



Provincial Department – Northern Province

G.C.E ( O/L )

Diagnostic Test– 2021



Science – I

Time: - 1 hour


**Note :**

- Answer all questions.
- In each of the questions 1 – 40, pick one of the alternatives (1), (2), (3), (4) which you consider is **correct** or **most correct**.
- Mark a cross ( X ) on the number corresponding to your choice in the answer sheet provided.
- Further instructions are given on the back of the answer sheet. Follow them carefully.

- 1) The functional unit of kidney is  
1. nephron                      2. urinary bladder                      3. urethra                      4. kidney
- 2) Which of the following element has high electro-negativity?  
1. H                      2. F                      3. He                      4. Ca
- 3) Which of the following frequencies is included within infra-sound ?  
1. 15 Hz                      2. 20 Hz                      3. 200 Hz                      4. 20 000 Hz
- 4) The digestion of carbohydrate starts in human being at ,  
1. buccal cavity                      2. oesophagus                      3. stomach                      4. small intestine
- 5) Oxide of which element is a strong acid ?  
1. Na                      2. Mg                      3. Al                      4. S
- 6) Inverted image is formed by a convex mirror. Which is not a feature of the image?  
1. real                      2. virtual                      3. enlarged                      4. diminished
- 7) The functions of some parts of our brain are given below.  
A. maintenance the body balance  
B. control the rate of heart beat.  
C. control the rate of respiration.

Which of the above are the functions of medulla oblongata ?

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

- 8) The acids, which are used to make aqua-regia are,  
 1.  $\text{HCl}$ ,  $\text{HNO}_3$                       2.  $\text{HCl}$ ,  $\text{H}_2\text{SO}_4$                       3.  $\text{H}_2\text{SO}_4$ ,  $\text{HNO}_3$                       4.  $\text{HCl}$ ,  $\text{H}_3\text{PO}_4$
- 9) Which is the incorrect statement about the pitch produced by the given musical instrument ?  
 1. It depends on the mass of a unit length of the string.  
 2. pitch decreases when the length of the string increases.  
 3. pitch increases when the tension of the string increases.  
 4. pitch increases when the length of the string increases.
- 
- 10) Which is not a reason for gastritis from the followings?  
 1. highly intake acidified and oily food items.  
 2. highly intake fibrous food items.  
 3. mental stress  
 4. additive to smoking.
- 11) The organ, which secretes bile in human being is  
 1. liver                      2. stomach                      3. small intestine                      4. pancreas
- 12) The composition of a mixture in V/V is 0.01. If mention, it is in ppm,  
 1. 1.                      2. 100                      3. 1000                      4. 10 000
- 13) An incorrect statement about the biological molecules is  
 1. the ratio between H: O = 2:1 in both carbohydrate and lipid.  
 2. carbohydrate and lipid consist of elements C,H and O.  
 3. element N is found in protein and nucleic acids.  
 4. glycogen is not found in plants as storage food.
- 14) 10 kg mass of box is placed on horizontal table having  $2\text{m}^2$  area . Find the perpendicular reaction exerted by the table on the box ?  
 1. 20N                      2. 50N                      3. 100N                      4. 200 N
- 15) 12g urea (  $\text{CO}(\text{NH}_2)_2$  ) is dissolved in distilled water to prepare  $1\text{dm}^3$  solution. Find its concentration?  
 1.  $0.02 \text{ mol dm}^{-3}$     2.  $0.2 \text{ mol dm}^{-3}$                       3.  $2 \text{ mol dm}^{-3}$                       4.  $20 \text{ mol dm}^{-3}$
- 16) The method of entrances of  $\text{CO}_2$  and  $\text{H}_2\text{O}$  into the plants, which are important factors for photosynthesis are,  
 1. diffusion, osmosis                      3. diffusion, diffusion  
 2. osmosis, osmosis                      4. osmosis, diffusion

17) The final product, which is not absorbed by the blood capillaries in micro-villi of small intestine is

1. amino acid                      2. vitamin                      3. mineral                      4. fatty acid

18) The Number of spinal nerves in human being are

1. 12                      2. 12 pairs                      3. 31                      4. 31 pairs

19) Some of the features of solvents A,B,C and D are given below

A and B are immiscible

A and D are miscible

B and C are miscible

C is water.

Which are polar solvents ?

1. A, B                      2. A, D                      3. B, C                      4. B, D

20) Some uses of a chemical substance are given below,

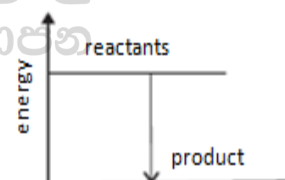
- used in preparation of Sodium hydroxide
- used in soap production
- used in production of Sodium carbonate by Solvay process.

The substance used here is

1. NaCl                      2.  $MgCl_2$                       3.  $CaCl_2$                       4.  $Na_2CO_3$

21) The correct statement about the energy level diagram is

1. It is an endothermic reaction.  
2. Heat is absorbed during the reaction.  
3. This type of reaction takes place between Citric acid and Sodium bicarbonate.  
4. When a metal reacts with an acid, this type of reaction takes place.



22) When diluting a Sodium chloride solution by adding water,

1. mole and mass of the solute will not be changed, the concentration of the solution will decrease.  
2. mole and mass of the solute will not be changed, the concentration of the solution will increase.  
3. mole ,mass of the solute and the concentration of the solution will decrease.  
4. mole ,mass of the solute and the concentration of the solution will increase.

