Ministry of Education
Science Branch

Grade 11 | **Supportive Test - 2023** | **34 S II**

Science I | **3 hours**

Instructions :

- ❖ Answer all questions.
- ❖ Four choices 1,2,3 and 4 are given for the questions 1 to 40 . Select the correct or most appropriate choice for each
- ❖ Mark a cross (X) on the number corresponding to your choice in the answer sheet provided.
- ❖ question.

1. Which answer contains the elements always present in proteins?
   (1) C , H, O, and N (2) C, H, O, and S (3) C, H, N, and S (4) C, O, N, and S

2. In chemistry, the unit g mol^{-1} is used to measure,
   (1) the molar mass. (2) the mass of a mole of the matter
   (3) relative atomic mass. (4) atomic mass unit.

3. What is the commercial unit of measuring electric energy by the domestic electric meter?
   (1) J (2) kJ. (3) W (4) kWh

4. An inherited disease related to sex linked gene mutation,
   (1) Albinism. (2) Anemia.
   (3) Colour blindness. (4) diabetes.

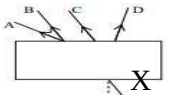
5. Which of the following separation techniques can be used to produce distilled water?
   (1) Solvent extraction (2) Steam distillation. (3) Simple distillation. (4) Fractional distillation.

6. An instrument which made by applying the principle of electromagnetic induction is,
   (1) electric motor (2) electric crane
   (3) microphone (4) loud speaker

7. A type of blood corpuscles which can be commonly seen in a blood sample when observed under the microscope is given in the diagram below.
   The above type of corpuscle can be,
   (1) platelets. (2) white blood corpuscles.
   (3) red blood corpuscles. (4) granulocytes.

8. The Metal that can extracts by electrolyzing fused compound
   (1) Mg (2) Fe (3) Sn (4) Au

9. One colour light ray which incidents on a face of a cuboid shaped glass block is shown below. What can be the correct ray of light that emerges from the opposite face of the glass block?
   (1)A (2) B (3) C (4) D



10. The main function of the nucleus of a cell is,
    (1) production of secretory substances. (2) maintenance of support of the cell.
    (3) control of life activities of the cell. (4) transport of material within the cell.

11. The atomic number of Na is 11. Its mass number is 23. The correct order of number of protons, neutrons and electrons present in Na^+ can be,
    (1) 11, 12 and 10 . (2) 11, 12 and 11 . (3) 11, 11 and 12 . (4) 12, 12 and 23 .

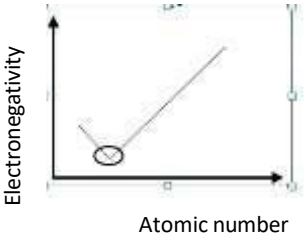
12. The method of identification of the gas produced during the photosynthesis is,
    (1) gives 'pop' sound when introduced a glowing splinter (2) flame of the splint immediately extinguishes.
    (3) turns colourless lime water into milky colour. (4) glowing splint relights

13. Several energy transformations are given below. Select the correct energy transformation among them.

(1) Dynamo - kinetic energy ⟹ potential energy
(2) electric motor - electric energy ⟹ kinetic energy
(3) dry cell - electric energy ⟹ chemical energy
(4) solar cell - solar energy ⟹ potential energy

14. A part of the graphical representation of the variation of electronegativity for two elements is given below. The two elements that present in the area which rounded by the circle should be,

(1) Na or Mg (2) F or Cl (3) Na or K (4) He or Ne



15. Select the **false** statement out of the statements given below.

(1) Heat energy from the sun reaches the earth by the radiation
(2) Any type of heat transfer does not take place through a vacuum.
(3) Black surfaces are rich heat absorbers.
(4) Shiney surfaces reflect heat well.

16. The answer which gives a similarity and dissimilarity between cardiac muscle tissue and skeletal muscle tissue respectively is,

(1) with nuclei and without nuclei (2) with cross striations and without cross striations
(3) with cross striations and involuntary action (4) uninucleate cells and branched cells

17. A chemical equation related to the production of Oxygen gas is given below.

$$2H_2O_2\,(l) \longrightarrow 2H_2O(l) + O_2(g)$$

To which types of chemical reactions, the above equation belongs to?

