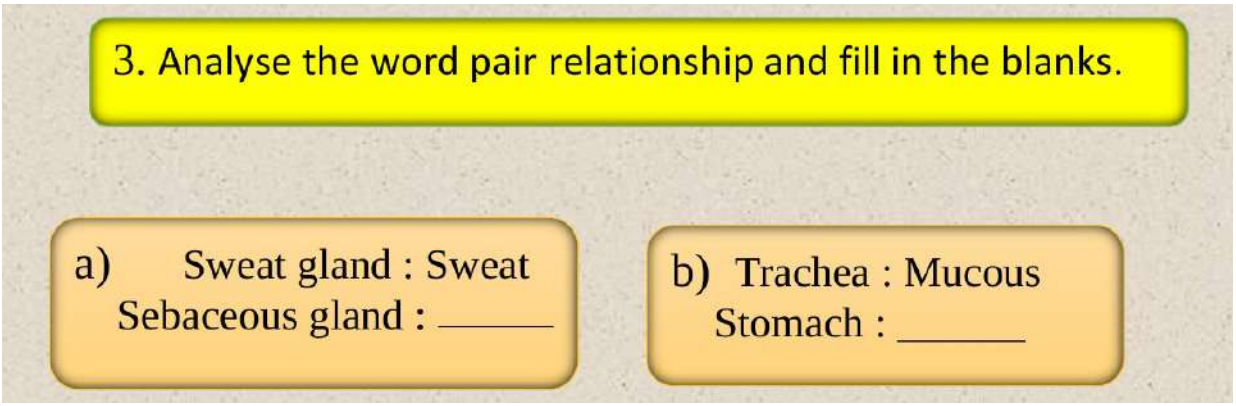
b) Tear

c) Stomach

19.

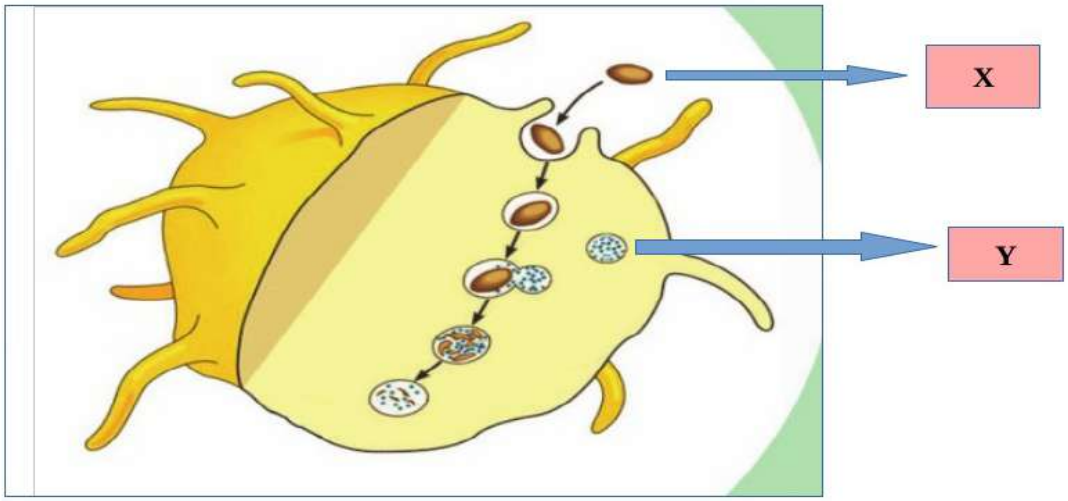


20.



21.

Observe the illustration and answer the questions.



a) Which is the process illustrated?

b)What does X and Y indicate?

c) Name the white blood cells involved in this process?

22.

.National Immunization Schedule of preventive vaccines be taken at different stages of childhood from birth . Complete the table .

VACCINE	DISEASE
B.C.G	
O.P.V	
PENTAVALENT	
M.M.R	
T.T	

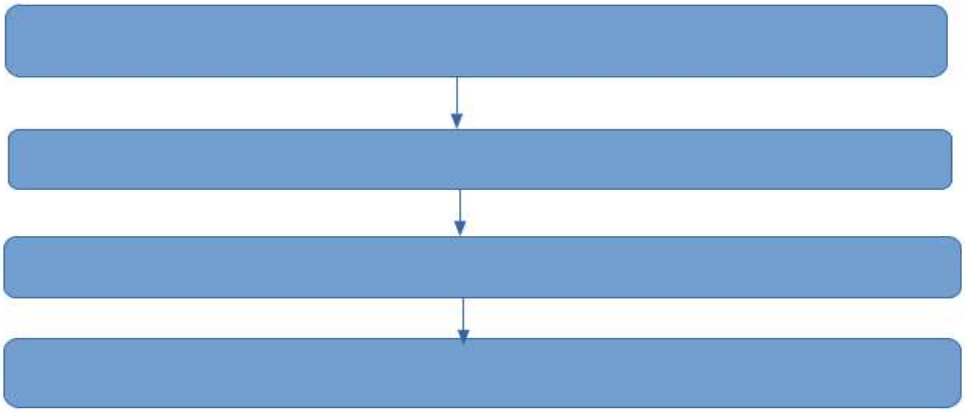
23.

a. What are vaccines?
b. What are the components of vaccines?
c. How do the vaccines act in the body?

24.

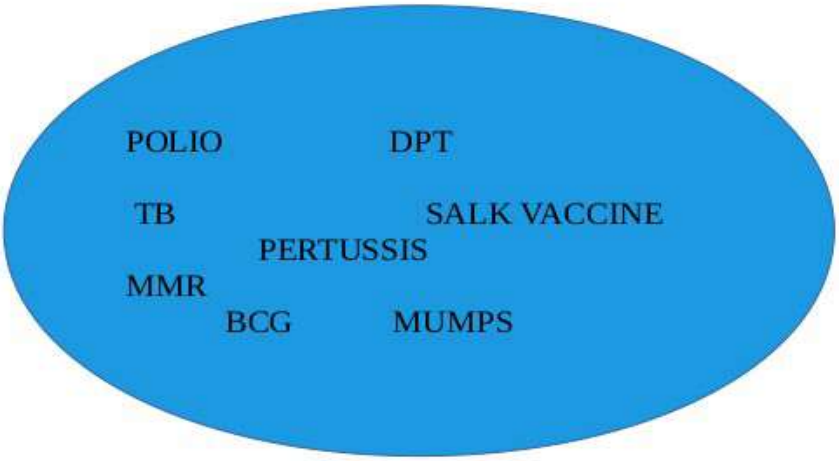
Rearrange the steps involved in the process of phagocytosis in correct sequence and prepare it in a flowchart form

a) Lysosome combines with membrane sac.
b) They engulfs pathogen in the membrane sac.
c) The pathogens are degenerated and destroyed by the enzymes in lysosome.
d) Phagocytes reach near the pathogen.



25.

. Some diseases and vaccines are given below. Make them Correct pairs.



26.

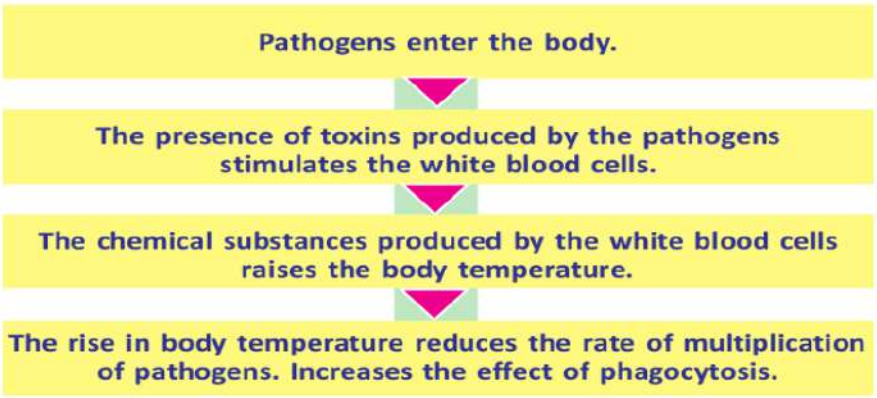
Complete the word pair

Antigen : Red blood cells

Antibody : .....

27.

Complete the flow chart by analysing the Illustration:



Pathogens enter the body

↓

They produce certain (a).....

↓

These toxins stimulates (b).....

↓

Then the chemicals produced by WBCs rises the (c).....

↓

the rise in body temperature

↙ ↘

decreases (d).....

increases (e).....

A JOINT VENTURE OF DIET AND SSK, PALAKKAD

INTERBELL

INTERVENTION BASED ON EFFECTIVE LIESURE LEARNING

STUDENT SUPPORT MATERIAL FOR

STANDARD 10
BIOLOGY

Chapter 5

SOLDIERS OF DEFENSE

WORKSHEET FOR Class 29-11rth NOVEMBER 2020

11.11.2020

Activity 1

1.Observe the picture given. What are the uses of wearing masks in places where epidemics spread out?

Activity 2

2. Identify the odd one. Write the common feature of others:-

Mucous membrane, Skin, Lymph, Saliva

Activity 3

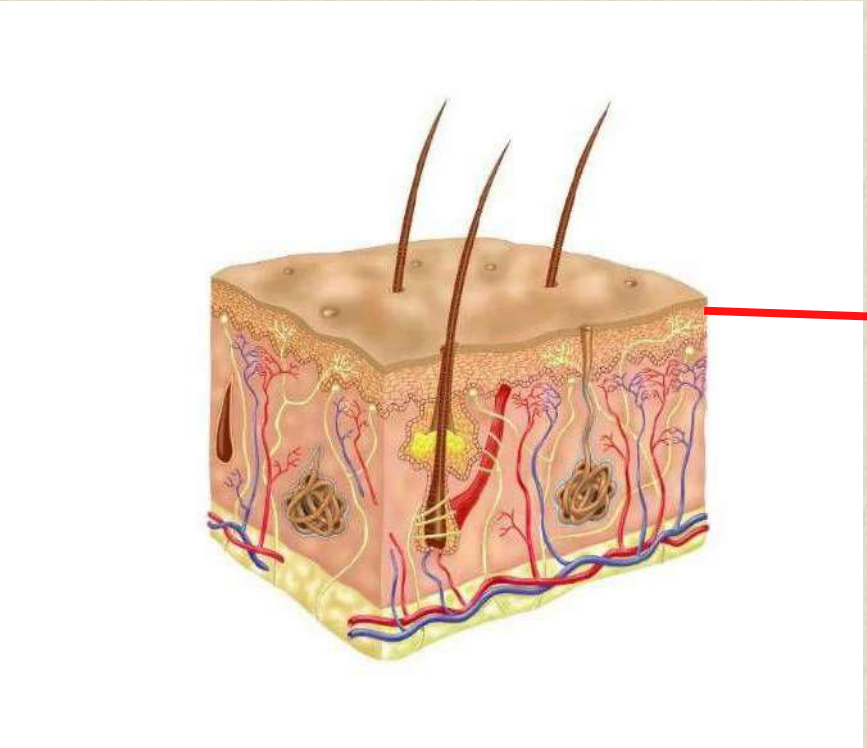
3. Analyse the word pair relationship and fill in the blanks.

a) Sweat gland : Sweat
Sebaceous gland : _____

b) Trachea : Mucous
Stomach : _____

Activity 4

4) Observe the diagram and answer the following questions.



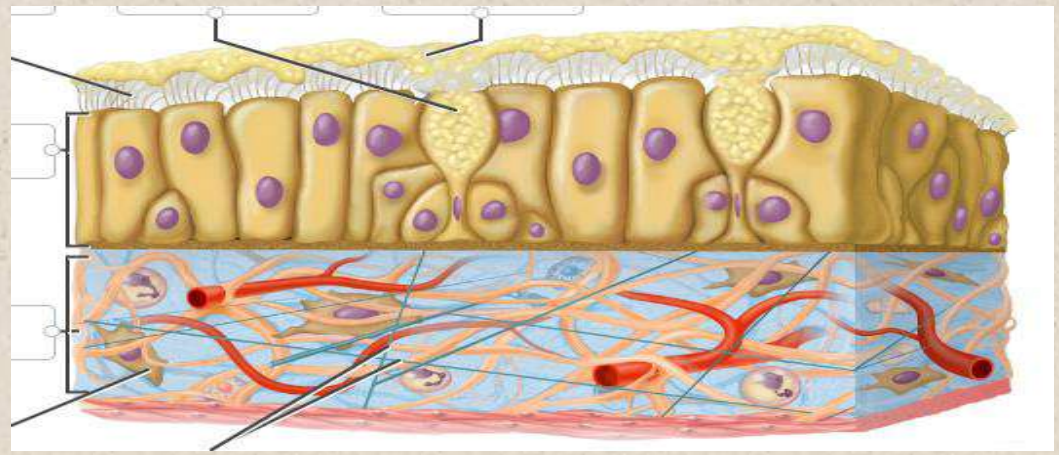
a) Identify the part labelled as‘A’

b) What is the role of ‘A’ in preventing the entry of germs?

c) What is the function of sebaceous gland and sweat gland?

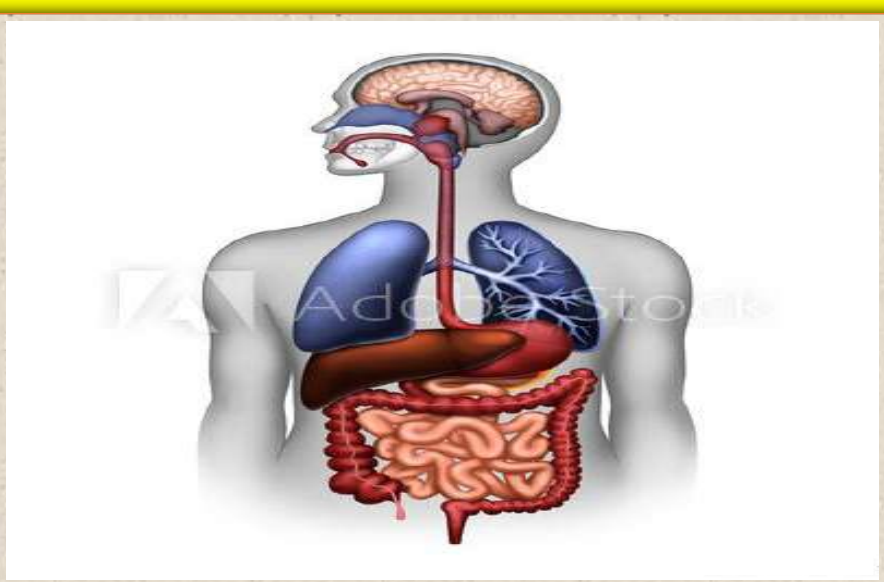
Activity 5

5) Observe the diagram of mucous membrane. What is the function of cilia and mucous in the respiratory tract?



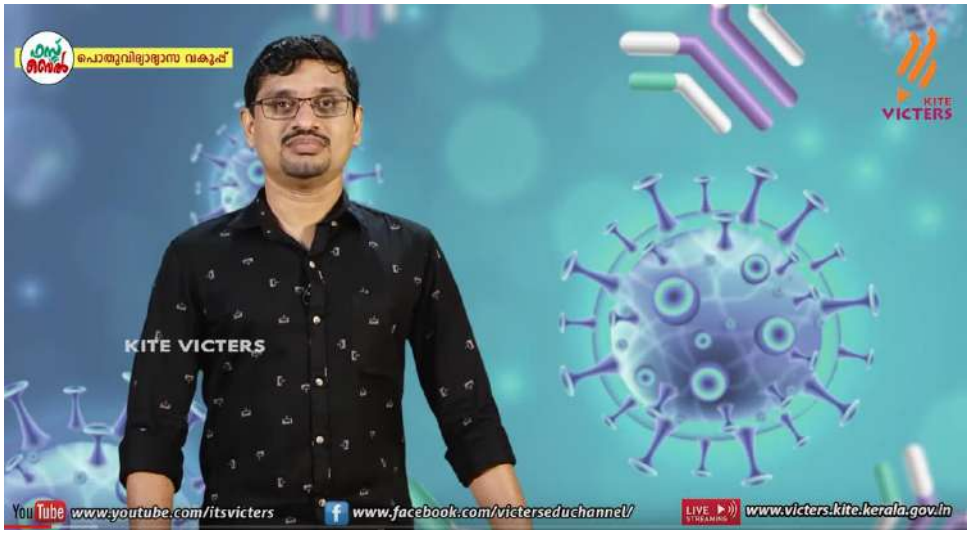
Activity 6

6) Complete the given table related to defense mechanism in our body by observing the given diagram.



Part of the body	Secretion
Eye	
Ear	
Stomach	
I	

To watch online Biology class 29, tap on the below image.



KITE VICTERS STD-10 BIOLOGY CLASS 29.

A JOINT VENTURE OF DIET AND SSK, PALAKKAD

INTERBELL

INTERVENTION BASED ON EFFECTIVE LIESURE LEARNING

BIOLOGY

STD 10

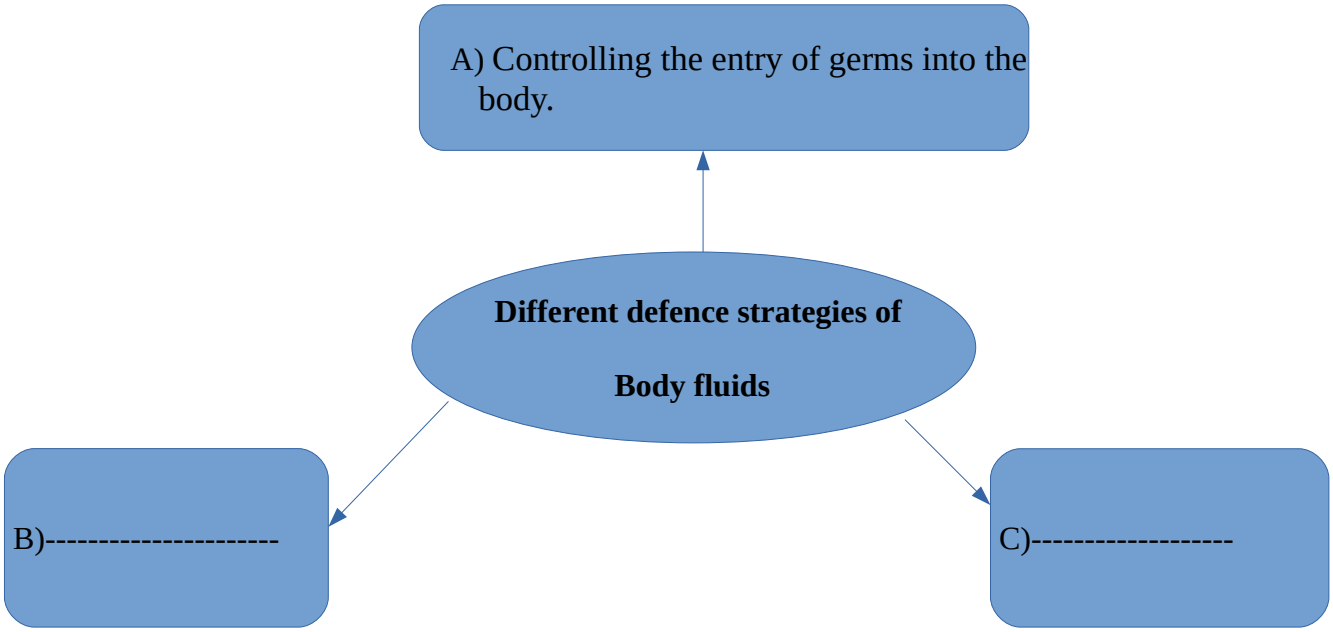
VICTERS DIGITAL CLASS

PART NO :30

DATE: 18/*11*/2020

ACTIVITY 1

Complete the word web



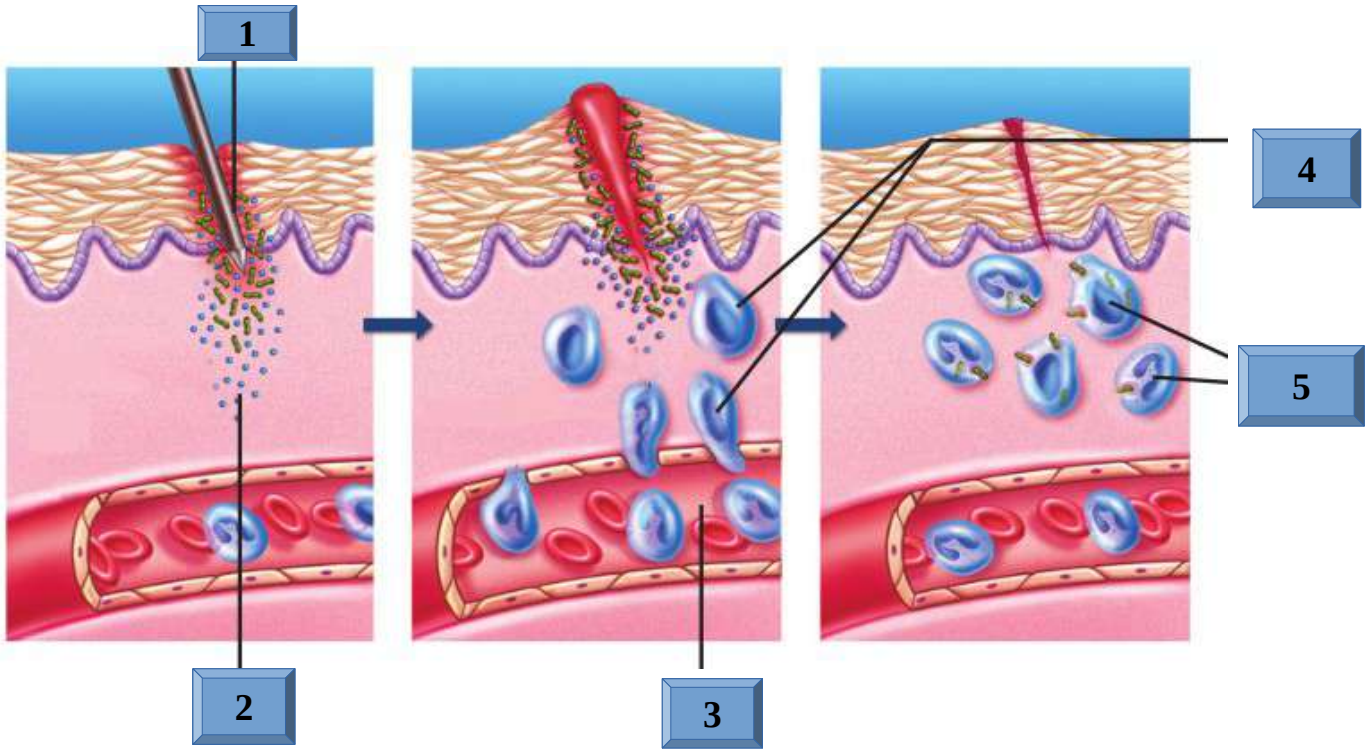
ACTIVITY 2

Complete the table related to white blood cells and Defense actions.

White Blood Cells		Defense Action
	**Neutrophil**	_____
	**Basophil**	----------
	**Eosinophil**	**Synthesizes chemicals that destroy foreign bodies.Synthesizes chemicals required for the inflammatory responses.**
	**Monocyte**	----------
	**Lymphocyte**	----------

ACTIVITY 3

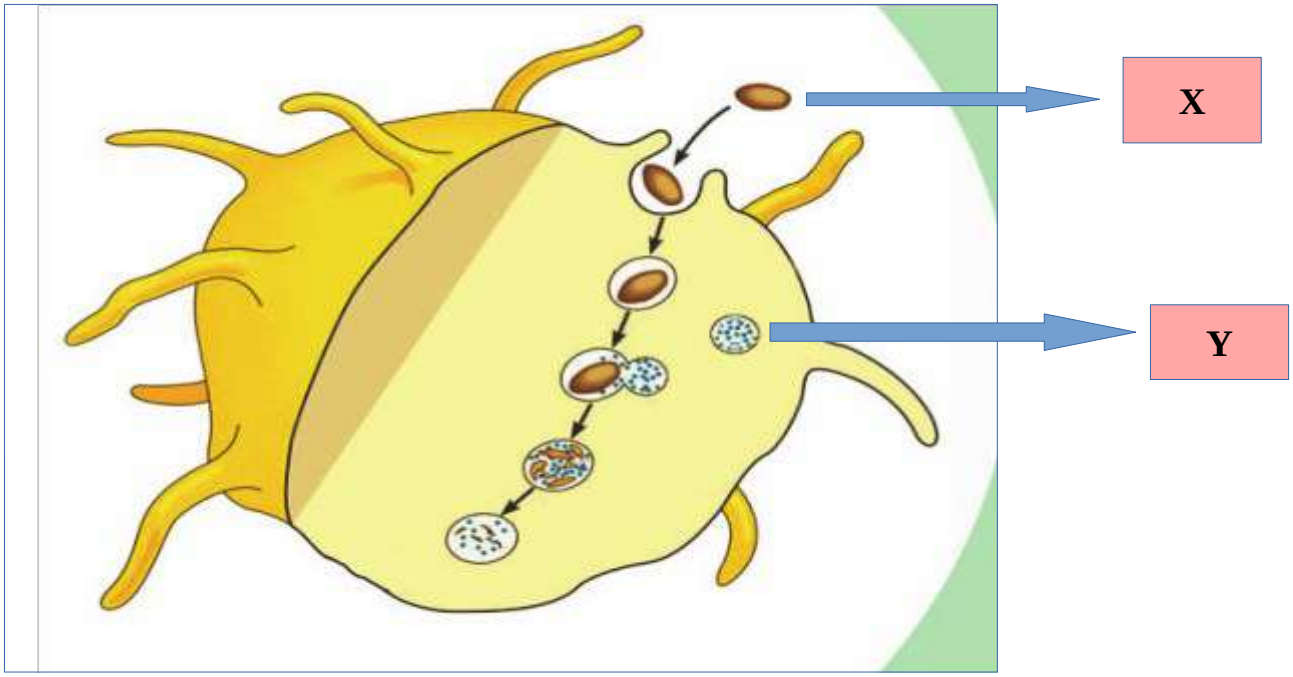
The given illustration explains how the inflammatory response takes place when a wound occurs.Analyse it and write in the correct sequence



Hints:(White blood cells reach the wound site through the walls of the capillaries, Blood capillaries dilate, Germs enter through wounds, Neutrophils and monocytes engulf and destroy germs, Chemicals are produced)

ACTIVITY 4

Observe the illustration and answer the questions.



a) Which is the process illustrated?

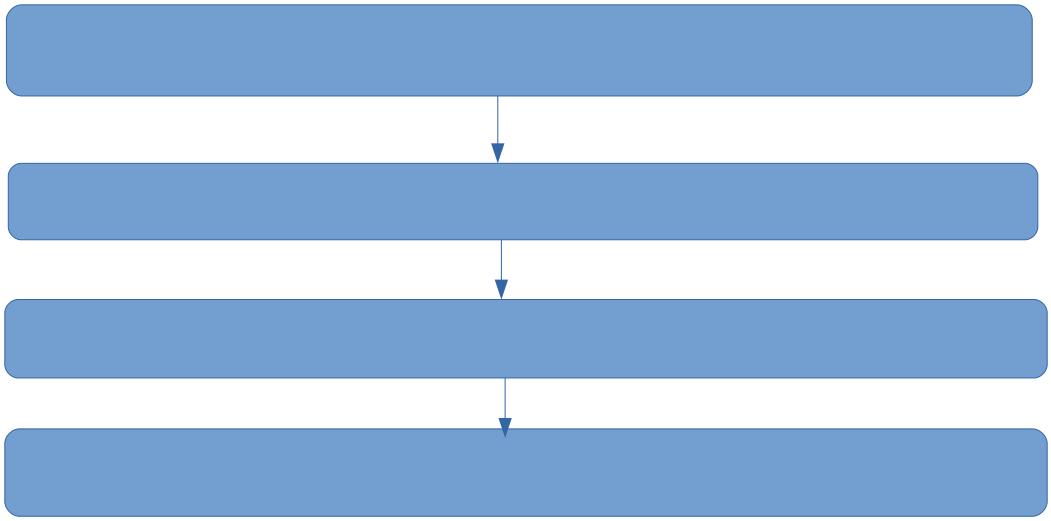
b)What does X and Y indicate?

c) Name the white blood cells involved in this process?

ACTIVITY 5

Rearrange the steps involved in the process of phagocytosis in correct sequence and prepare it in a flowchart form

a) Lysosome combines with membrane sac.
b) They engulfs pathogen in the membrane sac.
c) The pathogens are degenerated and destroyed by the enzymes in lysosome.
d) Phagocytes reach near the pathogen.



CLICK HERE TO VIEW ONLINE BIOLOGY CLASS 30

SAMAGRA SHIKSHA ABHIYAN

QUALITY EDUCATION FOR ALL

A JOINT VENTURE OF DIET AND SSK, PALAKKAD

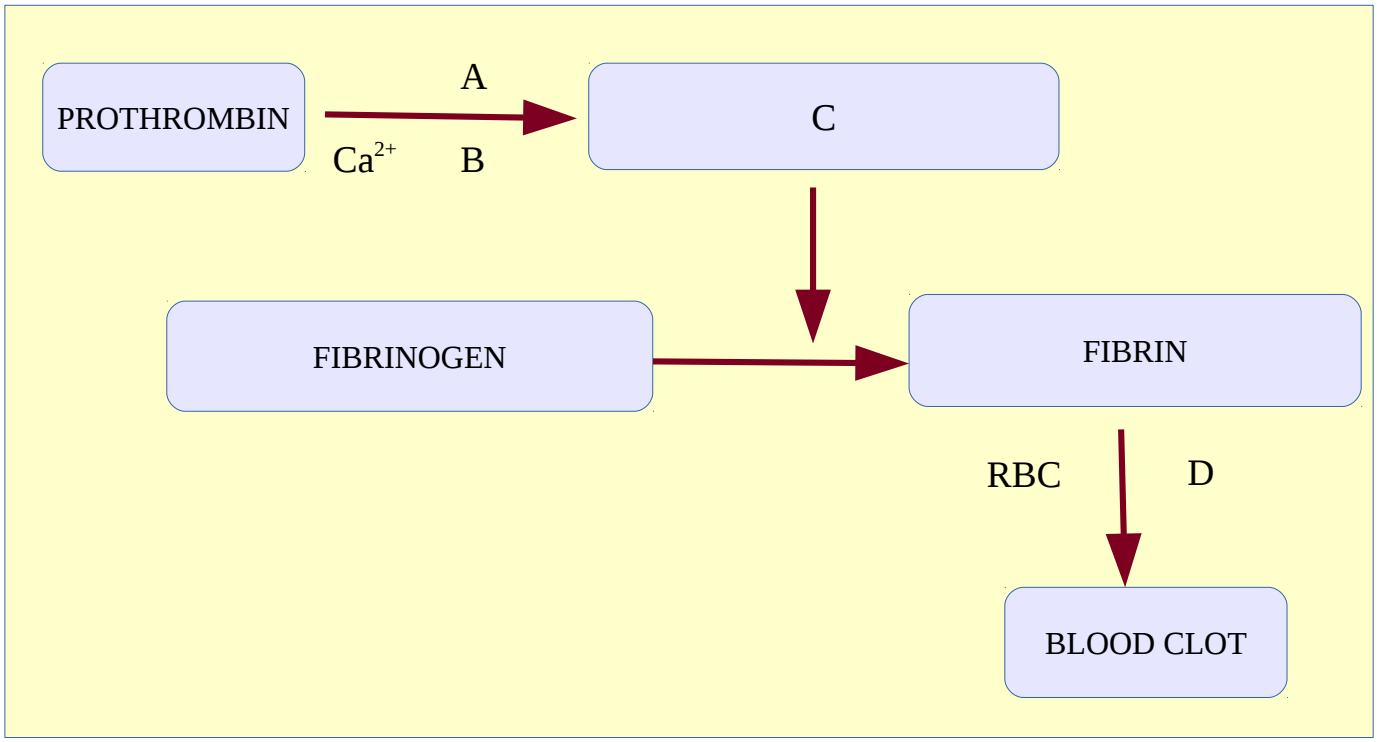
WORKSHEET FOR X
CLASS NO: 31

BIOLOGY
X (E.M)

Date : 24/11/2020

LESSON :-5
SOLDIERS OF DEFENSE

I Observe the flow chart given below and find out answers for the following questions:



a. A is a vitamin and B is an enzyme. Name them.
b. How does the lack of A and B affect the blood clotting process.
c. Identify and write the names of C, D .
d. What is the significance of blood clotting?

II Analyse the given statements and answer the questions.

a. White Blood Cells are not entangled, while Red Blood Cells and Platelets get entangled in fibrin network for the formation of blood clot. Why?
b. Some wound scars remains while some scars do not remains. Why?

III Prepare a flow chart of the blood clotting by using the following hints.

1 Thromboplastin converts Prothrombin to Thrombin
2 Blood flows from the wound.
3 Blood clot is formed.
4 Thrombin converts Fibrinogen to Fibrin
5 Tissues and Platelets at the site of wound degenerate to form the enzyme called Thromboplastin

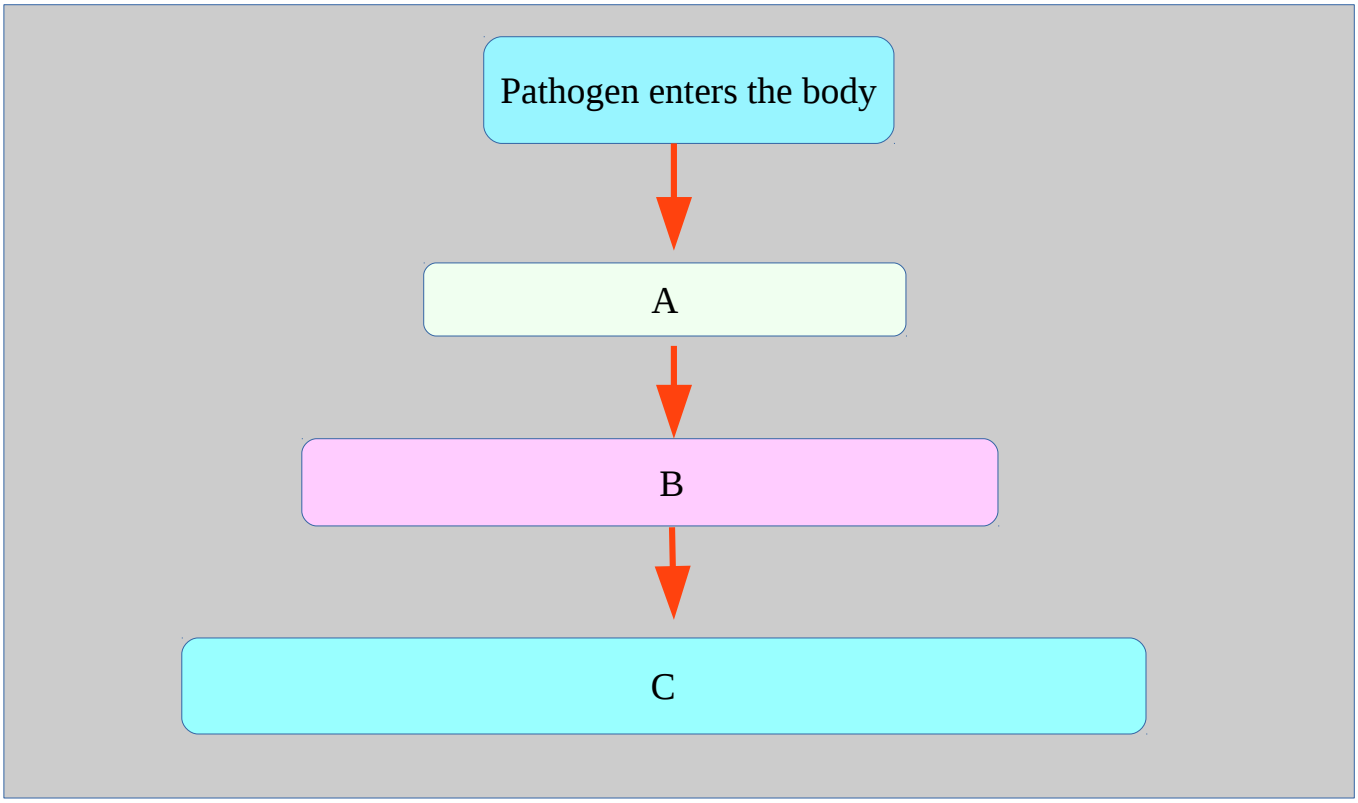
IV Analyse the conversation given below and find out answers for the following questions:

My body temperature raises when I get wounded while playing .Why?

Fever is a defence mechanism of our body.

a. What is the role of White Blood Cells in this process?
b. How could we attain defence through raise in body temperature?
c. Why do we take medicines during fever?

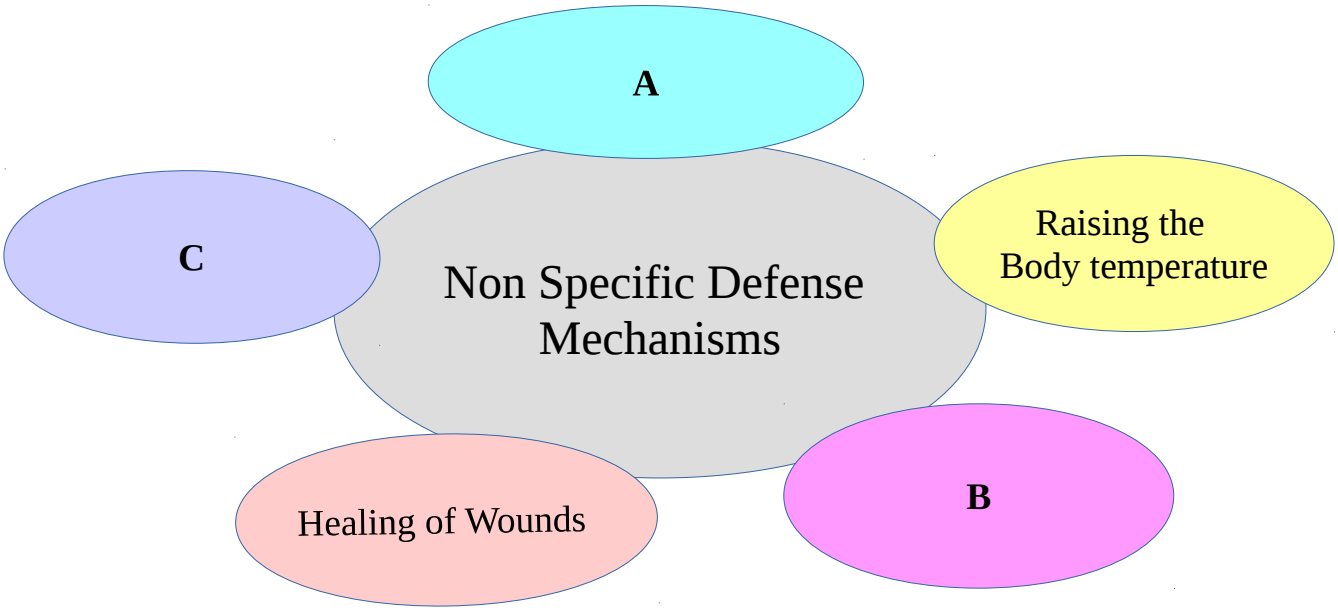
V Complete the flow chart related to fever.



VI Name the following:

a. The clinical test to detect the cause of excess bleeding or lack of clotting of blood.
b. Identify the picture given below. Write the name and function.

VII Complete the concept map of Non Specific Defense Mechanism.



Online class

SOLDIERS OF DEFENSE

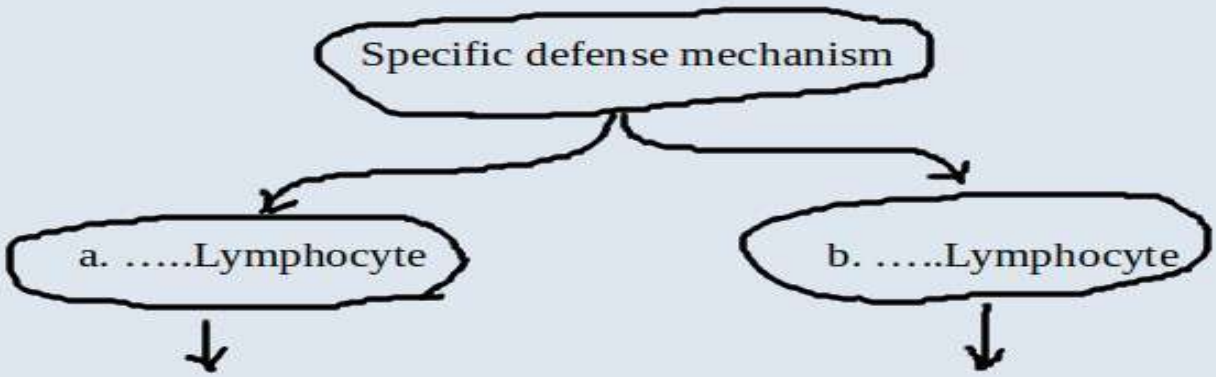
★ ★ ★ ★ ★

VICTERS FIRSTBELL ONLINE CLASS SUPPORTING MATERIALS

PALAKKAD DISTRICT

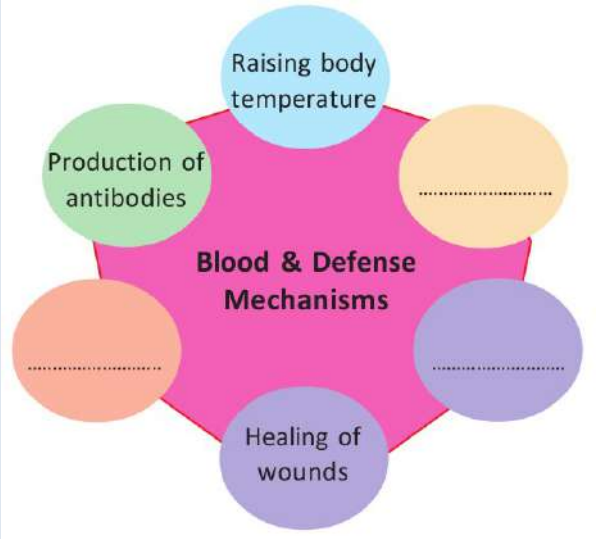
5 Soldiers of Defense

1. Complete the illustration:-



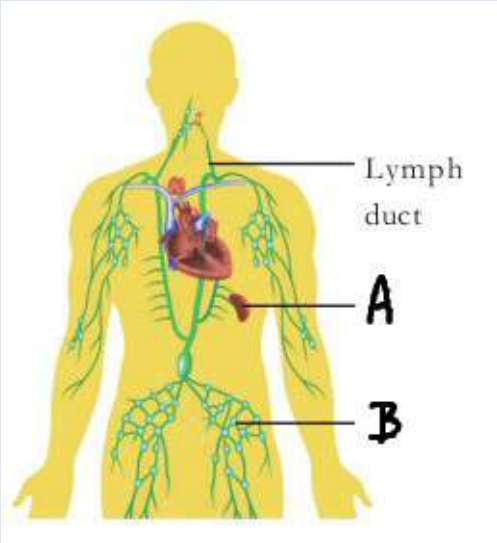
* Neutralises the toxins of antigen
* Destroys cancer cells
* c. .....
* d. .....
* e. .....
* f. .....

2. Complete the illustration of blood and defense mechanism:-



3. Compare and tabulate B & T Lymphocytes:-

4. Identify A & B. Write its functions:-



5. Differentiate antigens and antibodies:-

6. Prepare a note on Specific defense mechanism.

7. What are the components of Blood?

8. B Lymphocytes : mature in bone marrow
   T Lymphocytes : …….

9.

Which among the following is not included in non-specific body defense?

a. production of sebum

b. action of hydrochloric acid in the stomach.

c. action of B lymphocytes.

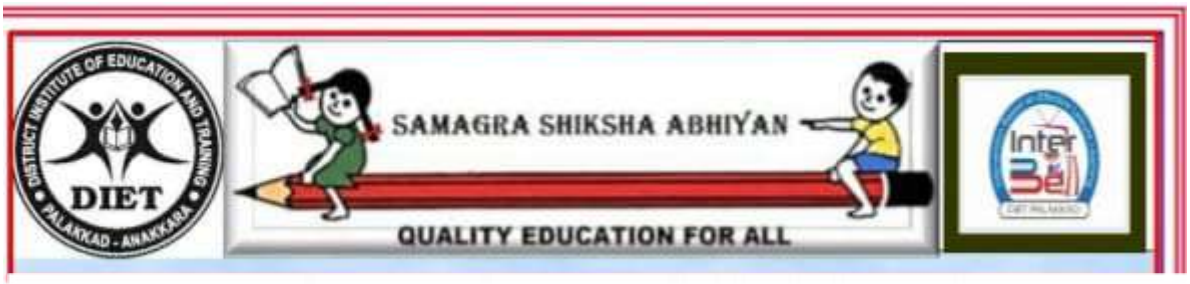
d. action of lysozyme in saliva.

10.

Write the functions of blood cells in the defense mechanism of the body.

Click here for online link

Worksheet prepared on the basis of 27/11/2020
Victors Firstbell online class

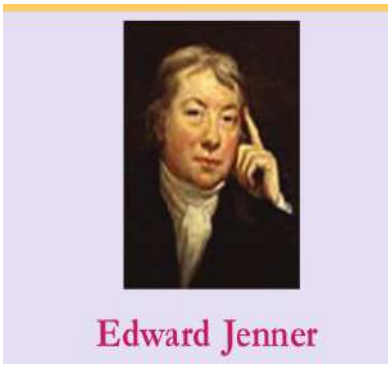


EPISODE –33

1.Explain how body will react to the situation described below?

*The components of vaccines enter thd body.

2.



*An experiment conducted by Edward Jenner is given below .Read it and answer the questions?

'He injected the pus taken from a cow pox patient into the body of an eight year old boy. After two months the pus taken from a small pox patient was injected in to the boy'.

a.What was the aim of his experiment?

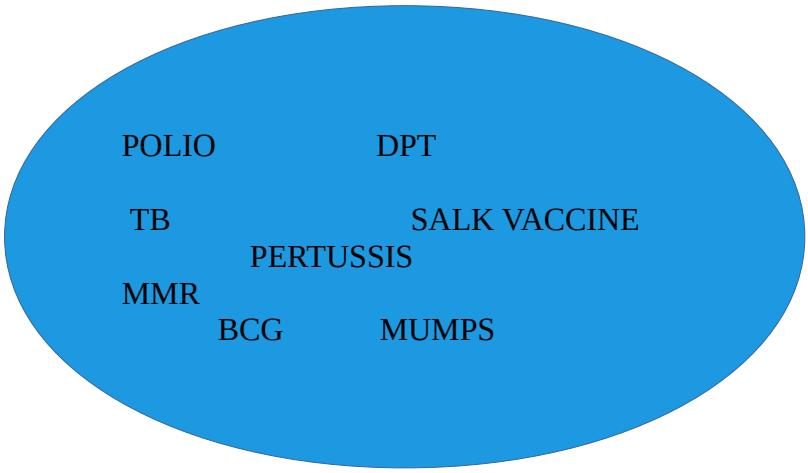
b.What was his contribution to the society by this experiment?

3.Dead and alive pathogens are used for vaccination. Justify the statement citing the examples of vaccines used for rabies and tuberculosis.

4.National Immunization Schedule of preventive vaccines be taken at different stages of childhood from birth . Complete the table .

VACCINE	DISEASE
B.C.G	
O.P.V	
PENTAVALENT	
M.M.R	
T.T	

5. Some diseases and vaccines are given below. Make them Correct pairs.



6. Pair the column A with B

COMPONENTS OF VACCINES	DISEASES
Dead pathogens	Cholera, Rabies
Alive but neutralised germs	Typhoid,Measles
Neutralised toxins	Tetanus, Diphtheria
Cellular parts of germs	Hepatitis B

Prepared by ;Kollengode biology group.based on the class ,Episode 33

Link ; https://youtu.be/f1PMOFyK51g

SAMAGRA SHIKSHA, KERALA

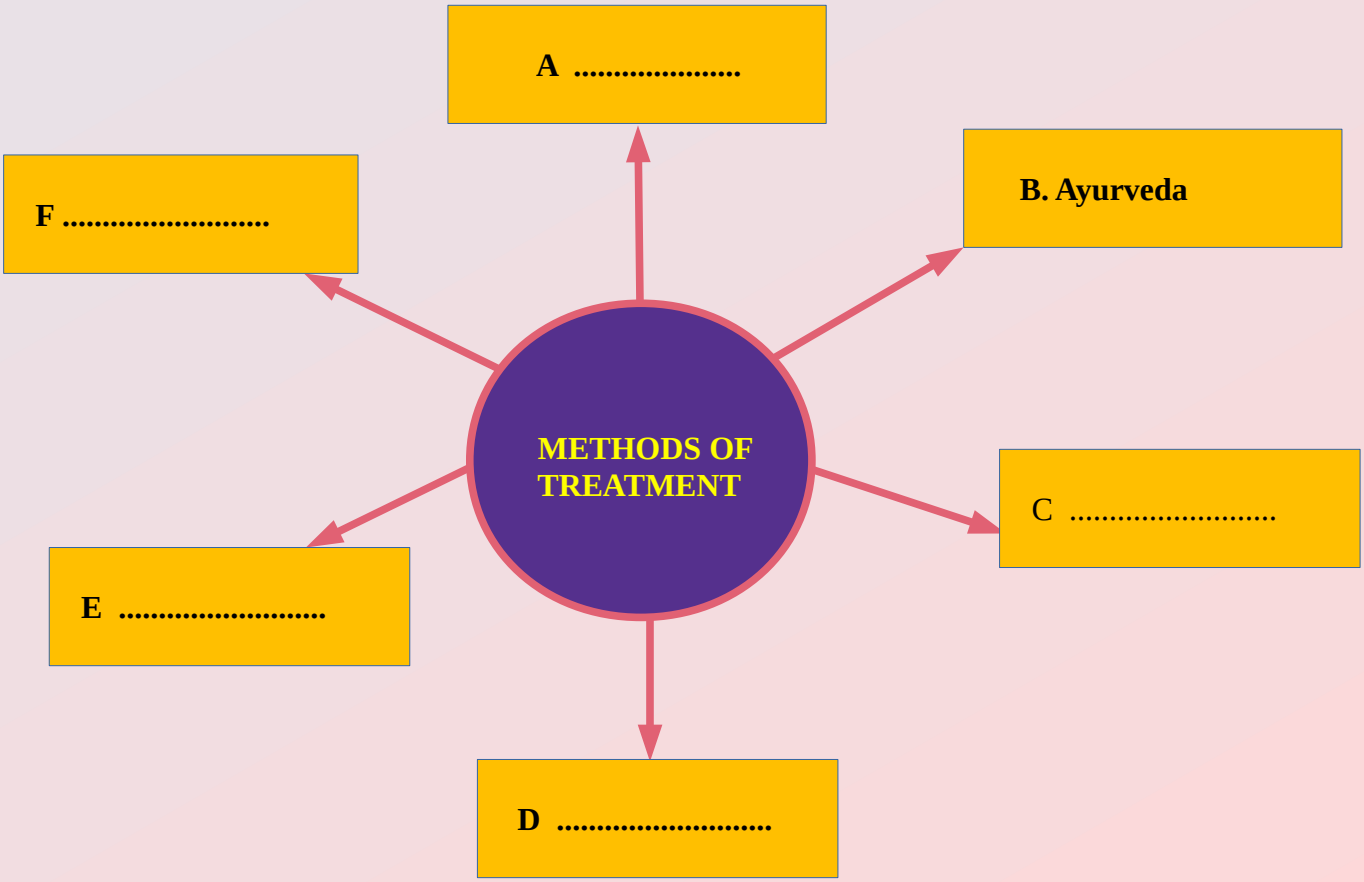
Inter Bell – a DIET and SSK Palakkad Initiative

Student support Material for standard 10 BIOLOGY

SOLDIERS OF DEFENSE

WORKSHEET FOR CLASS 34 ON 7-12-20

1.Complete the word web showing the different methods of treatment.



2. Read the statement and answer the below questions.

"This is a famous method of treatment that emerged in India that proposes to live in harmony with nature to maintain an efficient and healthy body."

a. Which is this famous treatment?
b. Which type of products are used as medicines in this treatment?

3. Given below is a part of article prepared by Binu for science magazine. Read the portion and answer the questions.

Siddavaidya,Panchakarma,Unani, Naturopathy,etc.are traditional treatment methods which have evolved in accordance with the lifestyle of the people, their culture and available natural resources. Homeopathy is a treatment system that emphasizes on pathogens, diagnosis and medicines.

a. Correct it if there is any mistake.
b. Who are the proponents of the treatment systems , homeopathy and modern medicine?

4. Identify the diagnostic equipments given below and write their use.

A

B

C

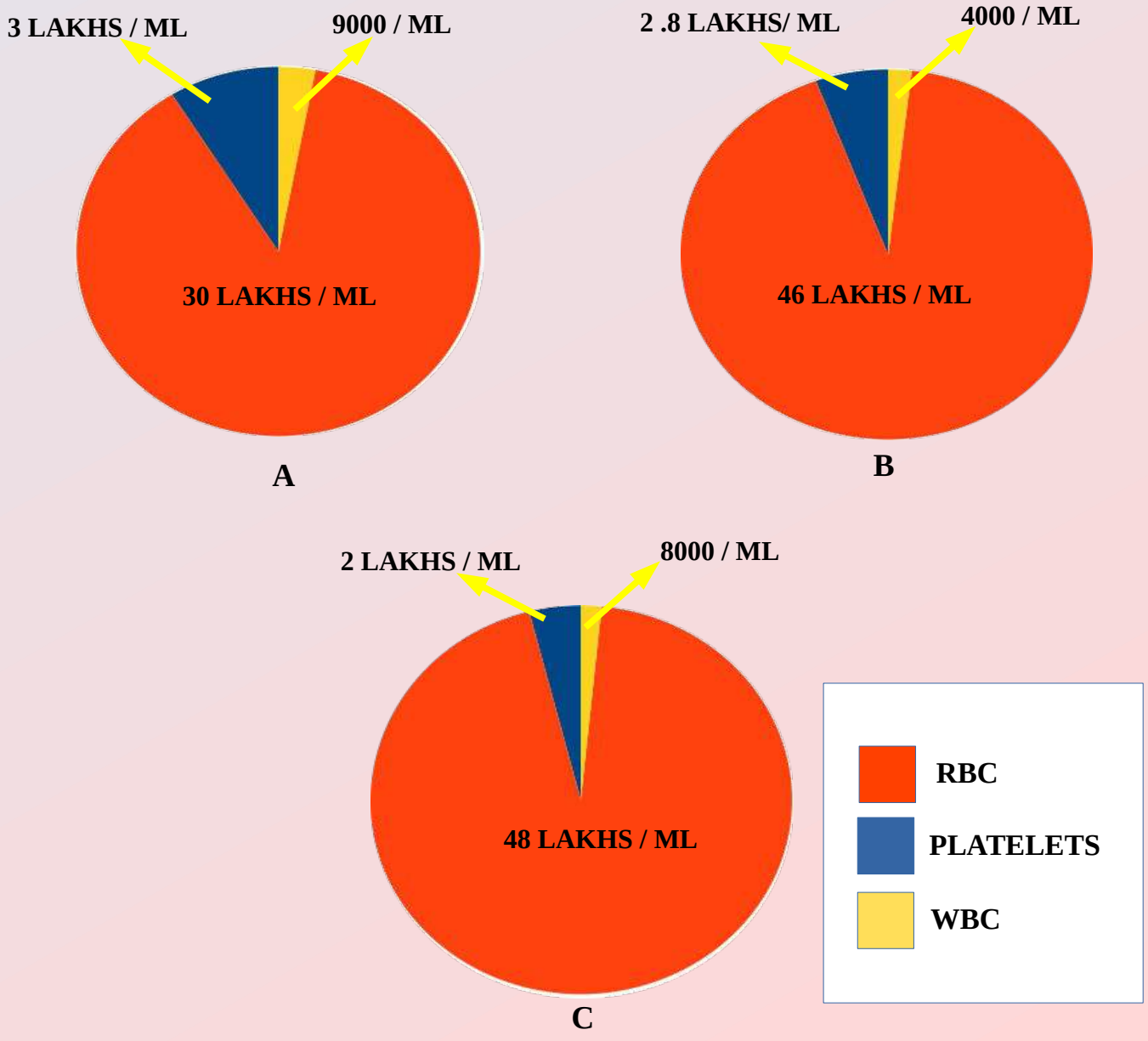
5. The use of some modern equipments are given below. Identify the equipments.

   a. To get three-dimensional visuals of internal organs with the help of computer, using X-rays.
   b. To record electric waves in the heart muscle.
   c. To understand the structure of internal organs using ultrasonic sound waves.

6. Find the word pair relationship and fill in the blanks.

   1. ..... **:** To record electric waves in the brain.
   2. MRI Scanner : .....

7. Blood count report of three persons (A , B, C) are given below. Analyse these pie diagrams and answer the following questions.

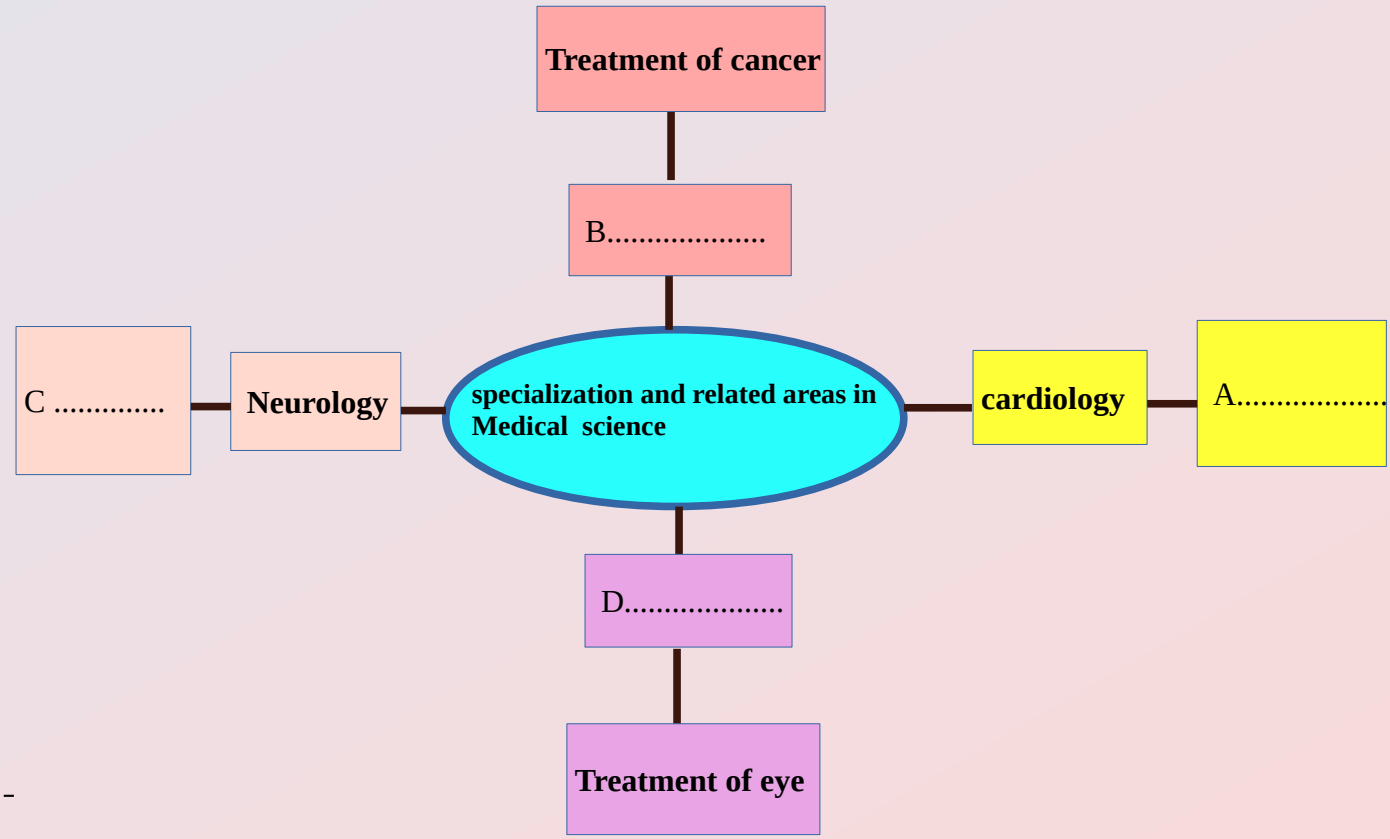


a. Find the persons having a normal value of RBC.
b. Specify the normal value of WBC.
c. Compare the count of platelets in A, B, C with its normal value.

8. When doctor proposed the blood test of Abu who had felt dizziness during the school assembly, the test report showed his haemoglobin level as 7.2 g /100ml

a. Say the reason for Abu's dizziness from the above context.
b. What is the normal level of haemoglobin in a healthy person?

9. Complete the illustration.



To watch the online class again , tap on the image.

A JOINT VENTURE OF DIET AND SSK, PALAKKAD

INTERBELL

INTERVENTION BASED ON EFFECTIVE LIESURE LEARNING

STUDENT SUPPORT MATERIAL FOR

STANDARD 10

BIOLOGY

Chapter - 5

SOLDIERS OF DEFENSE

WORKSHEET FOR Class 35-
10th DECEMBER 2020

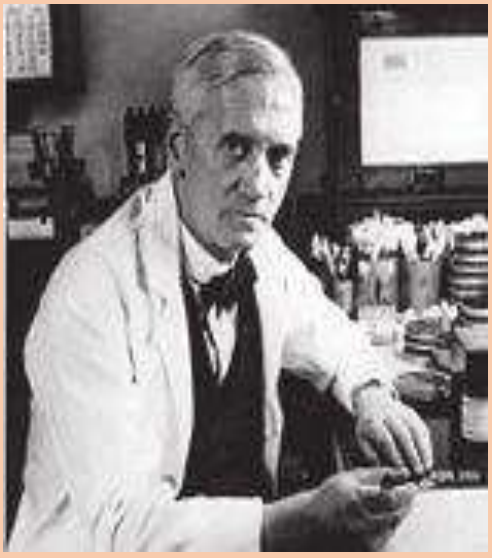
23.09.2020

Activity 1

1. In treatment, along with diagnosis medicines also have great significance. What are medicines?

Activity 2

2. Identify the scientist and write his contribution to the medical field.



Activity 3

3. Select the correct statements about antibiotics.

(a) Medicines extracted from microorganisms like bacteria, fungi etc.
(b) They are used to destroy bacteria.
(c) They are used to destroy viruses and fungi.
(d) They can be used externally and internally.

Activity 4

4.Complete the word pair.

Antifungal medicine : Fungi

_____ : Viruses

Activity 5

5. Figures A, B, C are some types of first aids. Identify and write the instances in which they are given.

A

B

C

Activity 6

6. Ravi uses antibiotics regularly without the recommendation by a doctor. Is it a good practice? Why?

To watch online Biology class 35, tap on the below image

KITE VICTERS STD-10 BIOLOGY CLASS 35

VIDEO LINKS

1.FIRST AID VIDEO LINK-1

2.FIRST AID VIDEO LINK-2

SAMAGRA SHIKSHA ABHIYAN

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DIET
PALAKKAD - ANAKKARA

A JOINT VENTURE OF DIET AND SSK, PALAKKAD

Intervention Based on Effective Leisure Learning
Inter Bell
DIET PALAKKAD

STUDENT SUPPORT MATERIAL

FOR

STANDARD 10 BIOLOGY

SOLDIERS OF DEFENSE

WORK SHEET FOR CLASS 36

ON 14-12-2020

1. The doctor demanded blood for treating Raju, who had met with an accident, He can accept only the same group of blood of him , “as two antibodies are present on his blood”.

a) what is the blood group of Raju?

b) Blood groups are divided +ve and -ve .What is the basis of this division?

2) Complete the word pair

Antigen : Red blood cells

Antibody : .....

3)”It is not necessary to detect blood group if one can accept blood from anyone” This was an argument put forward by Anil in a discussion on blood transfusion.

a) What is the basis of blood group determination?

b) Can a person receive blood from anyone?why?

4)A table indicating antigen and antibody in different blood groups is given. If there is a mistake in the table, rewrite it.

Blood Group	Antigen		Antibody	
	A	B	a	b
A	√	X	√	√
B	√	√	√	X
AB	√	√	√	√
O	X	X	√	√

Use only the symbols √ (yes) and X (no)

5)Generally blood donation doesn't affect the health of the donor . But it may affect the health of the recipient. Substantiate this statement and give your opinion.

6) Analyse the hints related to defense mechanism in plants given below . Explain the hints writing two examples for each

a) Different molecules produced by body tissues.

b) Characteristic features of the body structure.

7) In blood transfusion antibodies present in the blood plasma are of special importance. Justify this statement?

8) Tabulate the antigen and antibodies in the given blood group

Neena -Age 18 years:	Blood group A-Ve
Manu- age-20 years :	Blood group-A+ve

b) Is it possible to give Neena's blood to Manu?

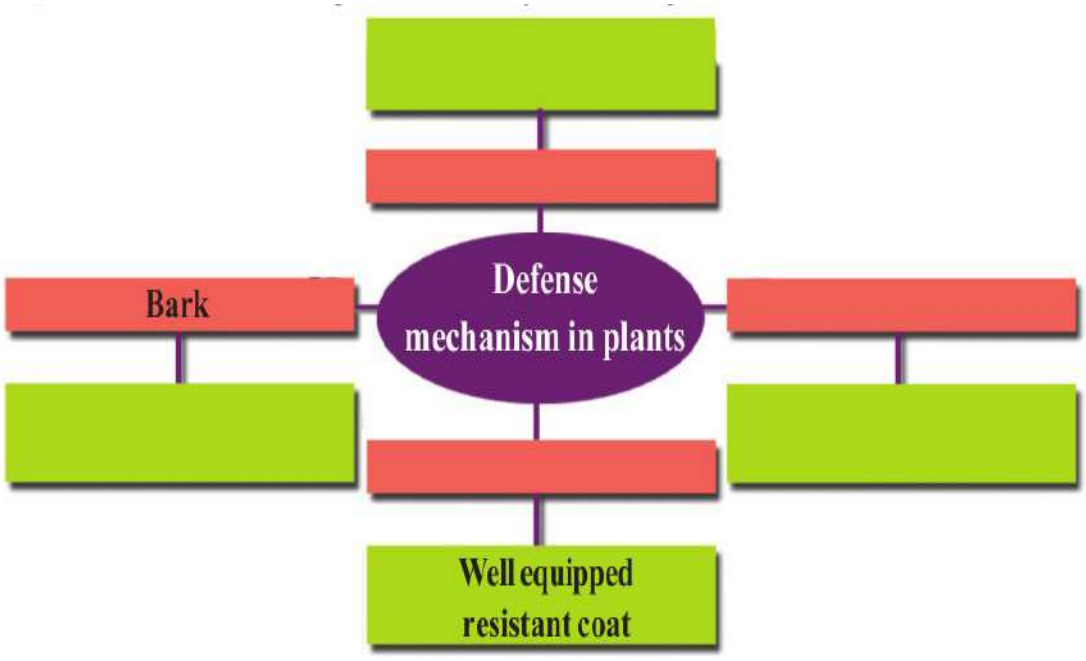
9) There are different methods in plants to prevent the entry of germs. Justify the statement giving two evidences related to cell wall.

10) What is the importance of antigen D in blood grouping?

11)Write a poster showing the things should be taken care of while trnsfusing blood

12)Write suitable slogens for promoting blood donation

13)Complete the diagram by including different defense mechanisms in plants.

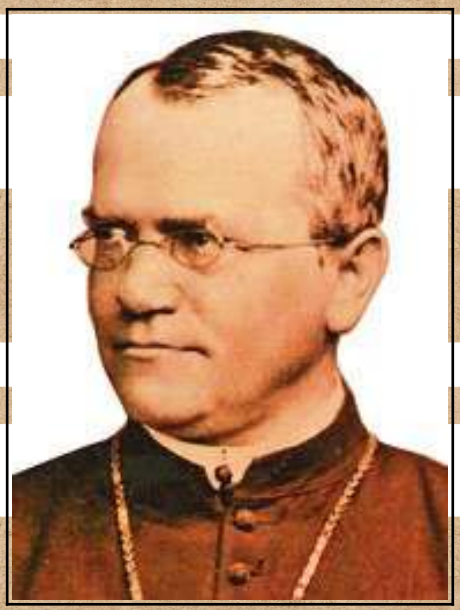


For first bell online class on 14/12/20 click

1) Given below are certain indicators exhibited by Anu in her slide presentation while conducting seminar on the topic "Emergence of Genetics". What explanations would you give for these indicators?

a)Heredity
b)Variation
c)Genetics
d)The father of Genetics

2) Identify the person from image given below. Mention the contribution of this personality to Genetics.



3) Find the word pair relationship and fill in the blanks appropriately.

a)The character which is expressed : Dominant

The character which remains hidden: ----------

b) Transmission of features of parents to offspring: Heredity

----------: Variation

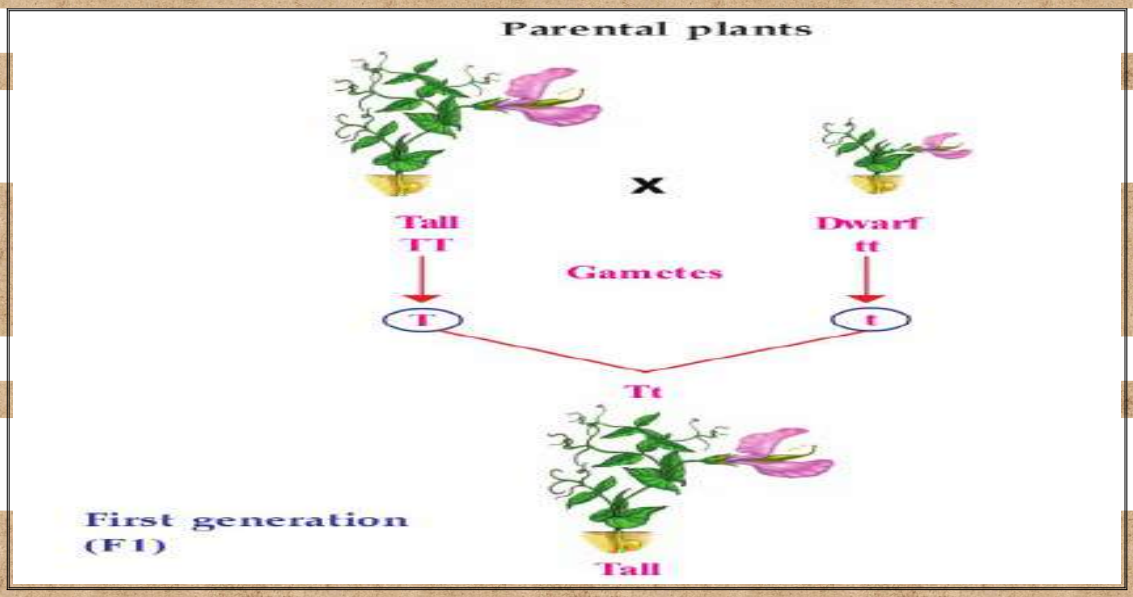
4) Write down 7 pairs of contrasting traits in pea plants used by Gregor Mendel for his experiments.

What is the scientific name of Pea plant used by Gregor Mendel?

5) Complete the flow chart with A and B, which indicate the location of Gene.

Cell → A → Chromosome → B

6) Observe the image and answer the questions mention below



Mendel crossed tall pea plant with dwarf pea plant in one of his experiment

a)The trait those were apparent in the first generation.

b)Which are the different alleles of the gene that controls the character, height?

c)How do the allele combination of the first generation differ from parental plants?

7) The note prepared by Shahana on ‘ Mendel's inferences ’ during the classroom analysis of Mendel's hybridization experiment in pea plants, based on a single trait is given below.

Analyse the statements in the note and correct those that are wrong ones.

a)One trait is controlled by a specific character.

b)One character is expressed and other remains hidden in the first generation.

c)The character that remains hidden in the first generation does not appear in the second generation.

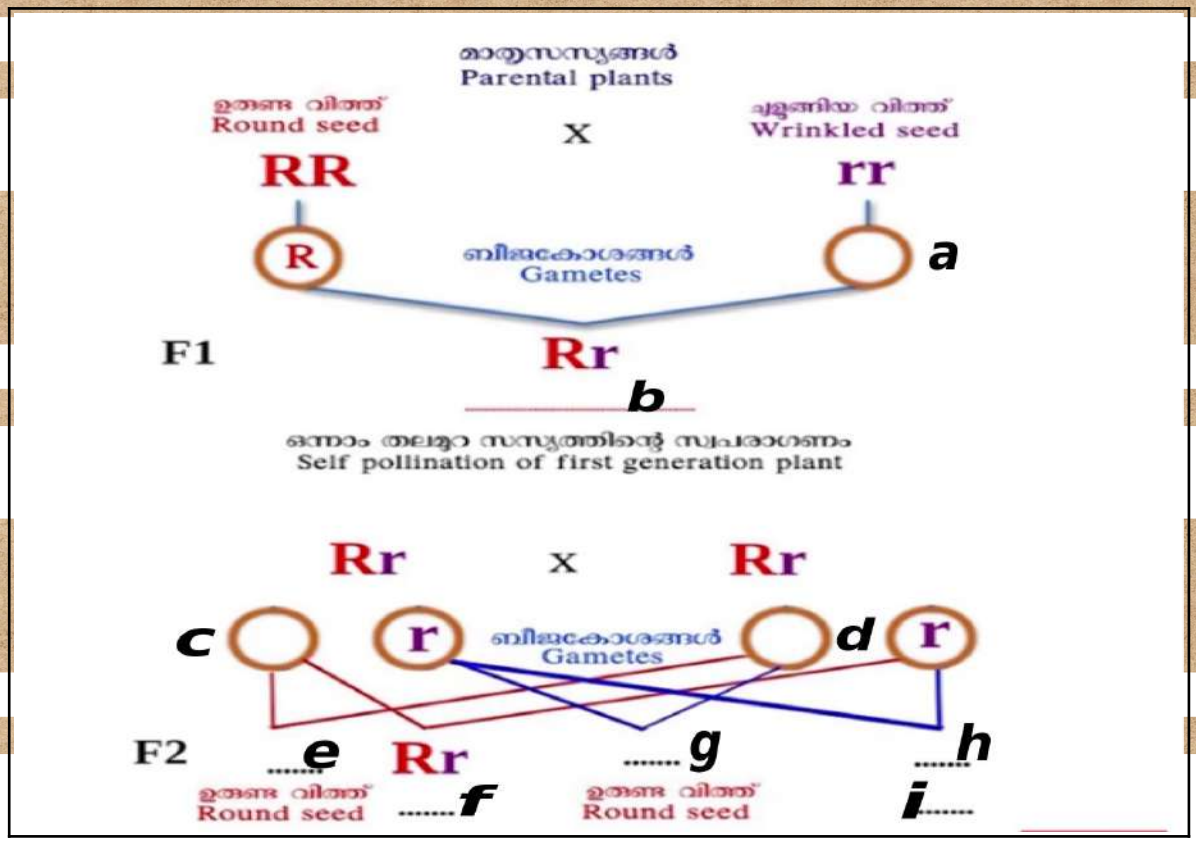
d)The ratio of characters in the second generation is 3:1.

to know more about

Gregor Johann Mendel

CLICK HERE

8)Fill in the blanks *a,b,c,d,e,f,g,h* and *i* in the illustration given below.



For watching online video class of this worksheet

CLICK HERE

"Father of Genetics"

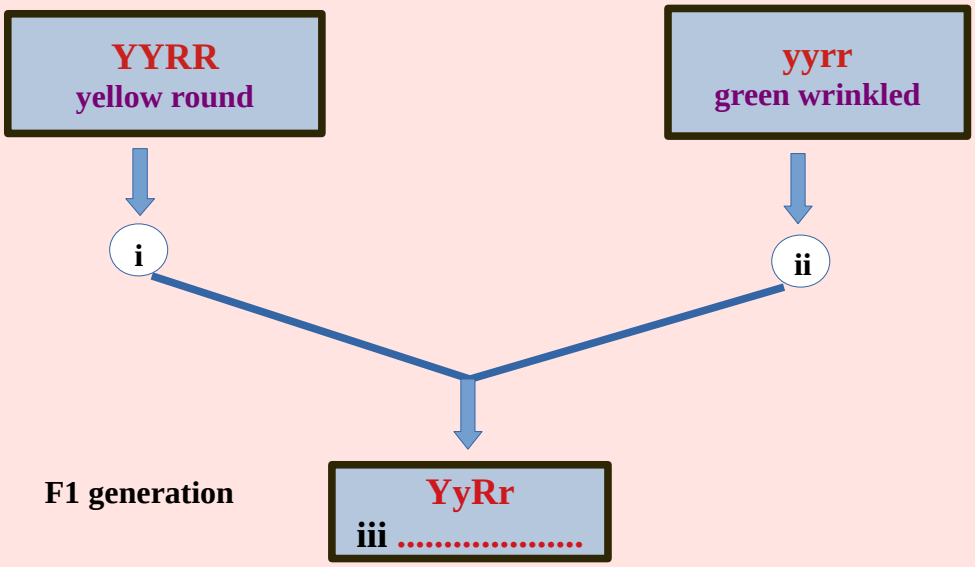
Inter Bell – a DIET and SSK Palakkad Initiative

Student support Material

BIOLOGY
STD 10
Victers Digital Class
Part No. 26

6
Unravelling Genetic Mysteries

1. An illustration showing the hybridization experiment of round and yellow seed plants with wrinkled and green seed plants is given below.



a). Fill the blanks i, ii & iii.

b). If F1 generation is self pollinated to produce F2 generation, what will be the possible gametes?

2. Differentiate between Gene and Allele.

Gene	Allele

3. Complete the illustration of the second generation obtained by the hybridization between two pairs of contrasting characters of plants. Find answer to the following questions.

Indicators: **Dominant characters Green and Round Seed**
Recessive characters Yellow and Wrinkled seed

	GR	Gr	gR	gr
.....	**GGRR** Green Round			
.....				
.....				
.....				**ggrr** yellow wrinkled

a). Write the characters different from parents that appeared in the second generation.

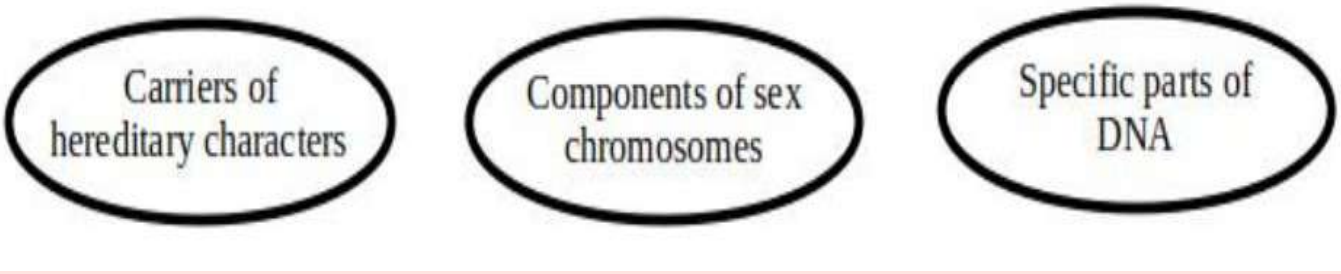
b). What is the ratio obtained in the F2 generation?

4. The genetic constitution of some plants obtained by self pollination of the tall plant with yellow fruit (TtYy) in a hybridisation experiment are given below.

Identify the tall plants with yellow fruit.

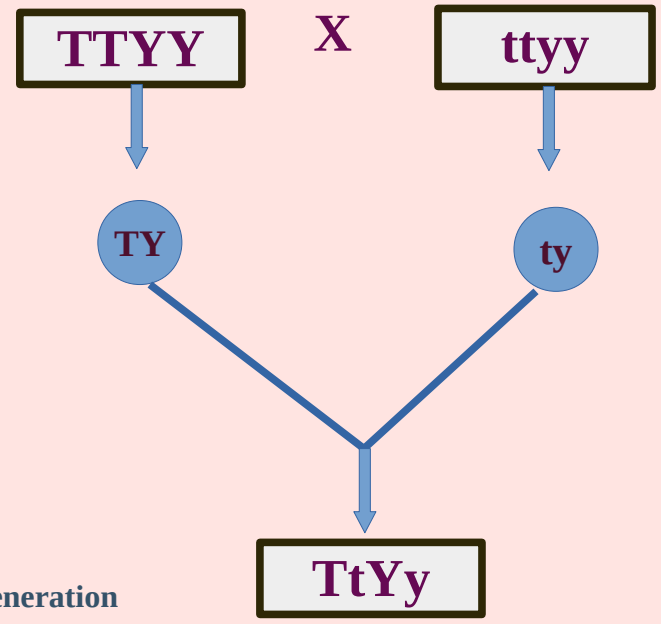
TTYy **Ttyy** **TtYy** **ttYY** **Ttyy** **TtYY**

5. Observe the statements given below and select appropriate statements to make a definition for gene.



6. An illustration of hybridisation by considering the height of the plant and colour of the cotyledon is given below.

(Dominant characters- Tall and Yellow, Recessive characters- Dwarf and green)



First generation

a) Write the characters expressed in "TTYY"?

b)What do TY and ty indicate?

c) Which character is expressed in ' TtYy '?. Identify its recessive character.

Click the link for watching the Victers Digital Biology Class No. 38:

https://www.youtube.com/watch?v=mcyx5JZMFEE

visit www.shenischool.in or whatsapp 7012498606

A JOINT VENTURE OF DIET AND SSK, PALAKKAD

BIOLOGY
STANDARD : X

VICTERS CLASS: 39
DATE:23/12/2020

CLICK HERE:

1). Identify the word pair and fill in the blanks.

a) Adenine : Thymine
Guanine :.....

b) DNA : Thymine
RNA : .....

2).Find out the odd one and mention the general character of others.
Adenine, Cytosine, Uracil, Guanine

3). Find out the nitrogen base which is not included in RNA?
Adenine, Thymine, Cytosine, Uracil

4). Analyse the given nitrogen bases and pair the nitrogen bases as seen in DNA.

Thymine

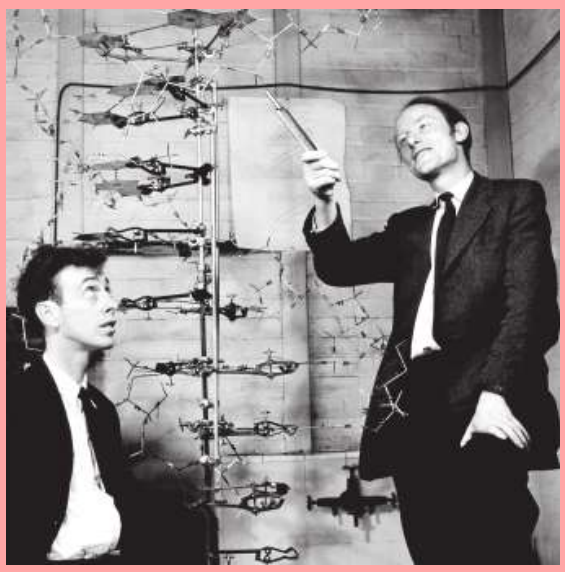
Guanine

Uracil

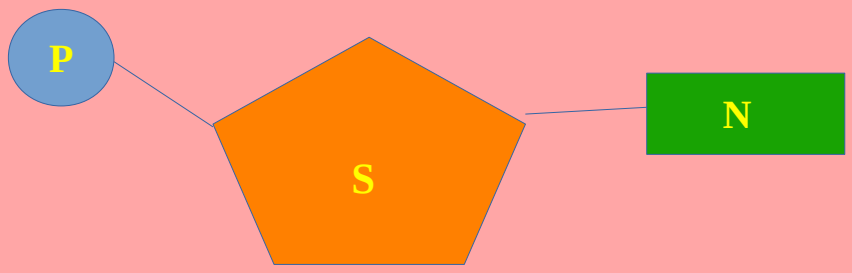
Cytosine

Adenine

5) Identify the 1962 Nobel prize winners,what is their contribution to the world of science?



6). Observe the figure given below and answer the following questions.



a) Identify the figure.
b) What do P, S and N indicate?

7). **'Nucleotides are seen only in DNA'**. Do you agree with this statement? Justify your answer

8). Pick out the wrong statements and correct it.

- In DNA, the adenine pairs only with cytosine and guanine pairs only with thymine.
- Carriers of heredity are the genes present in DNA.
- DNA has adenine, thymine, cytosine, uracil nucleotides.
- DNA is Deoxyribonucleotide.

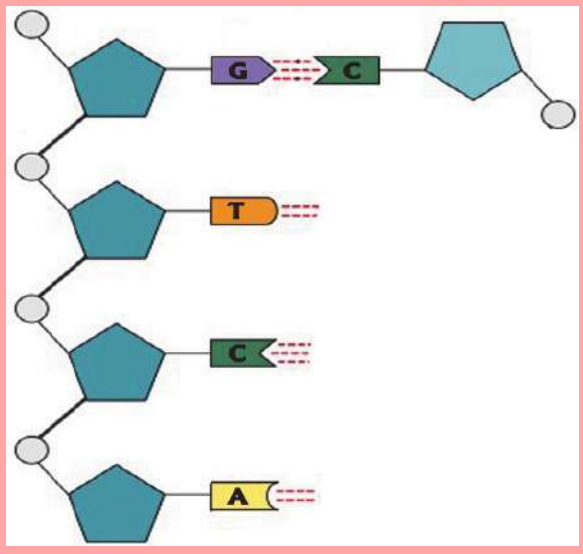
9).Mother has long straight hair, while Meenu has curly hair. These are based on the genes. But Meenu doesn't know where the genes are present. Please help her.

10). Peculiarities and building blocks of nucleic acids are given below. Arrange them in the table suitably.

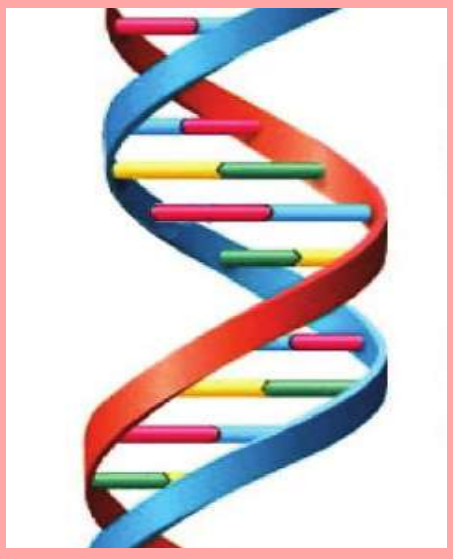
- Double helical model
- Ribose sugar
- Thymine
- Single strand
- Uracil
- Deoxyribose sugar

DNA	RNA

11).The arrangement of nucleotides in a DNA molecule is illustrated below. Redraw this illustration and complete it's second strand.



12). Observe the figure given below and answer the following questions.



a) Identify the figure.

b) What are the long strands made up of?

c) How the rungs are formed?

d) Which is the basic structural unit of this molecule?

1.

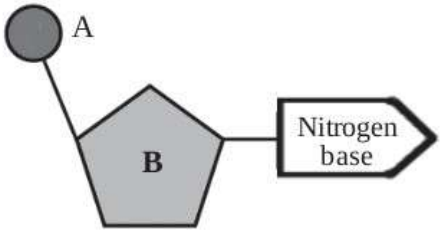
Find the word pair relationship and fill in the blanks appropriately.

a) DNA : Thymine
RNA : .....

b) Adenine : Thymine
Guanine : .....

2.

Analyse the illustration of a nucleotide molecule and answer the questions.



(a) Identify A and B in the illustration.
(b) "Nucleotides are found in DNA alone". What is your opinion regarding this statement? Substantiate.

3.

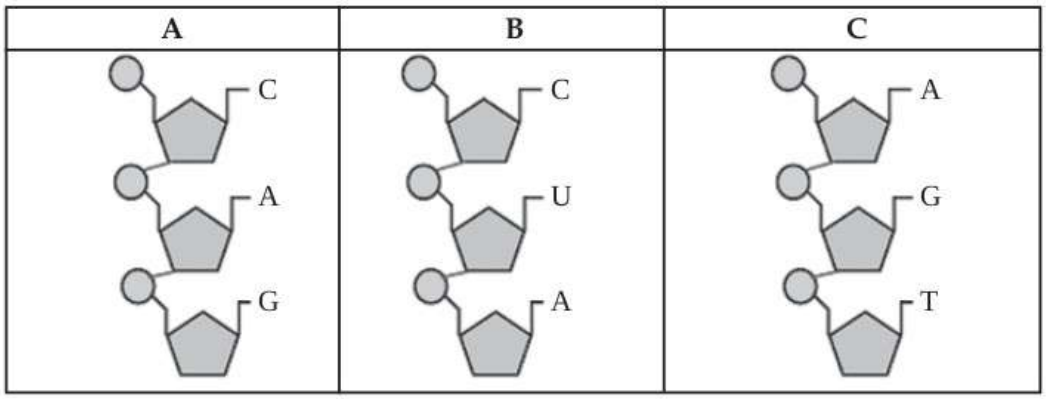
The components and features of nucleic acid are given below. Analyse them and complete the table.

a) ribose sugar
b) double helical shape
c) uracil
d) one strand
e) deoxyribose sugar
f) thymine

DNA	RNA
•	•
•	•
•	•

4.

Observe the nucleotide strands given below and answer the questions.



a) Identify the strand that is found in DNA only.
b) Identify the strand that can be found in both DNA and RNA.
c) What is a nucleotide?

5.

The practice of blaming those mothers who give birth to girl children exists even today.

(a) As a science student, how will you respond to this situation? Substantiate.

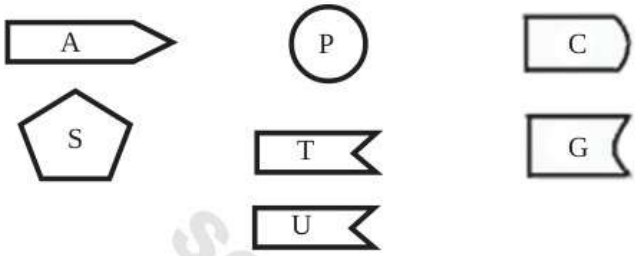
6.

The chromosomes from the father determine whether the child is male or female.

Evaluate this statement on a scientific basis.

7.

The components of nucleic acids are given below. Answer the questions through illustrations using these componenets:



a) Illustrate the nucleotide which is found only in RNA.
b) Illustrate the nucleotide which is found only in DNA.

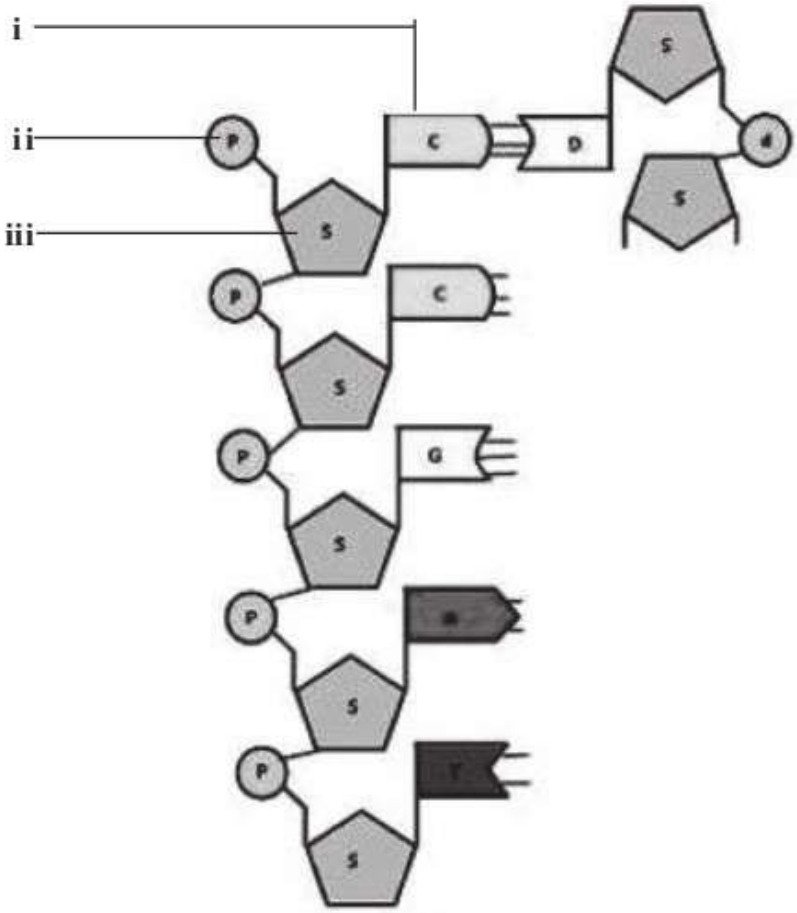
8.

Analyse the nitrogen bases given below and write the nitrogen base pairs found in DNA.

Thymine | Guanine | Uracil | Adenine | Cytosine

9.

A. The sequential arrangements of neucleotides in DNA molecule is illustrated below. Complete the illustraion by drawing the second strand of the DNA molecule.

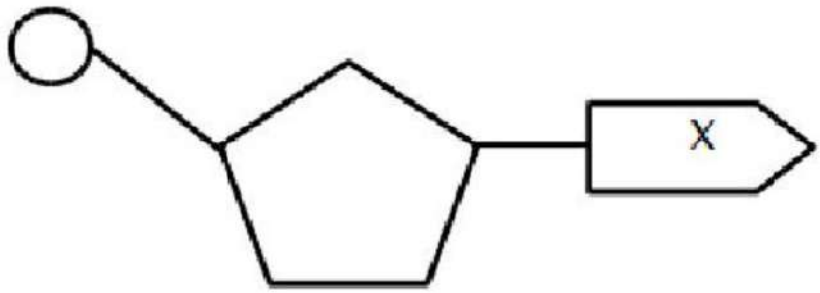


B. Tabulate the differences between DNA and RNA

	DNA	RNA
Number of strands	.....	.....
Type of sugar	.....	.....
Nitrogen bases	....	....

10.

Observe the illustration and answer the questions.



a) Identify the illustration?

b) What are the components of this molecule?

c) Name the different types of the molecule which indicates"X" in DNA?

11.

Make suitable pairs using the given nitrogen bases.

Adenine, thymine, guanine, cytosine

12.

According to the double helical model of DNA molecule, choose the correct statements from the following.

a) The DNA molecule contains nitrogen bases.

b) Three types of nitrogen bases are found in the DNA.

c) All the nitrogen bases found in DNA are also found in RNA.

d) The rungs of DNA are made of nitrogen bases.

13.

Find out the odd one? Write the common feature of others.

Adenine, thymine, uracil, cytosine

14.

Find the correct statements from the following.

A) Thymine Nitrogen base is not found in RNA.

B) Uracil nitrogen base is found in DNA.

C) Guanine Nitrogen base is found in DNA.

a) A and B are correct

b) B and C are correct

c) A and C are correct

d) C is correct

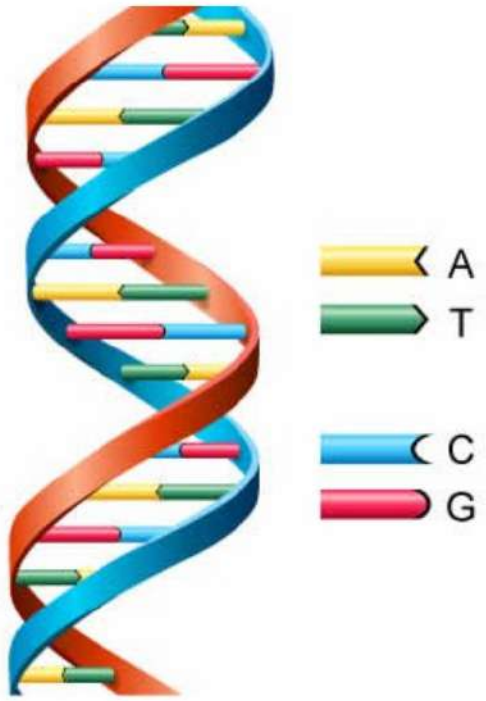
15.

