Holiday Homework
Std. 10
2025 - 26

(The Holiday Homework is to be done in your classwork notebook.)

English Language

1. Do question 5 (Do as Directed) of Papers 10 to 14 from your Text Book - Pearls of English Language.
2. Copy down the following Proverbs in your notebook and learn them. Learn their meanings too.

List of Proverbs

1. Actions speak louder than words.
2. An apple a day keeps the doctor away.
3. A bad workman blames his tools.
4. Do not put all your eggs in one basket.
5. Blood is thicker than water.
6. Let bygones be bygones.
7. If the cap fits, wear it.
8. Character is destiny.
9. Do not count your chickens before they are hatched.
10. Too many cooks spoil the broth.
11. Failure teaches success.
12. Fortune favours the brave.
13. A friend in need is a friend indeed.
14. When God shuts one door, He opens another.
15. Make hay while the sun shines.
16. Two heads are better than one.
17. History repeats itself.
18. Hunger is the best sauce.
19. A jack of all trades and master of none.
20. He knows most who speaks least.
21. Knowledge is power.
22. Better late than never.
23. Look before you leap.
24. Out of sight, out of mind.
25. Absence makes the heart grow fonder.

English Literature

ICSE 2008
Read the extract from 'Julius Caesar' Act 3, Scene 1, given below and answer the questions that follow:

Caesar: Are we all ready? What is now amiss,
That Caesar and his senate must redress?
Metellus: Most high, most mighty, and most puissant Caesar,
Metellus Cimber throws before thy seat
An humble heart.
[kneeling]

(i) Where are the speakers? What does 'puissant' mean?
Explain: 'Metellus Cimber throws before thy seat an humble heart". [3]

(ii) At the start of the scene what reply does the soothsayer give when Caesar says, "The Ides of March are come? What was Caesar's attitude then? Give a reason for your answer. [3]

(iii) What specific duties have been allotted by the conspirators to Trebonius and Casca? Why does Cassius become nervous when Popilius Lena speaks to him as they enter? [3]

(iv) Who else had a petition for Caesar? How did Caesar respond to his pleas that his was a suit that 'touches Caesar nearer? What characteristic of Caesar is seen in his reply? [3]

(v) Shortly after this Caesar is stabbed to death by the conspirators. At this point in the play what are your feelings for (a) Caesar and (b) the conspirators.
Give one reason each to support your answer. [4]

ICSE 1990

Read the extract given below and answer the questions that follow:-

Antony: Hie hence and tell him so. Yet, stay awhile,
Thou shall not back till I have borne this corpse
Into the market place; there shall I try,
In my oration, how the people take
The cruel issue of these bloody men;

(i) To whom was Antony speaking? Where were they? How had the person being spoken to
come to be there?

(ii) What did Antony mean by “Hie hence and tell him so"?

(iii) What is a “corpse”? Whose was it? How is this brought out in line 5 of this extract?

(iv) What is meant by the word “oration?” How did Antony come to make this oration?

(v) What did he mean by “how the people take”? What instruction did Antony now give this person?

ICSE 2025

Read the extract from ‘Julius Caesar’ Act 3, Scene 2, given below and answer the questions that follow:

Antony: Friends, Romans, countrymen, lend me your ears;
I come to bury Caesar, not to praise him.
The evil that men do lives after them,
The good is oft interred with their bones;
So let it be with Caesar. The noble Brutus
Hath told you Caesar was ambitious;
If it were so, it was a grievous fault,
And grievously hath Caesar answer ’d it.
Here, under leave of Brutus and the rest –
For Brutus is an honourable man;
So are they all, all honourable men –
Come I to speak in Caesar ’s funeral.

(i) What does Antony say he is there for? What does he say he is not there for?
What do you think he is actually there for? [3]

(ii) What were the three conditions that Brutus had laid down before allowing Antony to speak to the citizens of Rome? [3]

(iii) List the three arguments that Antony uses immediately after he speaks these lines to prove conclusively that Julius Caesar was not ambitious. [3]

(iv) Antony repeatedly uses certain words in his speech to describe Brutus. What are they? Why does he do this? [3]

(v) Which one argument of Antony's do you think had the greatest impact on his listeners? Give a reason to support your answer.
What were the citizens' feelings towards Antony before he began his speech?
How do their feelings towards him change at the end of his speech? [4]

Hindi Holiday Homework

हिन्दी परियोजना कार्य, 2025–26

कक्षा– 10

1) निम्नलिखित विषयों में से किसी एक विषय पर लगभग 250 शब्दों में संक्षिप्त हिन्दी लेख लिखिए–

क) आधुनिक समय में विज्ञापन हमें कहाँ–कहाँ किस रूप में दिखाई देते हैं? उनका हमारे जीवन पर क्या प्रभाव पड़ता है? इस विषय पर अपने विचार निबंध रूप में लिखिए।

ख) वर्षा ऋतु मनुष्यों के साथ–साथ सभी प्राणियों के मन को खुशियों से भर देती है। आप भी किसी ऐसे वर्षा ऋतु के दिन का वर्णन कीजिए जब आपने अपने परिवार और मित्रों के साथ खूब आनंद मनाया।

2) निम्नलिखित विषय पर पत्र लिखिए।

क) आपके विद्यालय में 'विज्ञान प्रदर्शनी' का आयोजन किया गया था, जिसमें आपने भी बढ़चढ़ कर भाग लिया था, इसके परिणामस्वरूप आपको क्या लाभ मिला था? इस विषय पर अपने मित्र का पत्र लिखकर बताइए।