(1) Chemical combination (2) Chemical decomposition (3) Single displacement (4) Double displacement

18. Select the answer with the correct order of three organizational levels in the Biosphere.

(1)Individual, Community , Ecosystem (2) Population, Community, Ecosystem
(3) Population, Ecosystem , Biosphere (4) Individual, Population, Ecosystem

19. Select the statement which shows the correct relationship between the change of the frequency, velocity and wave length of a sound wave which travels from water to air.

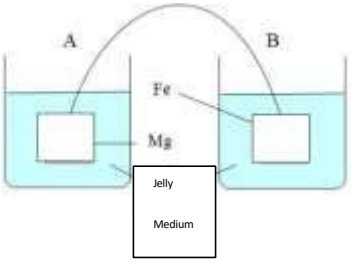
	frequency	velocity	wave length
(1)	changes	changes	changes
(2)	changes	changes	does not change
(3)	changes	does not change	changes
(4)	does not change	changes	changes

20. Select the answer which consist of tissues with only living cells and only non-living cells respectively.

(1) Parenchyma tissue and phloem tissue (2) Collenchyma tissue and xylem tissue
(3) Parenchyma tissue and sclerenchyma tissue (4) Xylem tissue and parenchyma tissue

21. Potassium ferricyanide and Phenolphthalein solutions are mixed with Agar jelly is added to two small beakers in equal amounts. Pieces of Mg and Fe are dipped in the agar jelly medium in those beakers and they are in contact with a conductor as shown in the diagram. What are the colour changes that can be observed in the jelly medium after few hours?

	A	B
(1)	blue colour	pink colour
(2)	blue colour	colourless
(3)	Colourless	pink colour
(4)	Colourless	blue colour



22. Four statements regarding the change of the resistance of a straight conductor are given below .

A. Resistance increases with the length.
B. Resistance decreases when the temperature increases.
C. Resistance changes according to the material of the conductor.

The true statement / statements out of the statements given above?

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

23 What is the correct statement about the solubility?

(1) Temperature does not affect the solubility of a gas in water.
(2) Temperature and pressure effect on the solubility of a solid in water.
(3) The maximum mass of solute which can be dissolved in 100 g water at a certain temperature
4) The maximum amount of a solute which can be dissolved in 100 g of water increases gradually with the decreasing temperature

24 Three statements expressed by a student about the two equilibrium forces which acting an object as shown by the diagram are given below.

A. The object is on rest
B. The object moves at a uniform velocity.
C. The object accelerates.

Correct sentence among the above are,

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

25 Sun energy flows to a one direction in a food chain. Only 10% of the energy in a certain trophic level passes to the next trophic level. Consider the following food chain

Grass → Cow ⟶ Tiger

If the energy stored in grass is 2500J in this food chain, what will be the energy stored in the tiger ?

(1) 1 J (2) 2.5 J (3) 25 J (4) 250 J

26 In which instance given below exothermic reaction takes place?

(1) Photosynthesis. (2) Respiration.
(3) Combustion of lime stone. (4) Heating of condis.

27 5 N and 10 N colinear forces are acting on an object. The resultant forces of these two forces can be,

(1) 15N or 5 N (2) 4 N or15 N (3) 8 N or 12 N (4) 10 N or 5 N

28 The answer with the correct order of functions of the Hydrochloric acid and Renin contain in gastric juice.

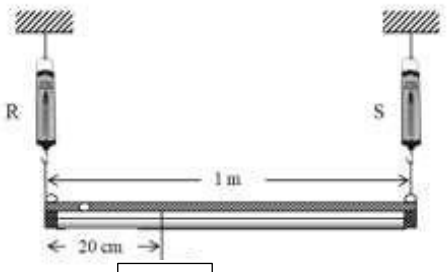
	Hydrochloric Acid	Renin
(1)	emulsification of lipids	activation of pepsin
(2)	coagulation of milk,	activation of pepsin
(3)	activation of pepsin	coagulation of milk,
(4)	emulsification of lipids	coagulation of milk,

29 . A bullet of mass 50 g is fired by a gun moves at a velocity of 2000 m s^{-1}. Find the momentum of the bullet.