23) A tiger has 50kg running with a uniform velocity  $10ms^{-1}$ , that caught a rabbit a moment and running again with the same velocity. During the motion, the total momentum

1. increases                      2. decreases                      3. not changed                      4. unable to say anything

24) In which substance, during decomposition oxygen gas is not delivered ?

1.  $\text{KMnO}_4$                       2.  $\text{KClO}_3$                       3.  $\text{H}_2\text{O}_2$                       4.  $\text{K}_2\text{CO}_3$

25) A substance, that gives violet colour with pH paper, is

1. lemon juice                      2. Copper sulphate                      3. well water                      4. Sodium hydroxide

26) Consider the following statements.

**Statement I** :- by applying  $\text{NaHCO}_3$  on the place of the scorpion sting, the pain is relieved.

**Statement II** :- during the scorpion stinging, it injects basic substance into the body. By neutralizing the substance by  $\text{NaHCO}_3$ , the pain will be relieved.

1. Statement I, Statement II both are correct.
2. Statement I, Statement II both are incorrect.
3. Statement I is correct. Statement II is incorrect.
4. Statement I is incorrect. Statement II is correct.

27) Sitar, thabla and thammattama are

1. string instrument, percussion instrument and wind instrument
2. string instrument, percussion instrument and percussion instrument
3. wind instrument, string instrument and percussion instrument
4. wind instrument, percussion instrument and string instrument

28) A toy car has 2kg moves with the uniform velocity  $5\text{ms}^{-1}$ . The correct statement about the motion of the car is

1. Unbalanced force acts on it.
2. It moves with  $4\text{ms}^{-2}$  acceleration.
3. It moves with  $4\text{ms}^{-2}$  deceleration.
4. It moves in a straight line.

29) The image formed by a concave lens for a real object is always,

1. real                      2. inverted                      3. virtual                      4. enlarged

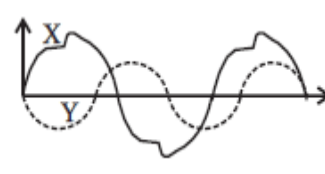
30) One of the biological process in human body is shown in the diagram. The process that in-taking of P and releasing of Q, the process that in-taking of Q and releasing of P in plants respectively, are

1. photosynthesis, protein synthesis
2. photosynthesis, respiration
3. respiration, photosynthesis
4. protein synthesis, photosynthesis



31) The figure shows the wave pattern of two sound waves X and Y, formed on the cathode ray oscilloscope. Which is the correct statement about the waves X and Y?

1. loudness of the waves X, Y are equal and pitch varies.
2. pitch of the waves X, Y are equal and quality of sound varies.
3. quality of sound of waves X, Y are equal and loudness varies.
4. pitch, loudness and quality of sound of the waves X, Y vary.



32) Velocity- time table of a child, which moves in a straight line is shown here. The correct statement about it,

Time (s)	0	5	10	15	20
Displacement (m)	0	20	0	20	0

During the whole motion of the child,

1. The velocity of the child is  $4\text{ms}^{-1}$
2. The displacement of the child is 80m
3. The child moves in a same direction
4. Total distance of the child is 80m.

33) Which one of the following substance completely ionized in aqueous solution?

1.  $\text{NH}_4\text{OH}$
2.  $\text{NaOH}$
3.  $\text{H}_2\text{CO}_3$
4.  $\text{H}_3\text{PO}_4$

34) The cell organelles, that perform cellular respiration, photosynthesis and protein synthesis in a cell are respectively,

1. mitochondria, ribosome, chloroplast
2. mitochondria, chloroplast, ribosome
3. chloroplast, mitochondria, ribosome
4. chloroplast, ribosome, mitochondria

35) The forces acting on a box are shown here. (only the shown forces act on the box). The incorrect statement about it,

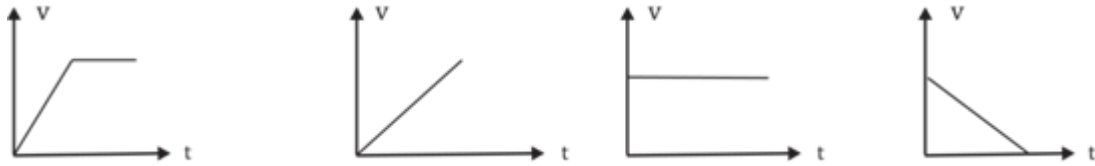
1. balanced forces are used here.
2. the box is in rest.
3. the box moves in a constant velocity.
4. the box moves in a particular acceleration.



36) Which is a simple sugar?

1. maltose
2. fructose
3. sucrose
4. lactose

37) A ball is rolled on a rough horizontal floor. The velocity-time graph for the motion of the ball is



38) Consider the following features of an organism,

- having segmented body
- body is divided into head, thorax and abdomen

Which animal has the above features?

1. earthworm      2. mosquito      3. *Nereis*      4. snail

39) The denitrifying bacteria is

1. *Rhizobium*      2. *Azotobacter*      3. *Thiobacillus*      4. *Nitrosomonas*

40) The chemical substance that causes cancer, is found in the coconut oil exported from Malasiya to Sri Lanka recently is?

1. Rhiboflavin      2. Ameksilin      3. Aflatoxin      4. Dioxin

