

Department of Education - Southern Province

Year End Test - 2018

Grade - 09






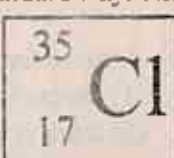
Science

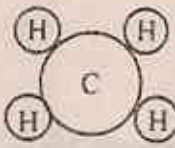
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Time: 2 hours

Part I

- ❖ Answer all the questions.
- ❖ Underline the most suitable answer.
- ❖ After answering, the paper I and answers for part II together and submit.

- (01) This is a group of micro organism with photosynthetic ability due to containing the pigment chlorophyll.
 (1) fungi (2) algae (3) virus (4) heterotrophic bacteria
- (02) This group of organism is considered as the first vertebrates that entered into the terrestrial environment.
 (1) fish (2) mammals (3) amphibians (4) reptiles
- (03) Which of the following is the hardest mineral according to the mohr's scale?
 (1) Tale (2) diamond (3) corundum (4) apatite
- (04) The timber of this plant is used for the tasks done under water due to its resistivity for water
 (1) jak (2) "lunumidella" (3) "wallapaita" (4) "hora"
- (05) Which of the following answer shows how the image is observed when an object like in the diagram is placed in front of a plane mirror?
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- (1)  (2)  (3)  (4) 
- (06) A gas which is burnt to obtain heat needed for welding metals is,
 (1) acetyline (2) methane (3) ethane (4) oxygen
- (07) The perpendicular force applied on a surface is 125N Which of the following is the surface area if the pressure act on the surface is 50 Pa?
 (1) 2.5m² (2) 2m² (3) 25m² (4) 1.5m²
- (08) This diagram shows the mass number and atomic number of the chlorine atom in the standard way. The number of neutrons in the chlorine atom is,
 (1) 35 (2) 17 (3) 15 (4) 18
- 
- (9) This is a growth substance produced in the tip of the shoots and roots
 (1) auxin (2) gibberellins (3) cytokinins (4) abscisic acid
- (10) Select the answer which shows the symbols of the elements sodium, potassium and carbon in sequence.
 (1) S, K, C (2) Na, P, K (3) Na, K, C (4) S, P, C

- (11) The acid present in vinegar is,
 (1) acetic acid (2) citric acid (3) lactic acid (4) sulphuric acid
- (12) The amount of platelets in blood decreases speedily due to this disease
 (1) malaria (2) hydrophobia (3) common cold (4) dengue
- (13) Several Statements regarding this diagram are shown below.
 A - It is a hetero atomic molecule. B - It is the structure of methane.
 C - It is the building unit of bio gas. The true statements out of them are,
 (1) A and B (2) B and C (3) A and C (4) all A, B and C
- 
- (14) Two statements regarding the structure of eye are shown below
 A - Eyes are located inside the orbits in the skull.
 B - Eyes are fixed with eight eye muscles in the orbits.
 Out of these statements,
 (1) only A is true. (2) only B is true. (3) both A and B are true (4) Both A and B are false.
- (15) When we observe a closer object,
 (1) The focal length of the eye decreases by decreasing the curvature of the eye.
 (2) The focal length of the eye increases by decreasing the curvature of the eye.
 (3) The focal length of the eye decreases by increasing the curvature of the eye.
 (4) The focal length of the eye increases by increasing the curvature of the eye.
- (16) Select the answer which shows standard units for measuring pressure and density respectively,
 (1) Nm^{-2} , kgm^{-3} (2) Nm^{-2} , kgm^{-2} (3) Nm , g cm^{-3} (4) Nm^{-2} , kgm^{-1}
- (17) The technique used to extract oil from cinnamon leaves is.
 (1) simple distillation (2) fractional distillation
 (3) vaporization (4) steam distillation
- (18) Several statements regarding the force are shown below.
 a - The standard unit of measuring force is Newton. b - Force can rotate an object.
 c - Force is a scalar quantity. d - Force has a point of application.
 Which of the following statement is incorrect?
 (1) a (2) b (3) c (4) d
- (19) There are 4 blood groups known as A, B, AB and O. Select the answer which shows universal donor and universal recipient respectively.
 (1) A and B (2) A B and O (3) O and B (4) O and AB
- (20) When a lightning strikes a person who is alone in a flat area, it is a
 (1) direct strike (2) contact voltage (3) side flash (4) step potential
- (21) A reason for an ox is hurt more than a human by a step potential is that,
 (1) human has two feet and ox has four feet.
 (2) there is a big potential difference between the two feet of human and a low potential difference between the feet of ox.
 (3) There is a low potential difference between the two feet of human and a big potential difference between the feet of ox.
 (4) There is no potential difference between feet of human and there is a potential difference between the feet of ox.

