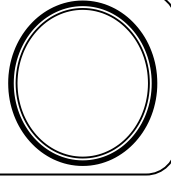




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J/ Hartley College, Point Pedro.



முதலாம் தவணைப் பரீட்சை –2020 – தரம் 10
First Term Examination – 2020 – Grade 10

SCIENCE

34

E

I, II

மூன்று மணித்தியாலம்
Three Hours

கூட்டு
Index No

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SCIENCE

Part – I

Underline the correct answer

01. The element which found is the highest mass percentage in the human body is,

1. C

2. N

3. O

4. H

02. Sugar that is not found in the plants,

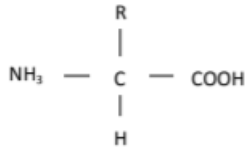
1. Lactose

2. Maltose

3. Sucrose

4. Glucose

03. This structure indicates,



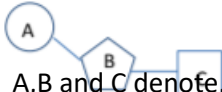
1. Protein

2. Carboxyl group

3. Glucose

4. Amino acid

04.



A, B and C denote, in the given nucleotide,

1. Phosphate group, Nitrogen base, Pentose sugar

2. Phosphate group, Pentose sugar, Nitrogen base

3. Nitrogen base, Pentose sugar, Phosphate group

4. Pentose sugar, Phosphate group, Nitrogen base

05. The correct one of the following,

1. Symptom of deficiency of vitamin A is, changing colour of the skin.

2. Symptom of deficiency of vitamin B is, weakening bones.

3. Symptom of deficiency of vitamin C is, scurvy.

4. Symptom of deficiency of vitamin D is, bite patches.

06. Which of the following pairs, indicates same quantities,

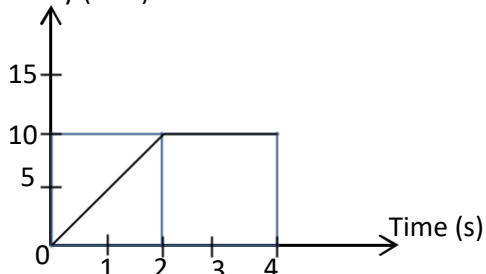
- | | |
|---------------------------|------------------------------|
| 1. Speed and displacement | 2. Pressure and acceleration |
| 3. Work and upthrust | 4. Velocity and acceleration |

07. A ball was thrown upward with velocity 30ms^{-1} . The highest height is,

- | | | | |
|--------|--------|-------|--------|
| 1. 90m | 2. 45m | 3. 0m | 4. 60m |
|--------|--------|-------|--------|

08. The velocity time, graph of a motion of an object is shown here. Which of the following statement is false,

Velocity (ms^{-1})



- | |
|---|
| 1. In the first two seconds it moves with acceleration as 5ms^{-2} |
| 2. It travels 20m distance with uniform velocity. |
| 3. The total distance travelled with the object is 40m. |
| 4. The distance travelled with acceleration is 10m. |

09. Electronic configuration of ${}_{11}^{23}\text{Na}$ is,

- | | | | |
|------------|----------|----------|----------|
| 1. 2,8,8,5 | 2. 2,8,4 | 3. 2,8,1 | 4. 2,8,5 |
|------------|----------|----------|----------|

10. Which of the followings shows amphoteric character,

- | | | | |
|--------------------------|----------------------------|-------------------|-----------------|
| 1. Na_2O | 2. Al_2O_3 | 3. SiO_2 | 4. MgO |
|--------------------------|----------------------------|-------------------|-----------------|

11. Which of the followings has lowest first ionization energy,

- | | | | |
|-------|-------|-------|------|
| 1. Si | 2. Mg | 3. Al | 4. P |
|-------|-------|-------|------|

12. Consider the following statement,

A – Energy of the energy levels decreases from outwards of the nucleus.

B – Difference between the energy levels decreases from outwards of the nucleus.

C – The maximum number of electrons allocated in the third energy level is 18.

