PROVINCIAL DEPARTMENT OF EDUCATION – NORTH WESTERN PROVINCE

THIRD TERM TEST - 2018

Grade 11   **SCIENCE - I**   One Hour

Name / Index No. :

- **Answer all questions.**
- **In each of the questions 1 to 40, pick one of the alternative (1), (2), (3), (4) which you consider as correct or most appropriate.**
- **Mark a (×) on the number corresponding to your choice in the answer sheet provided.**

01. Which Biomolecule contains Nitrogen as an element?

    (1) Proteins   (2) Carbohydrates   (3) Lipids   (4) Amylase

02. The electronic configuration of an atom of the element Z is 2,8,3 What is the period of element X in the periodic table ?

    (1) 2   (2) 3   (3) 1   (4) 4

03. The standard International (S1) unit which is used to measure the displacement in a unit time.

    (1) m   (2) M   (3) ms^{-1} (4) MS^{-1}

04. The vacuole in a cell is filled up with,

    (1) Air   (2) Water   (3) Empty space   (4) Cell sap

05. Which one is not a specific property of water due to the intermolecular interactions between water molecules ?

    (1) Boiling point of water is high   (2) Specific heat capacity of water is high

    (3) Transparency of pure water   (4) Density of water is higher than that of ice.

06. What is the relevant example to demonstrate newton's third law ?

    (1) Falling a fruit from a coconut tree.

    (2) Moving a vehicle along a straight lined path with a uniform velocity.

    (3) Decreasing the velocity of a thrown stone to the upward direction.

    (4) Moving a inflammed balloon through the air with a high speed when the mouth is released.

07. The live cell type in the Xylem tissue is,

    (1) Xylem vessel element.   (2) Xylem parenchyma

    (3) Xylem fibers   (4) Xylem tracheids

08. In this reaction,

    (1) The boiling tube gets heated up and gas bubbles are evolved.

    (2) The boiling tube gets cooled and gas bubbles are evolved.

    (3) The boiling tube gets heated up and gas bubbles are not evolved.

    (4) The boiling tube gets cooled and gas bubbles are not evolved.

HCl →

Mg →

01
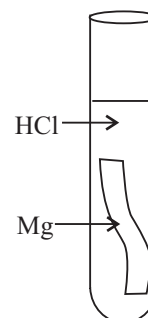
09. Choose the term used for a group of different populations, interacts with each other in a particular area,

    (1) Individual   (2) Species   (3) Community   (4) Population

10. Not a renewable energy source,

    (1) Solar energy   (2) wind   (3) Mineral oils   (4) Bio Mass

11. Which one of the followings shows a single displacement reaction ?

    (1) $CaCO_3 \longrightarrow CaO + CO_2$ (2) $2Na + 2H_2O \longrightarrow 2NaOH + H_2$

    (3) $CO_2 + C \longrightarrow 2CO_2$ (4) $CaCl_2 + Na_2CO_3 \longrightarrow CaCO_3 + 2NaCl$

12. What condition should be satisfied to maintain equilibrium under the action of three forces A, B and C for the object in the diagram ?

    (1) The three forces must be co-planar

    (2) A, B and C forces must be same.

    (3) The angles between all the forces should be equal values.

    (4) The sum of two forces should be equal to the magnitude of the other force.
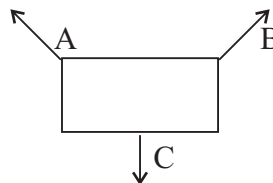
13. Which disease given below is inherited due to a sex-linked recessive gene"?

    (A) Thalassemia   (B) Haemophile   (C) Color blindness   (D) Albinism

    (1) A and B   (2) B and C   (3) C and D   (4) A and D

14. The gas liberated by the reaction between dilute HCl acid and a piece of Zn was collected. What is the graph that represent the volume of the gas with time ?
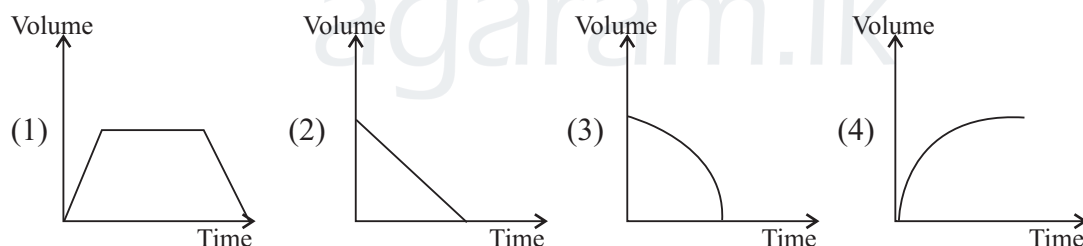
15. The quantities needed to find out gravitational energy is,

    (1) Mass, Distance, Gravitational acceleration   (2) Velocity, Acceleration, Height.

    (3) Height, Gravitational acceleration, Mass   (4) Acceleration, Mass, Velocity.

16. Select the correct statement out of the followings,

    (1) Simple food is broken down in respiration.

    (2) The largest excretory organ of the human is lung.

    (3) A potted plant near the window is turned to the opposite direction of light.

    (4) The dry mass is not increased irreversibly in growth.

17. Which answer gives a solid-soild homogeneous mixture and a solid - liquid heterogeneous mixture respectively ?

    (1) Salt solution and wheat flour - water mixture   (2) Brass and "Kola-Kenda" mixture.

    (3) Steel and ethylnalcohol - water mixture.   (4) Salt solution and brass.

18. An electro-manetic wave type and relevant relevant examples are given in,
    (1) Transverse waves - Sunlight, Microwaves.
    (2) Longitudinal waves - X rays , R rays
    (3) Transverse waves - Sound waves, Radio waves
    (4) Longidinal waves - UV rays, IR rays.

