Mid Year Examination - 2015

Science I

Grade 10 **විද්‍යාව I** Time: 01 Hour

Name/ Index No.

- **Answer all the questions.**

01 Building unit of Carbohydrate is,

(1) Glucose (2) Maltose (3) Cellulose (4) Lactose

02 Protein contains in egg white is,

(1) Gluten (2) Osein (3) Kekatin (4) Albumin

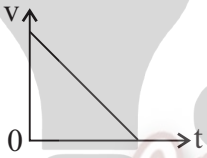
03 Symptoms such as retarded growth of roots / red and purple patches on leaves can be seen in plants because of deficiency in,

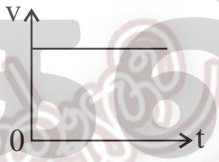
(1) Nitrogen (2) Phosperous (3) Potassium (4) Iron

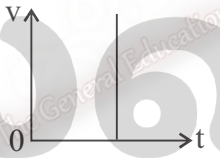
04 What is the standard unit of acceleration ?

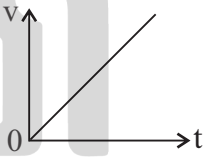
(1) ms^{-1} (2) Ns^{-2} (3) ms^{-2} (4) $Kgms^{-1}$

05 Velocity time graph which shows the motion of a coconut detached from the stalk and falling to the ground is,

(1) 

(2) 

(3) 

(4) 

06 Number of protons in a neutral atom whose atomic number 11 is,

(1) 10 (2) 11 (3) 8 (4) 12

07 What is the answer with the correct order of energy levels of an atom ?

(1) K, L, M, N (2) L, M, N, K (3) N, M, L, K (4) K, M, L, N

08 Not an instance of using sulphur is,

(1) Vulcanizing rubber (2) producing vine and beer

(3) producing sulphuric acid (4) welding metals

09 Surface from the following surfaces with the minimum friction is,

(1) surface of a slice of carrot (2) surface of snow

(3) surface of a concrete (4) surface of a polished granite

10 An organelle can not be seen in an animal cell is,

(1) mitochondria (2) large vacables

(3) nuclear membrane (4) cell plasm

11 Not an importance of mitosis is,

(1) growth of body (2) asexual reproduction

(3) repairing tissues by producing new cells. (4) resulting new variations.

12 Answer with correct relative atomic mass of Na is,

[Mass of Na atom $= 3.819 \times 10^{-23}$ g
Mass of C atom $= 1.993 \times 10^{-23}$ g] g

(1) $\frac{3.819 \times 10^{-23}}{1.993 \times 10^{-23}}$

(2) $3.819 \times 10^{-23} \times 1.993 \times 10^{-23}$

(3) $\frac{1.993 \times 10^{-23}}{3.819 \times 10^{-23}}$

(4) $\frac{3.819 \times 10^{-23}}{\frac{1}{12} \times 1.993 \times 10^{-23}}$

13 Number of basic units in a mole or Avogadro constant is,

(1) 1.67×10^{-24} (2) 6.022×10^{-23} (3) 6.476×10^{-23} (4) 3.819×10^{-23}

14 Standard unit of mollor mass is,

(1) $Kgmol^{-1}$ (2) $gmol^{-1}$ (3) mol^{-1} (4) $molKg^{-1}$

15 Number of molleculars contain in 5 moles of water is,

(1) $6.022 \times 10^{-23} \times 5$

(2) $\frac{6.022 \times 10^{-23} \times 5}{18}$

(3) $\frac{6.022 \times 10^{-23} \times 18}{5}$

(4) 6.022×10^{-23}

16 Following is an incomplete reaction written to show the process of photosynthesis,

$6CO_2 + \square \xrightarrow[\text{Chloroplasts}]{\text{Sun light}} C_6H_{12}O_6 + 6O_2$

Select the term suitable for the blank cage,

(1) $6O_2$ (2) H_2O (3) $6H_2O$ (4) C_2H_5OH

17 Common method of nutrition of bacteria is,

(1) photo autotrophic (2) chemical autotrophic

(3) parasitic (4) heterotrophic

18 A CO_2 which released by photosynthesis of plants is an excretory product.

B Urea released by kidneys of animals is an excretory product.

C O_2 released by plants at respiration is an excretory product.

D faeces released by animal from digesting system is an excretory product.

Correct statements from the above are,

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

19 Following diagram shows two forces act on an object.

Select the correct answer that shows the resultant force and its direction.