ख) आपको आधार कार्ड बनवाने की आवश्यकता पड़ गई है, उस आवश्यकता को स्पष्ट करते हुए अपना आधार कार्ड बनवाने के लिए जनसेवा केंद्र के अधिकारी को अनुरोध पत्र लिखिए।

3) निम्नलिखित गद्यांश को ध्यान से पढ़िए और उसके नीचे लिखे प्रश्नों के उत्तर अपने शब्दों में लिखिए।

एक उथला तालाब मछलियों से भरपूर था। उसमें तीन विशालकाय मछलियाँ भी रहती थीं, जो पक्की सखियाँ थी। इनमें पहले वाली मछली दूरदर्शी एवं दीर्घकाल की बात सोचने वाली थी, दूसरे की प्रतिभा ठीक समय पर काम करने वाली थी, परंतु तीसरी मछली आलसी और प्रत्येक काम को देरी से करने वाली थी। एक दिन कुछ मछुवारों ने इस कम गहराई वाले तालाब से पानी की छोटी–बड़ी नालियाँ बनाकर नीचे वाली भूमि की ओर प्रवाहित करना प्रारंभ कर दिया, ताकि पानी कम होने से वे सुगमता से वहाँ की मछलियाँ तथा दूसरे जल–जीवों को पकड़ सकें।

सरोवर के घटते जलस्तर को देखकर दूरदर्शी मछली ने अपनी दोनों सखियों से कहा– "सखियों! ऐसा जान पड़ता है कि हमारे ऊपर संकट के बादल घिरने लगे हैं। जब तालाब का पानी कम हो जाएगा तो मछुआरे हमें शेष मछलियों के साथ आसानी से पकड़ सकते हैं अतः हमें जलाशय का पानी कम होने से पूर्व ही किसी अन्य सरोवर में पहुँचने का मार्ग ढूँढना चाहिए। बुद्धिमान वही है जो आने वाले संकट का पहले से ही अपनी नीति द्वारा मिटा देता है।" इस पर साधारण बुद्धि वाली मछली कहने लगी– "हे सखियों! तुम्हारी बात सर्वथा उचित है, परंतु मेरे विचारानुसार हमें अभी तालाब छोड़ने की शीघ्रता नहीं करनी चाहिए।" उसी समय तीसरी मछली अपनी सखियों से कहने लगी– "जब मेरे ऊपर संकट आएगा तो उसी समय मैं अपने बचाव का उपाय करूँगी। अभी तो मैं जी भरकर अन्य छोटे जीवों तथा मछलियों को खाकर आराम से सोना चाहती हूँ। बाद में जो होगा देखा जाएगा।"

जब तीनों सखियाँ संकट की इस घड़ी में भी एक मत नहीं हो सकी, तो दूरदर्शी मछली रात को ही वहाँ से पानी की नालियों द्वारा निकलकर किसी दूसरे गहरे जलाशय में चली गई। कुछ समय पश्चात मछुआरों ने देखा कि तालाब का सारा पानी लगभग बाहर निकल चुका है तो उन्होंने अपना जाल बिछाकर अनेक मछलियों सहित दोनों मछलियों को भी उसमें फँसा लिया।

दूसरी मछली जब जाल में फँस गयी तो उसने जान बूझकर अपनी श्वास रोक ली तथा निश्चल होकर मरने का ढोंग करने लगी। जब मछुआरों ने देखा कि वह मछली तो मर चुकी है, तो उन्होंने उसे अपने जाल से निकालकर फेंक दिया। वह किसी तरह घिसटती हुई एक जलाशय में समा गई और इस प्रकार उसने अपने प्राणों की रक्षा की। परंतु आलसी तथा मूर्ख तीसरी मछली भाग्य पर भरोसा करती हुई जाल में फँसी तड़पती रही। मुसीबत के समय उसे अपनी मृत्यु का निकट आते देख कुछ भी सूझ नहीं रहा था। मछुआरों ने आते ही अन्य मछलियों के साथ उसे भी जाल से निकाला और उसे उठाकर बाज़ार में बेचने के लिए चल पड़े।

ऋषियों तथा विद्वानों ने धर्म शास्त्रों में लिखा है जो प्राणी संकट आने से पहले ही अपने बचाव के लिए उपाय सोचे उसे दूरदर्शी और जो ठीक समय आने पर आत्मरक्षा के बारे में विचार करे उसे साधारण बुद्धि कहा जाता है। एक अन्य प्रकार का जीव भी होता है जिसे दीर्घसूत्री कहा जाता है। ऐसा व्यक्ति अपने आलस्य के कारण घोर संकट को प्राप्त करता है।

जो व्यक्ति सोच समझकर सावधान होकर कार्य करता है वह निश्चय ही अपनी इच्छानुसार फल प्राप्त करता है। कार्य को भविष्य पर छोड़ने वाला व्यक्ति जीवन में उन्नति नहीं कर सकता। सच है 'आलस्य मनुष्य का सबसे बड़ा शत्रु है।'

निम्नलिखित प्रश्नों के उत्तर यथासंभव अपने शब्दों में लिखिए:

1 तीनों मछलियाँ कहाँ रहती थी? प्रत्येक की विशेषता बताइए।

2 मछुआरो ने जलाशय के जल को किस ओर प्रवाहित कर दिया और क्यों?

3 दूरदर्शी मछली ने अपनी दोनों सखियों को क्या सलाह दी? क्या उन्होंने उसकी बात मानी? स्पष्ट कीजिए

4 पहली और दूसरी मछली ने अपनी जान कैसे बचायी?