(22) At which border, do the two tectonic plates move away from each other while being in contact in an earth quake?

- (1) Slip border (2) divergent border (3) convergent border (4) on the earth surface.

(23) The real occurrence taken place in an eco system is that

- (1) materials are not recycling (2) Energy flows in one direction
(3) all plants become trees (4) There are limited number of interactions.

(24) This is a dry mixed evergreen forest.

- (1) Sinharaja (2) Wasgamuwa (3) Horton planes (4) Haggala

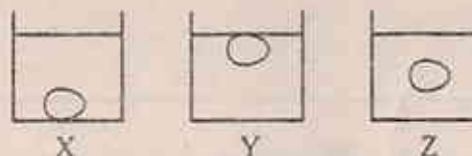
(25) Conserving an organism in their own natural environment is in-situ conservation. The set of local plants that conserve in in-situ conservation are,

- (1) jak, satinwood (2) Jak, 'nendun' (3) Satin wood, milla (4) Satinwood, teak

(26) These diagrams show how three identical objects are immersed in three identical beakers with equal volume of three liquids with different densities.

Which of the following answer shows the densities of liquids in the ascending order?

- (1) X, Z, Y (2) X, Y, Z
(3) Z, Y, X (4) Y, X, Z



(27) Select the incorrect statement regarding crop cultivation enhanced by bio-technology.

- (1) Producing pest resistant paddy varieties.
(2) Producing golden rice enriched with vitamin A.
(3) Producing crop varieties that can give a big harvest
(4) Reducing the nutrient value of crops.

(28) Using micro-organisms for removing environmental pollutants is known as bio-remediation. An instance of not using the bio-remediation is,

- (1) removing heavy metals from polluted water.
(2) decomposing the oil layer released on to the ocean water.
(3) Producing products related to plant fibres.
(4) Producing plastics by bacteria.

(29) SONAR machine which uses ultra sound waves is used to find the depth of the ocean. If an ultra sound wave took 5 seconds to strike on the ocean bed and come back, what is the depth of the ocean? (speed of sound in water is 1490ms^{-1})

- (1) $1490 \times 5 \text{ m}$ (2) $\frac{1490 \times 5}{2} \text{ m}$ (3) $\frac{1490}{5} \text{ m}$ (4) $\frac{1490 \times 2}{5} \text{ m}$

(30) To avoid a hilly area from landslides,

- (1) trees with big roots present in slopes should be removed.
(2) hilly areas with high slopes should be used for agriculture.
(3) constructions should be done in hilly areas with high slopes.
(4) grass and plants on slopes should be conserved.

Part II

❖ Question no. 1 is compulsory.

❖ Answer for five questions with question no.1 and four more questions.

(1) This diagram shows an environmental crisis faced by the world in the present

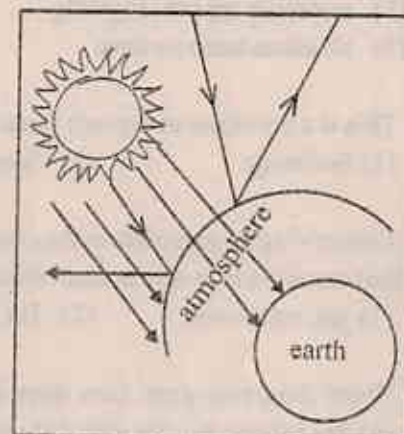
(A) (i) Identify the natural disaster shown in the diagram and write its name.