(1) 10N (2) 5N

(3) 15N (4) 5N

20 Number of protons and electrons of chlorine ion respectively are,

(1) 18, 17 (2) 17, 18 (3) 17, 17 (4) 18, 18

21 Not a specific quality of water having because of inter mollecular attractive forces among water mollecules is,

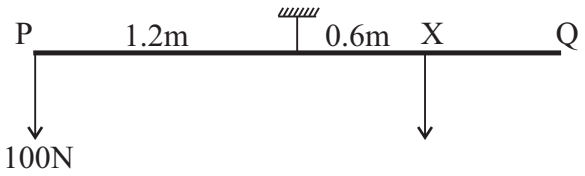
(1) no colour, taste or smell.

(2) having a high specific heat capacity.

(3) having a high boiling point.

(4) density of water is greater than that of ice.

22 PQ is 2.4 m length. It is hanged from the middle and at the end P of the balanced rod 100 N weight is hanged. What is the load to be put on point X 0.6 m far from mid point to keep the rod in balance position ?



(1) 50N

(2) 100N

(3) 200N

(4) 400N

23 Following are several compounds.

A Sodium chloride B Ammonia

C Magnesium oxide D Water

Answer with ionic compounds form the above are,

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

24 3 statements about virus are given below.

A Virus possess DNA and RNA only.

B No metabolism takes place within viruses.

C Reproduction of virus takes place with the help of host cells.

From the above statements,

(1) A is true (2) B is true

(3) A and B are true (4) A, B, and C are true

25 Responding to stimulates received from internal and external environment by organisms is known as,

(1) sensitivity (2) coordination (3) homeostasis (4) irritability

26 Following are several characteristics of a certain group of animals.

- live in terrestrial, fresh water, marine environment.
- body is not segmented.
- possess a cover wet by mucus.

An animal having those characteristics is,

(1) star fish (2) sea cucumber (3) prawn (4) octapus

27 Not an amphibian is

(1) Tortoise (2) Nootta (3) Frog (4) Salamander

28 Group of animals which support to create corel reefs is,

(1) coelenterata (2) Annelida (3) molluska (4) Echinodermata

29 Not a non-flowering plant without seeds is,
(1) Salvinia (2) Pynas (3) Pogonatum (4) Selleginella

30 Select the incorrect statement about binomial nomenclature.
(1) When writing scientific name first part to be generic name and second part to be species name.
(2) First letters of first name and second name to be English capital letters and other letters to be simple letters.
(3) When writing name two terms to be underlined.
(4) When printing name italic letters to be used.

31 Under ground stem of plantain is type of
(1) corm (2) rhizome (3) tuber (4) bulb

32 Natural vegetative propagation of plants and examples are given below. Correct answer is,
(1) by roots - 'Akkapana' (Bryophyllum) (2) by suckers - paddy
(3) by Runners - Curry leaves (4) by Leaves - 'Gotukola'

33 Sexual reproductive structure of plants is,
(1) seed (2) ovary (3) flower (4) gynoecium

34 Select the correct answer with adaptation of plants for pollination and the plant which shows that adaptation.
(1) spring up unisexual flowers - passion fruit.
(2) having extrose stamens - catharanthus
(3) Dichogamy - Corn
(4) Self - sterility

35 Methods of dispersal of seeds of coconut, bitter guard, dipterocarpus zeylanicus, ladies fingers respectively are
(1) by water, by animals, by wind, by explosion mechanism
(2) by animals, by wind, by water, by explosion mechanism
(3) by explosion mechanism, by wind, by animals, by water
(4) by wind, by animals, by water, by explosion mechanism

36 Not an external factor needed for germination of seeds is,
(1) Viability of seed (2) Oxygen
(3) Water (4) Optimum temperature

37 Hormne produced in male's body which affects for secondary sexual characteristics and place where it produces are,
(1) Testosterone - Testes (2) Projesterone - Vas deferens
(3) Oestrogen - Testes (4) Testosterone - Ovaries

38 The hormone secreted by pituitary which stimulate the development of a primary follicles to a graafian follicles is,
(1) LH (2) FSH (3) TSH (4) Projesterone.

39 *Puntius asoka* is a scientific name. Most appropriate statement related to this is,
(1) It is a botanical name (2) It is a zoological name
(3) It is a zoological name of a bird inherent to Sri Lanka
(4) It is a zoological name of a fish inherent to Sri Lanka

40 An animal of order of primates of class mammalia is,
(1) bat (2) sambur (3) man (4) whale

(1 x 40 = 40)

Mid Year Examination - 2015

Science II

විද්‍යාව II

Grade 10 Time: 02 Hours

Name/ Index No.