5 तीसरी मछली को किस संकट का सामना करना पड़ा? प्रस्तुत गद्यांश में निहित संदेश भी लिखिए।

4) निम्नलिखित प्रश्नों के उत्तर निर्देशानुसार लिखिए:–

i 'निर्मल' का विलोम बताइए:–

क) कोमल ख) निर्बल ग) दुर्बल घ) मलिन

ii 'वस्त्र' का उचित पर्यायवाची शब्द बताइए:–

क) पट–वसन ख) आवरण–पर्दा

ग) अस्त्र–शस्त्र घ) अंबर–आकाश

iii 'मूर्ख' का भाववाचक संज्ञा बताइए:–

क) अज्ञानी ख) बेवकूफ ग) मौखिक घ) मूर्खता

iv 'शक्ति' का विशेषण बताइए:–

क) शक्तिपूर्वक ख) शक्तिशाली ग) शक्तिदायी घ) शक्तिमय

v 'मिठाईयाँ' शब्द का शुद्ध रूप बताइए:–

क) मीठाइयाँख) मिठाईयाग) मीठाइया घ) मिठाइयाँ

vi 'रंग उड़ना' मुहावरे का अर्थ बताइए:–

क) उड़कर भाग जाना ख) रंग चला जाना

ग) भाग जाना घ) चेहरा फीका पड़ना

vii निम्नलिखित रेखांकित वाक्यांश हेतु उचित एक शब्द चुनकर लिखिए

ताजमहल देखने योग्य है।

क) ताजमहल दर्शनीय है।

ख) ताजमहल अद्‌भुत है।

ग) ताजमहल अदर्शनीय है।

घ) ताजमहल प्रदर्शनी है।

Viii निर्देशानुसार उचित वाक्य बताइए:–

'आजकल मँहगाई चर्म सीमा पर है।'

(रेखांकित शब्द के स्थान पर उचित शब्द का प्रयोग कीजिए।)

क) ऊँची ख) चरम ग) चोटी घ) नीची

5) निम्नलिखित गद्यांश को पढ़िए और उसके नीचे लिखे प्रश्नों के उत्तर हिन्दी में लिखिए:–

'सोचने लगा, ''यह दुनिया न्याय नगरी नहीं, अंधेर नगरी है। चोरी पकड़ी गई तो अपराध हो गया। असली अपराधी बड़ी–बड़ी कोठियों में बैठकर दोनों हाथों से धन बटोर रहे हैं। उन्हें कोई नहीं पकड़ता।''

बात अठन्नी की: सुदर्शन

क) उपर्युक्त कथन को सोचने वाला व्यक्ति कौन है? इस कथन का संदर्भ स्पष्ट कीजिए।

ख) किस व्यक्ति से क्या अपराध हो गया था? कारण स्पष्ट कीजिए।

ग) दोनों हाथों से धन बटोरनेवाले लोग कौन हैं? पाठ के आधार पर उनकी मानसिकता पर प्रकाश डालते हुए बताइए कि उनके न पकड़े जाने का क्या कारण है?

घ) 'यह दुनिया न्याय नगरी नहीं, अंधेर नगरी है' – इस कथन का अर्थ स्पष्ट करते हुए कहानी का उद्धेश्य बताइए।

6) लेकिन विघ्न अनेक अभी

इस पथ पर अड़े हुए हैं

मानवता की राह रोककर

पर्वत अड़े हुए हैं।

न्यायोचित सुख सुलभ नहीं

जब तक मानव–मानव को

चैन कहाँ धरती पर तब तक

शाति कहाँ इस भव को?

स्वर्ग बना सकते हैं– रामधारी सिंह 'दिनकर'

क) इस कविता में 'धर्मराज' कहकर किसे सबोधित किया गया है तथा धर्मराज को यह सदेश कौन दे रहा है?

ख) कवि के अनुसार मनुष्य का जीवन कैसा होना चाहिए? कविता के आधार पर बताइए।

ग) मानव जीवन के विकास में कौन–कौन सी बाधाएँ और आशंकाएँ उपस्थित है? ये बाधाएँ और आशंकाएँ कैसे दूर हो सकती हैं?

घ) 'भव' शब्द का अर्थ लिखकर कविता का उद्धेश्य स्पष्ट कीजिए।

नोटः– 1. परियोजना कार्य डॉन बॉस्को एकाडमी परियोजना कॉपी में करें।

2. व्यावहारिक व्याकरण के प्रश्न अर्थात् प्रश्न 4 को छोड़कर सभी प्रश्नों के विषय के अनुसार फोटो चिपकाए।

3. कार्य साफ एवं सुंदर लिखावट में करें।

4. गद्यांश से संबंधित प्रश्नों का उत्तर लिखने से पहले पूरे गद्यांश को लिखना अनिवार्य है।

Physics Holiday Homework

STANDARD X PHYSICS HOLI DAY HOME WORK 2025-26

Q1. What is meant by moment of force? Give its S.I unit

Q2.A large force is acting on a body in such a way that its line of action passes through the point about which the body rotate. What can we say about the magnitude of moment of force?

Q3.Can the moment of force be zero even when the force is not zero? If so when?

Q4.Suppose the resulting torque on a body is(1) zero and (2) not zero. What is the effect of the torques acting on the body in the two cases?

Q5.Why a man bends forward while ascending and backwards while descending a hill?

Q6.Why do old men generally use a walking stick/

Q7.Give two examples from daily life where a small force is able to produce a large turning effect.

Q8.Give reasons for the following:

(1) the heavy luggage is always put in the lower part of a ship

(2) a truck, carrying iron bars, is more stable than another truck, carrying an equal weight of wooden logs.

Q9.A force of 6N is acting on a body and a force of 4N on the other. In which case will the rotatory action be greater if the arm of the first force is 1m while that of second is 2m?

