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Grade }

විෂයය } science
Subject }

පත්‍රය } I
Paper }

කාලය } 01 Hour
Time }

★Underline the correct answer.

(01) Choose the disaccharide from the following compounds.

1. Sucrose 2. Cellulose 3. Starch 4. Glycogen

(02) ${}^1_6\text{X}$ is a neutral atom. What are the values of neutron, proton and electron of it?

1. 6,6,8 2. 6,14,6 3. 8,6,6 4. 6,6,14

(03) A piece of wood with a mass of m kg is accelerating on a table under F N force. It's acceleration is a ms^{-2} . What is the acceleration of it when the mass is doubled?



1. $a/2$ ms^{-2} 2. $a \times 2$ ms^{-2} 3. $a/4$ ms^{-2} 4. $a \times 4$ ms^{-2}

(04) What is the Lactose percentage of human breast milk?

1. 2-3 % 2. 4-5 % 3. 5-6 % 4. 6-7 %

(05) What is the value of atomic mass unit, if the mass of an atom of ${}^{12}_6\text{C}$ is 1.99×10^{-23} g?

1. 1.99×10^{-23} g / 6 2. 1.99×10^{-23} g / 12
3. 1.99×10^{-23} g $\times \frac{12}{6}$ 4. 1.99×10^{-23} g $\times \frac{6}{12}$

(06) What is the SI unit of moment of force?

1. kgms^{-1} 2. Nm 3. N 4. Ns^{-1}

(07) Which of the following is a unicellular fungus?

1. Amoeba 2. Chlamydomonas 3. Yeast 4. Paramecium

(08) The electronic configuration of neutral atom of Z is 2, 8, 1. What is the incorrect statement about Z?

1. The atomic number is 11. 2. Z belongs to second period.
3. Z belongs to first group. 4. Z always forms +1 ions.

(09) What is the type of electromagnetic wave used in mobile phones in the current world mostly?

1. X rays 2. Gamma rays 3. Micro waves 4. Ultra violet rays

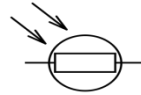
(10) Select another feature of a tree which has trimerous flowers.

1. Parallel venation 2. Taproot system
3. Secondary growth of the stem 4. Branched stems

(11) Which of the following answers correctly shows the components that are collected from the top and the bottom of the fractional distillation tower respectively.

1. LP gas, Lubricating oil. 2. Petrol, Tar
3. LP gas, Tar. 4. Tar, Lubricating oil.

(12) What is the device shown in the figure?



- | | |
|-----------------------------|----------------------|
| 1. Light dependent resistor | 2. Junction diode |
| 3. Light Emitting Diode | 4. Variable resistor |

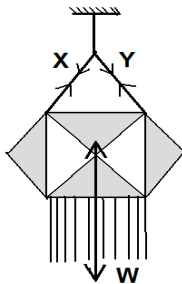
(13) Which of the following hormone contributes in releasing an ovum after the graafian follicle is fully matured?

- | | |
|----------------------|----------------------------------|
| 1. Oestrogen hormone | 2. Progesterone hormone |
| 3. Luteal hormone | 4. Follicle -stimulating Hormone |

(14) What are the polar covalent compounds out of the following compounds?

- | | | | |
|------------|--------------------|---------------------|-------------------|
| A. HF | B. CH ₄ | C. H ₂ O | D. O ₂ |
| 1. A and B | 2. A and C | 3. B and D | 4. B and C |

(15)



A Vesak lantern with the weight of W is hanging by a string to keep balanced position as shown in the figure. The tensions applied by the strings are X and Y . Here,

- A. X , Y and W lie on the same plane.
 B. The summation of X and Y is equal to W .
 C. The resultant of X and Y acts in the opposite direction of W .

What are the correct statements?

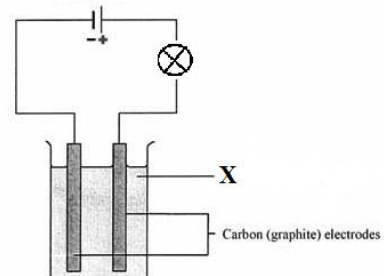
- | | | | |
|------------|------------|------------|--------------|
| 1. A and B | 2. A and C | 3. B and C | 4. A,B and C |
|------------|------------|------------|--------------|

(16) What is the correct statement regarding asexual reproduction?

- | | |
|--|---|
| 1. Formation of gametes | 2. Meiosis |
| 3. Producing organisms identical to mother | 4. Involvement of maternal and paternal organisms |

(17) A student arranged a set up using two carbon electrodes, connecting wires, a bulb and batteries as shown in the figure. The beaker contains solution "X". Which of the following cannot be X?