- **Answer 05 Questions only.**

01 A In 1665, Robert Hooke observed a section of a cork using a microscope prepared by him and micro structures were named as cells. After that, cell theory was introduced using various reveals.

(1) Who are the scientists who presented cell theory ? (03 m.)

(2) Mention 2 facts presented by cell theory. (01 m.)

(3) Write steps of observing cells of an onion peel by using light microscope in order. (02 m.)

(4) Name the main two ways of cell division. (01 m.)

(5) Mention two differences between above two methods of division. (01 m.)

B There are 4 types of basic organic compounds in the living body. Proteins and nucleic acids are two of them.

(1) Name the other two basic organic compounds in the living body. (01 m.)

(2) What is the building unit of protein ? (01 m.)

(3) What is the compound formed by polymerisation of nucleotides ? (01 m.)

(4) What is the name of test of identifying proteins ? (01 m.)

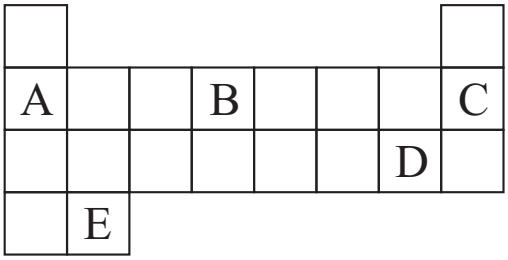
02 A Atom can be considered as the building as unit of matter.

(1) Name 3 sub atomic particles of an atom. (03 m.)

(2) What is known as mass number of atom ? (01 m.)

(3) Number of electrons of a carbon atom is 6 number of neutrons is 7. Write this atom in standard form using mass number and atomic number. (02 m.)

B Following is a part of the periodic table. Symbols given there are not standard symbols.



(1) Write down the electronic configuration of clement E. (01 m.)

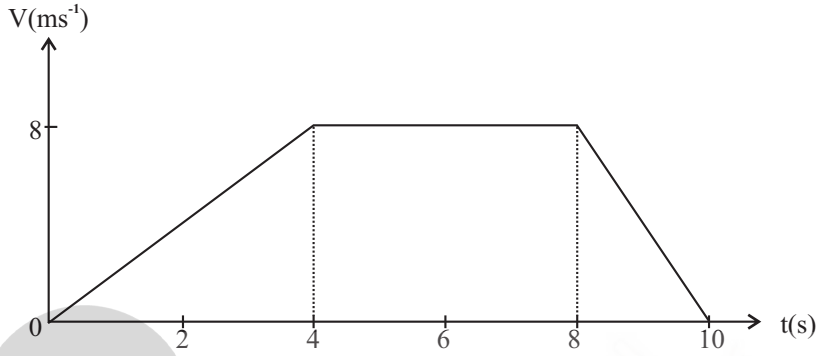
(2) What is the valency of element D ? (01 m.)

(3) Write the formula of compound formed by combining elements E and D. (01 m.)

(4) Draw dot - cross structure of molecule formed by combining 2 atoms of element D. (01 m.)

(5) Mention the types of compound according to the bonds formed between atoms of molecules in above (3) and (4) (02 m.)

03 A Following graph shows the variation of velocity of an object moved along a rectilinear path with time.



(1) Calculate acceleration of object within first 4 seconds. (02 m.)

(2) Describe the motion of object from 4th second to 8th second (01 m.)

(3) What is the deceleration of the object at last 2 seconds ? (02 m.)

(4) Calculate total displacement of object by using graph. (01 m.)

B (1) Write down the 1st law of Newton. (01 m.)

(2) Passengers in a bus fall forward when applying breaks. Describe this by using 1st law of Newton. (01 m.)

(3) What is the force to be supplied by engine to give $4ms^{-2}$ acceleration for a motor vehicle of 1000 kg mass. (02 m.)

(4) Calculate the momentum acts on the above motor vehicle when it travels at uniform velocity of $12ms^{-1}$ (01 m.)

(5) (a) Write a 2 factors which affect for the limiting frictional force exert on an object kept on a surface. (01 m.)

(b) Write 1 factor does not affect, (01 m.)

04 (1) What is relative atomic mass ? (01 m.)

(2) Calculate relative atomic mass of Ca, if the mass of a Ca atom is 6.69×10^{-23}g and that of is $^{12}_{6}C$ 1.99×10^{-23}g (03 m.)

(3) Calculate the relative atomic mass of CO_2 (C - 12, O - 16) (01 m.)