19. Which one is not an adaptation to make efficient the absorption of solar energy in the process of photosynthesis ?
    (1) Plant stems are green in color.
    (2) Broadened leaf blade.
    (3) Presence hairs of on plant leaves.
    (4) Having biaxile leave - rings.

20. What is the molar fraction of glucose in a solution made by dissolving 180 g glucose ($C_6H_{12}O_6$) in 360 g of water (H_2O) ?
    (1) $\dfrac{1}{11}$ (2) $\dfrac{1}{2}$ (3) $\dfrac{1}{20}$ (4) $\dfrac{1}{21}$

21. Select the correct diagram with shows the "Critical Angle "?
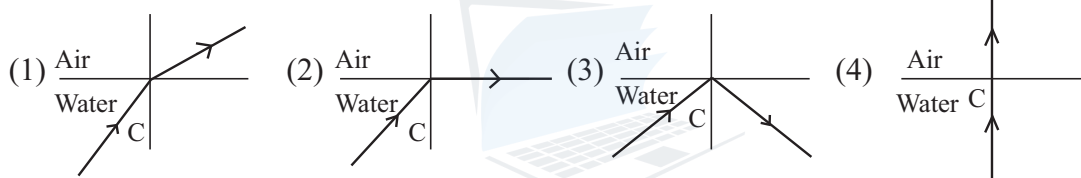
22. Statement - Due to mixing of bile with food, the lipids in food are broken down into small droplets by the process called 'emulsification"
    Reason - There is no enzyme to react on lipids
    (1) Statement - True, Reason - True   (2) Statement - False, Reason - True
    (3) Statement - Falsee, Reason - False   (4) Statement - True, Reason - False

23. Given below are some information about chemicals A, B and C.
    A   Give pink color with phenoloptheline indices indicator.
    B   Give colours relevant to pH value 7
    C   Blue litmus turns into red.
    A, B and C are respectively.
    (1) Acid, Neutral, Base   (2) Base, Acid, Neutral
    (3) Base, Neutral, Acid   (4) Neutral, Acid, Base

24. The frequency of a string musical instrument can be increased by,
    (1) decreasing the length of vibrated string part.
    (2) decreasing the tension of the string part.
    (3) increasing the mass of a unit length of a string.
    (4) increasing the length of the vibrated string path.

25. An action controlled by the Medulla Oblongata is,
    (1) Perception of touch.   (2) Co-ordination of muscle movements.
    (3) Control the high mental activities.   (4) Control the rate of heart beat.

26. Select the endothermic reaction out of the followings.

    (1) $CaO_{(s)} + H_2O_{(l)} \longrightarrow Ca(OH)_{2(aq)}$

    (2) $NaOH_{(aq)} + HCl_{(aq)} \longrightarrow NaCl_{(aq)} + H_2O_{(l)}$

    (3) $CaCO_{3(s)} \longrightarrow CaO_{(s)} + CO_{2(g)}$

    (4) $2N_{(s)} + Cl_{2(g)} \longrightarrow 2NaCl_{(s)}$
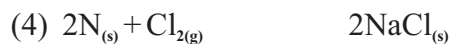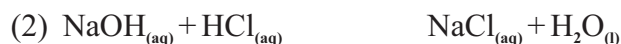
27. Steam gives more damage in burning than boiled water. The reason for this is,

    (1) due to the specific latent heat of vaporization.

    (2) due to the specific latent heat of fusion.

    (3) due to the change of state from liquid to gas.

    (4) due to the heat transmission through convection.

28. The phase that is used to measure the carrying capacity in a typical growth curve of populations.

    (1) slow growth phase   (2) stationary phase

    (3) High growth phase   (4) Decelerating phase

29. Which one is the mis-match statement out of the followings ?

    (1) Plating zinc metal on iron plate is called "Galvanization".

    (2) Bases decrease the rate of rusting of iron.

    (3) When applying tin metal on an iron nail gives the cathodic protection.

    (4) Sodium metal is extracted industrially by electrolysis of fused sodium chloride.

30. a - Electrical energy is transformed into mechanical energy in a motor.

    b - The force created when the direction of current is changed through a conductor can be found using the flemings right hand rule.

    c - Direct current (DC) can be obtained from a dynamo with split rings.

    The correct statement/s is/are,

    (1) Only a   (2) a & b only   (3) b & c only   (4) a & c only

31. Given below are some information about a disease related to the human respiratory system.

    ⬩ The disease is caused by virus or Bacteria

    ⬩ A fluid is collected in lungs

    This disease may be,

    (1) Pneumonia   (2) Bronchyties   (3) Tuberculosis   (4) Asthma

32. The number of C atoms in as isoprene molecule is,

    (1) 3   (2) 4   (3) 5   (4) 6

33. Given below is a circuit with a small torch bulb and a Light Emitting Diode (LED), what are the correct observations when switch is on,

Answer	Bulb	LED
(1)	Lights up	Lights up
(2)	Not Lights up	Lights up
(3)	Lights up	Not Lights up
(4)	Not Lights up	Not Lights up
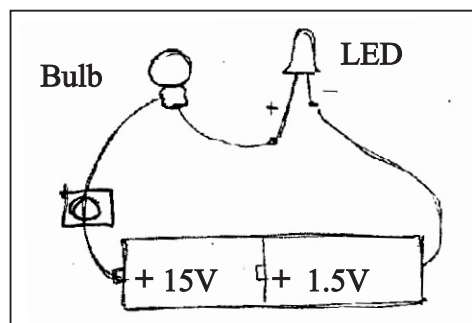
34. Which answer gives the characteristics of phylum Echinodermata ?

    A - Possess a sharp shiny body covering.

    B - A water vascular system present in the body.

    C - Several body segments collectively form functional segments called "Tagma"

    D - Having nematocysts.

    (1) A and B　　　　(2) B and C　　　　(3) C and D　　　　(4) D and A

35. Which one is the true statement out of the followings ? ($N = 14$, $H = 1$, $O = 16$)

    (1) The number of Ammonia (NH_3) molecules in 34 g is 6.022×10^{23}

    (2) 5 mols of Hydrogen is in 90 g of water (H_2O)

    (3) The molar mass of a compound is 40 gmol^{-1} Relative atomic mass of that compound is 40.

