

**CHINMAYA INTERNATIONAL RESIDENTIAL SCHOOL
COIMBATORE**

**ENTRANCE EXAM: SAMPLE PAPER
(FOR ADMISSION TO ACADEMIC YEAR 2014)**

CLASS: XI IB

SUBJECT: SCIENCE

01. Which combination of features is found in most plant and animal cells?

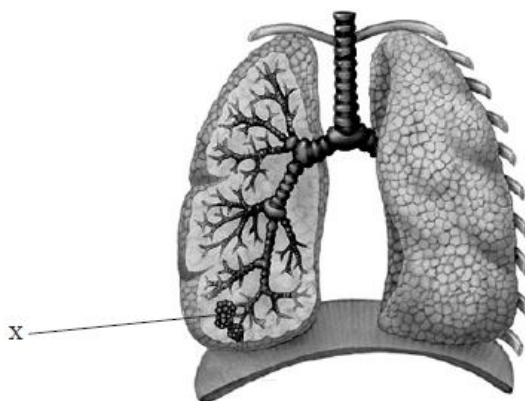
- A. Plasma membrane, vacuole, Golgi apparatus
- B. Cytoplasm, mitochondria, ribosomes
- C. Rough ER, nucleus, centrioles
- D. Plastids, cytoplasm, nucleus

02. In ecology, what is meant by the term community?

- A. A group of populations living and interacting in the same area
- B. A group of organisms of the same species living and interacting in the same area
- C. A group of organisms which can interbreed and produce fertile offspring
- D. The environment in which a species normally lives

03. What is the function of the structure labelled X?

- A. Gas exchange
- B. Expiration
- C. Respiration
- D. Inspiration



04. Which of the following correctly shows the site of the process ?

	Process	Location
A	Aerobic cell respiration	Cytoplasm
B	Respiration	Chloroplast
C	Photosynthesis	Cytoplasm
D	Photosynthesis	Chloroplast

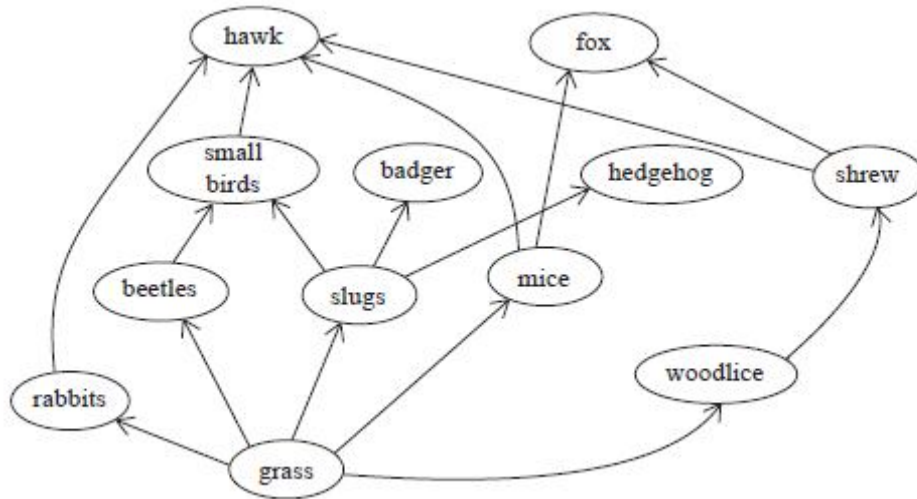
05. What is necessary for osmosis to occur?

- A. A membrane protein
- B. A partially permeable membrane
- C. A source of energy
- D. A cell wall

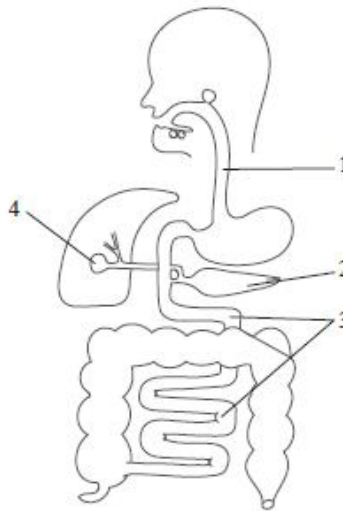
06. What role does iron play in human beings?

