



PROVINCIAL DEPARTMENT OF EDUCATION - NORTH WESTERN PROVINCE

DIAGNOSTIC TEST - 2021

Grade 10

SCIENCE - I

One Hour

Name / Index No. :

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

01. The cell wall of a plant cell is made up of

- 1) Cellulose 2) Phospholipids 3) Proteins 4) Pectin

02. What is the group that the sea horse shown in the diagram belongs?

- 1) Pisces
2) Amphibia
3) Reptilia
4) Mammalia



03. What is the standard unit of measuring weight?

1. m g 2. g 3. kg 4. N

04. If the formula of the compound formed by element A with oxygen is A_2O_3 , what would be the formula of the compound formed by element A with chlorine?

- 1) A_2Cl_3 2) A_3Cl_2 3) A_2Cl 4) ACl_3

05. What is the most accurate statement about the friction?

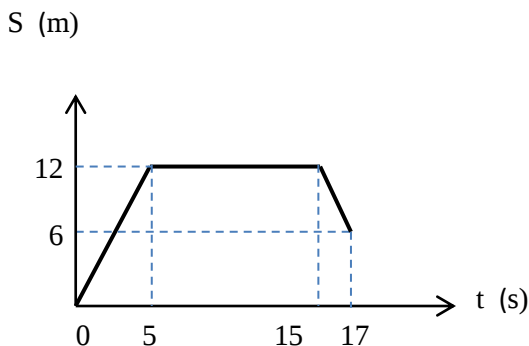
1. Friction always disturb the motion.
2. Friction helps to start the motion of a motor vehicle.
3. It is easy for a motor vehicle to move in a road without friction.
4. Motion speed increases when the friction between the parts of a machine increases.

06. The main excretory products of animals are

- 1) Urea, Salts and faecal matter 2) Carbondioxide and oxygen.
3) Carbon dioxide, urea and faecal matter 4) Carbon dioxide, water, urea and salt

07. According to the displacement-time graph shown in the figure, What is the displacement which has done?

1. 0 m
2. 6 m
3. 12 m
4. 18 m



08.

- Affects development of intelligence
- Lethargic attitudes toward studies
- Limits body height.

The lack of which mineral show the above deficiency symptoms?

- 1) Sodium
- 2) Iron
- 3) Calcium
- 4) Iodine

09. What is the single displacement reaction out of the followings?

- 1) $C + O_2 \longrightarrow CO_2$
- 2) $CaCO_3 \longrightarrow CaO + CO_2$
- 3) $Fe_2O_3 + 3CO \longrightarrow 2Fe + 3CO_2$
- 4) $2KMnO_4 \longrightarrow K_2MnO_4 + MnO_2 + O_2$

10. Consider the following two incidents

- a. A glass breaks when a small stone hits with a high speed.
- b. A glass breaks when a large stone hits with a low speed.

What is the option which suitable to explain the above incidents?

1. Momentum increases when the mass is increased.
2. Momentum increases when the velocity is increased.
3. Glass is a substance which can break even with a small force.
4. The increment of mass and velocity cause to increase momentum.

11. What is the correct statement regarding the flowers and fruits of chili plant?

- 1) Has trimerous flowers and a single cotyledon
- 2) Has tetramerous or pentamerous flowers and a single cotyledon
- 3) Has trimerous or pentamerous flowers and two cotyledons.
- 4) Has tetramerous or pentamerous flowers and two cotyledons.

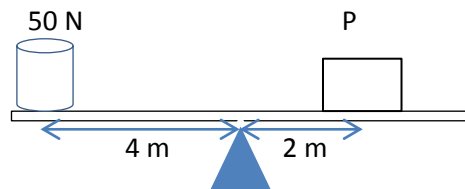
12. Which pair out of the followings becomes equal to the electronic configuration of Ar ?

