

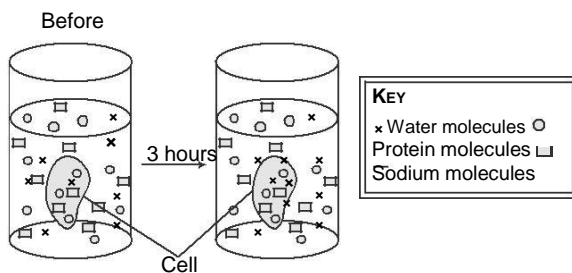
PRACTICE SET 1

A Whole Content Based Test for Class 9th Science Asiad

- A body covers 20, 22, 24 and 26 metres in 6th, 7th, 8th and 9th second, respectively. Then, which of the following conditions is true?

 - A The body starts from rest and moves with a uniform velocity
 - B The body starts from rest and moves with a uniform acceleration
 - C The body starts with an initial velocity and moves with a uniform acceleration
 - D The body starts with an initial velocity and moves with a uniform velocity

- The diagram given below shows the process of osmosis.



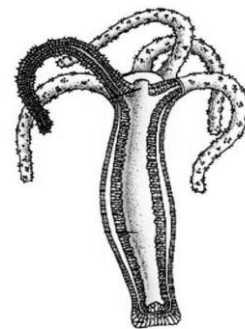
Diffusion of a solvent through a semipermeable membrane from a region of low solute concentration to a region of high solute concentration is known as osmosis. In the above diagram, which molecule is showing the process of osmosis?

- A Sodium molecule
 - B Protein molecule
 - C Water molecule
 - D All of these
- In which of the following conditions, the distance between the molecules of hydrogen gas would increase?

 - I. Increasing pressure on hydrogen contained in a closed container.
 - II. Some hydrogen gas leaking out of the container.
 - III. Increasing the volume of the container of hydrogen gas.
 - IV. Adding more hydrogen gas to the container without increasing the volume of the container.

- A I and III
- B I and IV
- C II and III
- D II and IV

- Observe the given organism carefully. Identify which of the given statements relates correctly with the organisms?



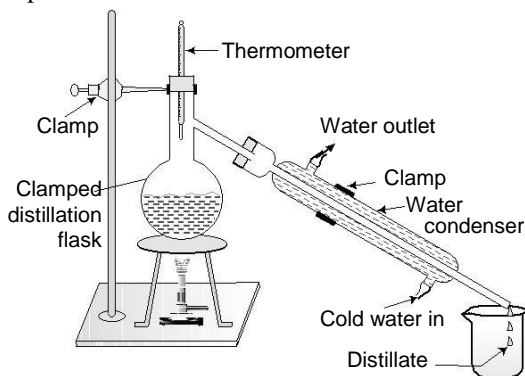
- A This organism is Porifera and diploblastic, but coelomate and has tissue level of organisation.
- B This organism is coelenterate found in warm places and uses pseudopodia for locomotion.
- C This organism is a coelenterate and have a central cavity or gastrovascular cavity.
- D This organism is a ctenophore and have two tentacles on it.

- Observe the crossword given below and find out the number of disease in it.

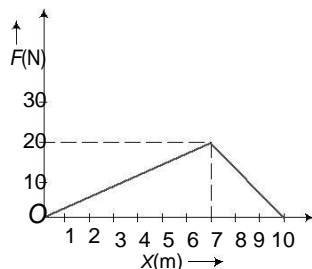
P	B	C	K	W	A	S	H	I	O	R	K
M	A	E	A	R	T	H	R	I	T	I	S
I	E	R	A	N	N	E	S	S	Y	D	L
E	I	L	M	O	C	S	I	S	P	E	L
C	K	R	U	E	L	E	P	H	A	N	T
V	A	O	M	A	L	A	R	I	A	G	E
Y	L	M	P	A	L	A	C	I	A	U	T
R	A	I	S	C	U	R	V	Y	E	E	A
H	A	E	M	O	P	H	I	L	I	A	N
S	Z	K	R	E	I	N	E	M	I	N	U
N	A	O	R	C	I	N	E	I	N	P	S
S	R	I	C	K	E	T	S	G	Q	R	T

- A 12
- B 9
- C 10
- D 11

6. While using the given apparatus, what must be kept in mind?



- A The mixture in the distillation flask must contain a solid.
 B The temperature difference between the boiling points of components of the mixture must be less than 25°C .
 C The temperature difference between the boiling points of components of the mixture must be more than 25°C .
 D All of the above
7. Work done is the product of force applied and displacement. Work done can also be calculated by graphical method. A force *versus* displacement ($F - X$) graph is shown in the figure. Find the total work done by the force.