- A. As a component in nucleic acids
- B. As a component of lipids
- C. As a component of carbohydrates
- D. As a component of haemoglobin

The following diagram of a food web refers to question No. 10



07. The diagram below represents the human digestive system.



Which of the following correctly represents the labels?

	Oesophagus	Gall bladder	Small intestine	Pancreas
A	1	4	2	3
B	1	4	3	2
C	4	3	1	2
D	2	1	3	4

08. In photosynthesis, light energy is used to split water molecules. Which products are formed and what is the name of the reaction?

	Products formed	Reaction
A	Hydrogen and ATP	Photolysis
B	Hydrogen and oxygen	Photolysis
C	Hydrogen and ATP	Hydrolysis
D	Hydrogen and oxygen	Hydrolysis

09. The table shows the numbers of particles present in the nuclei of four atoms or ions.

Which two particles belong to the same element?

	PROTONS	NEUTRONS	ELECTRONIC STRUCTURE
1	18	22	2,8,8
2	19	20	2,8,8
3	19	21	2,8,8,1
4	20	20	2,8,8,2

A. 1 and 2

B. 1 and 4

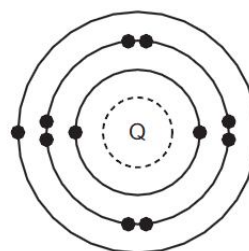
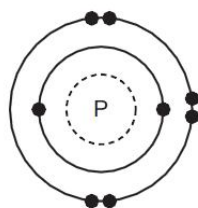
C. 2 and 3

D. 2 and 4

10. The electronic structures of atoms P and Q are shown.

P and Q react to form an ionic compound.

What is the formula of this compound?



key
● = electron

A. PQ_2

B. P_2Q

C. P_2Q_6

D. P_6Q_2

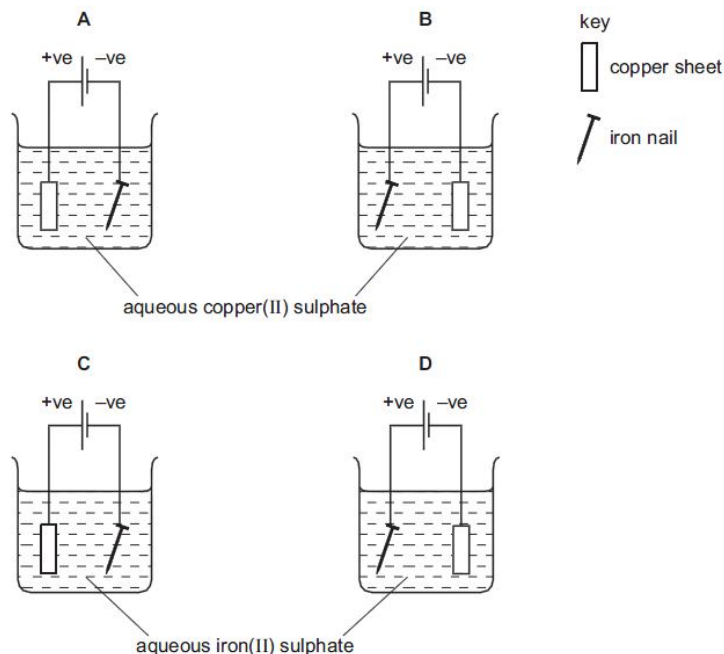
11. Element Y is in the second Period of the Periodic Table. An atom of element Z has six more protons than an atom of element Y.

Which statement must be correct?

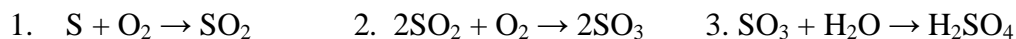
A. Elements Y and Z are in the same Period.

- B. Elements Y and Z have the same number of electrons in the first shell.
- C. Element Z has six more electrons in its outer shell than element Y.
- D. The nucleon number of element Z is six more than that of element Y.