Q10.A uniform meter scale is put on a wedge at the 40 cm mark. It is found that the scale gets balanced when a weight of 10 gf is suspended from the 25 cm mark. Find the weight of the meter scale.

Q11.What is mechanical energy? Define K.E and P.E

Q12.What happens to the K.E when (1)the mass of the body is doubled at constant velocity (2)

The velocity of the body is doubled at constant mass?

Q13.Can two agents, doing the same work, have different power?

Q14.Which form of is converted into another form of energy by

(1)burning candle stick

(2)dynamo

(3)electric motor

(4)thermocouple

(5)microphone

(6)loudspeaker

Q15. Derive the expression for K.E

Q16.Establish the relationship between momentum and K.E

Q17.State work energy theorem

Q18.Show that the mechanical energy of a freely falling bod at any instant is conserved.

Q19.Explane the conservation of energy for an oscillating pendulum

Q20.Do all the numericals of chapter Work energy and power.

Inn Addition, Answer all the questions from the ICSE board examination from 2023 to 2025 from the relevant chapters which we studied.

Chemistry Holiday Homework

aditya
Date
Page

Std - 10 Holiday Homework

1. Identify (name) the following:

(i) The energy required to remove an electron from valence shell of a neutral isolated gaseous atom.

(ii) Arrangement of electrons around the nucleus of an atom.

(iii) A water soluble base which furnishes hydroxyl ions.

(iv) Type of force responsible for the high melting point of NaCl.?

(v) A bond in which the election pair shifts towards the more electronegative atom.

(vi) The most electronegative element

(vii) Elements present in 1st period.

(viii) The gas produced at anode during electrolysis of acidulated water.

(ix) Metallic hydroxide insoluble in caustic soda but soluble in excess of ammonium hydroxide.

(x) The ion formed when water accepts a proton.

2. An element has an atomic number 16, state:

(i) The period to which it belongs

(ii) the number of valence electrons

(iii) whether it is a metal or non-metal

Q 3. Give reason

(i) Alkali metals are good reducing agent

(ii) Ionisation potential increases across a period.

(iii) Solid NaCl do not conduct electricity.

(iv) Inert gases do not form ions.

(v) Covalent compounds have low melting point, boiling point.

4. By drawing the electron dot diagram show the formation of ammonium ion, nitrogen molecule and sodium chloride.

5. An organic compound with vapour density 94 contain C = 12.67%, H = 2.13%, and Br = 85.11%. Find its molecular formula. [At. mass C = 12, H = 1, Br = 80]

6. Find the total percentage of oxygen in magnesium nitrate crystal. $Mg(NO_3)_2 \cdot 6H_2O$

[Mg = 24, H = 1, N = 14, O = 16]

7. Identify the cation in each of the following cases;

(i) NaOH solution added to solution A gives reddish brown precipitate

(ii) NaOH solution added to solution B gives pale blue precipitate insoluble in excess of NaOH solution.

Biology Holiday Homework

Practical Notes

HUMAN BIOLOGY (Write this at the center of a fresh page.)
Prepared by Department of Biology, Don Bosco Academy. Patna (not to copy)
Experiment 12 (Each Experiment has to be started on a new page)
Study of blood sample

Constituent of blood	Plasma , formed cells
Plasma	55 % - 60 % of total blood volume
Colour	Straw coloured
Composition	90 – 92 % water, 8% blood protein, 1 % of inorganic salts

Erythrocytes

Shape	Bi concave and disc like
Life span	120 days
Size	3 microns in diameter
Function	It contains respiratory pigment called hemoglobin which transports the respiratory gases

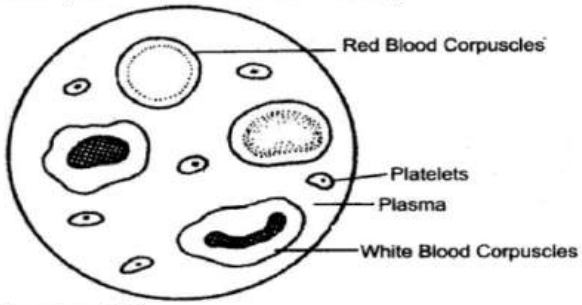
Leucocytes

Shape	Amoeboid and irregular
Size	8 – 10 microns
Types	Neutrophil, Eosinophil, Basophil, Lymphocytes, Monocytes
Function	phagocytosis ,They produce antibodies to neutralize the effect of antigen.
Life Span	14 days

Thrombocytes

Shape	Oval or polygonal
Size	5 microns
Function	It initiate the process of clotting
Life Span	3 – 5 days

Diagram:- **All diagrams are to be drawn and labeled with pencil on the plain side of the opposite side where you have written the above notes)**