- A 100 J
 B 90 J
 C 80 J
 D 70 J
8. Sort out the following processes into Group A (i.e. diffusion process), Group B (i.e. osmosis) and Group C (i.e. evaporation).
- Swelling up of a raisin on keeping in water.
 - Earthworm dying on coming in contact with common salt.
 - Drying of clothes.
 - Spreading of virus on sneezing.
 - Water droplets at the outer surface of a glass tumbler having ice cold water.

VI. Shrinking of grapes kept in thick sugar syrup.

VII. Preserving pickles in salt.

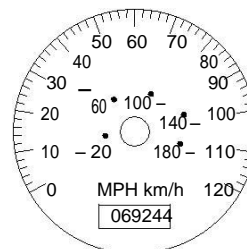
VIII. Spreading of smell of cake being baked throughout the house.

IX. Aquatic animals using oxygen dissolved in water during respiration.

- | | | | |
|---|---------|---|-------------------|
| A | Group A | — | I, IV, VII, IX |
| | Group B | — | II, III, VI |
| | Group C | — | V |
| B | Group A | — | IV, VII, VIII, IX |
| | Group B | — | I, II, VI |
| | Group C | — | III, V |
| C | Group A | — | II, III, VII |
| | Group B | — | I, IV |
| | Group C | — | V, VI |
| D | Group A | — | II, IV, VII, VIII |
| | Group B | — | I, VI |
| | Group C | — | III, V |

Direction (Ques. 9-11) Read the following information and answer the questions that follow:

An odometer or odograph is an instrument that indicates distance travelled by a vehicle such as a bicycle or automobile.



The device may be electronic, mechanical or combination of the two, it is sometimes called a metometer or colloquially, a tripometer. A mechanical odometer basically consists of a series of cogs featuring number on each edge. The cogs turn in accord with wheel rotation *via* the cable and drive mechanism. The mechanical parts are hidden from view by a windowed casing that reveals only a single row of numbers, which displays current mileage. This can be viewed on the speedometer face. A mechanical odometer might have a maximum count of 99999 miles at which point it rolls over to start recounting from 00000 miles.

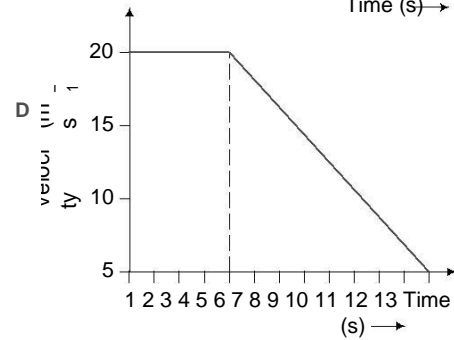
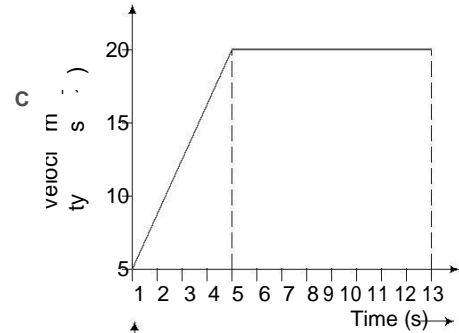
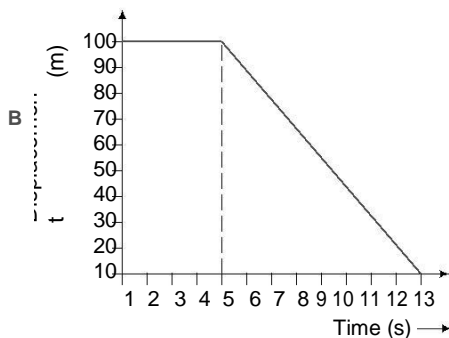
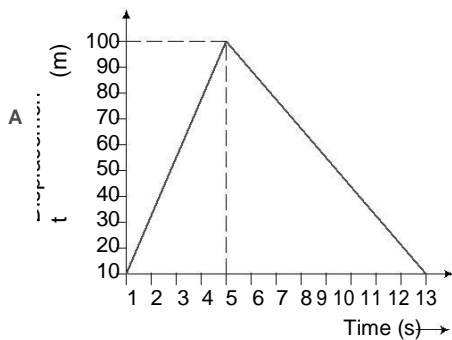
The modern electronic or digital odometer tracks mileage using computer chip. The read out is digitally displayed and the mileage is stored in the main engine control module.

