

GUJARAT BOARD CLASS 9 TERM 1 SCIENCE SAMPLE PAPER- SET 1

Time: 2 hrs

Total Marks: 60

General Instructions:

PART A

- In MCQs, internal options will not be given.
- 30 MCQs will be asked in this part of the paper. Each carries **1 Mark**. All these questions are compulsory.

PART B

- Internal options will be asked from the same chapter with equal difficulty level.
 - **Section A:** → Question no. 1 to 5 are to be answered in short. Each carries 2 marks.
→ Internal option will be available in two questions.
 - **Section B:** → Question no. 6 to 9 are to be answered in brief. Each carries 3 marks.
→ Internal option will be available in one question.
 - **Section C:** → Question no. 10 to 11 are to be answered in detail. Each carries 4 marks.
→ Internal option will be available in one question.
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PART A

Choose the correct option from the given choices for each of the following questions:
[1 mark each] [30]

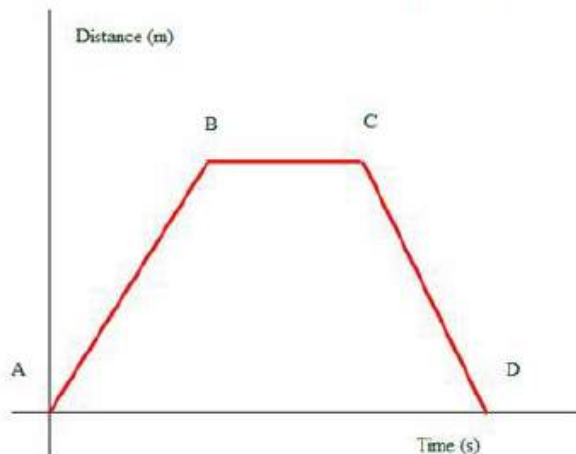
1. A ball is gently dropped from a height of 15 m. If its velocity increases uniformly at the rate of 10 m/s^2 , the velocity with which it will strike the ground is:
(a) 5.8 m/s
(b) 17.3 m/s
(c) 10 m/s
(d) 15 m/s
2. Density of salty water _____ when compared to the density of pure water.
(a) Is less
(b) Is always more
(c) Is equal
(d) May be less or more

3. The displacement covered in one complete round by a seconds' hand of radius r in a clock is:
- (a) $2r$
 - (b) 360°
 - (c) $3r$
 - (d) Zero

4. A car increases its speed from 20 m/s to 40 m/s in 10 seconds. Its acceleration is:
- (a) $5/9 \text{ m/s}^2$
 - (b) 2 m/s^2
 - (c) $(-5/9) \text{ m/s}^2$
 - (d) $(-2) \text{ m/s}^2$

5.

In the distance-time graph of a cyclist, what is happening between B-C and C-D?

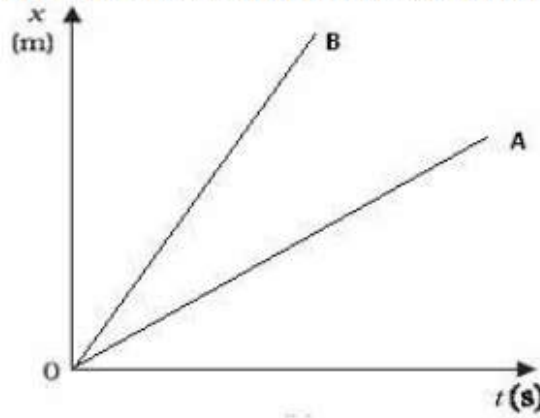


- (a) B-C: cyclist is stationary; C-D: speed is increasing.
- (b) B-C: cyclist is stationary; C-D: cyclist is accelerating.
- (c) B-C: Cyclist is stationary; C-D: cyclist is coming back to where he started.
- (d) B-C: Cyclist is coming back to where he started; C-D cyclist is stationary.

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6. Volume of a glass topper is 12.5 cm^3 and its density is 2.4 g cm^{-3} . To weigh it we shall prefer a spring balance of range:
- (a) 25 g
 - (b) 100 g
 - (c) 250 g
 - (d) 1000 g
7. Which of the following correctly represents the law of conservation of momentum?
- (a) $m_1 + u_1 + m_2u_2 = 0$
 - (b) $m_1v_1 + m_2v_2$
 - (c) $m_1u_1 + m_2u_2 = m_1v_1 + m_2v_2$
 - (d) $F_1 + F_2$
8. When balanced forces act on a body, the body is:
- (a) Either at rest or moving with constant velocity
 - (b) Moving with speed
 - (c) Moving with variable velocity
 - (d) Accelerating

9. Distance-time graph of two objects A and B are shown below:



Which statement is true for the speed of object A and B?

- (a) Speed of object A is greater than object B
 - (b) Speed of object A is lesser than object B
 - (c) Both have same speed
 - (d) Speed of object A is double the speed of object B
10. Rockets work on the principle of conservation of:
- (a) Momentum
 - (b) Energy
 - (c) Mass
 - (d) Impulse
11. If an object has a weight 294 N, what would be its mass in grams?
- (a) 30×10^3
 - (b) 30
 - (c) 29×10^3
 - (d) 15×10^3

12. Who discovered X-rays?
- (a) Willard
 - (b) Rontgen
 - (c) J. Chadwick
 - (d) Rutherford
13. Which of the following is NOT true for a mixture?
- (a) A mixture can be separated into its constituents.
 - (b) The composition of a mixture is variable.
 - (c) A mixture has a fixed melting point.
 - (d) Energy is not given out in the preparation of a mixture.
15. Which is the smallest particle of an element which can take part in a chemical reaction?
- (a) Compound
 - (b) Molecule
 - (c) Atom
 - (d) Mixture
14. Which of the following is not a part of J. J. Thomson's atomic model?
- (a) An atom is a hollow sphere.
 - (b) An atom is a gel of positive charge.
 - (c) Atoms have embedded negatively charged electrons.
 - (d) Electrons help in conduction of electricity.