(4) In $CaCO_3$

(a) What is the mollar mass ? (Ca - 40, C - 12, O - 16) (01 m.)

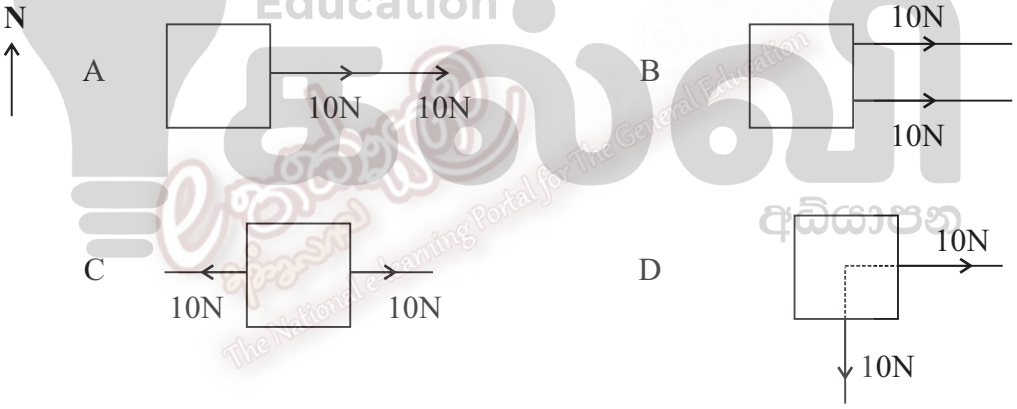
(b) Find the number of $CaCO_3$ moles in 50g (02 m.)

(5) Mollar mass of $(C_6H_{12}O_6)$ glucose is $180mgol^{-1}$

(a) Find the number of moles and (02 m.)

(b) Find the number of molecules in 90 g of glucose. (02 m.)

05 A



(1) What is the diagram with co-llinear forces act towards a same direction?(01 m.)

(2) Find the resultant force of in above A, B and C diagrams. (03 m.)

(3) Write an instance where C can be seen practically. (01 m.)

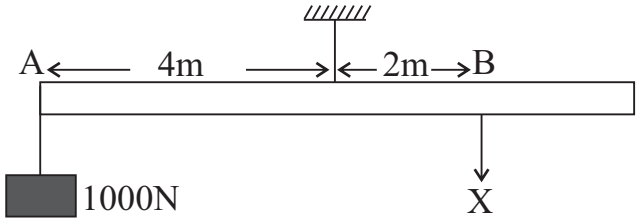
(4) (a) What is the instance that the resultant force of which type of two forces is shown by D ? (01 m.)

(b) Copy down the diagram D in your answer sheet and represent direction of its resultant force using a line. (01 m.)

B (1) Write down 2 factors which affect for moment of the force. (02 m.)

(2) Write down an equation by using above two factors for calculating moment of a force. (01 m.)

(3) Following diagram shows a balanced uniform rod with a weight 1000 N held at one end. (02 m.)



Find the force (x) to be applied on point B to keep the rod in equilibrium more.

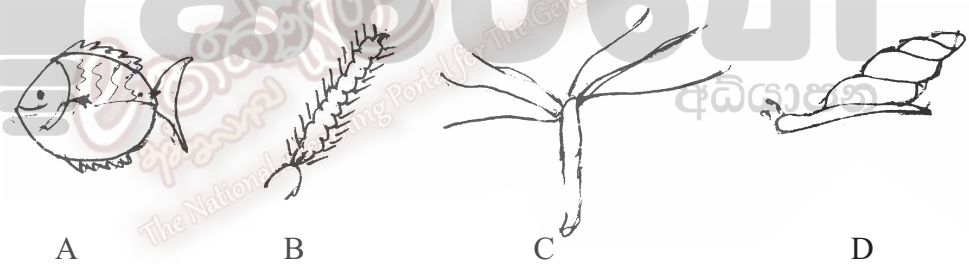
(02 m.)

06 A Natural classification is highly accepted as the most suitable method in classifying organisms. Here a hierarchy of classification is built up.

(1) Name 3 domains presented by Carl woese in 1990. (03 m.)

(2) To which domain is kingdom Animalia belongs ? (01 m.)

(3)



A B C D

(a) Name the vertebrate given here. (01 m.)

(b) Write a common feature of that phylum. (01 m.)

(c) Letter B represents the phylum with high distribution in animal world. Mention 2 common characteristics of that phylum. (01 m.)

B (1) Mention 4 common characteristics of Mammalians. (03 m.)

(2) Write the correct scientific name of man or morden man. (01 m.)

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