Provincial Department of Education
Northern Province

Practice Exam – 1 - 2024

| Grade:- 11	**Science**	Time :-2 Hours
Index no:	34 - T	

Part I

Choose the most appropriate answer and underline it.

1. Which biological molecules contain the elements carbon, hydrogen, and oxygen only?
   1. Carbohydrate, lipid
   2. Carbohydrate, protein
   3. Protein, nucleic acid
   4. Carbohydrate, protein, lipid

2. Which of the following Correctly indicates the unit of momentum?
   1. $kg\ m\ s^{-2}$
   2. $kg\ m\ s^{-1}$
   3. $kg\ m^2\ s^{-2}$
   4. $kg\ m^{-1}s^{-2}$

3. A beetle starts from point A and moves along a circular path with a radius of 14 cm and returns to the same point. What is the distance travelled by the beetle and its displacement?
   1. (2 x 22/7 x 7), 0
   2. (2 x 22/7 x 14),14
   3. (2 x 22/7 x 14),   0
   4. (2 x 22/7 x 7), 14

4. Which type of organelle is observed in places where high energy production is required?
   1. nucleus
   2. mitochonria
   3. Chloroplast
   4. Golgi apparatus

5. The number of protons and neutrons in the ion $^{35}_{17}Cl^-$ are respectively,
   1. 17, 18
   2. 17, 17
   3. 18, 17
   4. 18, 18

6. Which phylum is most closely related to the phylum chordate
   1. Annelida
   2. Arthropoda
   3. Mollusca
   4. Echinodermata

7. The number of days required for the release of an ovum from the right ovary and then again from the same ovary is,
   1. 28
   2. 31
   3. 56
   4. 30

8. A true statement about viruses is:
   1. They have a cellular structure.
   2. They are obligate control parasites.
   3. They can be observed using a light microscope and an electron microscope.
   4. Only DNA-type nucleic acid is found.

9. molar mass of NaOH is, (Na - 23, O - 16, H - 1)
   1. $40g\ mol^{-1}$
   2. 40 g
   3. 40 mol
   4. 40

10. The number of electrons surrounding the central atom in the compounds $AlCl_3$ and PCl_5 respectively are:
    1. 10, 6
    2. 8,10
    3. 10,8
    4. 6, 10

11. The correct scientific name of our national bird, the wild fowl, is:
    1. *Gallus Lafayetti*
    2. Gallus lafayetti
    3. *Gallus lafayetti*
    4. Gallus Lafayetti

12. Two students are in equilibrium on a 1-meter long rod. P is the centre point of the rod. If the weight of X is 200N, what is the mass of Y? $(g = 10 \text{ m s}^{-2})$
   1.   5 kg   2. 10 kg   3. 15 kg   4.
          20 kg
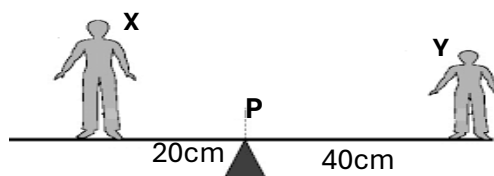
13. A student weighing 50 kg, carries a book bag weighing 20 kg and stands on a ladder of 8-meter height. What is his potential energy? $(g = 10 \text{ ms}^{-2})$
    1. 50 x 10 x 8 J   2. 20 x 10 x 8 J   3. 70 x 10 x 8 J   4. Insufficient data
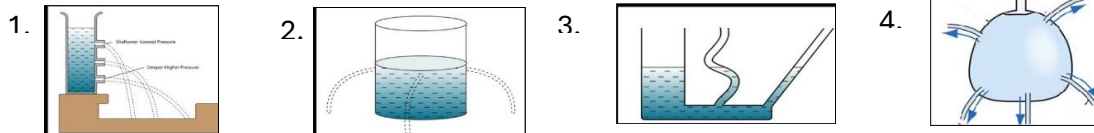
14. The following are some ways in which resistors can be connected .
    Which of the following shows the least and highest equivalent resistances, respectively?
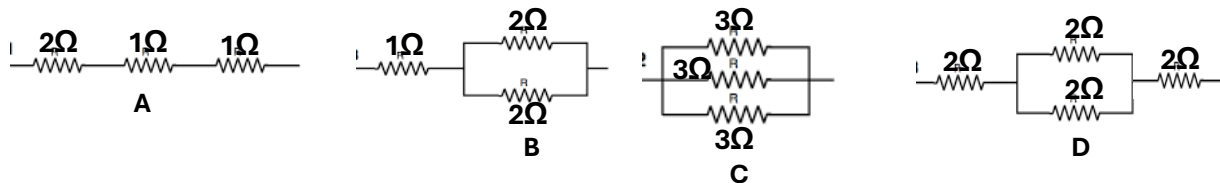
    1. C, D   2 C, A   3. C, B   4. A, D

15. Which diagram correctly represents the concept that a student should consider when setting up a water tank?

16. The catalyst used in the production of margarine by hydrogenation of unsaturated fats is:
    1. Iron   2. Platinum   3. Nickel   4. Vanadium pentoxide