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15. Which is the smallest particle of an element which can take part in a chemical reaction?
- (a) Compound
 - (b) Molecule
 - (c) Atom
 - (d) Mixture
16. Which of the following substances sublime at room temperature?
- (a) Ammonium chloride
 - (b) Iodine
 - (c) Dry ice
 - (d) Camphor
17. Which of the following is NOT true about Rutherford's model of an atom?
- (a) Most of the mass of the atom is concentrated in the nucleus.
 - (b) An atom as a whole is electrically neutral.
 - (c) An atom consists of a large nucleus.
 - (d) Electrons revolve around the nucleus in specific orbits.
18. Which of the following statements is correct?
- (a) A solution is a homogeneous mixture.
 - (b) A suspension is a homogeneous mixture.
 - (c) In a solution, the substance present in lesser quantity is called solvent.
 - (d) All of the above.

- 19.** Which is the largest cell in the human body?
- (a) Kidney cell
 - (b) Lung cell
 - (c) Osteocyte
 - (d) Nerve cell
- 20.** In which case does a single cell constitute a whole organism?
- (a) Rat
 - (b) Fungus
 - (c) Ant
 - (d) Chlamydomonas
- 21.** Which of the following tissues is short-lived?
- (a) Sclerenchyma tissue
 - (b) Parenchyma tissue
 - (c) Lateral meristem
 - (d) Intercalary meristem
- 22.** In which year was cell discovered?
- (a) 1674
 - (b) 1665
 - (c) 1831
 - (d) 1813
- 23.** The kidney shaped cells surrounding stomata are called:
- (a) Kidney cells
 - (b) Guard cells
 - (c) Arc cells
 - (d) Chlorenchyma cells

24. What does vascular bundle consist of?

- (a) Xylem and Parenchyma
- (b) Xylem and Phloem
- (c) Epidermis and Cork
- (d) Epidermis and Meristem

25. Uninucleate characteristic is shared by

- (a) Cardiac and skeletal muscles
- (b) Skeletal and smooth muscles
- (c) Cardiac and smooth muscles
- (d) Skeletal and involuntary muscles

27. A student was observing a slide under a microscope. She saw small, branched and striated muscle cells. Which type of muscle did she observe?

- (a) Cardiac muscle
- (b) Voluntary muscle
- (c) Non-striated muscle
- (d) Striated muscle

26. The matrix of bones is made up of salts of:

- (a) Calcium and sodium
- (b) Calcium and phosphorus
- (c) Magnesium and sodium
- (d) Magnesium and potassium

27. Which of the following is not a feature of skeletal muscles?
- (a) Branched
 - (b) Cylindrical
 - (c) Multinucleate
 - (d) Striated
28. Which of the following tissues is not found in animals?
- (a) Nervous tissue
 - (b) Muscular tissue
 - (c) Connective tissue
 - (d) Parenchyma
29. Tuberculosis is spread by:
- (a) Mosquito bite
 - (b) Sputum of infected person
 - (c) Deep wounds
 - (d) Water
30. This disease exhibits its symptoms 10 to 14 days after infection.
- (a) Typhoid
 - (b) Malaria
 - (c) Jaundice
 - (d) T.B.

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PART B **Section A**

Answer the following questions in short: [10]
[2 marks each]

1. What is the significance of valence electrons? [2]
2. What are apical and intercalary meristems? [2]
3. Name the different types of elements found in the xylem. [2]
4. Differentiate between distance and displacement. [2]

OR

A motorboat starting from rest on a lake accelerates in a straight line at a constant rate of 6 m/s^2 for 4 seconds. How far does the boat travel during this time?

5. Distinguish between true solution and colloidal solution. [2]

OR

Calculate number of moles and molecules present in 16 g of Oxygen (O_2).

Section B

Answer the following questions in short: [12]
[3 marks each]

6. Joseph jogs from A to B of a 300 m straight road in 2 minutes 30 seconds and then turns around and jogs 100 m back to point C in another 1 minute. What are Joseph's average speeds and velocities in jogging in given conditions? [3]
(a) From A to B
(b) From A to C?

7. Describe the plant plastid, which is capable of carrying out photosynthesis.
(with diagram) [3]
8. Discuss the structure of a neuron. (Diagram needed) [3]
- OR**
- Give the location and functions of the following tissues:
(a) Cartilage (b) Areolar tissue (c) Adipose tissue
9. Give location, characteristics and function of blood. [3]

Section C

Answer the following questions in detail: [8]
[4 marks each]

10. Describe the production of X-rays, its properties and uses. [4]
11. Define buoyant force? What are the factors affecting the buoyant force? [4]
- (a) A body whose volume is 100 cm^3 weighs 10 N in air. Find its weight in water.
- (b) (Take $g = 10 \text{ ms}^{-2}$, density of water = 1000 kg m^{-3})
A body is weighed first in air, then in liquid A and then in liquid B. The observations are 100 N, 50 N and 60 N respectively. Which liquid is denser? What is the ratio of density of liquid A to that of liquid B?

OR

Show that the value of 'g' (on the Earth's surface) does not depend on the mass of the object. On what factors does the value of 'g' depend?