The correct statements of the mentioned above,

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

13. Which of the followings has the same electronic configuration of Cl,

- | | | | |
|-------|-------|------|------|
| 1. Ar | 2. Ne | 3. K | 4. F |
|-------|-------|------|------|

14. What is the acceleration of the wooden block which placed on a smooth surface undergone with forces according to the picture,



- | | |
|--|---|
| 1. 16ms^{-2} , direction towards with 80N | 2. 3ms^{-2} , direction towards with 80N |
| 3. 1ms^{-2} , direction towards with 95N | 4. 3ms^{-2} , direction towards with 95N |

15. Momentum of an object depends on,

1. Mass 2. Velocity 3. Mass, velocity 4. None of the mentioned above.

16. Which of the followings has the highest electrogativity,

1. Cl 2. K 3. Ca 4. La

17. Chemical forula of magnesium sulphate is,

1. $Mg(SO_4)_2$ 2. Mg_2SO_4 3. MgS 4. $MgSO_4$

18. Factor that doesn't determine on the limiting frictional force,

1. Normal reaction 2. Area of the contact surfaces
3. Nature of contact surface 4. None of the mentioned above.

19. Which of the followings is as not charged above particle,

1. Proton 2. Electron 3. Neutron 4. Nucleus

20. Vitamin that soluble in fat is,

1. A 2. B 3. C 4. Fe

21. X denotes in the reaction as, fatty acid + glycerol \rightarrow X + water,

1. Lipid 2. Protein 3. Vitamin A 4. Carbohydrate

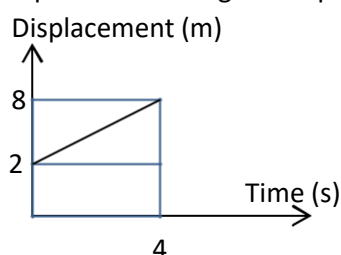
22. Substance that acts as biochemical caralyst is,

1. Vitamin 2. Glucose 3. Enzyme 4. Water

23. An atom of an element has three energy levels with outer most energy level having five electrons, than the period, and group of this element are,

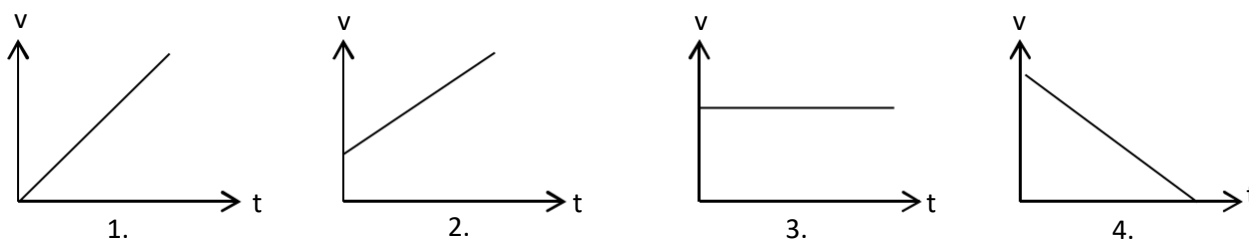
1. 3, 5 2. iii, iv 3. 3, v 4. iii, 5

24. A pattern of change of displacement with time of a vehicle is shown in the graph. Velocity of the vehicle is,



1. $0.5ms^{-1}$ 2. $1.5ms^{-1}$
3. $2.0ms^{-1}$ 4. $2.5ms^{-1}$

25. A velocity time graph for motion of a ball having 5kg undergone with application of instant force 10N is,



Structured Questions

Part – II

01. The main organic compounds which used to compose the living things are called biological molecules.

A. 1. What are the types of biological molecules

.....
.....

2. Which organic compound is found abundantly on the earth surface.

.....
.....

3. Give the example for polysaccharides.

a. b. c.

4. Give the composed materials of the following disaccharides.

a. Maltose b. Sucrose

c. Lactose.....

5. Give the reagent materials for identifying the followings.

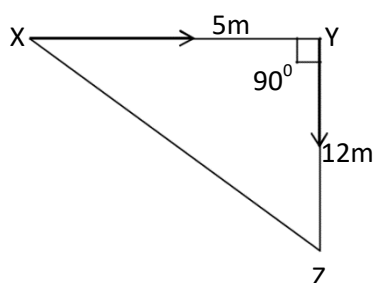
a. Starch

b. Glucose

c. Coconut oil

d. Protein

B. A sample of a motion completed with a child on an instance is shown in the picture. Initial and final positions are X and Z.



i. What is the distance travelled with the child

.....

ii. What is the displacement of the child.