17 . The diagram shows an experiment conducted by a student in the laboratory. What is/are the product(s) of the reaction?
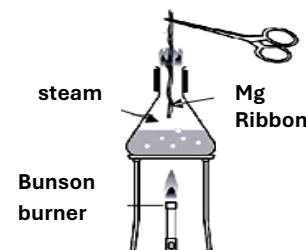
    1. MgO   2. $Mg(OH)_2$, H_2 3. MgO, H_2 4. MgO, H_2, $Mg(OH)_2$

steam   Mg Ribbon   Bunson burner

18. Some hereditary diseases in human are given below.
       A. Hemophilia   B. Red-green color blindness
       C. Albinism   D. Thalassemia
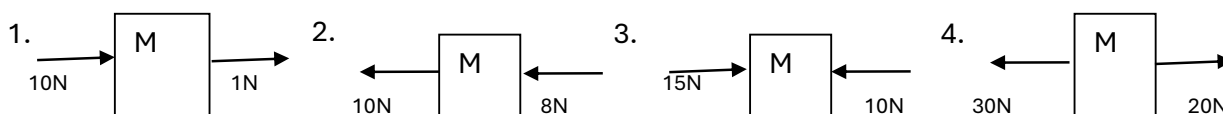   Which of the following are chromosomal disorders?
        1. C, D   2. B, A   3. B, C   4. A, D

19. The chemical formula of the carbonate of an element M is M_2CO_3. What is the chemical formula of its chloride?
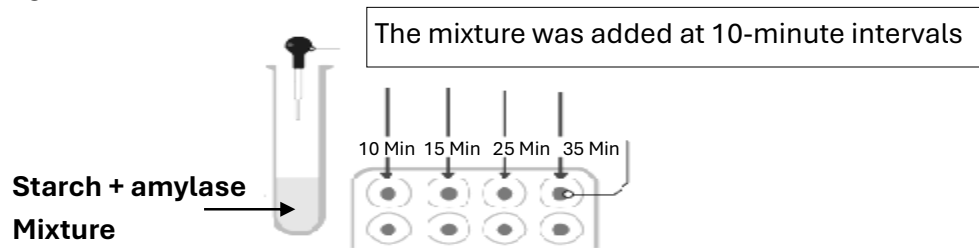   1. MCl   2. M_2Cl 3. MCl_2 4 M_3Cl_2

20. The diagrams below show two forces acting on an object of mass M. Which diagram shows the larger acceleration?

2. Experimental Setup organised to demonstrate the effect of Amylase enzyme on starch is given below.

A) A well-organized experimental setup is given to demonstrate the effect of amylase enzyme on starch in the process of digestion.

The mixture was added at 10-minute intervals

10 Min 15 Min 25 Min 35 Min

Starch + amylase Mixture

1. What is the product formed by the action of amylase enzyme on starch in a water medium?

    …………………………………………………………………………………………… (1 Mark)

2. Why does a blue colour appear when iodine solution is added to the mixture after 15 minutes?…………………………………………………………………………………… (1 Mark)

3. If starch is completely absent in the mixture after 35 minutes due to the action of amylase enzyme, what will be the colour observed when iodine solution is added?

    …………………………………………………………………………………………………(1Mark)

4. What strategy was used in this experiment to increase the rate of action of amylase enzyme?

    …………………………………………………………………………………………… (1 Mark))

5. Which specific type of protein is present among the substances provided in this experiment?

    …………………………………………………………………………………………………(1 Mark)

B). A group of students visited Peradeniya Botanical Garden and observed the characteristics of certain plants. These observations are presented in the table.

1. In which domain and kingdom do these plants belong?

    Domain………………………….   Kingdom………………………………..   (1 Mark)

2. Identify the plants that match the given characteristics.

    Pinus palmyra, Marchantia ,   blue lotus

    *   Plants with fibrous roots and trimerous flowers…………………………………..
    *   Plants with open seeds………………………………………………………….
    *   Plants that produce spores……………………………………………………...(3 Marks)

3. In one of the plants there, lichens are present in the bark. What are the group of organisms present in these lichens?

    …………………………………………………………………………………………………(1 Mark)

    (15 Marks)

(6) The given experiment was done by Grade 10 Students to prepare Carbon Dioxide Gas
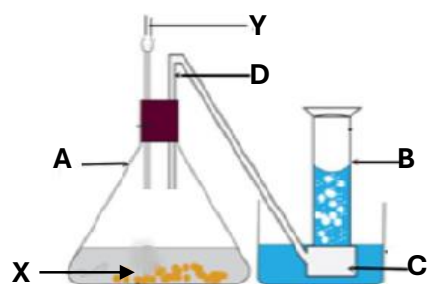
1. Name the chemicals X and Y which is used in this experiment? (1Mark)
2. Name the apparatus labelled A, B, C, and D. (2 Marks)
3. How is carbon dioxide gas collected in this experiment? (1Mark)
4. How would you recover the error in this gas preparation setup? (1 Mark)
5. (a) Write the balanced chemical equation for the reaction taking place here using the chemicals used in X and Y (1 Mark)

   (b) What type of reaction is this? (1 Mark)

(B) Diagram of a Setup for Iron Extraction shown in here.

1. What is the name of this apparatus? (1Mark)
2. Name the two substances that enter the part labelled A. (1 Mark)
3. Write the balanced equation for the formation of CO_2 in B. (1 Mark)
4. Through which part (C or D) does the main product exit. (1Mark)

(C) .A 100 g marble X starts from rest and moves with uniform acceleration for 10 seconds ,reaching a velocity of 20 ms-1.It continues to move at this velocity for 30 s .Then it collides with another marble Y of mass 50 g which is in rest and comes to rest in 20 seconds. The 50 g marble Y moves with the velocity it acquired.
(Consider the surface is smooth and there is no energy lost during the colloison. Gravitational acceleration is 10 m s⁻¹)

1. What is the mass of marble X? (2 Mark)
2. Draw the velocity-time graph for the motion of marble X? (3 Mark)
3. What is the acceleration of marble X during its initial motion? (2 Mark)
4. What is the total distance travelled by marble X? (2 Mark)