(ii) Name a greenhouse gas that contributes mostly for this process.

(iii) Write two actions that can be followed by you as an environment friendly person to avoid this condition.

(iv) What is known as green concept?

(v) What is the main aim of the green concept?



(B) Sinharaja forest in Sri Lanka is the biggest specific eco system which is considered as a world heritage. All the interactions that should be taken place in an eco system take place here and contributes more to maintain the water cycle.

(i) Write a biotic - abiotic interaction that can be seen in a forest.

(ii) Write 3 requirements fulfilled by a biotic-biotic interaction.

(iii) Certain forests show stratification, What is meant by stratification?

(iv) Write 2 problems arise in a man-made environment that cannot be seen in a natural environment.

(v) Why is it necessary to apply fertilizer to an agricultural land though it is not necessary to apply fertilizer to plants in a forest?

(vi) "Forests contribute mostly to maintain the water cycle". Do you agree with this statement? Explain it.

(02) (A) Several examples for micro-organisms are shown below

(i) Separate the above micro-organisms correctly to the groups given below

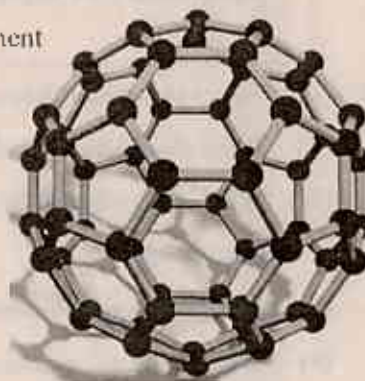
- (a) bacteria (b) fungi (c) protozoans
(d) algae (e) virus

Euglena	Amoeba
Chlamidomonas	Methanococcus
Penicillium	Ebola
Diatom	Influenza
Rhizobium	Mucor

- (ii) Name the micro-organism that contributes for fixation of atmospheric nitrogen.
(iii) Name the microorganism that contributes to make bio gas, living on organic matter.
(iv) Mention the kind of micro-organism that grow on wet loaves of bread, Vegetables and fruits.

(B) Nano materials are used in various fields in the present and the element carbon takes a most prominent place among them.

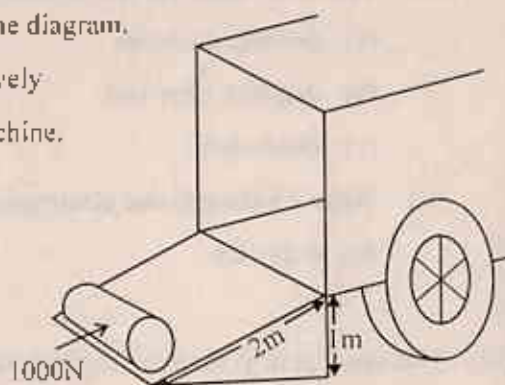
- (i) What is the name used to identify the nano carbon structure shown in the diagram ?
(ii) What is the diameter of the above structure roughly ?
(iii) Name another carbon structure used in nano-technology.
(iv) Name a raw material used to produce active carbon.
(v) Explain the reason for using active carbon to purify water.



(03) (A) This diagram shows how 2 m long plank is used to make the task easy for lifting 2000N weight oil barrel to a lorry. The deck of the lorry is placed 1 m above the earth. A force of 1000N is applied to push the oil barrel.

Answer the questions below using the given information.

- (i) What is the type of simple machine shown in the diagram.
(ii) Show the values of load and the effort respectively
(iii) Calculate the mechanical advantage of this machine.
(iv) Calculate the velocity ratio of the machine.