    (4) Number of Oxygen molecules in 4 mols of carbondioxide is $8 \times 6.022 \times 10^{23}$

36.
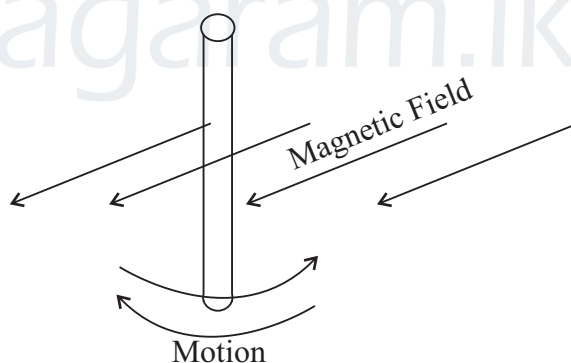
The diagram shows the oscillatory motion of a metal rod in a magnetic field. Which graph gives the electromagnetic induction accurately ?
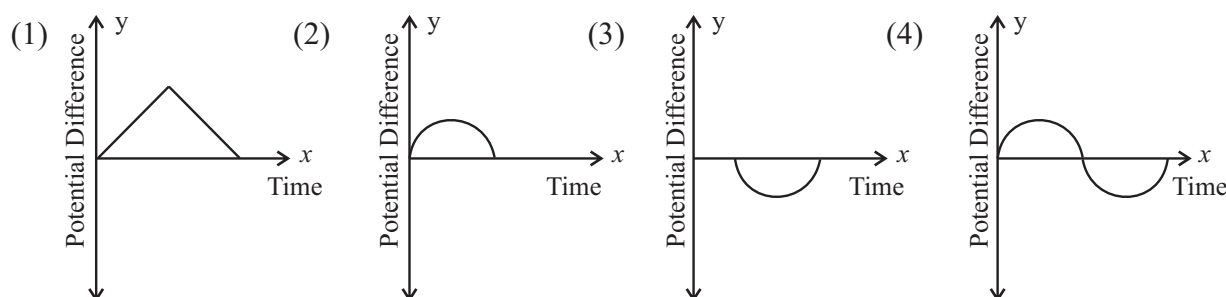
37. Mendele's experiments on inheritance are very important due to,

    (1) Presenting a scientific concept about the transmission of inherited characteristics.

    (2) Explaining the process of inheritance through chromosomes.

    (3) Explaining the process of inheritance through genes.

    (4) Explaining the number of chromosomes in a vegetative cells is varied from a gamete cell.

38. The hazardous organic substances released from different sources are called persistent organic Pollutants (POPs). A specific feature of POPs is,

    (1) Highly toxic per short time.

    (2) Accumulate in the body of organisms along food chains.

    (3) Spread within a small area in the environment

    (4) Not included into a dirty dozen which can be a threat to the earth.

39. The following symptoms can be seen in a patient who is admitted to a hospital.

    * Increasing the number of times pass urine at night.

    * Amount of urine formed reduces.

    * Backache and body pain.

    * Swelling of ankle of foot and becomes pale in color.

    (1) High blood pressure

    (2) Diabetic

    (3) Nephritis / Rental failure

    (4) Calculi in bladder.

40. Most of the renewable energies are considered as sustainable energies, still the using of these renewable energy sources is not popular due to the different technical problems. Which one is the important step of using natural energies in the field of architecture."

    (1) To introduce fixing of Air conditioned machines in stead of natural ventilation methods.

    (2) To keep windows from west to east to enrich the air flowing inside the house.

    (3) To aware the people to use bulbs which are not sensitive to the light in day time.

    (4) To give advices for using curtains with high thickness inside the house.

PROVINCIAL DEPARTMENT OF EDUCATION - NORTH WESTERN PROVINCE

THIRD TERM TEST - 2018

Grade 11 | # SCIENCE - II | **Three Hours**

Name / Index No. :

- **Answer four questions in part A in the space given.**
- **Answer only three questions in part B, in separate papers.**
- **After answering, attach part A and answer script of B together and hand over.**

Part A - Structured Essay

01. A   A food chain is given below.

   Plant   Grass hopper   Frog   Crow

   (i)   What is the percentage of energy wastage when flowing energy from one tropic level to the other ?   (01 m.)

   ....

   (ii) If plants contain 3000 J what is the amount of energy transmitted to the last organism ?   (02 m.)

   ....

   (iii) Fill in the blanks showing the organizational levels in the biosphere.

   ....   Population   ....   Eco system   Biosphere (02 m.)

   B   (i)   What is the bio-geo circle given here ?

   ....

                                                               (01 m.)

   (ii) Name A substance and processes B and C.

   Substance A   ....

                                                               (01 m.)

   Process B   ....   (01 m.)

   Process C   ....   (01 m.)
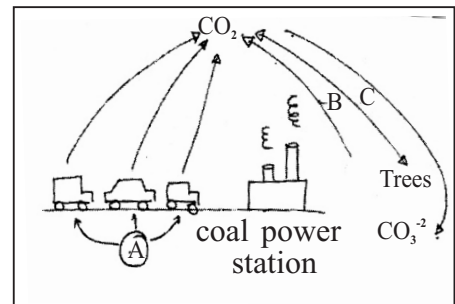
(iii) Acid rains are possible due to smoke in a coal power station. What is the responsible gas for this ?   (01 m.)

....

C   Although Glyphoset is banned in Sri Lanka, the permission was given to use it again for rubber and tea.

(i)   Which type of pesticide glyphoset is ?   (01 m.)

....

(ii)   State one heavy metal that can be accumulated in the environment due to excessive use of agro-chemicals.   (01 m.)

....

(iii) What is bio accumulation ?   (02 m.)

....