12. Which apparatus could be used to electroplate an iron nail with copper?



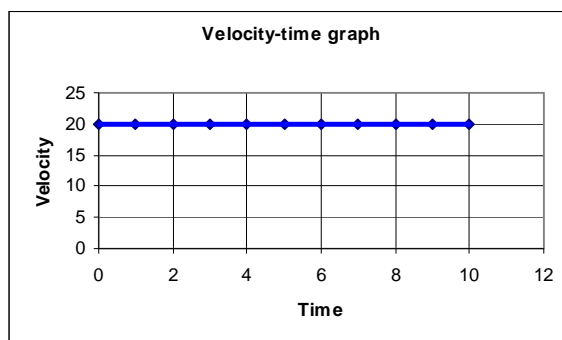
13. Three reactions used in the manufacture of sulphuric acid are shown.



Which of these reactions are redox reactions?

- A. 1 only
- B. 3 only
- C. 1 and 2 only
- D. 2 and 3 only

14 The following graph represents the motion of



- A. an object with positive acceleration
- B. an object with zero acceleration
- C. an object with negative acceleration
- D. a stationary object

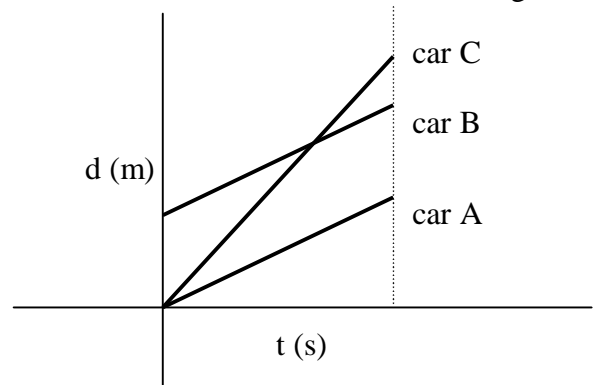
15. An astronaut picks up a stone on the Moon and finds its mass to be 2 kg. If the mass of the Earth is 6 times more than the mass of the moon, what will be the mass and the weight of the stone on the Earth?

	MASS	WEIGHT
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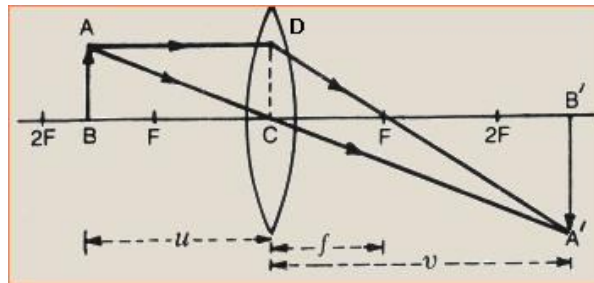
- | | | |
|----|-------|-------|
| A. | 2 Kg | 12 N |
| B. | 2 Kg | 20 N |
| C. | 12 Kg | 120 N |
| D. | 20 Kg | 200 N |

16. The distance-time graph of three cars, A, B and C, is shown below. Which of the following is the correct comparison of the speed of the three cars?

- A. speed A = speed B = speed C
 B. speed A < speed B < speed C
 C. speed A = speed B ≠ speed C
 D. speed C > speed B > speed A



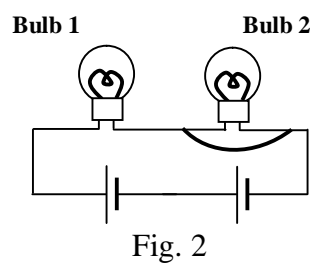
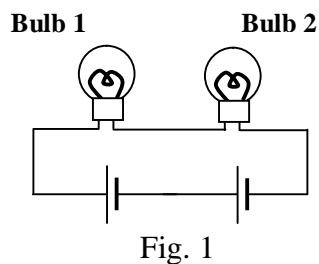
17. The following figure shows the refraction of light by a convex lens. AB represents the object and A'B' represents the image.



What happens to the size of the image when the object is moved away from the lens to a position beyond 2F?

- A. The size of the image diminishes B. The size of the image does not change
 C. The size of the image enlarges D. Cannot be predicted

18. In the circuit diagram shown below, both the bulbs are similar and have the same rating. What will happen if the circuit is rewired as shown in Fig. 2?



- A. There will be no change in the brightness of the bulbs

- B. Bulb 1 will glow dimmer than Bulb 2
- C. Bulb 2 will glow dimmer than Bulb 1
- D. Bulb 2 will not glow at all