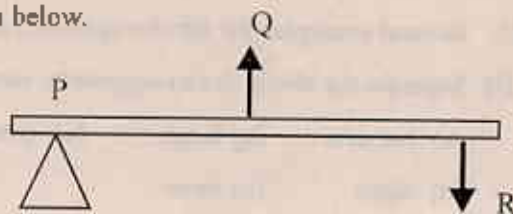


(c) Figurative representation of a lever is shown below.

(i) If the fulcrum is p, name Q and R ?

(ii) Which order of lever is represented by this diagram?

(iii) Mention an instance of using this type of lever in day today life.



(04) The materials shown below were placed on the work table to learn the changes caused in a solution by an electric current. Use these materials to answer both parts A and B.

salt solution, distilled water, copper sulphate solution, acidulated water, Kerosene oil, voltmeter, 1.5V drycell, 9V battery, connecting wires, carbon rods, iron plates, copper plates, an ammeter

(A) (i) Select two electrolytes among the given solutions above.

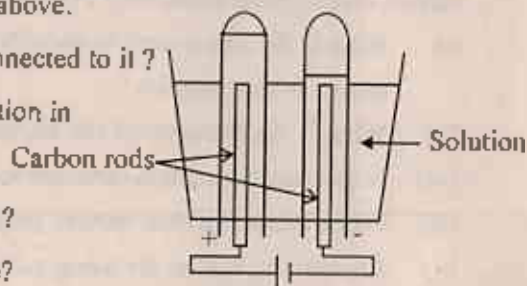
(ii) What should be the voltage of the cell / battery connected to it ?

(iii) What is the electrolyte that can be used as the solution in this set-up?

(iv) What is the gas emitted near the positive electrode ?

(v) What is the gas emitted near the negative electrode?

(vi) Mention how the gas emitted near the positive electrode is identified ?



(B) This diagram shows a set-up prepared for electroplating copper on an iron plate.

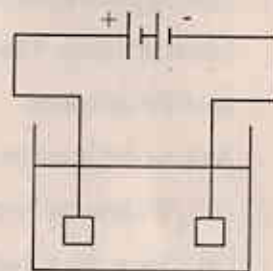
(i) Select the materials relevant for the things below.

(a) positive electrode

(b) negative electrode

(c) electrolyte

(ii) Write 2 instances that electroplating is used in day to day life.

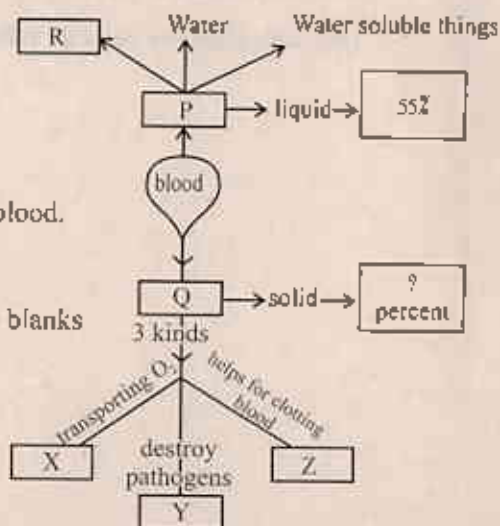


(05) This concept map shows a rough sketch of components of blood.

(A) Complete the above sketch using the relevant words for the blanks P, Q, R, X, Y, Z.

(i) What is the main function of P?

(iii) What is the percentage of Q in blood ?

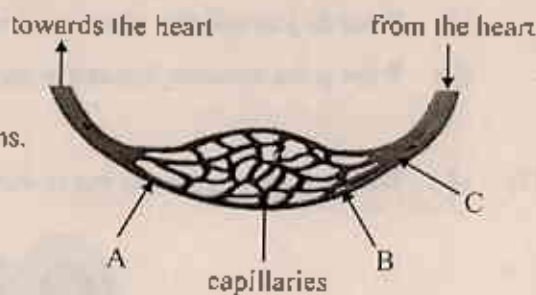


(B) (i) Name the blood vessels shown and A, B and C in the diagram.