9. The table given below shows the distance in centimetre, travelled by three cars A, B and C during each second.

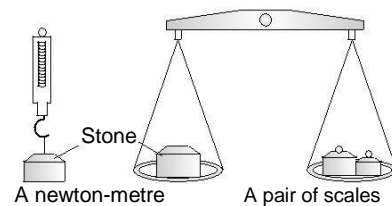
Time	Distance (in cm) covered in each second by A, B and C		
	Car A	Car B	Car C
1st second	20	20	20
2nd second	20	36	60
3rd second	20	24	100
4th second	20	30	140
5th second	20	48	180

Which car is moving with a constant acceleration?

- A A
B B
C C
D None of the above
10. A car moving with a uniform speed covers a distance of 120 m in 2 s. What time will it take to cover 240 m?
A 1 s
B 2 s
C 3 s
D 4 s
11. A car travels with a uniform velocity of 20 ms^{-1} for 5 s. The brakes are then applied and the car is uniformly retarded. It comes to rest in further 8 s. Which graph correctly represents the motion of car?

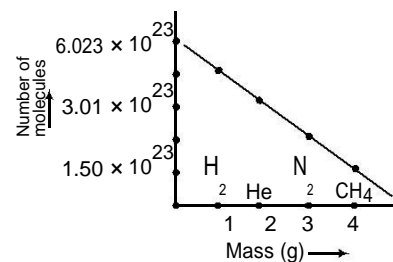


12. A lump of stone is weighed using a newton-metre (spring balance) and a pair of scales (pan balance).



This experiment is repeated on the moon. Are the readings for each balance the same or different when taken on the earth and on the moon?

- | | On newton-metre | On scales |
|---|-----------------|-----------|
| A | Different | Different |
| B | Different | Same |
| C | Same | Different |
| D | Same | Same |
13. The graphical representation of number of molecules of different gases is given below. Which gases are placed at correct position?



- A H_2 , He
B N_2 , CH_4
C He, CH_4
D H_2 , CH_4

14. Which of the following statements are true?
- A. Cells have many different shapes and sizes.
 - B. All living things are made up of more than one cell.
 - C. The new cells formed from division are different from the parent cell.
 - D. Cell walls are important to plants because they give the plant cells their shape.
- A A and D
 B A, B and C C
 B and D
 D A, B, C and D

15. **Assertion (A)** Pressure is a vector quantity.

Reason (R) Pressure depends on force which is a vector quantity.

- A Both A and R are true and R is the correct explanation of A
 - B Both A and R are true, but R is not the correct explanation of A
 - C A is true, but R is false
 - D Both A and R are false
16. Which sulphide contains the greatest mass of sulphur in a 10 g sample?

Sulphide	Formula	Mass of one mol/g
A	NiS	90
B	FeS ₂	120
C	MoS ₂	160
D	PbS	239

- A A
 - B B
 - C C
 - D D
17. The speed of sound in air is about 344 m/s and speed of light in air is $3 \cdot 10^8$ m/s. It is thus clear that the speed of light is very great as compared to speed of sound. So, though sound may take a few seconds to travel a distance of a few hundred metres, light will take practically no time to reach a distance of even a few kilometres.