- | | |
|-------------------|------------------------|
| 1. Sugar solution | 2. Salt solution |
| 3. Lime juice | 4. Dilute HCl solution |



(18) An object that is three meters above from the ground has a potential energy of 270 J. What is the mass of that object? ($g = 10 \text{ ms}^{-2}$)

- | | | | |
|---------|----------|----------|----------|
| 1. 9 kg | 2. 10 kg | 3. 11 kg | 4. 12 kg |
|---------|----------|----------|----------|

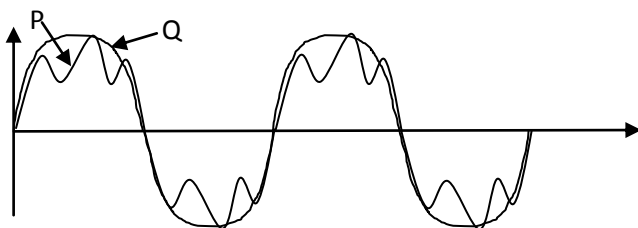
(19) Which of the following features belong to mammalian?

- A. Skin is covered by hairs.
 B. Poikilothermic
 C. Four chambered heart.
 D. Possess a light bony endoskeleton.
- | | | | |
|------------|------------|------------|------------|
| 1. A and B | 2. A and C | 3. B and C | 4. B and D |
|------------|------------|------------|------------|

(20) What is the composition of the solution which is made by dissolving 3 g of NaCl in 250 cm^3 water in m^3/v ?

- | | | | |
|-----------------------------|--------------------------|--------------------------|--------------------------|
| 1. $1/12 \text{ g dm}^{-3}$ | 2. 3 g dm^{-3} | 3. 6 g dm^{-3} | 4. 4 g dm^{-3} |
|-----------------------------|--------------------------|--------------------------|--------------------------|

- (21) A fruit in a tree that detaches from the stalk takes 5 s to fall to the ground. What is the height that it fell from? ($g = 10 \text{ ms}^{-2}$)
1. 2.5 m
 2. 0.5 m
 3. 50 m
 4. Cannot say
- (22) Who is the scientist that showed the genes that present in the same chromosome do not segregate always independently and they result unexpected phenotypic ratios?
1. Mendel
 2. Morgon
 3. Mendelieve
 4. Newton
- (23) Out of the following compounds which pair of compounds has equal relative molecular masses? (C = 12, O = 16, H = 1, N = 14, Ca = 40, Cl = 35.5)
1. $\text{CO}(\text{NH}_2)_2$ and CH_3COOH
 2. NaCl and CH_3COOH
 3. CaO and $\text{CO}(\text{NH}_2)_2$
 4. NaCl and CaO
- (24) P and Q are shapes of two acoustic waves as shown in a cathode ray oscilloscope. Choose the correct statement a



1. P and Q have different pitch, but equal loudness.
 2. P and Q have different loudness, but equal pitch.
 3. P and Q have different quality of sound, but equal pitch.
 4. P and Q have equal loudness, but different quality of sound.
- (25)

$\begin{matrix} \circ \\ + \end{matrix}$	$\begin{matrix} \circ \\ \nearrow \end{matrix}$	T	t
T		1	2
t		3	4

What are the genotypes relevant for 1, 2, 3 and 4 given in this Punnett square?

1. Tt, TT, Tt, tt
 2. TT, Tt, Tt, tt
 3. Tt, Tt, TT, Tt
 4. TT, tt, Tt, T
- (26)
- A. $\text{CaO} + \text{CO}_2 \longrightarrow \text{CaCO}_3$
 - B. $\text{CuSO}_4 + \text{Mg} \longrightarrow \text{MgSO}_4 + \text{Cu}$
 - C. $2 \text{KClO}_3 \longrightarrow 2 \text{KCl} + 3 \text{O}_2$
 - D. $\text{FeSO}_4 + 2 \text{NaOH} \longrightarrow \text{Fe}(\text{OH})_2 + \text{Na}_2\text{SO}_4$
- What is the answer that consists of combination, decomposition, single displacement and double displacement reactions in order?
1. A, B, C, D
 2. D, C, B, A
 3. A, C, B, D
 4. D, B, C, A
- (27) What are the optical devices related to the instances given below?
- Obtain a very large image of your face.
 - Obtain a converged light beam after refraction.
 - Able to view a larger area with a diminished image.
- What are the optical devices related with the above instances?

1. Convex mirror, convex lens, concave mirror
2. Concave mirror, convex lens, convex mirror
3. Concave mirror, concave lens, convex lens
4. Concave lens, concave mirror, convex lens

(28) Choose the correct order of animal groups which have two chambers, three chambers and four chambers in the heart.

1. Pisces, Amphibian, Aves
2. Aves, Amphibian, Pisces
3. Amphibian, Aves, Pisces
4. Pisces, Aves, Amphibian

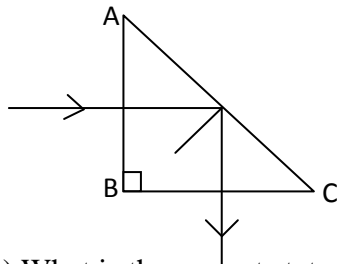
(29) $\text{CaCO}_3 \longrightarrow \text{CaO} + \text{CO}_2$

What is the mass of CaO that can be obtained from 50 g of CaCO_3 by burning?