(iv)   State one advantage of multi-crop agriculture.   (01 m.)

....

02. A   The origin of a multi-cellular organism is given below.
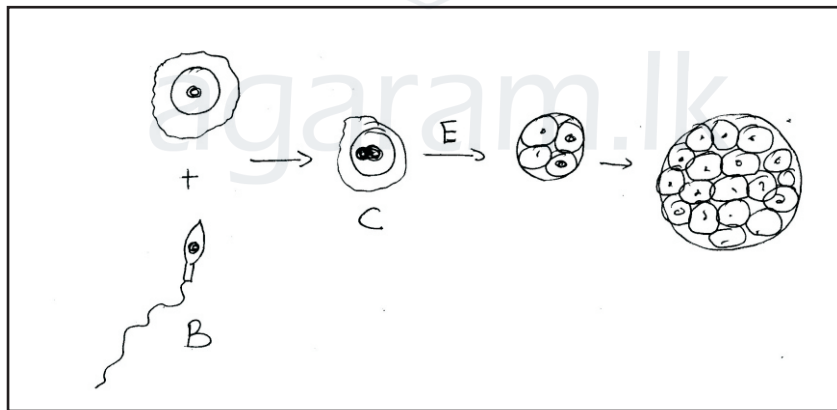
(i)   Identify B and C and name them.

B   .... (01 m.)

C   .... (01 m.)

(ii)   Which is the process given as E ?   (01 m.)

....

(iii) State the organizational levels in the body of a multicellular organism in order.

.... (01 m.)

(iv) State one common characteristic of organisms. (01 m.)

....

(v) What is "A tissue"? (01 m.)

....

B   A longitudinal section of a kidney is given below.

(i) Name the parts A and B.

A   .... (01 m.)

B   .... (01 m.)
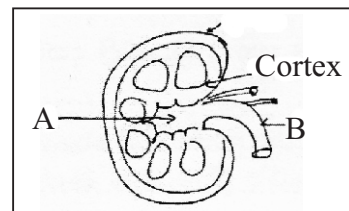
(ii) What is the structural and functional unit of the kidney ? (01 m.)

....

(iii) Main processes of urine filtration is given below. Name the process B.

A) ultrafiltration.

B) .... (01 m.)

C) Secretion.

(iv) Name two substances that are not present in glomerular filtrate but present in blood.

.... (01 m.)

.... (01 m.)

(v) State the path of urine travel from collecting tibules to the elimination of urine from the body..

....

.... (02 m.)

03. A   Several elements of 2 consecutive periods of the periodic table is given below.

A	B	C	D	E	F
G	H	I	J		

(i) If the atomic number of element A is 5, how many protons does it contain ?

.... (01 m.)

(ii) State the type and number of the sub atomic particle which are revolving around the nucleus of the atom E, according to the planetary model of the atom.

Type of sub atomic particle .... (01 m.)

Number of those partice ....(01 m.)

(iii) State the electronic configuration of atom G.

.... (01 m.)

B Mixtures are divided into two groups as homogeneous and heterogeneous mixtures according to the nature of the mixture. Two of such mixtures are given below.

A - Salt powder and water mixture   B - Wheat flour and water mixture

(i) What is the homogeneous mixture.   (01 m.)

....

(ii) State one reason to name it as a homogeneous mixture.   (01 m.)

....

(iii) Homogeneous mixture are known as ....   (01 m.)

(iv) State another homogeneous and a heterogeneous mixture.

(a) Homogeneous mixture ....   (01 m.)

(b) Heterogeneous mixture ....   (01 m.)

C (i) Explain the term "Solubility"   (02 m.)

....

....

(ii) You have been given a creation amount of sugar to dissolve in a certain mass of water. But all the sugar couldn't be dissolved in that mass of water.

(a) State one strategy of dissolve all the sugar in the same mass of water. (01 m.)

....

(b) State another factor affecting solubility of a solute in a solvent.   (01 m.)

....
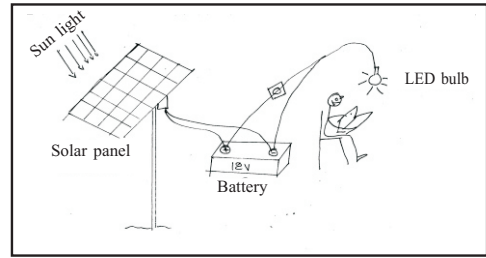
(iii) To remove grease, kerosene is normally used by Simon who worked in a garage.

What is the reason for this ?   (01 m.)

....

04. A   The following figure shows an emergency light system in a house.

   (i)   What type of wave sunlight is? (01 m.)

   ....

   (ii) State the symbol of an light emitting diode.   (01 m.)

   (iii) The energy transformation in the above system is given below. Fill in the blanks.

   ....   Electrical energy   ....
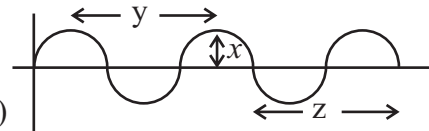
   light energy   (03 m.)

   (iv) A graphical representation of a wave is given below. Write the amplitude and wave length.

      (a)   Wave length .... (01 m.)

      (b)   Amplitude .... (01 m.)

   (v)   State the relationship to calculate the speed of a wave.   (01 m.)

   ....

   B   A diagram to draw rays in a concave mirror is given below.

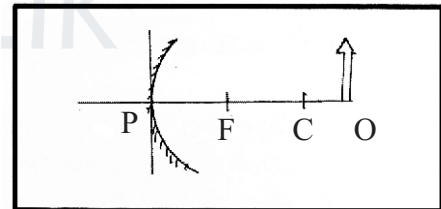   (i)   Name the positions denoted by the symbols in the diagram.

   P   ....

   .... (01 m.)

   C   .... (01 m.)

   F   .... (01 m.)