Sound of thunderstorm is heard 10 s after the lightning is seen. The approximate distance of the thunder cloud is

- A 3.4 m
- B 3.44 km
- C 30.4 km
- D 340 km

18. Match the Column A with Column B and select the correct option from the codes given below.

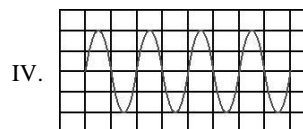
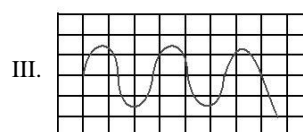
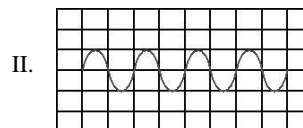
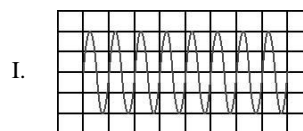
Column A (Nutrients)	Column B (Deficiency diseases)
P. Niacin	I. Scurvy
Q. Vitamin-C	II. Kwashiorkor
R. Vitamin-K	III. Xerophthalmia
S. Protein	IV. Pellagra
T. Vitamin-A	V. Bleeding disease

- A P-I, Q-II, R-IV, S-V, T-III
- B P-IV, Q-I, R-V, S-II, T-III
- C P-I, Q-III, R-V, S-IV, T-II
- D P-IV, Q-V, R-III, S-II, T-I

19. **Assertion (A)** Mass can neither be created nor destroyed.

Reason (R) The volume occupied by one mole of any gas at STP is always same.

- A Both A and R are true and R is the correct explanation of A
 - B Both A and R are true, but R is not the correct explanation of A
 - C A is true, but R is false
 - D R is true, but A is false
20. Which of the following sound waves shown in the figure represent sounds of the same loudness but different pitch?



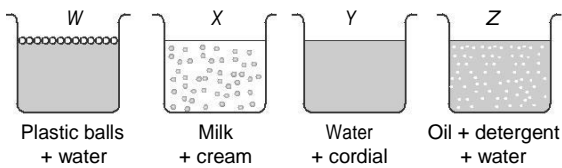
- A Both I and II
- B Both II and III
- C Both I and IV
- D Both II and IV

28. A car is travelling at 20 m/s along a road. A child runs out into the road 50 m ahead and the car driver steps on the brake pedal. What must the car's deceleration be if the car is to stop just before it reaches the child?
- A 2 m/s^2 B 4 m/s^2 C 6 m/s^2 D 8 m/s^2

29. Two liquids mix if there is no boundary visible between them, when they are stirred together.

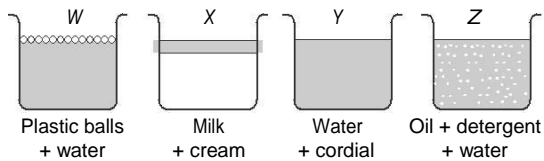
Alex investigated the properties of some mixtures. He took four beakers W, X, Y and Z. He placed some substances into each beaker. He placed some substances into each beaker. Alex then vigorously stirred the substances.

These diagrams show what the mixtures looked like just after being stirred.



Alex allowed the mixtures to settle overnight.

These diagrams show what the mixtures looked like the next morning.

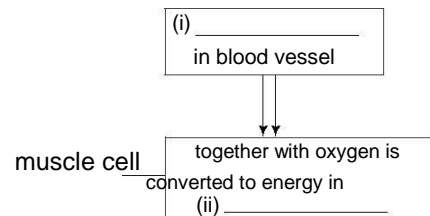


From a description that Alex read in a textbook, he decided that substance Z was an emulsion.

Which of the following is a description of an emulsion that supports Alex's decision?

- A Liquids that mix and do not form layers after settling.
 B Liquids that do not mix but form layers after settling.
 C A liquid and a solid that does not dissolve in the liquid.
 D Liquids that do not mix and do not form layers after settling.

30. Complete the diagram to show how a muscle cell gets its energy. Choose the correct option from options below:



- (i) _____ (ii) _____
- A digested food cytoplasm
 B blood cell sap
 C blood cytoplasm
 D cytoplasm cell sap