(Ca – 40, O – 16, C – 12)

1. 28 g
2. 50 g
3. 56 g
4. 100 g

(30) The diagram shows how a light ray bends by 90° from a right angle prism. What is the correct statement about the critical angle of the glass and angle of incidence on the AC surface?



1. Critical angle = angle of incidence
2. Critical angle > angle of incidence
3. Critical angle < angle of incidence
4. Critical angle = angle of incidence = 90°

(31) What is the correct statement about sex linked inherited disorders?

1. Linked genes are always located on the X chromosome and patients are always males.
2. Linked genes are always located on the X chromosome and carriers are always males.
3. Linked genes are always located on the X chromosome and carriers are always females.
4. Linked genes are always located on the Y chromosome and patients are always females.

(32)



A, B and C tubes contain equal volume of water and equal mass of CaCO_3 powder. What is the order in which the reactions end, when the same HCl acid is added as below?

A- 5 drops of HCl

B- 10 drops of HCl

C- 15 drops of HCl

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

(33) An hawk grabbed a prey and flew with an initial velocity of 4 ms^{-1} while obtaining 40 J kinetic energy. If the mass of the prey is 1 kg, what is the weight of the hawk?

1. 4 N
2. 40 N
3. 5 N
4. 50 N

(34) Which of the following is not a characteristic of neuron?

1. Made up of cell body and nerve fibres.
2. Axons carry the nerve impulse away from the cell body.
3. Dendrons carry the nerve impulse towards the cell body.
4. The resource of myelin sheath reduces the speed of nerve

(35) Given below are the chemical changes of metals X, Y and Z.

- Metal X does not react with cold water, but releases gas bubbles by reacting with hot water.
- Metal Y does not react with either cold water or hot water, but reacts with steam.
- Metal Z shows a faster reaction with a hissing sound when it is put into cold water.

What is the descending order of X, Y and Z metals according to their reactivity?

1. X, Y, Z
2. X, Z, Y
3. Z, Y, X
4. Z, X, Y

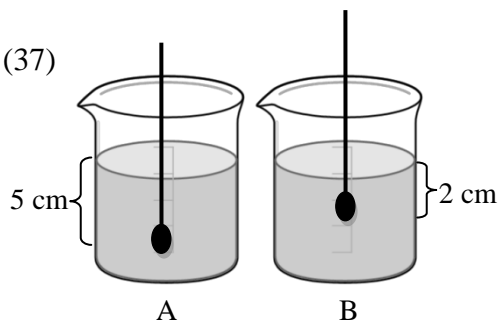
(36) Consider the following statements.

- A. Opening a tap
- B. Detaching a nut using a spanner
- C. Opening a door using a key

In which of the above instances a couple of forces acts?

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

(37)



The figure shows the levels of two hydrometers which are immersed in A and B solutions. Following are some suggestions made to take the hydrometers to an equal level.

- P- Add more solute to the solution A.
- Q- Add more solvent to the solution B.
- R- Add more solvent to the solution A.
- S- Add more solute to the solution B.

What are the correct suggestions?

1. P and Q 2. Q and R 3. R and S 4. P and S

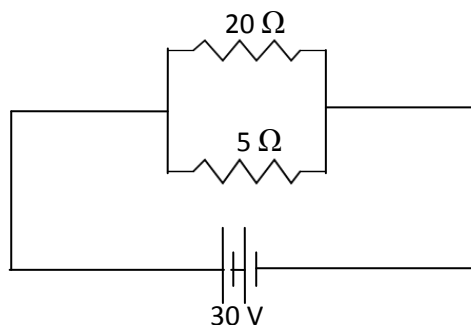
(38) Given below are few statements on element Carbon.

- A - Amorphous Carbon is used as a rubber filling agent.
- B - Graphite is used as a fuel.
- C - Charcoal is used to absorb gases.
- D - Dimond is used for electrodes in cells.

The correct statements are,

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

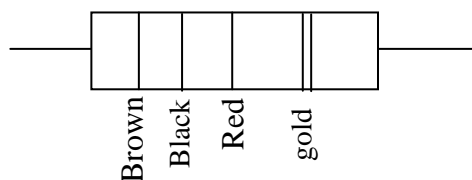
(39)



What is the equivalent resistance and current flow through the circuit?

1. 25 Ω and 7.5 A 2. 30 Ω and 6 A
 3. 6 Ω and 7.5 A 4. 4 Ω and 7.5 A

(40)



- Brown - 1
- Black- 0
- Red - 2
- Gold - 5%

What is the resistance value, tolerance value and range of the true value?

1. 1000 Ω , 5%, (950 - 1050) Ω
 2. 102 Ω , 5%, (102 - 152) Ω
 3. 100 Ω , 5%, (105 - 110) Ω
 4. 102 Ω , 5%, (950 - 1050) Ω