   (ii) Denote the position of the image of the above object using light rays.   (02 m.)
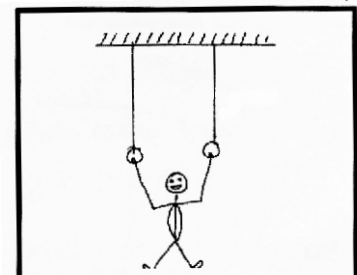
   C   A person is hung in the center of two ropes which are fixed in parallel. The force exerted on one rope is 200 N.

   (i)   What is the weight of the person ?   (01 m.)

   ....

   (ii) If the maximum weight that can be held by one rope is 800 N, if this person hangs by one rope, can he hang by one rope or does he fall down?   (01 m.)
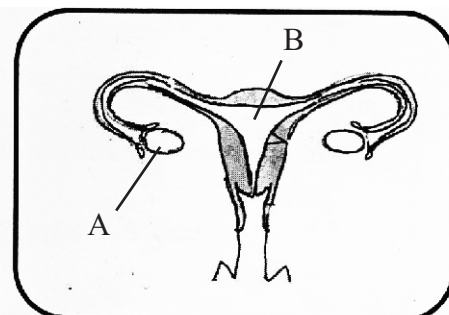
   ....

05

Grade 11	THIRD TERM TEST - 2018	SCIENCE - II

Part B - Essay

● **Answer only for 3 questions.**

05. A   A diagram of the female reproductive system is given below.

    (i)   Name the part A and B.   (02 m.)

    (ii)   What happens in fertilization of ova?   (01 m.)

    (iii) What is the term used to introduce the process
          of elimination of unfertilized ovule with blood
   and mucous from the uterus ?   (01 m.)

    (iv) What is the term used to introduce the deposition of zygote in the walls of the
          uterus ?   (01 m.)

    (v)   Name a sexually transmitted disease caused by a bacterium.   (01 m.)

  B   Species of organisms can be differentiated due to specific inherited characters present in
   them.

    (i)   Name,

        (a)   a common inherited charactorsitc   (01 m.)

        (b)   a rare inherited charactoristic of human species.   (01 m.)

    (ii)   Name the person who conducted experiments about transferring characters from
         generation to generation.   (02 m.)

    (iii) Build up a punnett square to show the inheritance of mono-hybrid cross between
          pure tall (TT) x pure short (tt)   (03 m.)

  C   Several animal tissues are given below.
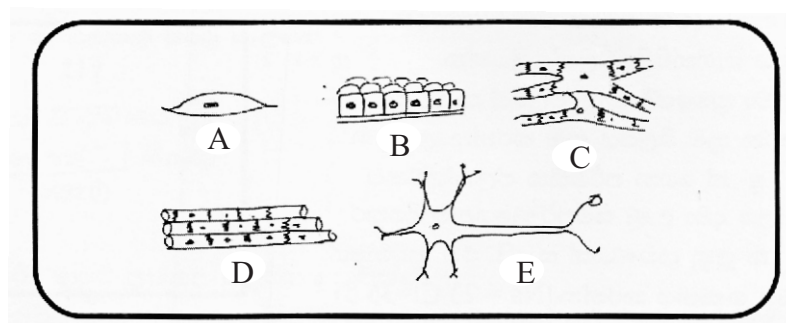
    (i)   Name the tissues A and C.   (02 m.)

    (ii)   State a feature to differentiate tissue C from tissue D.   (02 m.)

    (iii) What is the term use to introduce one cell in tissue E ?   (01 m.)

   (iv) Name two locations of tissue A in the body.   (02 m.)

06

06. A   The following activity is done to find out the nature of the reactivity of Al, Mg, Zn and Ag with equal volumes of $CuSO_4$ solution.

Al   Mg   Zn   Ag

A   B   C   D
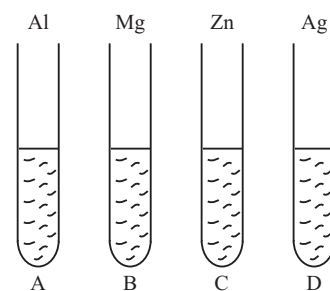
(i)   What is the colour of the $CuSO_4$ solution.   (01 m.)

(ii)   Name a test tube in which a chemical reaction could be observed.   (01 m.)

(iii) Write the balanced chemical equation for the above reaction.   (02 m.)

(iv)   To which type of chemical reaction does it belong ?   (01 m.)

(v)   Name the test tube in which a chemical reaction couldn't be observed. Give reasons.   (02 m.)

B   (i)   Name the extraction methods of sodium, Iron and gold.   (03 m.)

(ii)   What is the main component in iron ore which is used to extract iron ?   (01 m.)

(iii) Write the balanced chemical reaction occurs in the above compound in extraction of iron.   (02 m.)

(iv)   Name one component present in slag which is floating on molten iron at the end of the iron extraction.   (01 m.)

C   A simple sketch of a saltern is given below.

Obtaining sea water

1st tank   2nd tank   3rdst tank   Mother solution
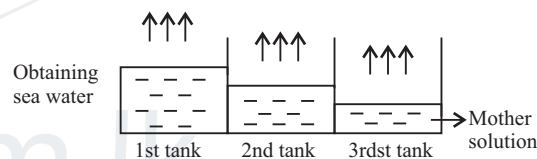
(i)   Name the compounds precipitated in the 1st and the 2nd tanks in order.   (02 m.)

(ii)   Name the separating technique of components in sea water in saltern method.

(01 m.)

(iii) A salt solution of 500 cm³ volume is made by dissolving 117 g of salt in distilled water in a volumetric flask. Calculate the concentration of that solution. (Na = 23, Cl = 35.5)   (03 m.)

07. A   A glass - mercury thermometer is given below. It is calibrated in celcius scale,

°C
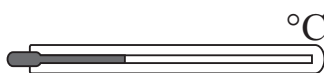
(i)   Name other two types of thermomenters.   (02 m.)

(ii)   State following temperatures in Kelvin scale.