Experiment 12

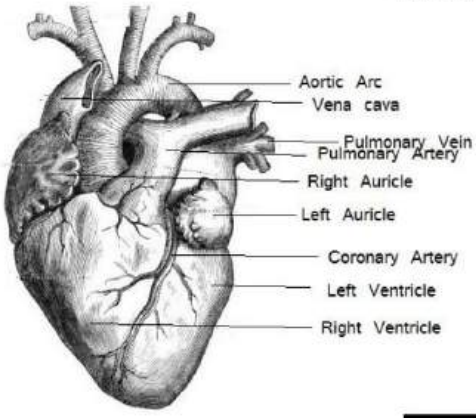
Study of Human Heart

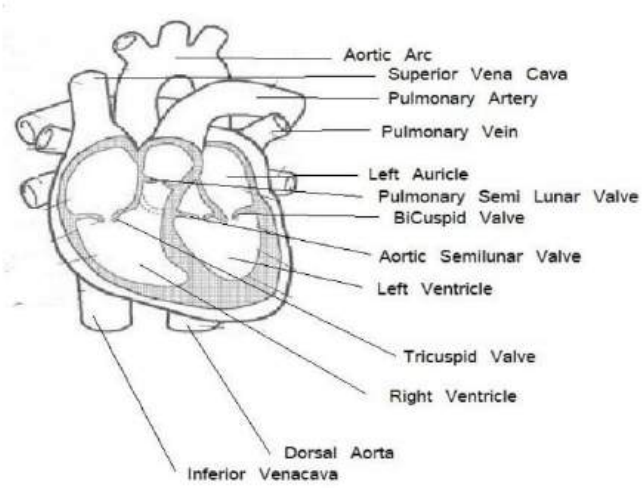
Location	The heart is located in the thoracic cavity between two lungs.
Shape	It is more or less triangular in shape
Size	It is as big as one's fist
Pericardium	The heart is covered by double layered pericardium enclosing pericardial fluid
Blood Vessels arising from heart	
Aorta	It arises from left ventricle and carries oxygenated blood to different body organs
Pulmonary artery	It arises from the right ventricle and carries

	deoxygenated blood to lungs
Coronary Artery	It originates from the aorta and supplies oxygenated blood to the muscles of heart
Vena Cava	Superior and inferior vena cava brings deoxygenated blood from various parts of the body to the right auricle
Pulmonary Vein	It brings oxygenated blood from lungs to the left auricle
Chambers of Heart	The human heart consists of four chambers. Auricles are the upper chambers and ventricles are the lower Chambers
Valves	Tricuspid valves are located in the right ventricle at the aperture of right auricle to the right ventricle . Bicuspid valves are located in the left ventricle at the aperture between the left auricle to the left ventricle. Semilunar valves are located at the origin of pulmonary artery in the right ventricle and aorta in the left ventricle
Chordae Tendinae	They are tendinous chords which holds the flaps of cuspid valves.
Papillary Muscle	They are muscular projections of the ventricular walls to which chordate tendineae are attached.

Diagrams (Both diagrams can be drawn on the same page or two different pages in case the notes exceeds to the next page)

External View





Experiment No. 13

Study of Human excretory system

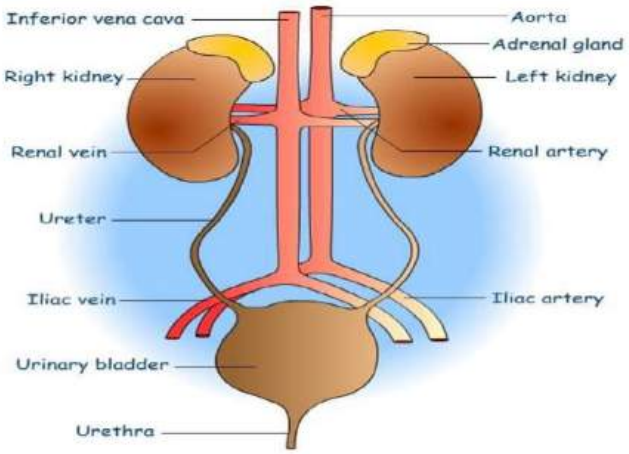
Kidney	They are bean shaped reddish brown organs located on either sides of the lumbar vertebrae protected by last two ribs.
Ureter	It is a muscular tube arising from the median surface of each kidney and joins with urinary bladder.
Urinary Bladder	It is a large distensible sac located in the pelvic region
Urethra	It is a short muscular tube leading outside from the urinary bladder

Internal Structure of Human Kidney

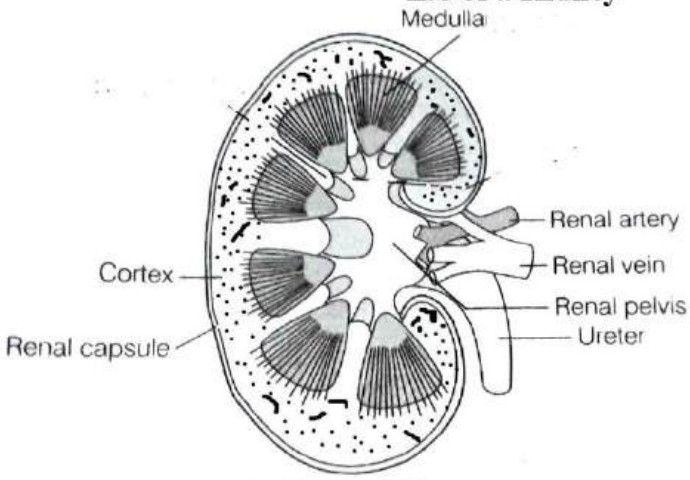
Capsule	It is the outer protective covering of the kidney
Renal Cortex	It is the outer region of the kidney formed of malphigian body, proximal and distal convoluted tubule. It is dark red and has dotted appearance.
Renal Medulla	It is the inner region of the kidney consisting of Henle's loop and collecting ducts. It is light red
Pelvis	It is the anterior expanded part of the ureter.