- 1) Al^{3+} and Cl^-
- 2) Mg^{2+} and O^{2-}
- 3) Ca^{2+} and Cl^-
- 4) K^+ and O^{2-}

13. A ball with the mass of 200g is thrown upwards with the velocity of 10 m s^{-1} . What is the initial momentum of the ball?
- 2 m s^{-1}
 - 2 kg m s^{-1}
 - 20 kg m s^{-1}
 - 200 kg m s^{-1}
14. What is the incorrect statement about the cell?
- All the organisms are made up of one or more cells.
 - All the cells are formed from pre-existing cells
 - The structural and functional unit of life is cell.
 - All the cells are equal in shape and size.
15. What is the number of CO_2 moles present in 22 g of CO_2
- 0.5
 - 2
 - 5
 - 22
16. Consider the following statements regarding the resultant forces.
- Resultant of two co linear forces act along opposite directions is equal to the sum of two forces.
 - Resultant of two co linear forces act along same directions is equal to the sum of two forces.
 - Resultant of two parallel forces act along the same direction is equal to the sum of two forces. The correct statements out of them are,
- A and B only
 - A and C only.
 - B and C only.
 - A, B and C all
17. Menstruation takes place due to the degradation of uterine wall when an ovum not fertilized is due to the deficiency of which hormone?
- Oestrogen
 - Progesterone
 - Luteinizing hormone
 - Follicle stimulating hormone
18. Consider the following diagram regarding the application of forces on an object.
- 
- What is the magnitude and the direction of the resultant force.
- 20 N force to 20 N direction.
 - 20 N force to 10 N direction
 - 10 N force to 20 N direction.
 - 10 N force to 10 N direction.
19. The sexually transmitted disease which show symptoms related to sexual organs and cause inactivation in the nervous system is?
- AIDS
 - Syphilis
 - Gonorrhea
 - Herpes
20. Three elements which can extract by using chemical reduction method is,
- Na, Mg and Al
 - Zn, Mg and Al .
 - Na, Ca and Fe
 - Zn, Fe and Sn

21. An object stays at equilibrium as shown in the diagram. What is the mass of the object P

1. 10 N
2. 10 kg
3. 100 N
4. 100 kg



22. What is the hereditary defect which only expressed in males due to the effect of sex linked gene.

- | | |
|-----------------------------|----------------|
| 1) Red-green colorblindness | 2) Hemophilia |
| 3) Albinism | 4) Thalassemia |

23. Consider the following statements introduced by three students regarding the periodic patterns

- A. The first ionization energy increases with a pattern when moving right across a period.
- B. The electro negativity increases from group i to viii across a period.
- C. The metallic property gradually decreases when moving right across a period.

The correct statements are

- | | | | |
|------------|------------|------------|------------------|
| 1) A and B | 2) B and C | 3) A and C | 4) A,B and C all |
|------------|------------|------------|------------------|

24. Four elements which are mainly involved in the formation of living body are,

- 1) Carbon,Hydrogen,Oxygen and Nitrogen
- 2) Carbon,Hydrogen,Oxygen and sulphur
- 3) Carbon,Oxygen.Sulphur and nitrogen
- 4) Hydrogen,oxygen,phosphorous and nitrogen

25. Following diagram shows how a light weighted rod is kept at equilibrium by using three newton balances. The correct relationship among A,B and C forces is

1. $A + B = C$.
2. $A + C = B$.
3. $B + C = A$.
4. $B - C = A$.

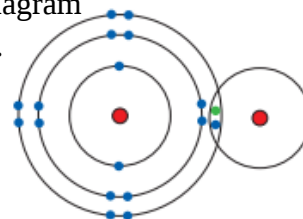


26. Some living entities are difficult to distinguish whether they are living or non living. An example is

- | | |
|-----------|-------------|
| 1) Virus | 2) Bacteria |
| 3) Fungus | 4) Algae |

27. Consider the following statements regarding the types of bond shown in the diagram

- A. Representation of hydrogen chloride molecule bonded by a covalent bond.
- B. An example for polar covalent bond
- C. An example for hydrogen bond
- D. An example for arrangement of electrons in an ionic bond.



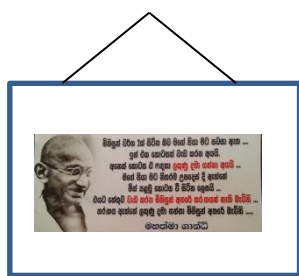
Correct statements out of them are

- | | | | |
|-------------------|--------------------|-------------------|-------------------|
| 1) A,B and C only | 2) A,B and D only. | 3) A,C and D only | 4) B,C and D only |
|-------------------|--------------------|-------------------|-------------------|

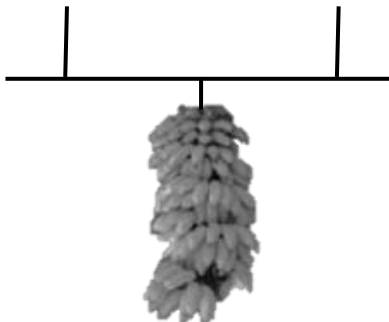
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28. Following are three situations where an object remains at equilibrium



A



B



C

Out of them , the situations where coplanar parallel and opposite forces act are

1. A and B only 2. A and C only 3. B and C only 4. A,B and C all

29. Followings are certain processes which apply gene technology

- A. Use of developed bacteria and fungus when producing antibiotics.
- B. Use of *E coli* bacteria to produce insulin.
- C. Production of artificial amino acids such as monosodium glutamate.