(a)   37 °C   (b)   -10 °C   (02 m.)

(iii) Which characteristic of mercury is used for the function of glass - mercury thermometer?   (01 m.)

B   Information about some electrical appliances are given below.

| Appliances	Specification
Filament bulb	100 W 230 V
LED bulb	15 W 230 V
Normal electric iron	1500 W 230 V
Vapour electric iron	2200 W 230 V

(i)   State the standard symbol of measuring power. (01 m.)

(ii) Calculate the energy exhausted when lighting the LED bulb for 4 hours. (02 m.)

(iii) Ironing clothes by vapour electric iron is more advantageous than normal electric iron. What is the reason for this? (02 m.)

C   Using a panner for unfixing nails in a wheel is given below.

(i)   How should the spanner rotates to unfix the nails ? Clockwise or anti clockwise ? (02 m.)

(ii) What is the moment of force around the nail ?

(02 m.)

(iii) State one strategy to make it easy to unfix the nail. (01 m.)
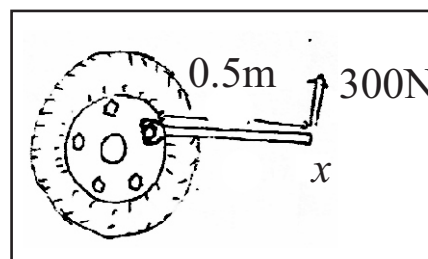
(iv) A hit was given to the place X by a hammer when it was difficult to unfix the nail. The mass of the hammer is 8 kg and the velocity of motion is 2 ms^{-1}. What is the kinetic energy of the hammer ? (03 m.)

(v)   When fixing the wheel, the vehicle was displaced 1 km with the force of 2000 N. Calculate the amount of work done by the vehicle. (02 m.)

08. A Following things were taken by a group of students to an experiment about photosynthesis.

> a) A potted plant kept 48 hours in the dark.
> b) Iodine solution.
> c) Potassium hydroxide solution.
> d) Two transparent bags
> e) Distilled water.

(i)   Which factor was tested using above things. (01 m.)

(ii) What is the reason for keeping the plant 48 hours in the dark (01 m.)

(iii) Can we use black coloured paper bags instead of transparent bags for this activity. Give reasons for your answer. (02 m.)

(iv) Why is it necessary to use potassium hydroxide and iodine solutions for this activity. (02 m.)

(v)   How can we arrange a control set-up for this activity. (01 m.)

B   Cell division directly affect the growth of organisms.

   (i)   Name the two methods of cell division.   (02 m.)

   (ii)   Which method of cell division is caused for the growth of organisms.   (01 m.)

   (iii) State one significance of cell division for the organisms except the growth.

                                                                                    (01 m.)

   (iv)   State one difference between pollen production and cell division in meristematic
          tissues ?   (01 m.)

C   The diagram given below shows a set-up prepared by a student to study about the
     behaviour of electric current. The resistance of AD conductor is 90 Ω and the potential
     difference is 3V.
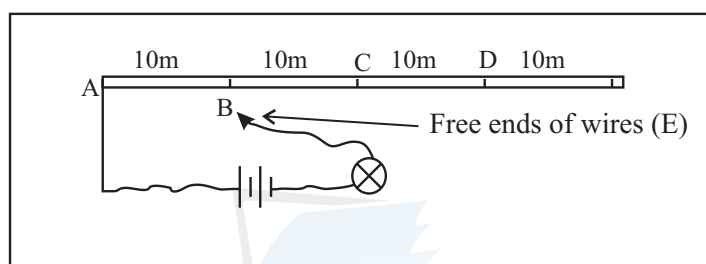
   (i)   The terminal E touches the points B, C and D from A.

      (a)   How the brightness of the bulb changes.   (01 m.)

      (b)   What is the reason for the above answer ?   (01 m.)

   (ii)   The conducting wire AD is cut into two equal parts and connected parallely to the
          system. What should be the equivalent resistance ?   (01 m.)

D (i)   State the deflection of the center zero galvanometer in the above instance.

      a)   At the time of closing the switch.   (01 m.)

      b)   When switch is closed.   (01 m.)

      c)   When opening the switch.   (01 m.)

   (ii)   Name the electrical appliance produced, based on the above principle.   (01 m.)

09. A   A note given by your teacher to confirm a certain concept in chemistry is given below.

   (i)   What is the concept introduced
          by X in the figure.   (01 m.)

   (ii)   Mention the relative molecular
          mass of water.   (01 m.)
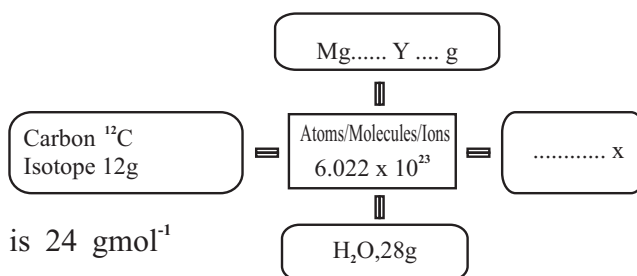
   (iii) If the molar mass of magnesium is 24 $gmol^{-1}$
          state the value of Y correctly.   (01 m.)

   (iv)   How many hydrogen atoms are present in 9g of water.   (02 m.)

Part B - Continuation

B   The following description gives how a student reported a certain activity done by him.

> "When immersing a zine plate and a copper plate in a beaker containing dilute sulphuric acid and connecting a (2.8V) torch bulb to the two terminals of metal plates, the bulb gets lighted slightly, then light disappears after sometime."

(i)   State one observation that can be taken by this activity.   (01 m.)

(ii)   Draw a rough sketch of the set-up.   (02 m.)

(iii)   Fill in the blanks using the most appropriate words.   (04 m.)

(a) .... electrons from an atom is know as (b) ....
while obtaining electrons is known as (c) ....

The cathode is the electrode (d) .... takes place.