(1) 100 kg m s^{-1} (2) 1000 kg m s^{-1} (3) 3500 kg m s^{-1} (4) 100000 kg m s^{-1}

30 A weight of 15 N is suspended on a light rod which is hung by two spring balances, R and S. The readings of R and S spring balances are,

	Reading of R	Reading of S
(1)	5 N	10 N
(2)	10 N	5 N
(3)	3 N	12 N
(4)	12 N	3 N



31 The condition that affect the blood supply to a certain organ due to a blood clot in a blood vessel is called,

(1) Hypertension. (2) Thrombosis. (3) Atherosclerosis. (4) Angina.

32 Four sexually transmitted diseases are given below.

A. Herpes B. Ghonoria C. Syphilis D. AIDS

Out of above diseases which cause by bacteria only,

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

33 420 J amount of heat is supplied to 100 g of water. Find the level of temperature increased in water. (Specific heat capacity of water is 4200 $\mathbf{J\ kg^{-1}\ ^0C^{-1}}$)

(1) 1 ^{0}C (2) 2 ^{0}C. (3) 10 ^{0}C (4) 12 ^{0}C

34 Three methods of identification of gasses in the laboratory are given below.

A- Introducing a glowing splinter into the gas sample.

B- Introducing a flame into the gas sample .

C- Bubbling the gas through lime water.

The methods of identification of Hydrogen and Oxygen gases from the above can be respectively,

(1) A and B only. (2) A and C only. (3) B and A only. (4) B and C only.

35 Tin metal is coated on the inner surface of a fish can. Three statements regarding this action are given below.

A- It protects the metal by which the can is made from rusting.

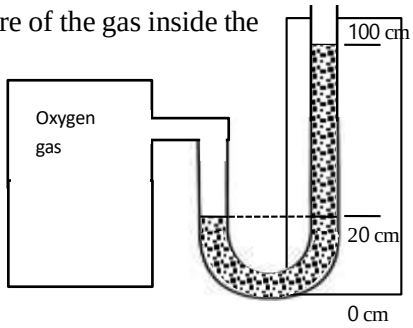
B- It prevents the reaction between the container and the contents.

C- The fish can corrode quickly when release to the environment after the usage

The most correct answer regarding the coating of tin in the can could be,

(1) A and B only. (2) A and C only. (3) Band C only. (4) All A, B and C

36 A barometer fixed to an Oxygen tank is given below. What is the pressure of the gas inside the tank? (Consider atmospheric pressure as P_o and the density of mercury as ρ)



(1) $P_o + \frac{(100-20)\ m}{100} \times \rho \times 10$ (2) $P_o - \frac{(100-20)\ m}{100} \times \rho \times 10$

(3) $(P_o + \frac{(100-0)m}{100} \times \rho \times 10$ (4) $P_o - \frac{(100-0)m}{100} \times \rho \times 10$

37 Select the ***incorrect*** statement about the anerobic respiration.

(1) The anerobic respiration that takes place in animals is known as lactic acid fermentation.

(2) The respiration that takes place without oxygen is known as anaerobic respiration.

(3) Cramps occur when anaerobic respiration takes place in animal bodies.

(4) Ethyl alcohol is produced during the anaerobic respiration in animal bodies.

38 The correct order of descending in the pH values of Acetic acid (CH_3COOH), Hydrochloric acid (HCl), Calcium Hydroxide solution($Ca(OH)_2$) and Distilled water(H_2O) is,

(1) $Ca(OH)_2$, H_2O, CH_3COOH, and HCl (2) H_2O, CH_3COOH, HCl, and $Ca(OH)_2$

(3) $Ca(OH)_2$, CH_3COOH, HCl and H_2O (4) HCl, CH_3COOH, H_2O, and $Ca(OH)_2$

39 A student decides to measure the temperature of a heap of sand. What should not do by the student?

(1) The reading must be taken while the thermometer is still there in the heap of sand.

(2) The reading mut be taken quickly after the bulb of the thermometer immersed in sand.

(3) The thermometer must immerse vertically in the heap of sand to get the reading.

(4) The meniscus of the mercury column of the thermometer must be kept at eye level when getting the reading.

40 The action that should be paid more attention to spend a healthy life.

(1) Consuming food with less amount of artificial flavoring agents.

(2) Avoiding the consumption of instant food and fast food when drinking tea.

(3) Adding considerable number of vegetables and fruits to the meals.

(4) Drinking purified bottled water