(ii) Mention,

(a) a structural

(b) a functional feature of arteries and veins.



(06) (A) There is a big difference among locomotive methods of various animals in the animal world.

(i) Write the locomotive methods and the appendages used for it by the animals shown in the table below.

	animal	method of locomotion	locomotive organ
a	frog		
b	crow		
c	cheeta		
d	dolphin		

(ii) (a) Name 2 animals present in the home garden that do not have special appendages for locomotion.

(b) What are the structures used by the above animals who don't have locomotive organs for their locomotion?

(iii) Write a benefit obtained by vertebrates from the structures you mentioned in part (ii) -b and bones instead of motion or locomotion.

(B) This set - up shown in the diagram is prepared to demonstrate the performance of a human hand.

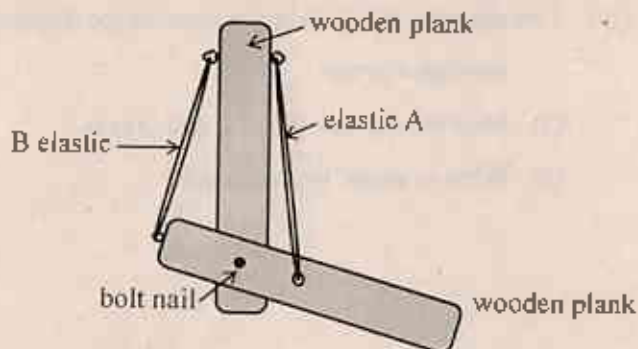
(I) Mention to which parts of the human hand, these materials used for making the set - up correspondent.

a) wooden planks

b) elastic A

c) elastic B

d) bolt nail



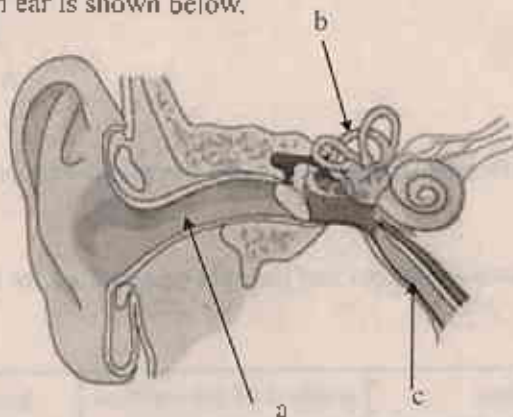
(ii) Which muscle contracts when the hand is bent from the elbow?

(C) Plant leaves in Sesbania like legume plants shrink in the night.

(i) What do you call this plant movement?

(ii) What is the structure located in the leaf base which contributes for this movement?

(7) (A) The diagram of a human ear is shown below.



(I) (i) Name the parts a, b, c

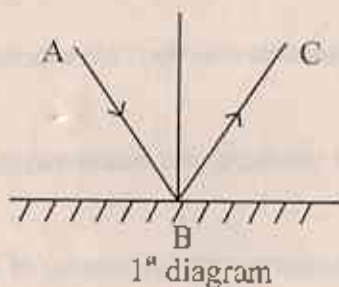
(ii) In which part are auditory nerve endings located?

(iii) Which structure helps to maintain the balance of the body.

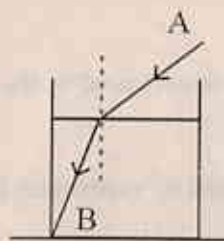
(iv) What part helps to maintain the balance of pressure either sides of tympanic membrane?

(B) These diagrams show two phenomena taken place due to light.

(i) Identify these phenomena and name them.



1st diagram



2nd diagram

(ii) Name an effect taken place in the environment due to the phenomena shown in the diagram 2

(iii) This diagram shows how we observe the dispersion of light when white beam of light travels through a prism.

(a) Mention the colours of P and Q rays.

(b) What is meant by dispersion,