C   A circuit diagram of a set-up to demonstrate the function of a rectifier diode is given below.
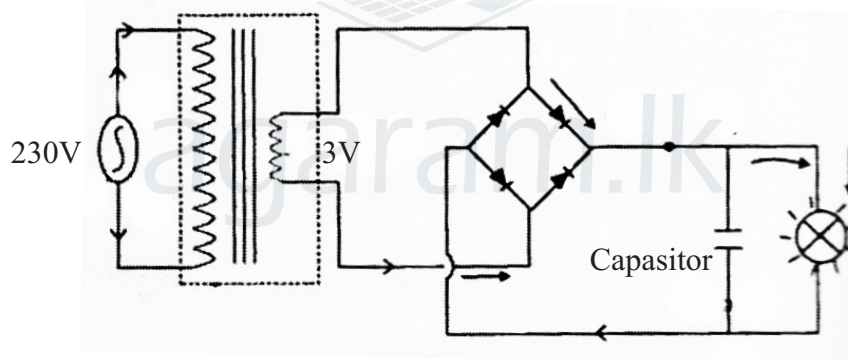
(i)   How many diodes are present in the circuit ?   (01 m.)

(ii)   To demonstrate which function of the diode is this set-up used ?   (01 m.)

(iii)   Why is a transformer connected to the circuit   (01 m.)

(iv)   What is the function performed by the capacitor ?   (01 m.)

(v)   Draw a graph between the current flows through bulb with time.   (02 m.)

D   Calculate the pressure exerted on a fish which is in 4 m above the bottom of an ocean which is 20 m in depth.

(The density of ocean water is 1050 kgm^{-3} and the gravitational acceleration is 10 ms^{-2})

       (02 m.)

Grade 11	THIRD TERM TEST 2018	Science

Answer Paper - Part I

01. (1) 02. (2) 03. (3) 04. (4) 05. (3) 06. (4) 07. (2) 08. (1) 09. (4) 10. (3)

11. (2) 12. (1) 13. (2) 14. (4) 15. (3) 16. (1) 17. (2) 18. (1) 19. (3) 20. (4)

21. (2) 22. (4) 23. (3) 24. (1) 25. (4) 26. (3) 27. (1) 28. (2) 29. (3) 30. (4)

31. (1) 32. (2) 33. (2) 34. (1) 35. (3) 36. (4) 37. (1) 38. (2) 39. (3) 40. (4)

(40 x 2 = 80m.)

PART A - Structural Essay

01. A (i)   Ninety percent / 90%   (01m.)

      (ii)   3 Joules / 3J   (02m.)

      (iii) Individual, community in order   (02m.)

   B (i)   Carbon cycle   (01m.)

      (ii)   A - Mineral oil / fossil fuel   (01m.)

             B - Respiration   (01m.)

             C - Photosynthesis   (01m.)

      (iii) Sulphur dioxide / SO_2 (01m.)

   C (i)   Weedicides   (02m.)

      (ii)   Arsenic / As   (01m.)

      (iii) Concentration of poisonous chemical pollutants from one tropic level to the other in a
             food chain.   (01m.)

      (iv)   Less rick of spreading diseases / Reduction of arising resistant pests   (01m.)

02. A (i)   B - Sperm   (01m.)

             C - Zygote   (01m.)

      (ii)   Cell division / Mitosis   (01m.)

      (iii) Cell, tissue, organs, systems in order   (02m.)

      (iv)   Growth, reproduction, excretion, movement, Irritability like living characteristic (01m.)

      (v)   Group of cells to perform a common function.   (01m.)

   B (i)   A - Pelvis   (01m.)

             B - Ureters   (01m.)

      (ii)   Nephron   (01m.)

      (iii) B - Selective reabsorption   (01m.)

      (iv)   Blood cells, plasma proteins   (02m.)

      (v)   Pyramids, Pelvis, Ureters, bladder, Urethra   (02m.)

03. A (i)   Five / 5   (01m.)

      (ii)   Electrons   (01m.)

             Nine / 9   (01m.)

      (iii) 2, 8, 1   (01m.)

   B (i)   A / Salt - water mixture   (01m.)

      (ii)   Some density / Same concentration / Constant composition - like idea   (01m.)

      (iii) Solutions   (01m.)

      (iv)   Homogeneous mixtures - Sugar, solution, ethyl alcohol   (01m.)

             Heterogeneous mixtures - herbal porridge, blue powder in water   (01m.)

   C (i)   The maximum amount of mass of a solute that can be dissolved in 100g of the solvent in
             a certain temperature.   (03m.)

01

Grade 11	THIRD TERM TEST 2018	Answer Paper - Part II - Science

	(ii)	(a) Increasing temperature	(01m.)
		(b) Nature of the solute or Nature of the solvent	(01m.)
	(iii)	Grease is a non-polar solute. Koresene is a non polar solvent. So grease dissolves in Kerosene.	(02m.)
04. A	(i)	Electro magnetic waves	(01m.)
	(ii)	Symbol of LED	(01m.)
	(iii)	Light energy, chemical energy, Electrical energy in order	(03m.)
	(iv)	Graph of the wave showing amplitude as X and wave length as Y	(02m.)
	(v)	Velocity = frequency x wave length or in symbols	(01m.)
B	(i)	P - Pole of the mirror	(01m.)
		C - Centre of curvature	(01m.)
		F - Focus of the mirror	(01m.)
	(ii)	Showing the ray diagram	(02m.)
C	(i)	400N	(01m.)
	(ii)	Do not fall on the ground	(01m.)
05. A	(i)	A - Ovary	(01m.)
		B - Uterus	(01m.)
	(ii)	Fusion of the necleus of sperm with the nucleus of the ovum	(01m.)
	(iii)	Menstruation	(01m.)
	(iv)	Implantation	(01m.)
	(v)	Gonorrhoes / Syphillis	(01m.)
B	(i)	(a) Complexion, nature of hair, nature of ear lobes, straight or curved thumb, ability to roll the tongue.....	(01m.)
		(b) Polydactyly, Syndactyly, albinism, blue or brown eyes	(01m.)
	(ii)	The priest Gregor Mendal	(02m.)
	(iii)		(03m.)