Processes related to medical field out of them are

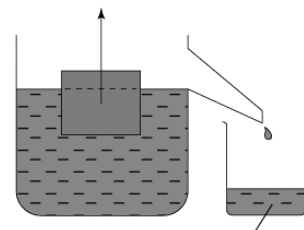
- 1) A and B 2) B and C 3) A and C 4) A,B and C all

30. What is the relative molecular mass of CCl_4 ? (C = 12, Cl = 35.5)

- 1) 47.5 2) 59.5 3) 154 4) 154 g

31. Following figure shows how a wooden block floats on water

- 1. The volume of wooden block is equal to the volume of displaced water
- 2. The weight of the wooden block is equal to the weight of displaced water
- 3. The mass of wooden block is equal to the weight of displaced water.
- 4. The mass of wooden block is equal to the upthrust.



32. Consider the following statements about the **carbon dioxide** gas

- A) Colourless, Odourless
- B) Show acidic properties
- C) Burns with a pop sound when a flame is brought close to a gas sample.

Correct statements out of them are,

- 1) A and B 2) B and C 3) A and C 4) A,B and C

33. What are the two compounds with equal formula masses

- 1) NaOH and H_2O 2) NaOH and MgO 3) MgO and CaCO_3 4) CaCO_3 and MgO

34. A man pushes a broken down vehicle 8m distance along a road within 10 seconds by applying a force of 600N. What is the power of the man?

1. 480 J 2. 480W
3. 4800 J 4. 4800 W

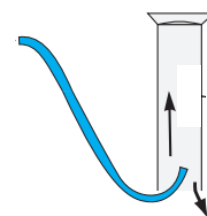


35. Consider the following statements regarding the gas collection method shown in the following diagram

- A) Can be used to collect hydrogen gas
- B) Density of collecting gas is greater than the density of air.
- C) This gas can also be collected using downward displacement of water

Correct statements out of them are

- 1) A and B . 2) B and C 3) A and C 4) A,B and C



36. Following are three statements about the properties of a chemical compound

- A. Doesn't conduct electricity at solid state
- B. Conduct electricity through fused or aqueous solutions
- C. Exist as white crystals

This compound would be

- 1) NaCl 2) CuSO₄ 3) C₆ H₁₂ O₆ 4) KMnO₄

37. Followings are three statements introduced by three students that should be followed during the nomenclature of organisms

- A. Name of the organisms is composed of two parts as generic name specific epithet.
- B. Only the first letter of the generic name should be capital
- C. Binomial nomenclature is not used for virus

Correct statements out of them are,

- 1) A and B only. 2) B and C only 3) A and C only 4) A,B and C all

38. Consider the following two statements regarding the decomposition of hydrogen peroxide.

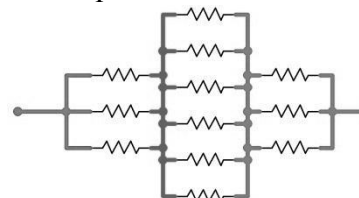
- A) Decomposition speed of hydrogen peroxide increases with a catalyst.
- B) Hydrogen peroxide decompose even at room temperature without a catalyst.

Out of these statements ,

- 1) A is correct and B is incorrect 2) B is correct and A is incorrect
- 3) Both A and B statements are correct. 4) Both A and B statements are incorrect

39. 12 resistors of 12 Ω are connected as shown in the diagram. What is the equivalent resistance ?

1. 10 Ω 2. 24 Ω
3. 36 Ω 4. 144 Ω



40. Consider the following statements about Covid 19 epidemic.

- A. Majority wear face masks but not in a manner to cover the face.
- B. Majority doesn't care about the social distance.
- C. Not wearing masks when travelling a single person in an air-conditioned closed vehicle.

Out of them, the statements which mainly affect in spreading covid 19 epidemic are

- 1) A and B only 2) B and C only 3) A and C only 4) A,B and C only