Diagrams. ((Both diagrams can be drawn on the same page or two different pages in case the notes exceeds to the next page)

Human Urinary System



L.S of a Kidney

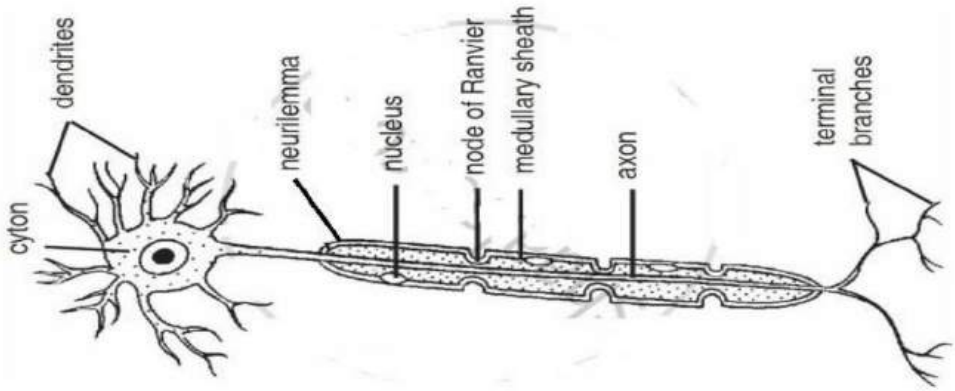


LS of human kidney

Experiment No. 14

Aim	To study a Human Neuron
Structure	**Function**
Nissl's Granule	These are RNA protein complex which synthesis the protein to form enzyme required for the Synthesis of Neurotransmitter
Dendron	They receive impulses from other neurons or receptors and pass them to cyton of next neuron.
Axon	It transmits impulse to next neuron or the effector organ
Neurolemma	It provide protection and insulate the axon to prevent the leakage of nerve impulses.
Myelin sheath	It provide insulation to axon and prevent the leakage and mixing of the nerve impulses. It also increases the speed of nerve impulse transmission.
Node of Ranvier	They are associated with the conduction of nerve impulses and exchange of food and oxygen between nerve tissue and its surrounding.

Diagram



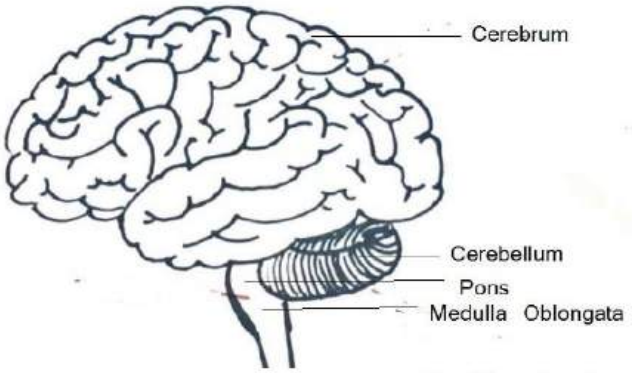
Experiment No.15

Aim	To study the structure and Function of Brain.
Structure	**Function**
1. Forebrain	
Cerebrum	It is the seat of the consciousness, intelligence, memory, reasoning etc. It receives the impulse from different parts of the body and initiate all the voluntary activities. It is also a centre for hearing.
Corpus callosum	It connects the two cerebral hemispheres from base. It also transfer impulse from one hemisphere to other
Thalamus	It acts as the relay station for incoming sensory impulse and out going motor impulse to and from cerebrum
Hypothalamus	It is the regulatory centre fo thirst, hunger, and body temperature. It also controls the functioning of pituitary gland.
2. Mid Brain	It lies sandwich between the fore brain and the hind brain.
3. Hind brain	
Cerebellum	It regulates and co ordinates the group movement of muscle and thus maintains balance of body and posture.
Pons Verolli	It transmit nerve impulses across the nerve fiber that

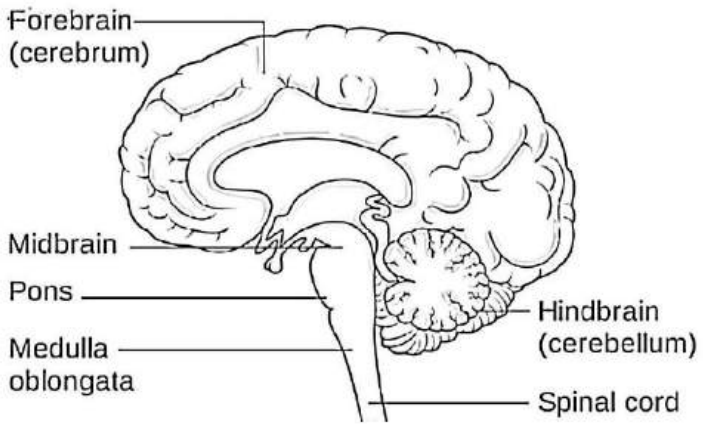
Medulla Oblongata	connects the two lobes of cerebellum and ensure co-ordination of muscle movement on both the sides of the body. It is a nerve centre situated within the medulla controls the activities of internal organs such as working of heart, breathing and other involuntary actions.

Diagrams (Both diagrams can be drawn on the same page or two different pages in case the notes exceeds to the next page)

External View



Median Section

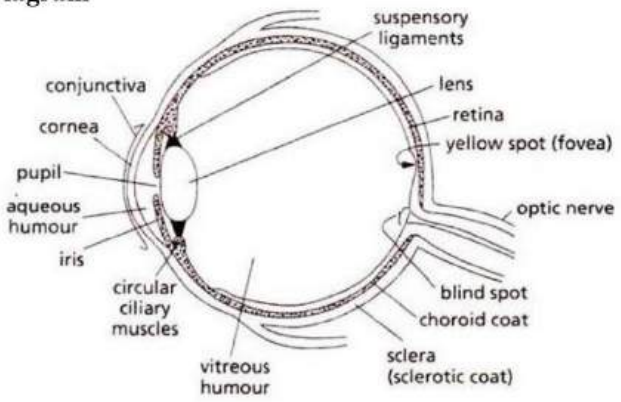


Experiment No.16

Aim	To study human eye.
Structure	Function
Sclera	It is the outer tough, white, opaque, non elastic layer of the eye ball. It continues in front as cornea. It provides shape to the eye ball.
Choroid	It is the middle , pigmented, vascular layer of the eye ball .It prevent light rays from reflecting and Scattering inside the eye.
Retina	It is the inner most photosensitive layer of the eye ball containing rods and cone cells.
Yellow spot	It is the area of brightest vision and also for colour vision. It lies at the center of the retina
Blind spot.	It is an area of no vision as there is no rod and cone cells located.. Here the optic nerve arises, which take the nerve impulse to brain.
Lens	It is a crystalline , transparent, biconvex body held in position by the suspensory ligament.
Cornea	It is the part of the sclerotic layer that bulges out and become transparent in the front region where .It covers the coloured part of the eye. It allows the light

Ciliary body	rays to pass through. It lies at the junction of the choroids and iris. It contains smooth muscles which alter the shape of the Lens.