X	t	t
T	TT	Tt
T	Tt	tt

C	(i)	A - Mussle tissue / Smooth muscle	(01m.)
		C - Cardiac muscle / Heart muscle	(01m.)
	(ii)	C is branced, have intercalated discs,	
		D is multinucleus	(02m.)
	(iii)	Nerve cell / Neurone	(01m.)
	(iv)	Intestine, bladder, uterus like answer	(02m.)
06. A	(i)	Blue colour	(01m.)
	(ii)	One from A or B or C	(01m.)
	(iii)	$2Al + 3CuSO_4 \quad Al_2(SO_4)_3 + 3Cu$	(02m.)
		$Mg + CuSO_4 \quad MgSO_4 + Cu$	
		$Zn + CuSO_4 \quad ZnSO_4 + Cu$	

	(iv)	Single displacement reaction	(01m.)
	(v)	Tube D, Ag is situated below Cu in activity series	(02m.)
B	(i)	Sodium Electrolysis of fused Sodium Chloride	(01m.)
		Iron Heating heamative in air.	(01m.)
		Gold Physical methods	(01m.)
	(ii)	Haematite	(01m.)
	(iii)	$Fe_2O_3 + 3CO \quad 2Fe + CO_2$	(02m.)
	(iv)	Calcium Silicate ($CaSiO_3$) or Aluminium silicate ($CaAl_2O_4$)	(01m.)
C	(i)	First tank - Calcium Carbonate ($CaCO_3$)	(01m.)
		Second tank - Calcium Sulphate / Gypsum ($CaSO_4$)	(01m.)
	(ii)	Crystallization / Evaporation / Vaporization	(01m.)
	(iii)	Molar mass of NaCl = 58.5 $gmol^{-1}$	(01m.)

Moles of NaCl $= \dfrac{117g}{58.5 \ gmol^{-1}} = 2mol$ (01m.)

Concentration of NaCl $= \dfrac{2 \ mol}{500 \ cm^3} \times 1000$ (01m.)

$= 4 \ moldm^{-3}$

07. A	(i)	Alcohol - Mercury thermometer	(01m.)
		Digital thermometer	(01m.)
	(ii)	(a) 273 + 37 = 310 K	(01m.)
		(b) 273 + (-10) = 263K	(01m.)
	(iii)	Having high expansion	(01m.)
B	(i)	W	(01m.)
	(ii)	15W x 4 x 60 x 60 = 216000J or 216 KJ	(02m.)
	(iii)	Minimum time for ironing clothes / easiness	
C	(i)	Anti-clockwise	(02m.)
	(ii)	300 x N x 0.5m = 150Nm Anti-clockwise	(02m.)
	(iii)	Fixing an iron tube to the distal end of the spanner /Increase the length of the effort arm.	(01m.)

(iv) Klnetic energy $= \dfrac{1}{2} \ mv^1$ (01m.)

$= \dfrac{1}{2} \times 8kg \times 2ms^{-1} \times 2ms^{-1}$ (01m.)

$= 16 \ J$ (01m.)

(v) Work done $=$ Force x distance   (01m.)

$= 2000N \times 1000m = 2000000J$ (01m.)

08. A	(i)	Carbon dioxide is needed for Photosynthesis	(01m.)
	(ii)	To remove starch produced in the plant / Destarch	(01m.)
	(iii)	Cannot, no sunlight / Two factors cannot be tested simultaneously	(01m.)
	(iv)	Potassium hydroxide to absorb Carbon dioxide	(01m.)
		Iodine solution - To identify starch	(01m.)
	(v)	Covering plant leaves by a transparent polythene bag with Potassium hydroxide. (Writing or using a diagram)	(01m.)
B	(i)	Mitosis (01m.) Mitosis	(01m.)

03

(ii) Mitosis (01m.)

(iii) To produce gametes (01m.)

(iv) When producing pollen, both mitosis and meiosis occur, In apical meristem, only mitosis occurs. (01m.)

C   (i) (a) Decreasing the brightness of the bulb gradually. (01m.)

(b) Increasing the resistance with the increase of the length of a conductor. (01m.)

(ii) 90   / 2 = 45 (02m.)

$$\frac{1}{45} + \frac{1}{45} = 22.5$$

D   (i) (a) Deflection of the indicator of the galvanometer (01m.)

(b) No deflection of the indicator of the galvanometer (01m.)

(c) Deflection of the indicator of the galvanometer (01m.)

(ii) Transformer (01m.)

09. A   (i) Avogadro constant / Avogadro number (01m.)

(ii) 18 Units should not be mentioned (01m.)

(iii) 24g (01m.)

(iv) $\frac{99}{18 \text{ gmol}^{-2}} = \frac{1}{2} \text{ mol}$

$2 \times 6.022 \times 10^{23} \times \frac{1}{2}$

6.022×10^{23} (01m.)

B   (i) Lighting the bulb slightly and the putting off. (01m.)
Putting off.
Dissolving zinc plate.
Presence of gas bubbles near the copper plate.
(for one observation)

(ii) Showing that the beaker is filled half with acid. (01m.)
Naming the copper and zinc plate. (01m.)

(iii) (a) Removing (01m.)

(b) Oxidation (01m.)

(c) Reduction (01m.)

(d) Reduction (01m.)

C   (i) Four / 4 (01m.)

(ii) Rectification of current (01m.)

(iii) To reduce the potential difference. (01m.)

(iv) To smoothing the current. (01m.)

(v) Representing a direct current graphically (02m.)

D   Liquid pressure = height of the liquid column x dencity of the liquid x gravitation (01m.)

= 20m x 1050 kgm⁻³ x 10ms⁻² (01m.)

= 210000 Pa (01m.)