.....
.....

iii. Time taken for the continuous movement of the child from X as through Y and up to Z is 5 seconds.

a. What is the speed of the child.

.....
.....

b. What is the velocity of the child.

.....
.....

02.

A. Fill in the blanks in the following sentences.

- i. Things which have same atomic number and different mass numbers are known as.....
- ii. These are isotopes as.....,.....,..... for hydrogen.
- iii. The sum of the number of protons and neutrons found in the nucleus of an atom is.....
- iv. Number of protons of an atom is 19. Number of electrons is There are neutrons. The mass number of the element is.....

B. A part of a periodic table is given below. Symbols given here are not actual symbols. Observe the

					F		B
			C			E	D
	A						

patterns and answer the questions given.

i. What are the elements which have the outer most energy level completely filled.

.....
.....

ii. Give the elements found as gaseous state.

.....
.....

iii. Write the electronic configuration of C.

.....
.....

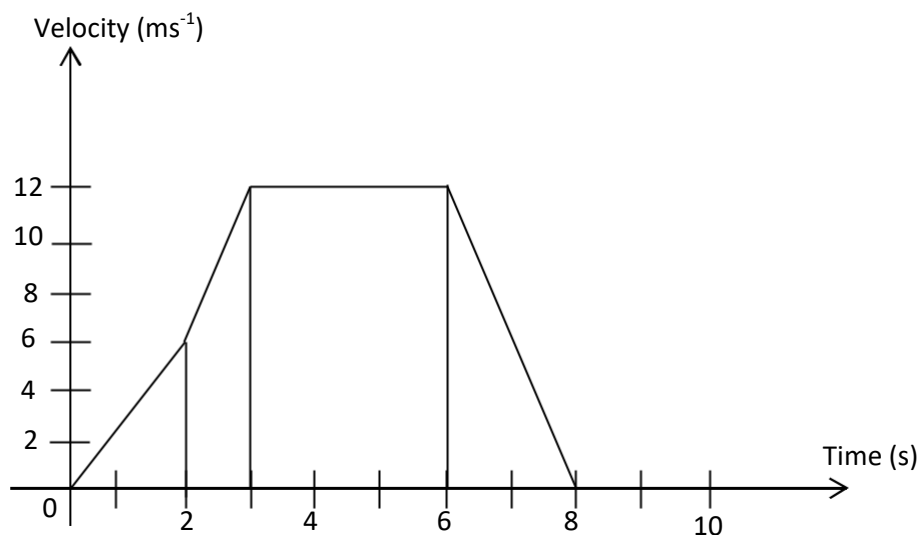
iv. Which is the metallic element.

.....
.....

v. Write the chemical formula of the compound formed with A and E.

.....
.....

03. A velocity time graph of motion of an object is given below.



1. What is the initial velocity of the object.
2. What is the acceleration of the first two seconds.
3. What is the acceleration within the first next second.
4. What is the distance travelled within first 3 seconds.
5. What is the distance in which the object moves in a constant velocity.
6. What is acceleration.
7. What is the distance travelled with deceleration.
8. What is the total distance travelled with the object.

B. Describe the motion of the object.

1. Give three physical properties of each of a metal and a non-metal.
2. What is allotrope. Give the two elements that have allotropes.
3. Write the chemical formula of the following compounds.
 - a. Sodium sulphate.
 - b. Ammonium dichromate.
4. What is electronegativity.
5. Which is the element has the highest electronegativity.

04.

- A.
1. Write the Newton's second law.
 2. What is the equation derived from the Newton's second law.
 3. What is the force act on the object having 5kg mass achieving 12ms^{-1} velocity from rest, within 4s.
 4. Give two instances where as application of Newton's third law.
 5. What is the maximum momentum of the object having 3kg where allowed to fall vertically from the rest. As reaching the ground within 4s.
(Gravitational acceleration is 10ms^{-2})
- B.
1. How can we classify the frictional force.
 2. Give the factors that determine frictional force.
 3. Give two advantages of frictional force.
 4. Write two ill effects of frictional force.
 5. Give two methods for reducing frictional force.