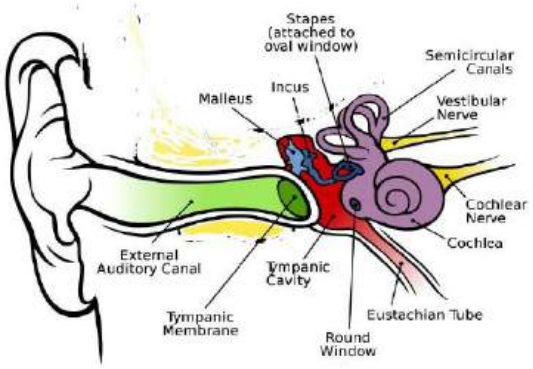
Diagram



Experiment No. 17

Aim	To study structure of human ear.
Structure	Function
Pinna	It is a skin covered flap of elastic cartilage. Muscles also present on it from either sides of the head. It collects sound waves and direct them in to the auditory canal.
Auditory canal	It is "S" shaped tube leading inward from the pinna of the external ear. Sound waves travel from pinna. To the tympanum through the auditory canal.
Ear drum:	Thin, oval ,tightly stretched membrane closing the external ear internally. It converts sound waves into mechanical vibration.
Eustachian Tube	A passage that connects the cavity of the middle ear with the throat or naso pharynx. It equalizes air pressure on ither side of the tympanum.
Ear osscicles	A chain of three small articulated bone that crosses the tympanic cavity of the middle ear.It magnifies and transmit the sound vibrations in to the inner ear.
Inner Ear	It is also referred as membranous labyrinth surrounded by bony labyrynth filled with perilymph. It has Cochlea, vestibule and semicircular canal.
Utriculus and Sacculus	Found on the vestibule and are concerned with static balance of the body
Cochlea	Spirally coiled tube of about two and half turn resembling snails shell. The cochlear canal contain organ of corti.
Organ of Corti	Found on the basilar membrane of the median canal of cochlea and are concerned with hearing.
Vestibule	It is the central canal sac like part of the inner ear consisting of two chambers utricles and sacculus.
Semicircular canal	A set of three semicircular canal in each ear which are arranged at right angles to each other in three different places. It helps in maintaining dynamic balance of the body.

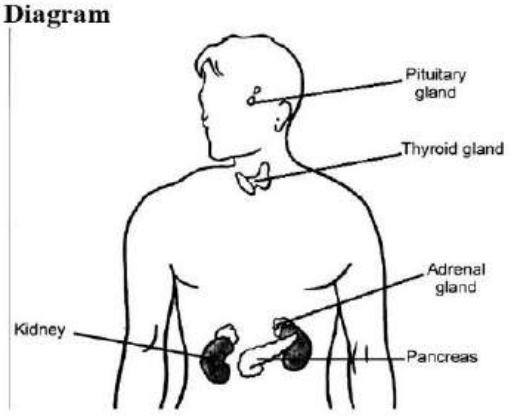
Diagram



Experiment 18
Human Endocrine Glands

Aim	Study of human endocrine glands.
Endocrine System	It consisits of ductless endocrine glands which secrete hormones into the blood stream.
Pituitary Gland	It is a small pea sized gland attached to the hypothalamus of the brain. It is also called master gland because it secretes tropic hormones which controls the secretions of other endocrine glands in the body
Adrenal Gland	A pair of adrenal glands are located above the kidney fitted like a cap. Each adrenal gland consists of two regions - Adrenal cortex and adrenal medulla. The adrenal cortex secretes cortisone which helps in fighting stress. Adrenal Medulla secrete Adrenaline which is an emergency hormone.
Pancreas	It is a heterocrine gland located just below the stomach. It consists of endocrine tissue called Islets of Langerhans formed of Alpha Cells and Beta cells. Alpha cells secrete glucagon and Beta cells secrete insulin
Thyroid Gland	It is a bilobed gland present in front of the neck below the larynx. It secretes thyroxine which regulates the basal metabolism of the body.

Diagram



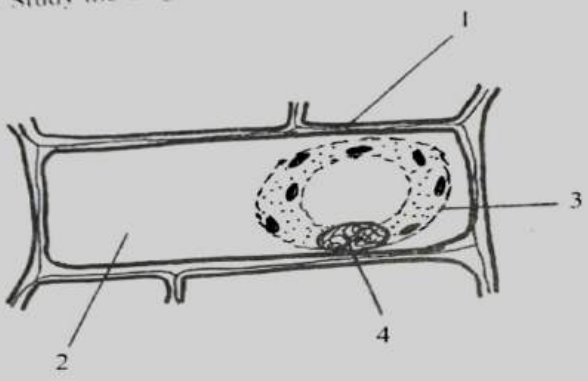
Thank You

Wish You All The Best
By
Department of Biology, Don Bosco Academy, Patna.