Complete the table.

Nucleic acid	Number of threads	The type of sugar	Nitrogen bases found
A.....	2	B.....	Adenine, Cytosine, Guanine, C) .....
RNA	D.....	E.....	Adenine, Cytosine, Guanine, F) .....

16.

Observe the picture given below and answer the questions.



a) What does the picture indicate?

b) Which are the components of its long strands?

c) What are the components of rungs?

17.

Correct mistakes if any in the underlined part.

A) Thiamine is a nitroge base not found in DNA

b) Adenine is a nitrogen base found in RNA

c) rRNA is a part of the ribosome

d) The amino acids are carried to the ribosome by mRNA.

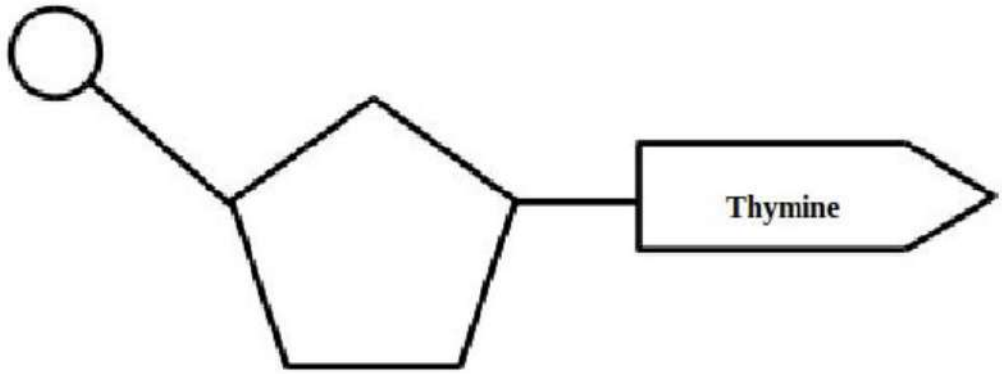
18.

"There is nothing scientific in blaming mothers who only give birth to female child"

Do you agree with this statement?Why?

19.

Which of the following is a nitrogen base complementary to the nitrogen base given in the illustration?



a) Uracil b) Cytosinec) guanine d) adenine

20.

From the given chromosome makeup, find out the genetic makeup of males and females respectively.

a) 22+XY, 22+ XX

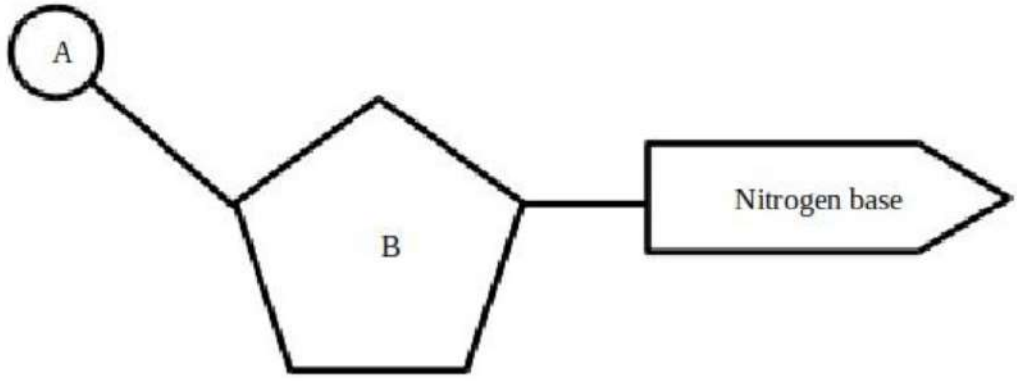
b) 22+X, 22+XX

c) 44+XY, 44+XX

d) 44+XX, 44+XY

21.

Observe the illustration.



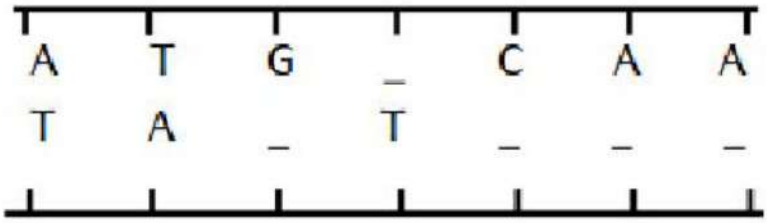
a) Identify the illustration?

b) Identify the molecules A and B in the illustration?

c) Which are the nitrogen bases present in DNA molecule?

22.

Complete the illustration of DNA.



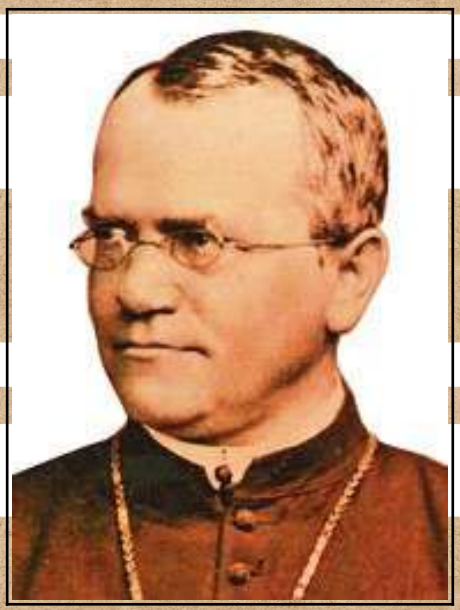
23.

Write down the steps of protein synthesis in correct sequences.

1) Given below are certain indicators exhibited by Anu in her slide presentation while conducting seminar on the topic "Emergence of Genetics". What explanations would you give for these indicators?

a)Heredity
b)Variation
c)Genetics
d)The father of Genetics

2) Identify the person from image given below. Mention the contribution of this personality to Genetics.



3) Find the word pair relationship and fill in the blanks appropriately.

a)The character which is expressed : Dominant

The character which remains hidden: ----------

b) Transmission of features of parents to offspring: Heredity

----------: Variation

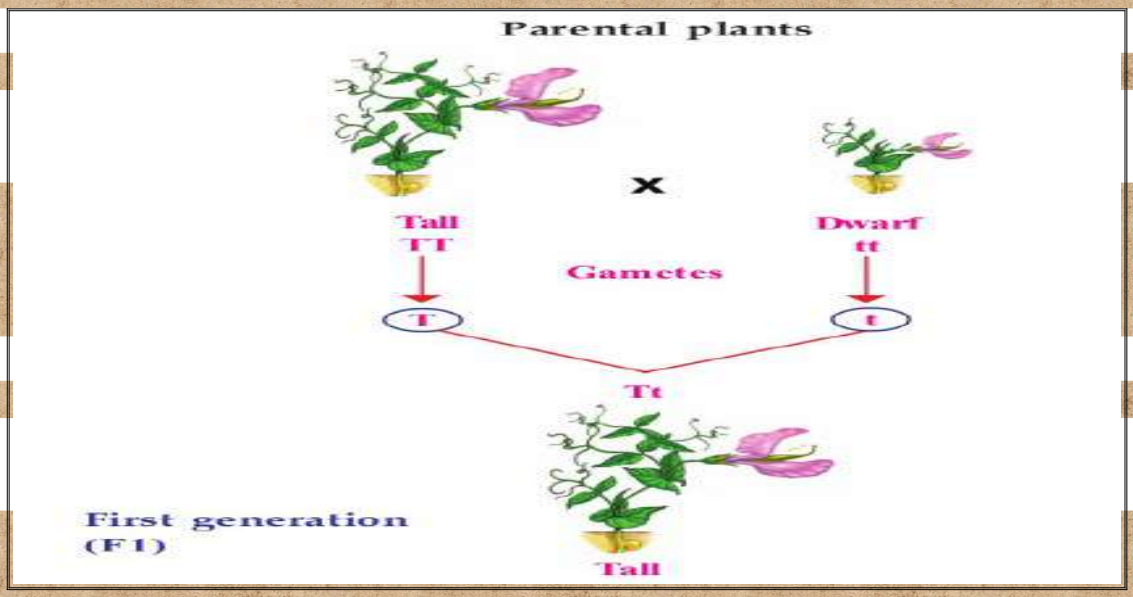
4) Write down 7 pairs of contrasting traits in pea plants used by Gregor Mendel for his experiments.

What is the scientific name of Pea plant used by Gregor Mendel?

5) Complete the flow chart with A and B, which indicate the location of Gene.

Cell → A → Chromosome → B

6) Observe the image and answer the questions mention below



Mendel crossed tall pea plant with dwarf pea plant in one of his experiment

a)The trait those were apparent in the first generation.

b)Which are the different alleles of the gene that controls the character, height?

c)How do the allele combination of the first generation differ from parental plants?

7) The note prepared by Shahana on ‘ Mendel's inferences ’ during the classroom analysis of Mendel's hybridization experiment in pea plants, based on a single trait is given below.

Analyse the statements in the note and correct those that are wrong ones.

a)One trait is controlled by a specific character.

b)One character is expressed and other remains hidden in the first generation.

c)The character that remains hidden in the first generation does not appear in the second generation.

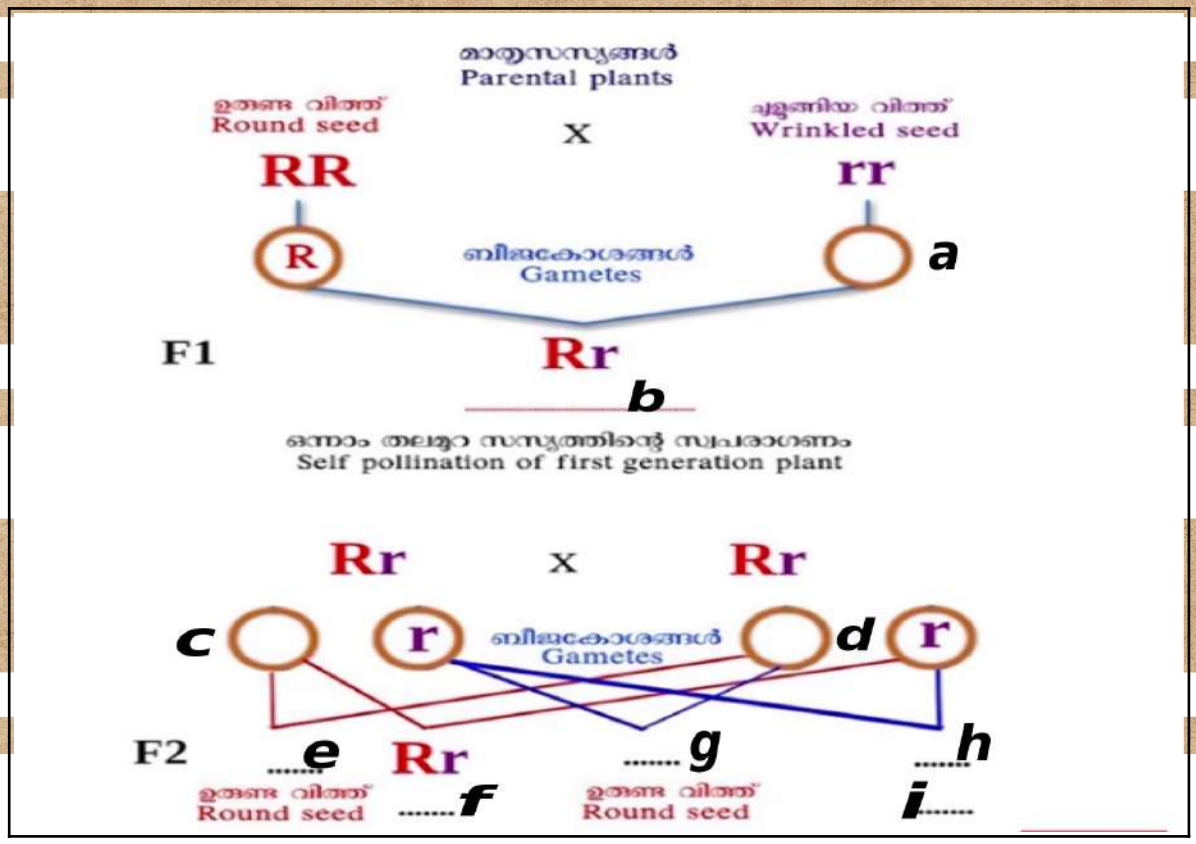
d)The ratio of characters in the second generation is 3:1.

to know more about

Gregor Johann Mendel

CLICK HERE

8)Fill in the blanks *a,b,c,d,e,f,g,h* and *i* in the illustration given below.



For watching online video class of this worksheet

CLICK HERE

"Father of Genetics"

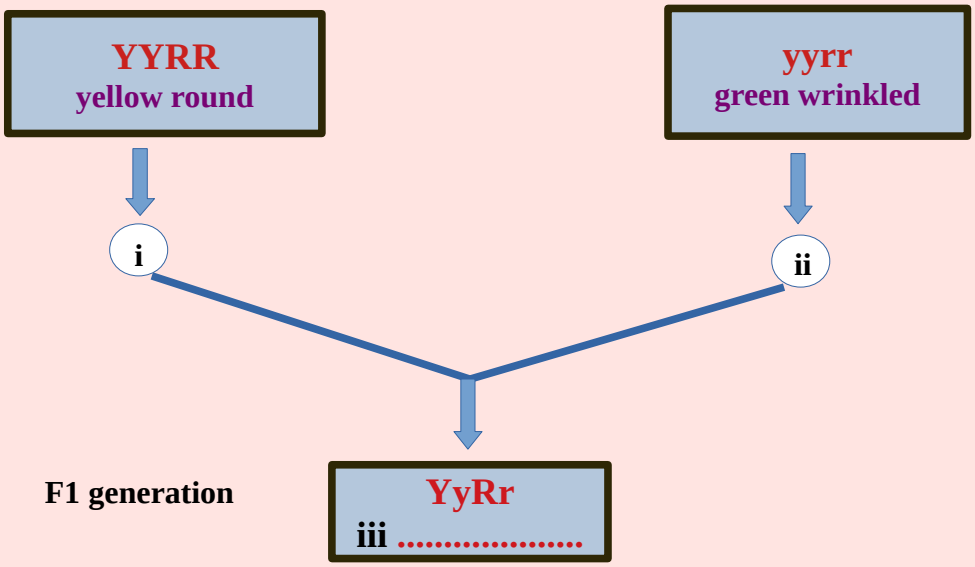
Inter Bell – a DIET and SSK Palakkad Initiative

Student support Material

BIOLOGY
STD 10
Victers Digital Class
Part No. 26

6
Unravelling Genetic Mysteries

1. An illustration showing the hybridization experiment of round and yellow seed plants with wrinkled and green seed plants is given below.



a). Fill the blanks i, ii & iii.

b). If F1 generation is self pollinated to produce F2 generation, what will be the possible gametes?

2. Differentiate between Gene and Allele.

Gene	Allele

3. Complete the illustration of the second generation obtained by the hybridization between two pairs of contrasting characters of plants. Find answer to the following questions.

Indicators: **Dominant characters Green and Round Seed**
Recessive characters Yellow and Wrinkled seed

	GR	Gr	gR	gr
.....	**GGRR** Green Round			
.....				
.....				
.....				**ggrr** yellow wrinkled

a). Write the characters different from parents that appeared in the second generation.

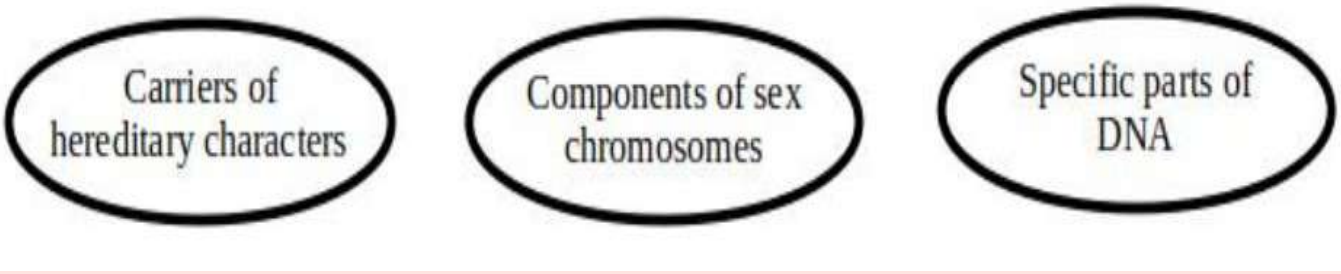
b). What is the ratio obtained in the F2 generation?

4. The genetic constitution of some plants obtained by self pollination of the tall plant with yellow fruit (TtYy) in a hybridisation experiment are given below.

Identify the tall plants with yellow fruit.

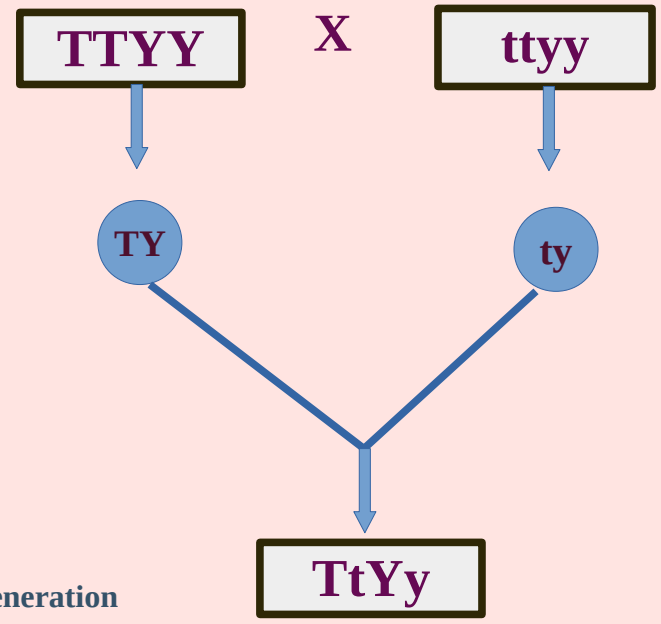
TTYy **Ttyy** **TtYy** **ttYY** **Ttyy** **TtYY**

5. Observe the statements given below and select appropriate statements to make a definition for gene.



6. An illustration of hybridisation by considering the height of the plant and colour of the cotyledon is given below.

(Dominant characters- Tall and Yellow, Recessive characters- Dwarf and green)



First generation

a) Write the characters expressed in "TTYY"?

b)What do TY and ty indicate?

c) Which character is expressed in ' TtYy '?. Identify its recessive character.

Click the link for watching the Victers Digital Biology Class No. 38:

https://www.youtube.com/watch?v=mcyx5JZMFEE

visit www.shenischool.in or whatsapp 7012498606

A JOINT VENTURE OF DIET AND SSK, PALAKKAD

BIOLOGY
STANDARD : X

VICTERS CLASS: 39
DATE:23/12/2020

CLICK HERE:

1). Identify the word pair and fill in the blanks.

a) Adenine : Thymine
Guanine :.....

b) DNA : Thymine
RNA : .....

2).Find out the odd one and mention the general character of others.
Adenine, Cytosine, Uracil, Guanine

3). Find out the nitrogen base which is not included in RNA?
Adenine, Thymine, Cytosine, Uracil

4). Analyse the given nitrogen bases and pair the nitrogen bases as seen in DNA.

Thymine

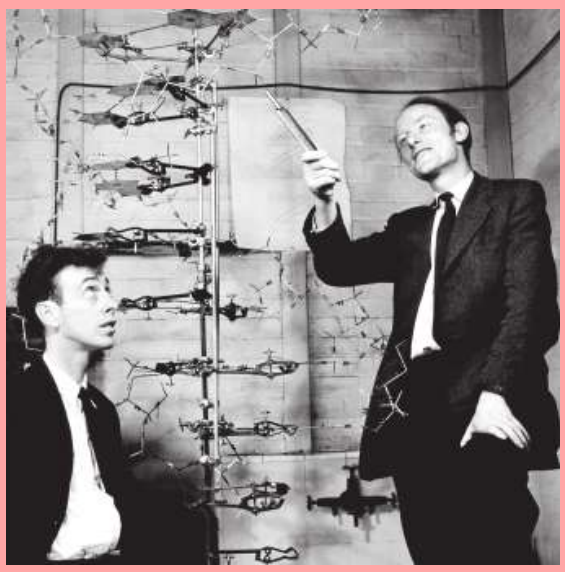
Guanine

Uracil

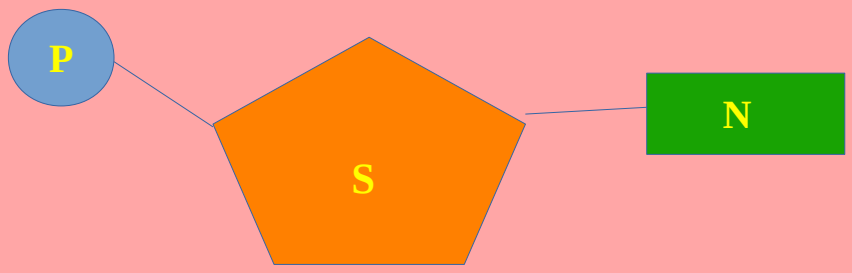
Cytosine

Adenine

5) Identify the 1962 Nobel prize winners,what is their contribution to the world of science?



6). Observe the figure given below and answer the following questions.



a) Identify the figure.
b) What do P, S and N indicate?

7). **'Nucleotides are seen only in DNA'**. Do you agree with this statement? Justify your answer

8). Pick out the wrong statements and correct it.

- In DNA, the adenine pairs only with cytosine and guanine pairs only with thymine.
- Carriers of heredity are the genes present in DNA.
- DNA has adenine, thymine, cytosine, uracil nucleotides.
- DNA is Deoxyribonucleotide.

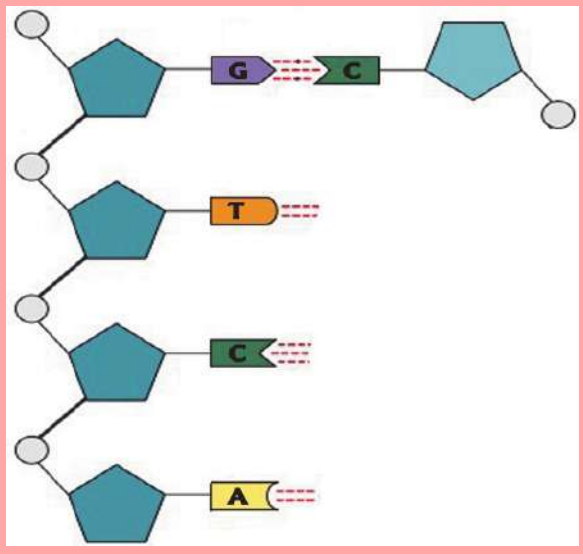
9).Mother has long straight hair, while Meenu has curly hair. These are based on the genes. But Meenu doesn't know where the genes are present. Please help her.

10). Peculiarities and building blocks of nucleic acids are given below. Arrange them in the table suitably.

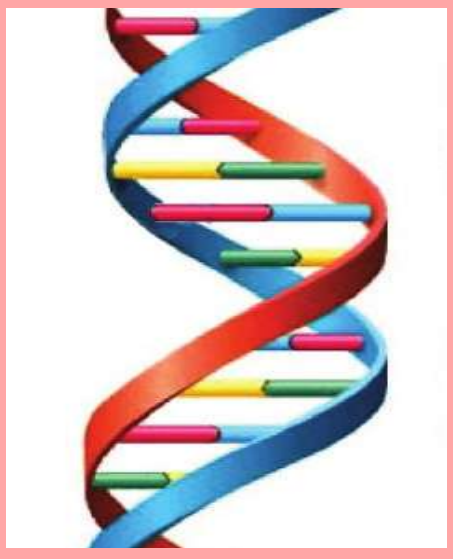
- Double helical model
- Ribose sugar
- Thymine
- Single strand
- Uracil
- Deoxyribose sugar

DNA	RNA

11).The arrangement of nucleotides in a DNA molecule is illustrated below. Redraw this illustration and complete it's second strand.



12). Observe the figure given below and answer the following questions.



a) Identify the figure.

b) What are the long strands made up of?

c) How the rungs are formed?

d) Which is the basic structural unit of this molecule?

A JOINT VENTURE OF DIET AND SSK, PALAKKAD

INTERBELL

INTERVENTION BASED ON EFFECTIVE LIESURE LEARNING

STUDENT SUPPORT MATERIAL FOR

STANDARD 10

BIOLOGY

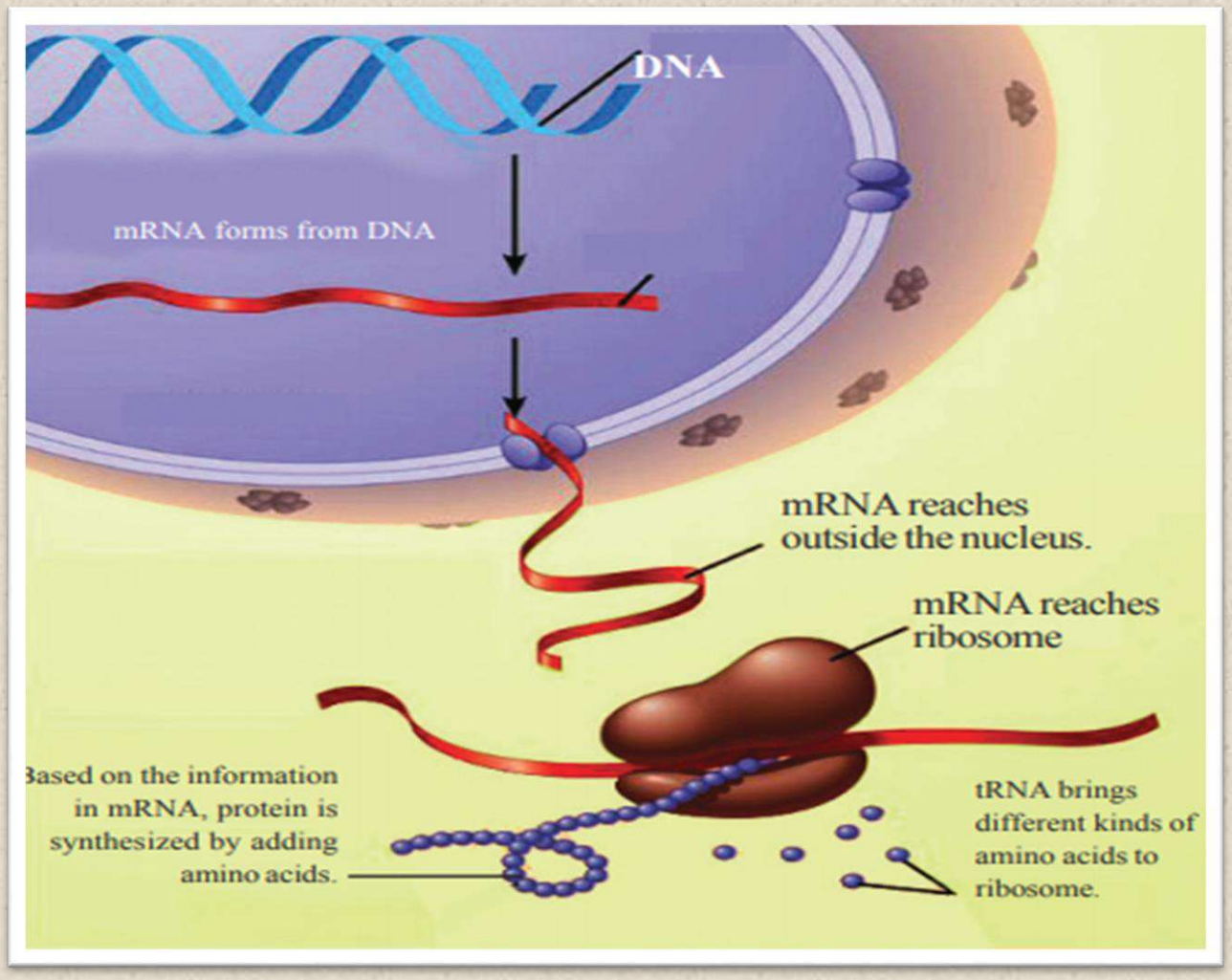
Chapter - 6

Unravelling Genetic Mysteries

WORKSHEET FOR Class 40- 29th DECEMBER 2020

Activity 1

Observe the illustration and answer the questions.



a. Name the process mentioned here.
b. Write down the different steps of this process in correct order.

Activity 2

The different stages of protein synthesis are given below. Rearrange them appropriately.

a. tRNA carries different types of amino acids to the ribosome.
b. mRNA come out from the nucleus.
c. mRNA is formed from DNA.
d. Amino acids are joined together based on the message in mRNA.
e. mRNA reaches the ribosomes.
f. protein is synthesized.

Activity 3

Observe the following illustration and answer the questions

DNA → mRNA → Amino acids are combined

a.Identify the process indicated.
b. mRNA is considered as the Messenger of DNA. Why?
c.Write the role of tRNA and ribosome in this process?

Activity 4

DNA does not participate directly in protein synthesis. Illustrate the process of protein synthesis with the help of flowchart given below

DNA

↓

mRNA formed from DNA

↓

1

↓

2

↓

3

↓

4

↓

Proteins are synthesized

Activity 5

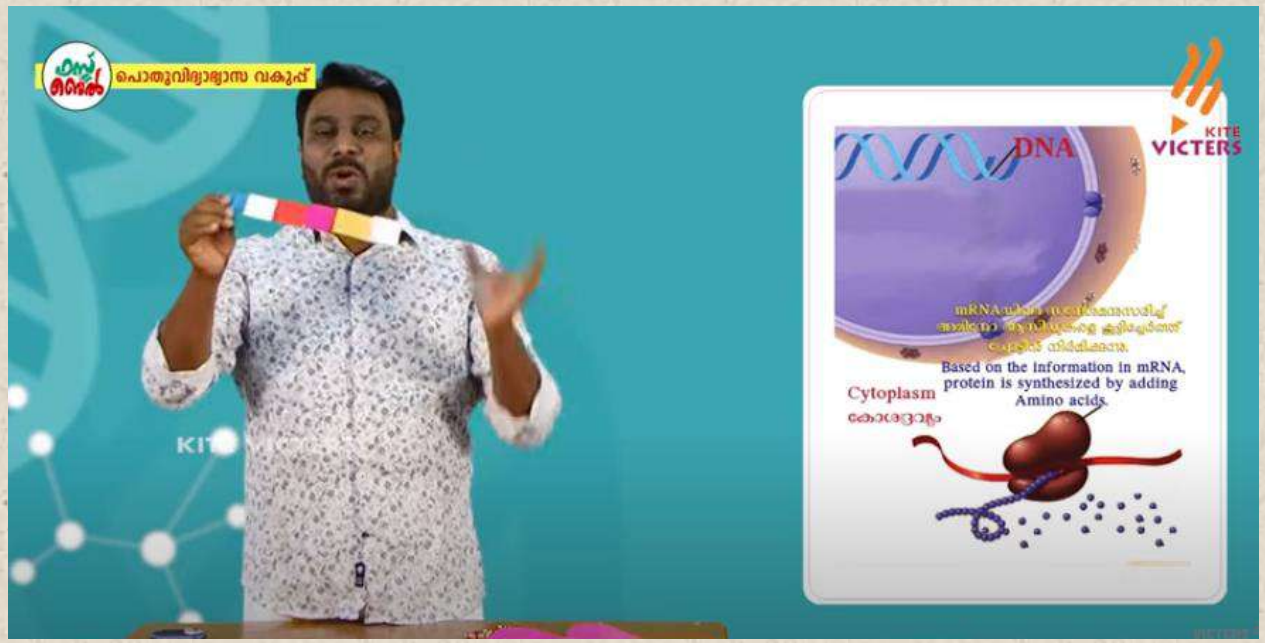
Genes which are the specific unit of DNA controls metabolic activities and are also responsible for specific characters. They control the process of protein synthesis

Raju has a doubt on the above note.
"Does the RNA have any role in protein synthesis"
What explanation would you give to Raju?

Activity-6

What are the different types of RNA involved in protein synthesis and what are their functions?

To watch online Biology class 40, tap on the below image



KITE VICTERS STD-10 BIOLOGY CLASS 40

SAMAGRA SHIKSHA, KERALA

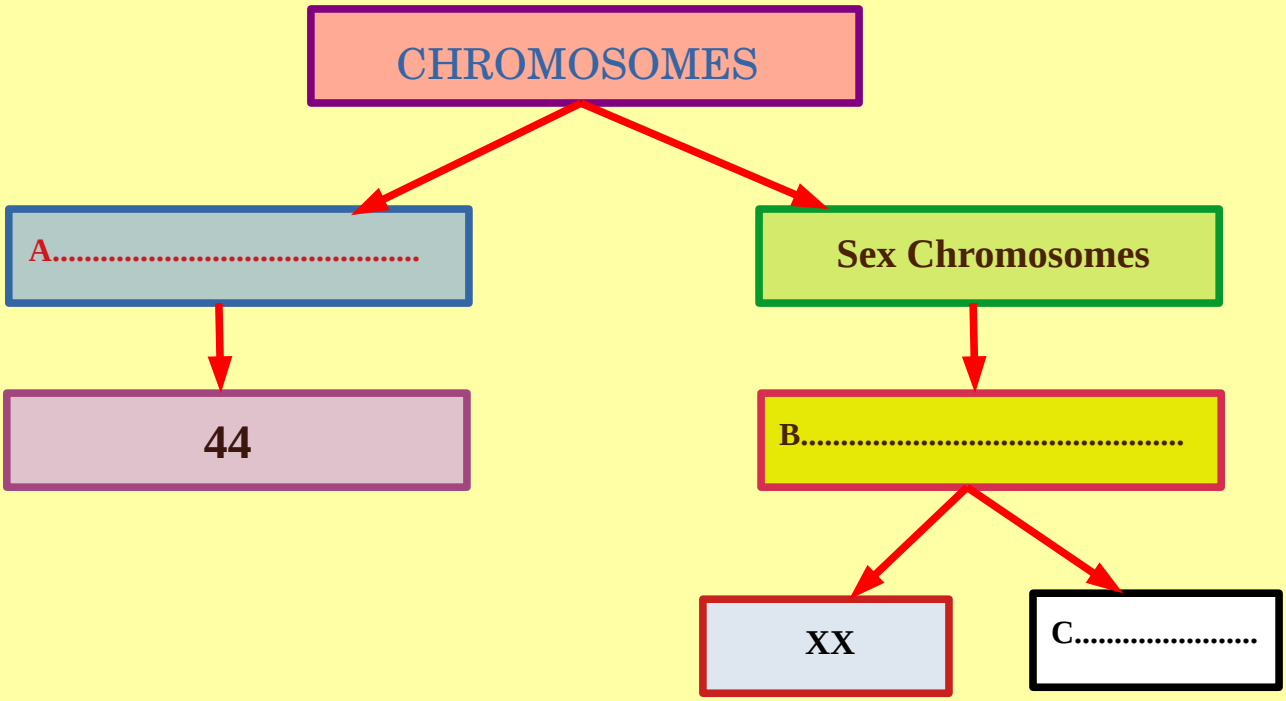
Inter Bell – a DIET and SSK Palakkad Initiative

Student support Material for standard 10 BIOLOGY

UNRAVELLING GENETIC MYSTERIES

WORKSHEET FOR CLASS 41 ON 30-12-20

1. Fill in the blanks in the illustration related to chromosomes in man.

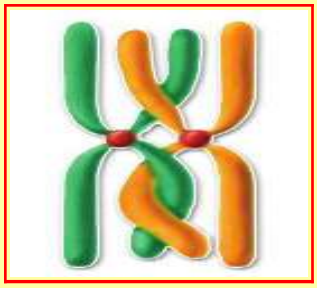


2.Identify the word pair relationship and fill in the blanks:

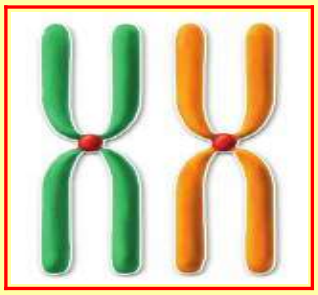
(a) Female : 44 + XX
Male : .....

(b) Chromosomes pair and exchange their parts : Crossing over
A sudden heritable changes in the organism : .....

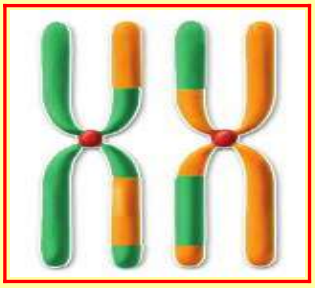
3. Analyse the illustration and answer the following questions.



1



2



3

a. Arrange the stages appropriately.

b. What is the above illustration indicates?

c. What is the significance of this process?

4. A part of the article , 'Variations in ourself' is given below.

"The features seen in offspring that are different from their parents are called variations. Certain process taking place in the initial phase of a cell division are responsible for such variations."

a. Name the process which is responsible for variations in the offspring.

b. Mention the type of cell division which are responsible for such variations.

c. "This process brings about variations in offspring". How?

5. Vipin wrote the following as situations that create variations in organisms. Choose the right ones.

a) Mutation
b) Formation of mRNA
c) Crossing over of chromosomes
d) Action of tRNA

6. While reading an online newspaper , Pradeep noticed the below headline. Answer the questions related to it.

a. What is the scientific term used to denote such a sudden change in the genetic constitution of the virus?

b. What are the reasons responsible for this variation ?

7. Arrange the links that create variations in organisms appropriately:

Indicators.

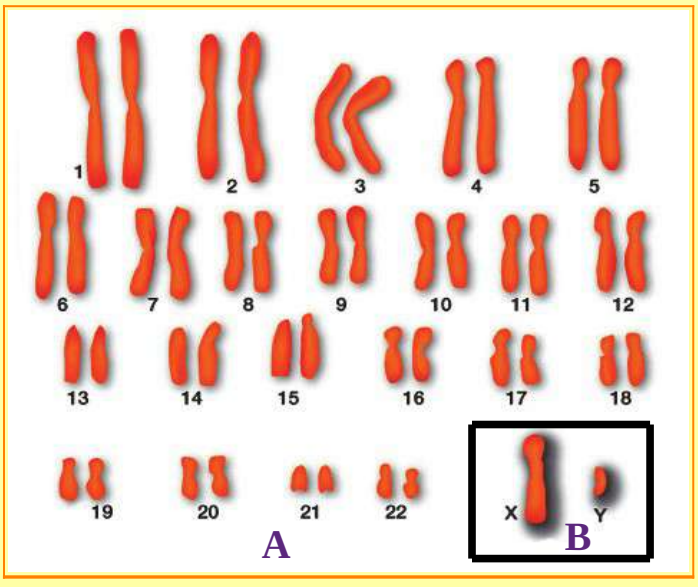
- Crossing over of chromosomes
- Mutation
- Fertilization

Duplication of DNA → ____

Change in the combination of alleles → ____

Initial phase of meiosis → ____

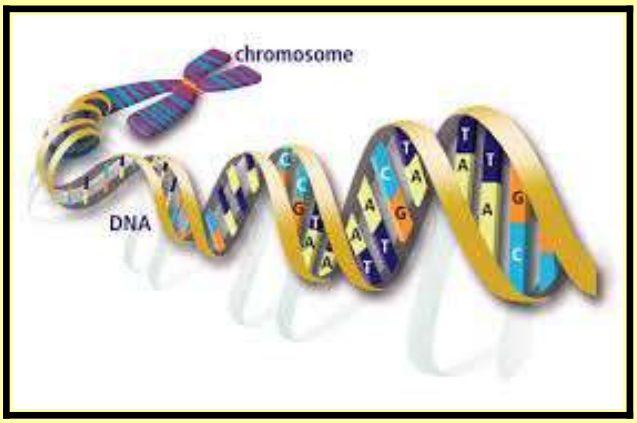
8. Examine the picture given below and answer the questions.



(a) Identify A and B.

(b) Write the chromosome number of human beings.

To watch the online class again, tap on the image below



A JOINT VENTURE OF DIET AND SSK, PALAKKAD

INTERBELL

INTERVENTION BASED ON EFFECTIVE LIESURE LEARNING

STUDENT SUPPORT MATERIAL FOR

STANDARD 10

BIOLOGY

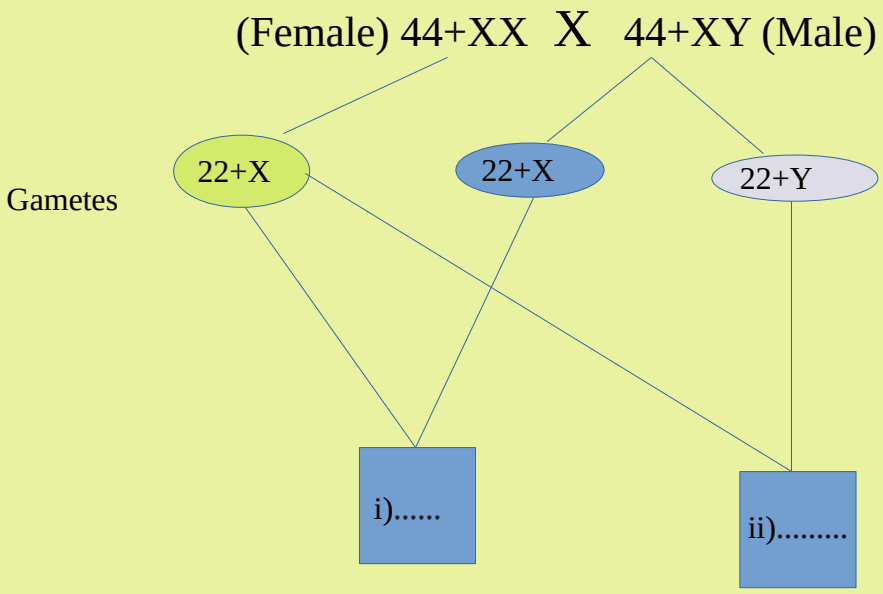
Chapter - 6

Unravelling Genetic Mysteries

1. Analyse the table related to human chromosomes and arrange the column B in accordance with column A.

A	B
Sex chromosomes	**22+X**
Somatic chromosomes	**44+XY**
The chromosomes in sperms	**22 Pairs**
The chromosomes in Ovum	**X,Y**
	22+X, 22+Y

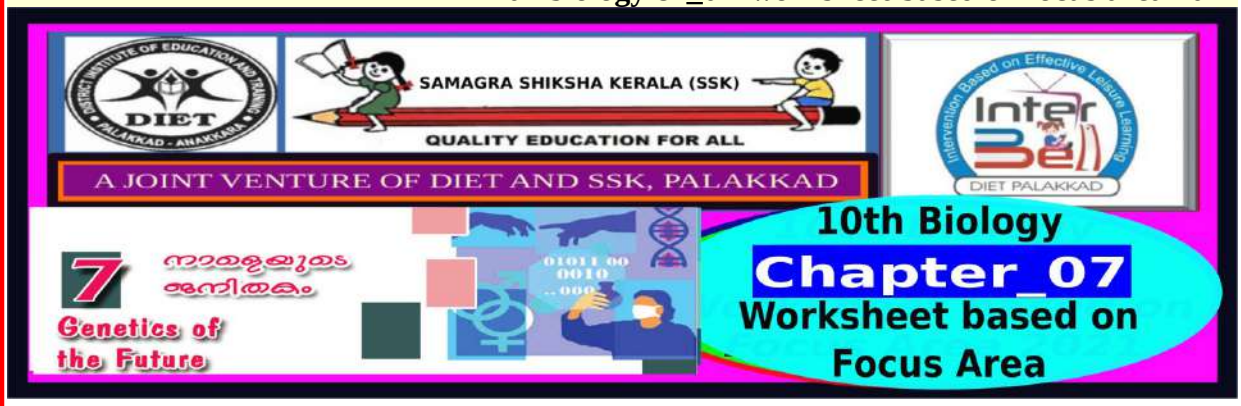
2. Observe the illustration related to sex determination in man and answer the questions



a)Fill up i &ii
b)What is the genetic mechanism that determines whether a child is male or female?
c)What does the number '44' indicate in this illustration?

3.What is the reason for the difference in the colour of the skin in people living in various parts of the world?

TO SEE THE CLASS ONCE MORE CLICK HERE BIOLOGY CLASS 42



1.

Analyse the word pair relationship and fill in the blanks:

a) Restriction endonuclease : genetic scissors
..... : genetic glue

b) DNA profiling : Tests the arrangement of nucleotides
..... : Identifies the location of a gene in the DNA.

2.

Given below are the various steps involved in the production of insulin through genetic engineering. Arrange them appropriately.

(a) Producing active insulin from this.
(b) Cutting the gene responsible for the production of insulin from human DNA.
(c) Bacteria produce inactive form of insulin.
(d) Isolating bacterial DNA.
(e) Joining the gene with bacterial DNA and inserting it in to the bacterial cell.
f) Providing a favourable medium for the multiplication of bacteria.

3.

DNA testing - Dead bodies identified.

Kollam : About twenty dead bodies of those who lost their lives in the Paravoor firework tragedy were identified through DNA test and handed over to relatives.

Didn't you read the newsreport?

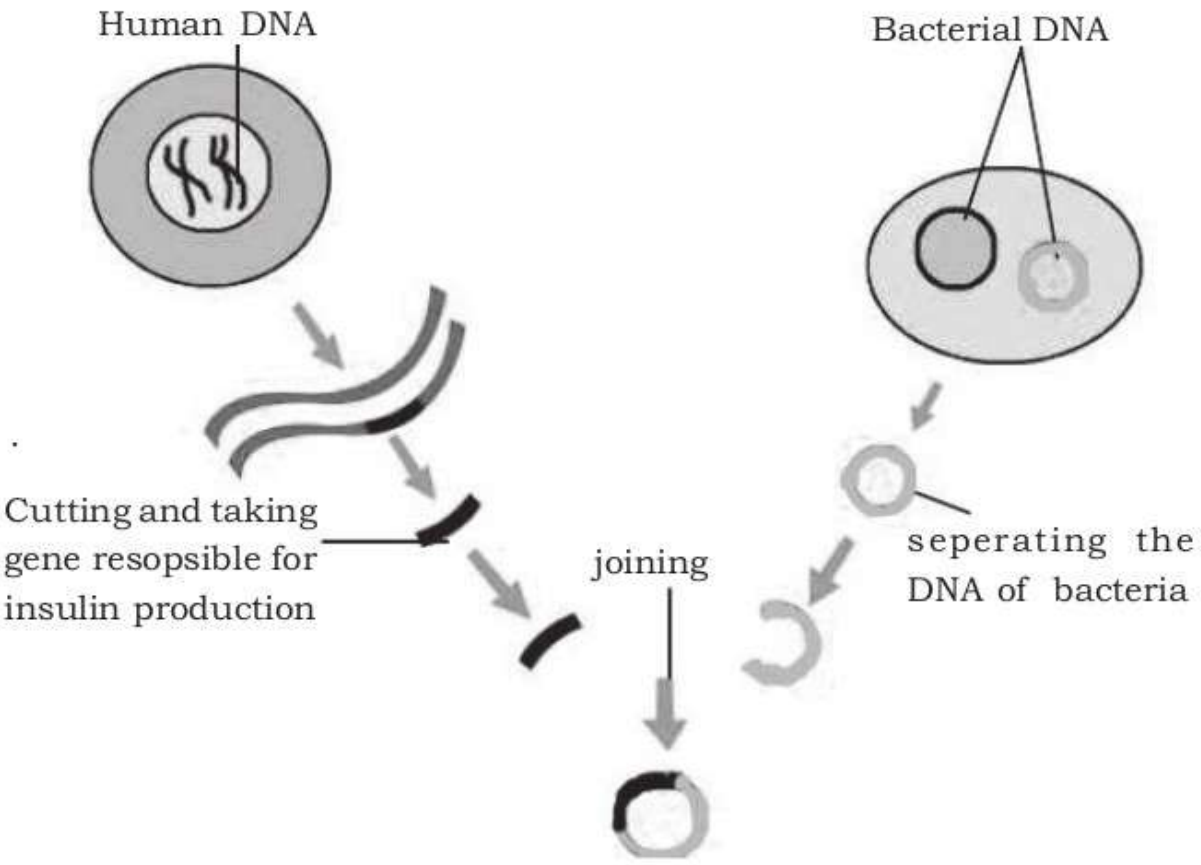
(a) What is the basis of DNA test?
(b) How is it possible to identify relations through DNA test?

4.

What are the scope of DNA fingerprinting and gene mapping?

5.

Analyse the stages in the production of bacteria those are capable of producing insulin and answer the following questions



a) Which is the enzyme used for cutting the gene responsible for insulin production ?

b) Which is the mechanism used for transfer of genes from one cell to another ?

c) Which is the enzyme used for joining gene responsible for insulin production with the DNA of the bacteria?

d) Name the technology referrred here.

6.

What is the importance of 'genetic scissors 'and 'genetic glue' in connection with genetic engineering ?

7.

.A rrange columns B and C in accordance with column A.

A	B	C
a) genetic glue	i) Carries foreign genes	I) Plasmid
b) genetic scissors	ii) Cut the genes	II) Junk gene
c) Vectors	iii)Join sugar and phosphate	III) Restiction endo nuclease
	iv) Join the genes	IV) Ligase

8.

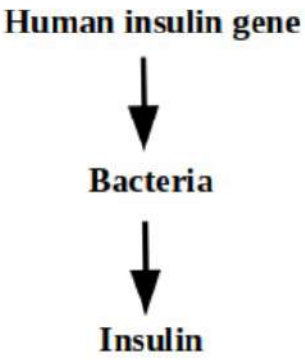
Write the significance of each of the following steps in the process of producing insulin-producing bacteria through genetic engineering.

a) The plasmid DNA is extracted.

b) DNA is deposited in the bacterial cell.

c) The desired gene is cut from the human DNA.

9.



(a)What is the technology indicated in the illustration?

(b) What is the limitation in producing insulin using the method mentioned in the illustration ?

(c)What is the solution that biotechnology has come up with to overcome this?

10.

How does the new genes become part of target cell through genetic engineering?

11.

Who invented DNA finger printing? How does this technology help in detecting crimes?

12.

Identify the relationship between the words given below and fill in the blanks.

Genetic scissors :restriction endonuclease

Genetic glue :.....

13.

Different steps in the synthesis of genetically modified bacteria which can produce human insulin is given below .Arrange them in the correct order.

a) separates bacterial DNA

b) cuts the gene which controls the synthesis of insulin.

c) DNA is inserted into the bacterial cell .

d) bacteria synthesizes inactive insulin

e) Provides suitable conditions for the multiplication of bacteria

f) Joins insulin producing gene with the bacterial DNA

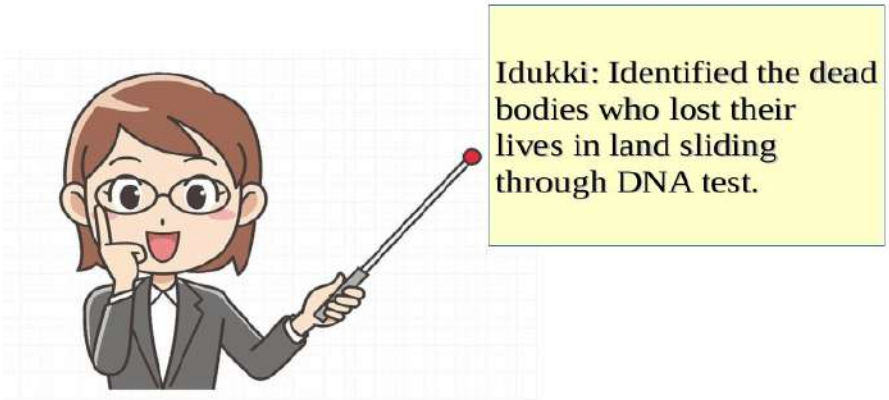
14.

Identify the photo and answer the questions given below.

Write the name of the scientist.
What was his contribution to science?

15.

Analyse the newspaper report and and write down answers for the questions given below.



What is the basis of DNA test?
How is it possible to identify relations through DNA Test?
How could we identify the real culprit through DNA fingerprinting?

BIOLOGY STD :10
WORKSHEET :43
VICTERS CLASS
DATE :5/1/2021

ACTIVITY 1

Given below are the various steps involved in the production of insulin through genetic engineering .Arrange them appropriately .

a) ***Producing active insulin from this .***

b) ***Cuting of insulin gene from Human DNA.***

c) ***Bacteria produce inactive form of insulin .***

d) ***Isolating bacterial DNA(plasmid).***

e) ***Joining insulin gene with bacterial DNA (plasmid) and inserting it into the bacterial cell.***

ACTIVITY 2

“Insulin producing bacteria created” -news report .

Arya raises the following doubts about the news .What explanation would you give ?

a) ***Which is the technology that helped to create insulin producing bacteria ?***

b) ***Will the next generation of this bacteria be able to produce insulin? Give reason.***

ACTIVITY 3

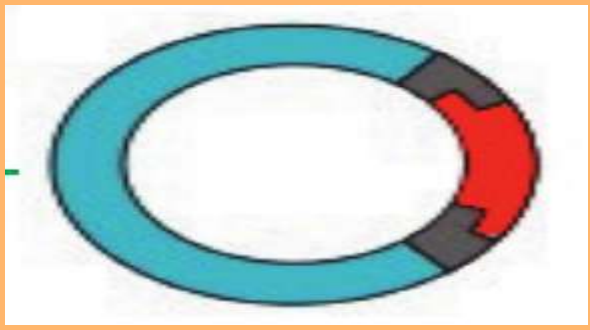
Analyse the word pair relationship and fill in the blanks

a) Restriction endonuclease : genetic scissors.

---------- : genetic glue.

ACTIVITY 4

Observe the given figure and answer the questions .

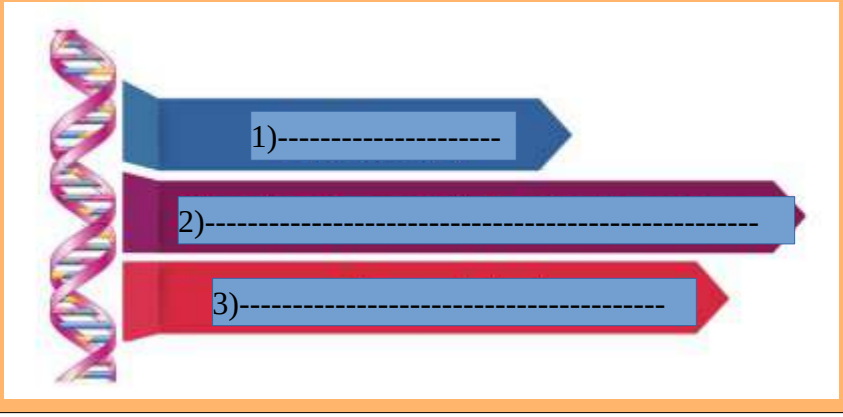


a) Write the role of vectors in genetic engineering?

b) Which is the commonly used vector?

ACTIVITY 5

List out 3 scopes encountered in the field of genetic engineering.



ACTIVITY 6

Which among the following statements are true ?

a) Plasmids are used as vectors in genetic engineering .

b) The technology used to locate the position of gene is called gene therapy .

c)Junk genes are functional genes .

d)A gene from one cell is transferred to another cell using suitable vectors .

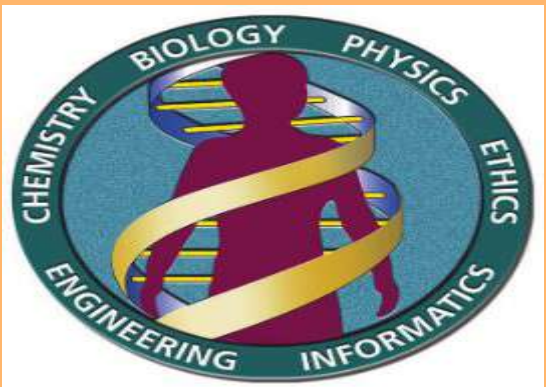
ACTIVITY 7

Is gene therapy a solution to genetic diseases ?

What is your response to Lakshmika's doubt ?

ACTIVITY 8

Identify the logo



a) When was it started ?

b) what is the relevance of this Project ?

ACTIVITY 9

Complete the information regarding the Human Genome Project

Human genome has about 24000 functional genes.

CLICK HERE TO VIEW ONLINE BIOLOGY CLASS 43

SAMAGRA SHIKSHA ABHIYAN

QUALITY EDUCATION FOR ALL

A JOINT VENTURE OF DIET AND SSK, PALAKKAD

WORKSHEET FOR X
CLASS NO: 44

BIOLOGY
X (E.M)

Date : 07/01/2021

LESSON :-7
Genetics Of The Future

I Arrange the column B according to column A:

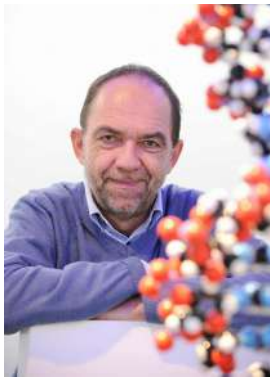
	A	B
a	Interferons	Pain
b	Insulin	Growth disorders
c	Endorphin	Viral diseases
d	Somatotrophin	Diabetes

II Analyse the doubts of Neena and write down answers for the following questions.

A Which technology creates these organisms?

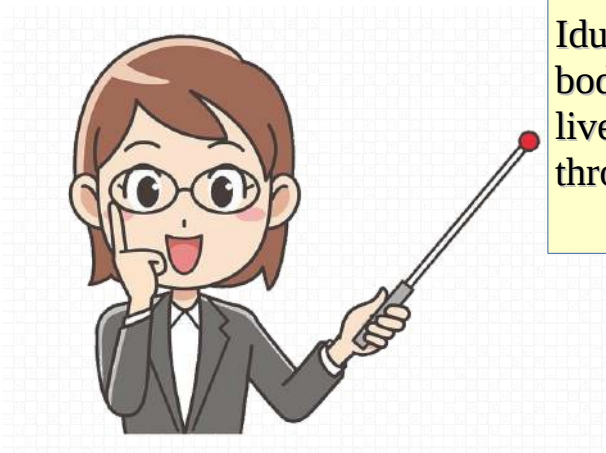
B How is it possible to create pharm animals and insect resistant plants? Give examples.

III Identify the photo and answer the questions given below.



a Write the name of the scientist.
b What was his contribution to science?

IV Analyse the newspaper report and and write down answers for the questions given below.

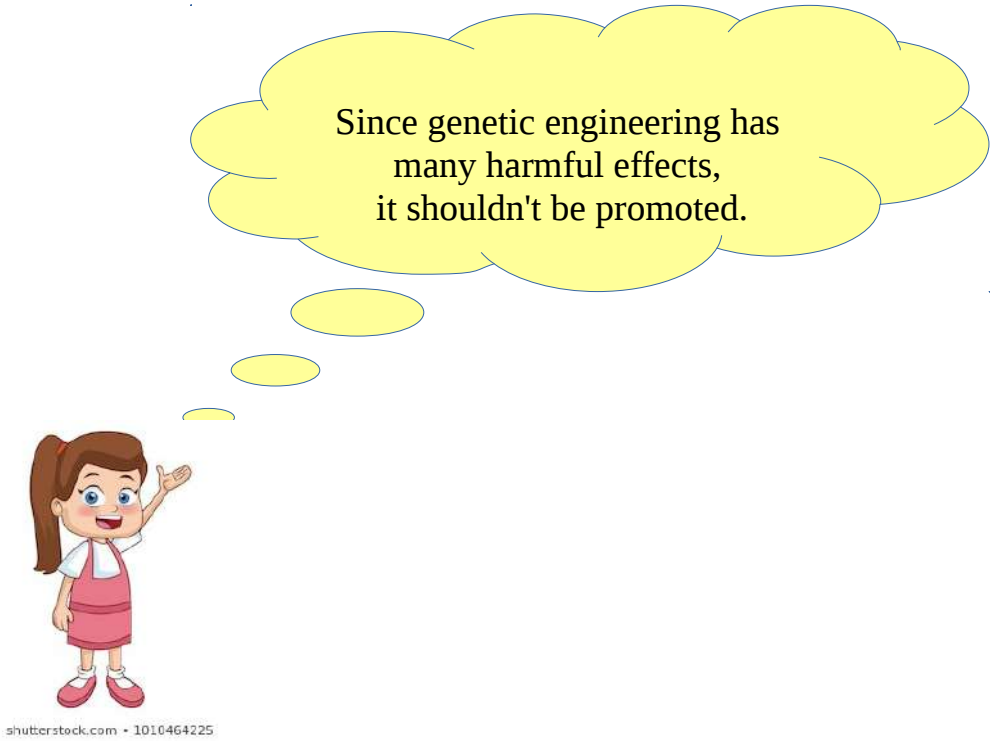


Idukki: Identified the dead bodies who lost their lives in land sliding through DNA test.

a What is the basis of DNA test?
b How is it possible to identify relations through DNA Test?
c How could we identify the real culprit through DNA fingerprinting?

V A debate is going to be organised in the class room on the topic “Genetic Engineering - scope and challenges”. List out three scopes and challenges of genetic engineering that you would like to present.

VI Evaluate the statement of Ammu presented during the class room discussion and answer the question given below.



a Do you agree with Ammu? Why?

ON LINE CLASS

1.

The stages related to the origin of life are given below. Analyse and arrange them correctly.

(a) organic compounds
(b) prokaryotic cells
(c) chemical evolution
(d) eukaryotic cells
(e) multicellular organism
(f) colonies of eukaryotic cells.

2.

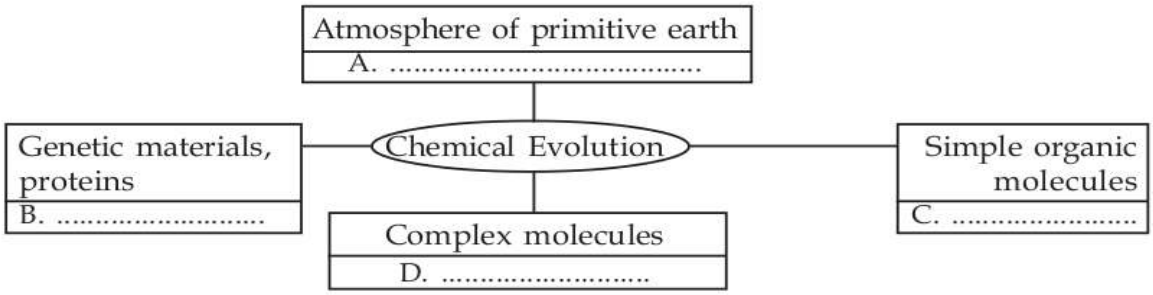
Identify the statements that are related to chemical evolution:

i) Life originated in some other planets in the universe and accidentally reached the earth.
ii) Life originated as a result of the changes that occured in the chemical substances in water, under specific conditions of primitive earth.
iii) The theory is supported by the organic substances found in the meteors that fell on earth.
iv) A.I.Oparin and J.B.S. Haldane are the proponents of the theory.

3.

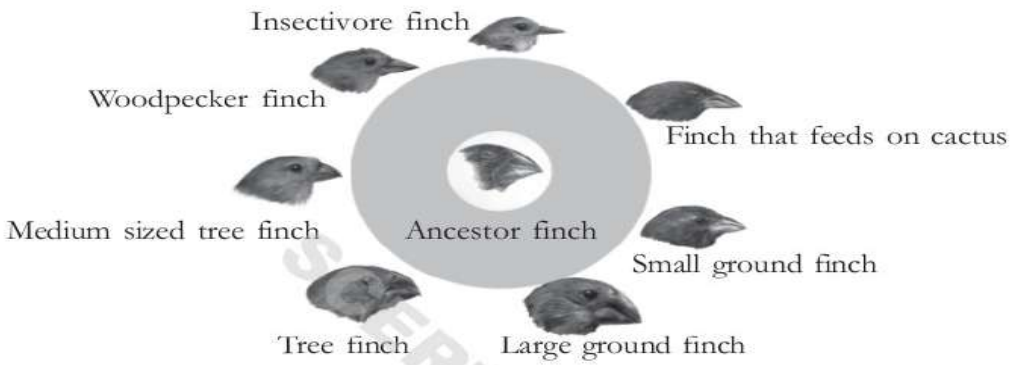
An illustration related to chemical evolution is given below. Complete the illustration using the information given in the box.

(i) RNA, DNA
(ii) Polysaccharides, peptides, fats
(iii) Presence of H_2, N_2, CO_2
(iv) Monosaccharides, aminoacids



4.

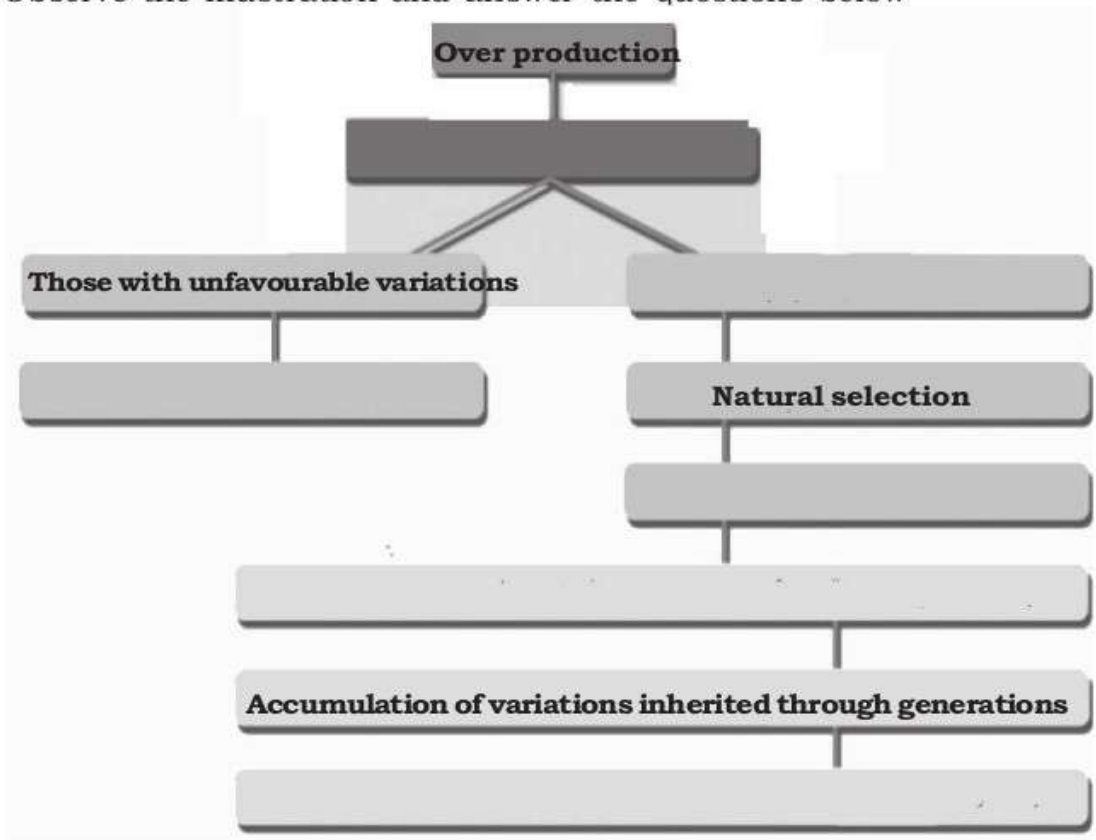
Given below is an illustration of the differences observed by Darwin in the beaks of the finches in the Galapagos island.



Finches with different beaks emerged from the ancestor finch. Substantiate the statement.

5.

Observe the illustration and answer the questions below

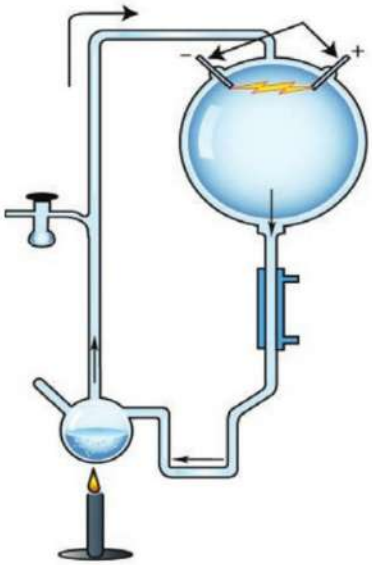


a) Complete the illustration.

b) Name the theory which is illustrated?

c) Who put forward this theory? Explain his findings with the help of suitabe example.

6.



a) Which theory of life does this experimental system indicate?
b) Who were the scientists who conducted this experiment?
c) What are the conclusions reached from this experiment?

7.

Various elements related to the origin of life are given in the box. Arrange these in the appropriate column.

Amino acids, Hydrogen sulphide, Peptide, Methane, Fats, Monosachrides

Atmosphere of primitive earth	Simple organic molecules	Complex organic molecules

8.

Ideas in the theory of evolution formulated by Charles Darwin given below. Analyse them and write down the answer to the questions.

Over production
Struggle for existence
Variation
Natural selection.

a) In these which of reason could not explain by Charles Darwin.
b) How does NeoDarwinism explain these matter ?

9.
Which of these organic particles was formed during the Urey – Miller experiment?
(Protein, fatty acids, amino acids, glucose)

10.
Rearrange the table in correct order

A	B
Oparin and Haldane	Natural Selection
Urey – Miller	Evidence for Chemical evolution
Charles Darwin	Chemical evolution

11.
The following are the main ideas in the theory of evolution formulated by Charles Darwin. Write them down in the appropriate order.

* Accumulation of vatiations inherited through generations.
* Favourable variations are transferred to the next generation.
* Struggle for existence.
* Those with favourable variations survive and others destroyed.
* Origin of new spevies
* Over production

12.
From the elements given in the box, find out and write down the element which was not present in the atmosphere of the primitive earth.

Oxygen, Hydrogen, Nitrogen,
Chlorine, Hydrogen Sulphide,
Ammonia, Carbon dioxide, Methane

13.

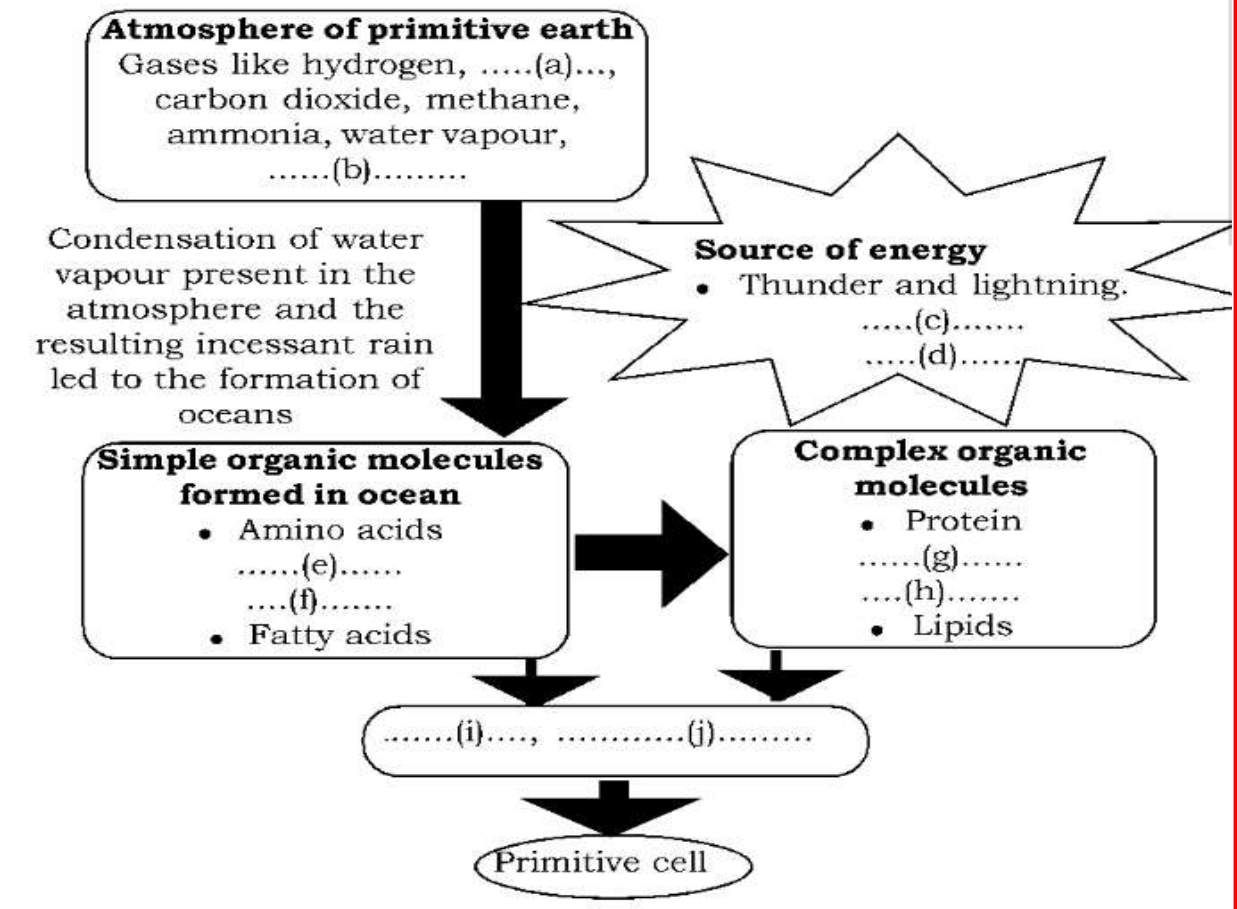
Analyze this statement and write answers to the following questions.

"The conditions in the primitive Earth's atmosphere were artificially recreated in the laboratory to form biological molecules".

a) What is the theory validated by this experiment?
b) Who were the first scientists to make this experimental theory?
c) What are the chemicals used to form bio molecules?

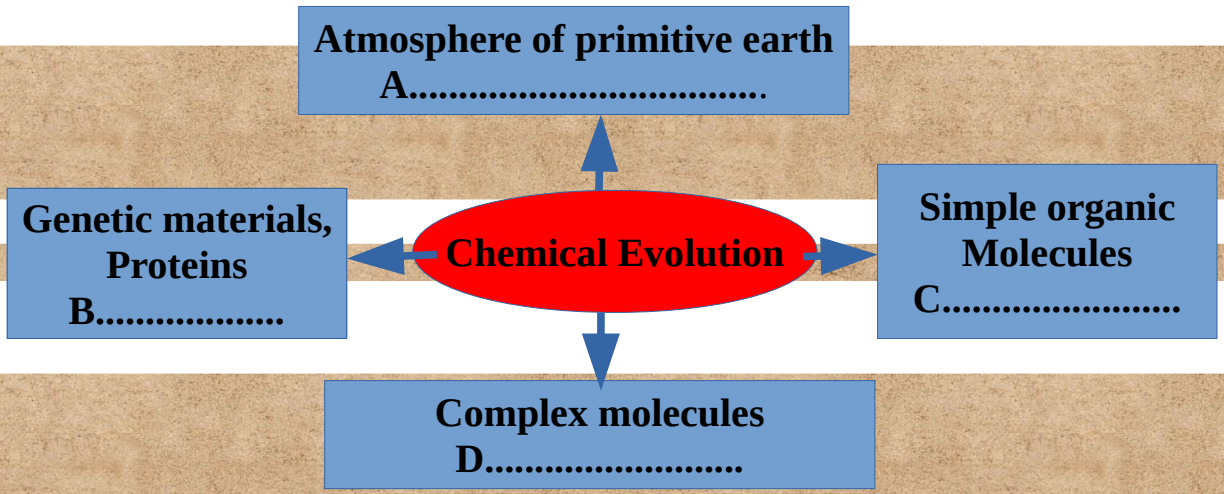
14.

Complete the illustration that list the main concepts of the theory of chemical evolution.



1. An illustration related to chemical evolution is given below. Complete the illustration using the information given in the box.

(i)RNA, DNA
(ii) Polysaccharides, peptides, fats
(iii) Presence of H 2 , N 2 , CO 2
(iv) Monosaccharides, aminoacids



2. From the elements given in the box, find and write down the element which was not present in the atmosphere of the primitive earth.

Water vapour, Oxygen, Hydrogen, Nitrogen, Chlorine, Hydrogen Sulphide, Ammonia, Carbon dioxide, Methane

3.Identify the statements that are related to chemical evolution:

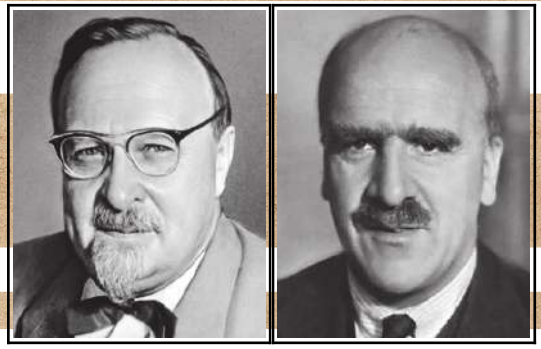
a) Life originated in some other planets in the universe and accidentally reached the earth.
b) Life originated as a result of the changes that occurred in the chemical substances in water, under specific conditions of primitive earth.
c) The theory is supported by the organic substances found in the meteors that fell on earth.
d) A I Oparin and J B S Haldane are the proponents of the theory.

4. Various elements related to the origin of life are given in the box. Arrange these in the appropriate column.

**Amino acids,
Hydrogen sulphide,
Peptide, Methane,
Fats, Monosaccharides**

Atmosphere of primitive earth	Simple organic molecules	Complex organic molecules

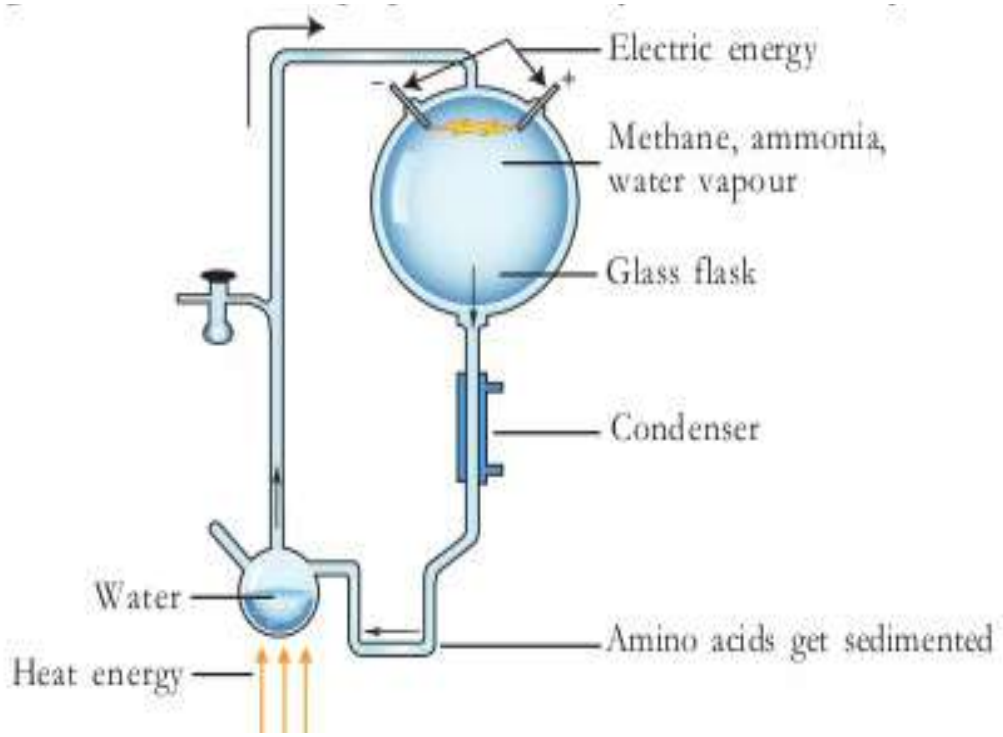
5. Identify the these personalities from image given below and mention the evolution theory put forward by them.



For watching online video class of this worksheet **CLICK HERE**

INTERBELL BIOLOGY EPISODE-46

CHAPTER-8-THE PATHS TRAVERSEDBY LIFE



1.a.Which concept of Evolution was proved by this Experimental set up?

b. Name the scientists who conducted the Experiment?

c.What are the conclusions of this experiment?

2.Giraffes were short necked at the beginning. From these ,giraffes with longnecks emerged through generations.

How is the situation explained by Lamark?
Do you agree with Lamarkism? Why?

3.Arrange the facts related with evolution in proper columns

(Amino acids, Hydrogen sulphide, Peptides, Methane, Fat, Monosaccharides)

Atmosphere of primitive earth	Simple biomolecules	complex biomolecules

Prepared by kollengode biology team,based on the class : Episode 46, Link:https://youtu.be/V-Iz6jwAtuU

BIOLOGY ONLINE CLASS 47

STANDARD X

16-01-2021

SAMAGRA SHIKSHA ABHIYAN
QUALITY EDUCATION FOR ALL
A JOINT VENTURE OF DIET AND SSK, PALAKKAD

Intervention Based on Effective Leisure Learning
Inter Bell
DIET PALAKKAD

INTERBELL
INTERVENTION BASED ON EFFECTIVE LIESURE LEARNING

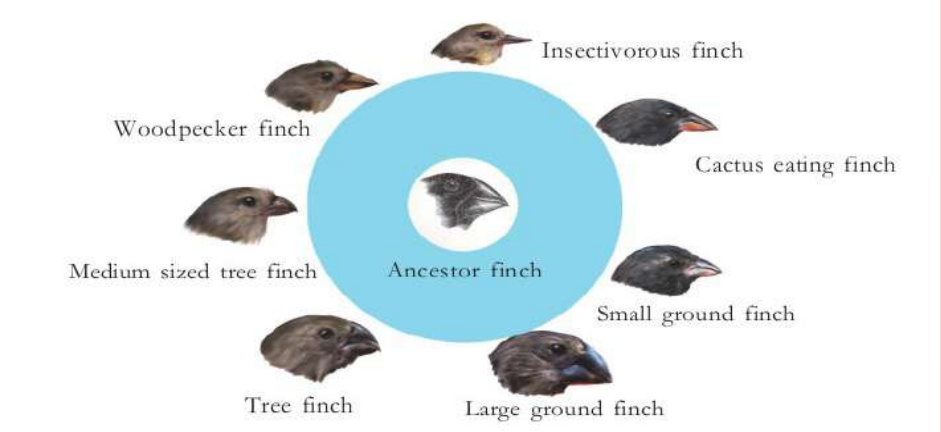
1. Identify the relationship and fill in the blanks.

(a) Theory of Evolution : Darwin
(b) Mutation Theory : .....

2. Which concept is put forward by the theory of Natural selection ?

(a) Origin of life
(b) Origin of Species
(c) Origin of Eukaryotes
(d) Chemical Evoluation of life

3. Given below is an illustration of Finches observed by Darwin in the Galapagos Island.



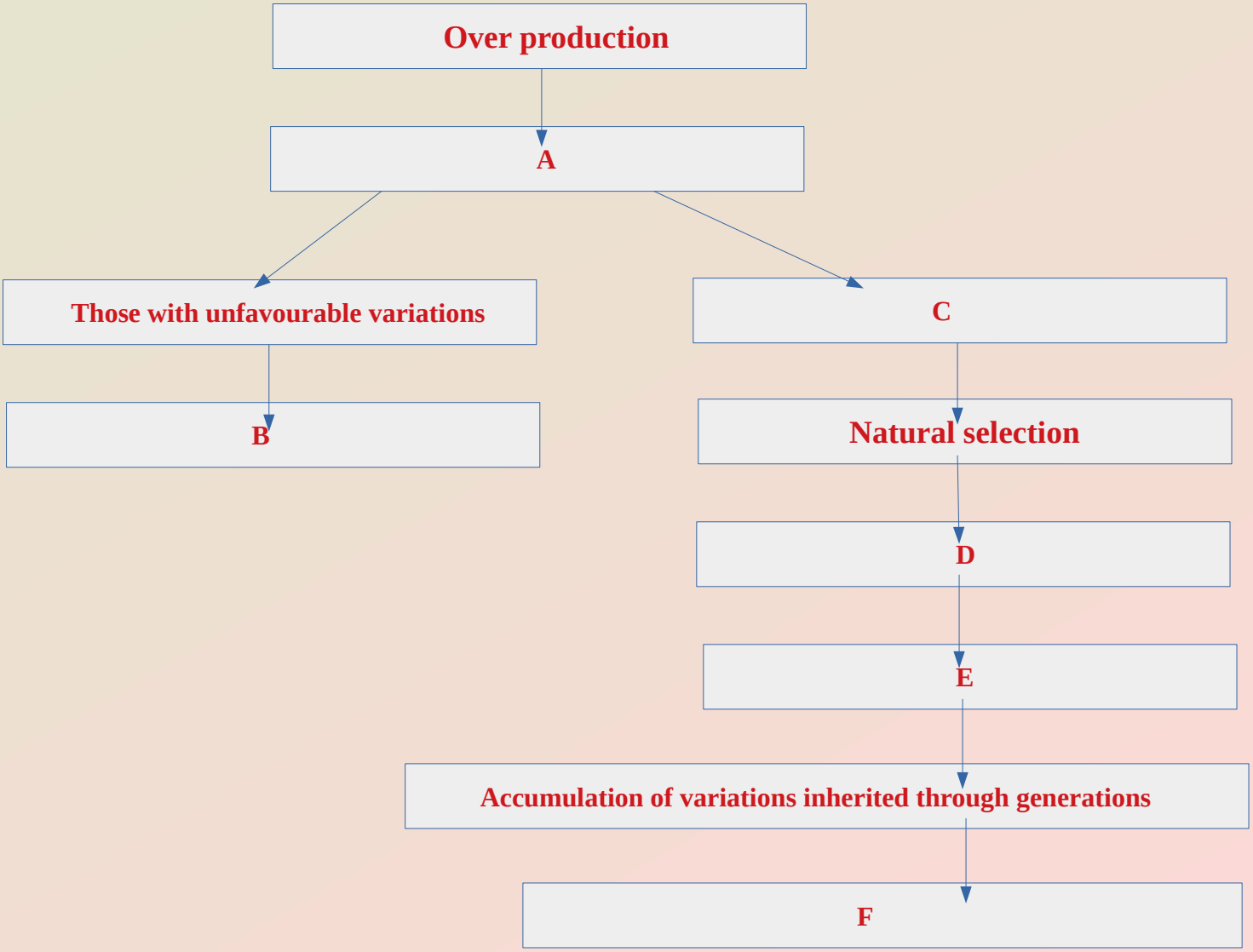
(a) Which peculiarity of the Finches attracted Darwin ?
(b) How do these peculiarities help Finches in their survival ?

4. A few concepts of Scientists like Darwin and Malthus are given below .Classify them in the table given below.

(a) Selection by nature leads to the diversity of species.
(b) Rate of food production does not increase proportionately to the increase in population.
(c) Those organism that overcome the unfavourable situations will survive.
(d) Scarcity of food and starvation leads to struggle for existance.

Concepts of Darwin	Concepts of Malthus

5. Observe the illustration and answer the questions below



(a) Complete the illustration.
(b) Name the theory which is illustrated here .
(c) Who put forward this theory ? Explain his findings with the help of suitable example.

6. A part from the article " Darwins's view of Evolution " is given below.

Variations often occur in organisms.New Species arise when these variations are subjected to Natural Selection.But Darwin could not explain the reason for these.

(a) Explain the reason for Variations on the basis of Genetics.
(b) How was Darwinism revised later ?

First bell online class

SAMAGRA SHIKSHA ABHIYAN

QUALITY EDUCATION FOR ALL

DIET

A JOINT VENTURE OF DIET AND SSK, PALAKKAD

Intervention Based on Effective Leisure Learning

Inter Bell

DIET PALAKKAD

STUDENT SUPPORT MATERIAL

FOR

STANDARD 10 BIOLOGY

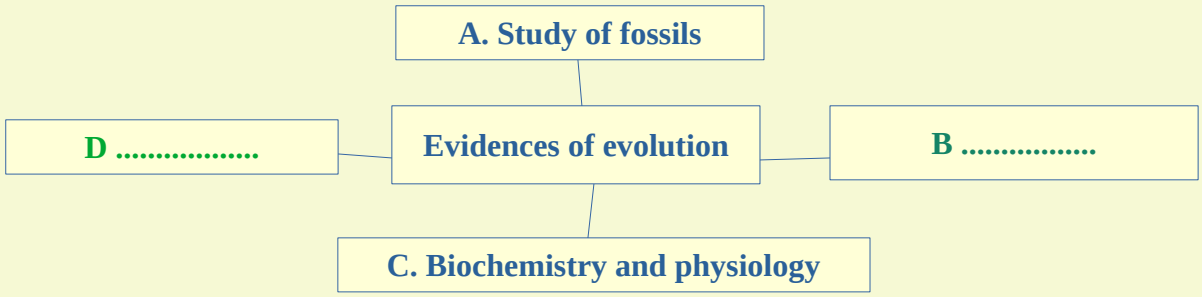
THE PATHS TRAVERSED BY LIFE

WORK SHEET FOR CLASS 48

ON 17-01-2021

1. Write the branch of science which deals with study of fossils ?

2. Complete the illustration given below, related to the evidences that support the evolution of new species.



3. Scientific study of the remnants, body parts, and imprints of primitive organisms are evidences of evolution

(a) What inferences do we arrive at, through such scientific studies?
(b) How will you explain these inferences as evidences on evolution?

4. The morphological and anatomical structure of forelimbs in lizard, bat,sea cow are shown here .Observe the illustration and answer the following questions

(a) Are these forelimbs differ morphologically or anatomically or both ? What is the reason behind this difference?

(b) what is the term used for such organs that are similar in structure but different in function

5. There is a common ancestor for all the different species that exist today. Explain how Biochemical and Physiological studies substantiate the above statement?

6. Fossils obtained from the different layers of rocks clearly indicate the evolution of eukaryotes from prokaryotes

(a) What are fossils?

7. The table given below shows the difference in aminoacids obtained from a comparative study of the β chain of haemoglobin of different organisms. Analyse the table and answer the questions:

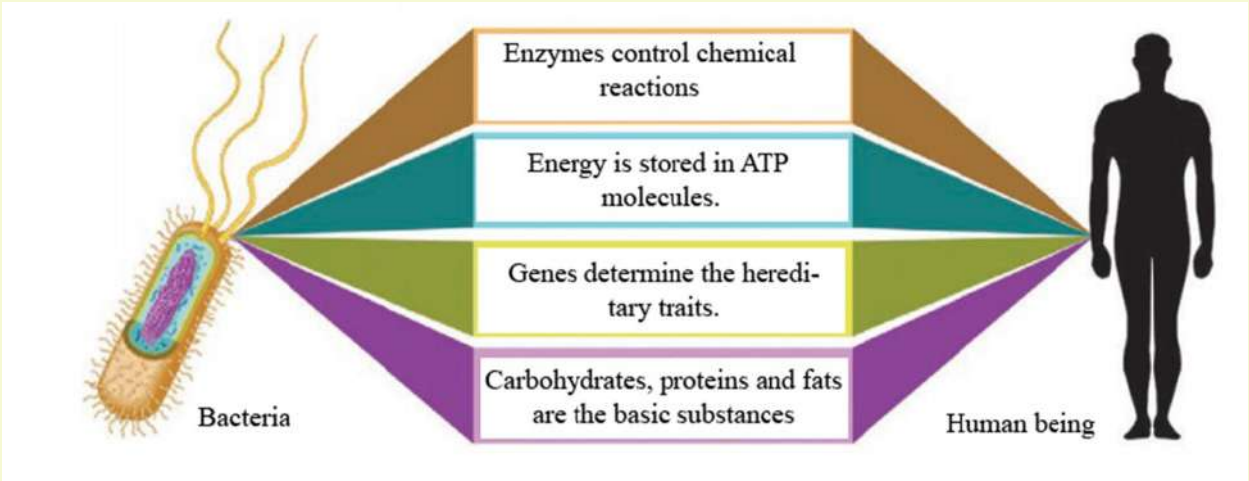
Organism	Difference from the aminoacids in the β chain of haemoglobin in man.
Chimpanzee	0
Gorilla	1
Rat	31

(a) Which organism is more closely related to man on the basis of evolution? Substantiate your observation.

(b) Explain the reason for the difference in amino acids of haemoglobin of the organisms listed in the table on biochemical basis.

8. "Bacteria and Human beings are evolved from a common ancestor" Analyse the statement and give evidences to prove this.

9. Observe the illustration and write what proof of evolution do you get from these facts?



for first bell online class 48

1. Identify the odd one from those given below, and write the feature common to others:

(a) monkey, gibbon, orangutan, gorilla.

2. Analyse the word pair relationship and fill in the blanks:

(a) Monkey : Cercopithecoidea

Chimpanzee : .....

3. Complete the illustration related to the evolution of human beings appropriately.

Anthropoidea

(a)..... **(b).....**

(c) ..... **Developed brain**

Eg : Baboon **Eg : Chimpanzee**

4. The table given below shows the difference in aminoacids obtained from a comparative study of the β chain of haemoglobin of different organisms. Analyse the table and answer the questions

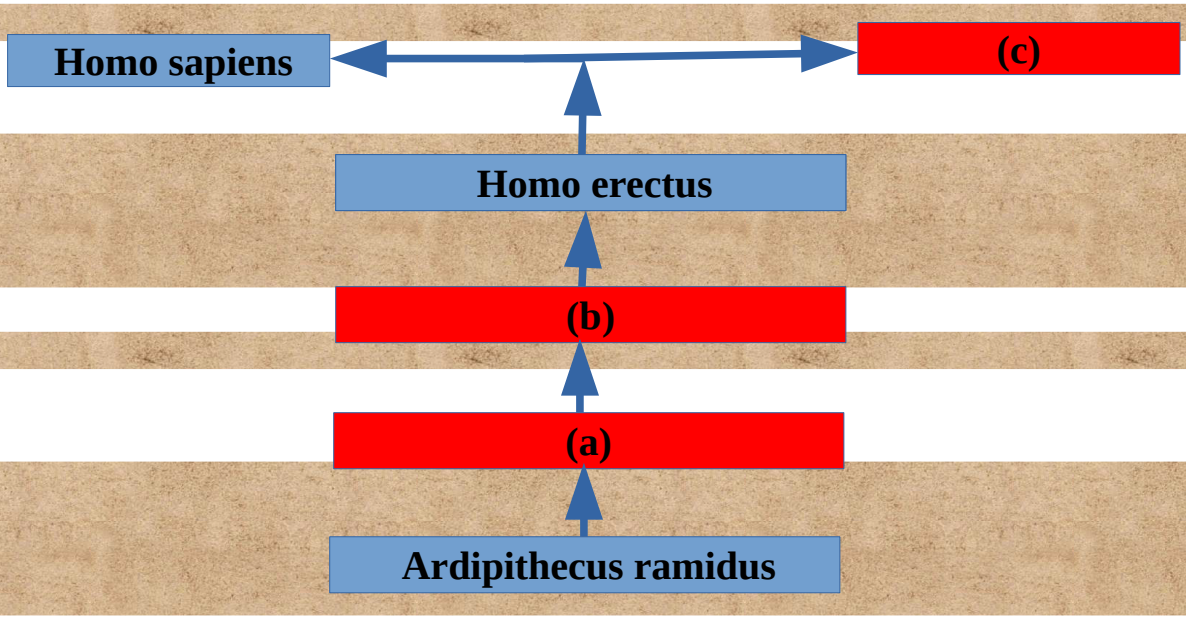
Organism	Difference from the aminoacids in the β chain of haemoglobin in man
Chimpanzee	0
Gorilla	1
Rat	31

(a) Which organism is more closely related to man on the basis of evolution? Substantiate your observation.

(b) Explain the reason for the difference in aminoacids of haemoglobin of the organisms listed in the table on biochemical basis.

5. The links in the evolutionary history of modern man are given in the box. Complete the illustration choosing the appropriate ones from the box.

Ardipithecus ramidus, Homo neanderthalensis, Homo habilis, Homo erectus, Homo sapiens, Australopithecus afarensis.



For watching online class of this worksheet_49 **CLICK HERE**

For Focus Area based combined Worksheet of InterBell

Malayalam **CLICK HERE**

English **CLICK HERE**