To be don in the Biology Notebook
Absorption by Roots

Question 3

(a) The diagram given below represents a plant cell after being placed in a strong sugar solution. Study the diagram and answer the questions that follow:



(i) What is the state of the cell shown in the diagram?

(ii) Name the structure that acts as a selectively permeable membrane.

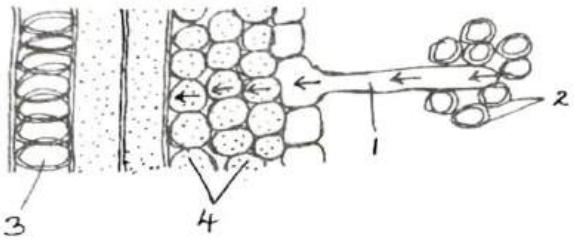
(iii) Label the parts numbered 1 to 4 in the diagram.

(iv) How can the above cell be brought back to its original condition? Mention the scientific term for the recovery of the cell.

(v) State any two features of the above plant cell which is not present in animal cells.

Question 2

(a) The figure given below is a diagrammatic representation of a part of the cross section of the root in the root hair zone. Study the same and then answer the questions that follow: [5]



(i) Name the parts indicated by the guidelines 1 to 4.

(ii) Which is the process that enables the passage of water from the soil into the root hair?

(iii) Name the pressure that is responsible for the movement of water in the direction indicated by the arrows. Define it.

(iv) Due to an excess of this pressure sometimes drops of water are found along the leaf margins of some plants especially in the early mornings. What is the phenomenon called?

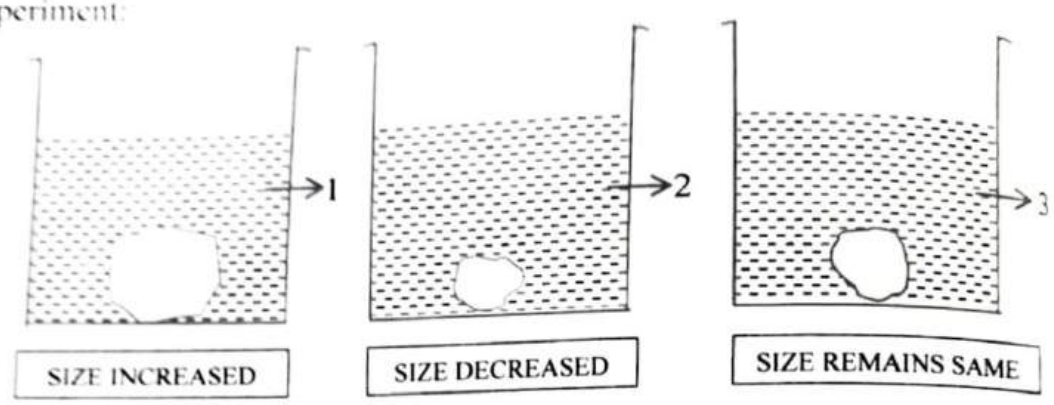
(v) Draw a well labelled diagram of the root hair cell as it would appear if an excess of fertiliser is added to the soil close to it.

[5]

)uestion 3

a) A candidate in order to study the process of osmosis has taken 3 potato cubes and put them in 3 different beakers containing 3 different solutions. After 24 hours. in the first beaker the potato cube increased in size, in the second beaker

the potato cube decreased in size and in the third beaker there was no change in the size of the potato cube. The following diagram shows the result of the same experiment:



(i) Give the technical terms of the solutions used in beakers, 1, 2 and 3.

(ii) In beaker 3 the size of the potato cube remains the same. Explain the reason in brief.

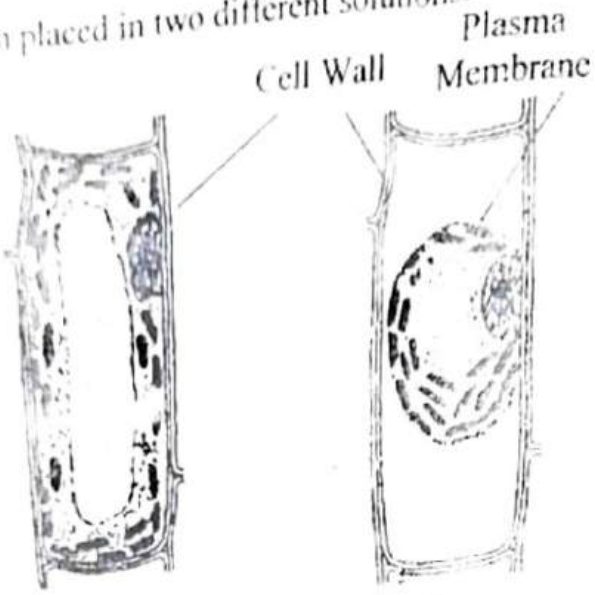
(iii) Write the specific feature of the cell sap of root hairs which helps in absorption of water.

(iv) What is osmosis?

(v) How does a cell wall and a cell membrane differ in their permeability?

Question 6

(a) Given below are diagrams of plant cells as seen under the microscope after having been placed in two different solutions:



(i) What is the technical term for the condition of

1. Cell A 2. Cell B?

(ii) From the solutions given in brackets (water, strong sugar solution, 1% salt solution) name the solution into which:

1. Cell A 2. Cell B was placed before being viewed under the microscope.

(iii) Under what conditions in the soil will the root hair cell resemble:

1. Cell A 2. Cell B?

(iv) Name the pressure responsible for the movement of water from the root hair cell to the xylem of the root. How is it set up?

(v) Name the pressure that helps in the movement of water up the xylem of the root.

[5]

(b) Explain the following terms: