

- (c) during the last two seconds.  
 (d) Which physical quantity is measured by area under the quadrilateral ABCD? Calculate it.
24. (a) What is intercropping?  
 (b) How does intercropping give better returns to the farmers than the normal method of cultivation?  
 (c) State any four losses due to biotic and abiotic factors during storage of grains.

**Section B**

25. The correct order which describes the true solution, colloidal solution and suspension in the order of their increasing stability is  
 (a) Suspension < colloidal solution < true solution  
 (b) Colloidal solution < true solution < suspension  
 (c) True solution < colloidal solution < suspension  
 (d) Colloidal solution < suspension < true solution
26. To separate a mixture of sand, common salt, camphor and iron filings, Aditya added water to the mixture in a test tube, and shook it well. He found that one component dissolved in water. It was  
 (a) Sand (b) Iron filings (c) Camphor (d) Common salt
27. Which of the following will show Tyndall effect?  
 (a) Milk (b) Salt solution (c) Vinegar (d) Sulphur in water
28. The process used to separate oil and water is  
 (a) Distillation (b) Sublimation (c) Separating funnel (d) Chromatography
29. Which of the following is correctly matched?
- | Method of Separation  | Mixture                           |
|-----------------------|-----------------------------------|
| (a) Chromatography    | (a) Plant pigments                |
| (b) Distillation      | (b) Copper sulphate and water     |
| (c) Separating funnel | (c) Ammonium chloride and camphor |
| (d) Sublimation       | (d) Kerosene oil and water        |
30. While preparing a temporary mount of human cheek cells the excess glycerine on the slide:  
 (a) is left as it is.  
 (b) is drained by tilting the slide.  
 (c) is allowed to evaporate.  
 (d) is drained by tilting the slide and then the slide is wiped using a filter paper.
31. A permanent slide shows thin walled isodiametric cells with a large vacuole. The slide contains:  
 (a) Parenchyma cells (b) Nerve cells  
 (c) Sclerenchyma cells (d) Collenchyma cells
32. The boiling point of water on Celsius and Kelvin scale respectively is:  
 (a) 373, 273 (b) 0, 273 (c) 273, 373 (d) 100, 373

**Science****Mega Test - 1****Class IX**

SA - 1 (Sep, 2013)

Time allowed: 3 hours

Maximum Marks: 90

**General Instructions:**

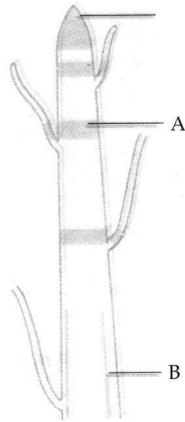
- (i) The question paper comprises of two sections, A and B. You are to attempt both the sections.  
 (ii) All questions are compulsory.  
 (iii) There is no overall choice. However, internal choice has been provided in all the five questions of five marks category. Only one option in such questions is to be attempted.  
 (iv) All questions of section A and all questions of section B are to be attempted separately.  
 (v) Questions 1 to 3 in section A are one mark questions. These are to be answered in one word or in one sentence.  
 (vi) Questions 4 to 6 in section A are two marks questions. These are to be answered in about 30 words each.  
 (vii) Questions 7 to 18 in section A are three marks questions. These are to be answered in about 50 words each.  
 (viii) Questions 19 to 24 in section A are five marks questions. These are to be answered in about 70 words each.  
 (ix) Questions 25 to 36 in section B are multiple choice questions based on practical skills. You are to select one most appropriate response out of the four provided to you.  
 (x) Questions 25 to 33 in section B are one mark questions.  
 (xi) Questions 34 to 36 in section B are two marks questions.

Section	A				B	
Q. No.	1 - 3	4 - 6	7 - 18	19 - 24	25 - 33	34 - 36
Marks	1	2	3	5	1	2

**Section A**

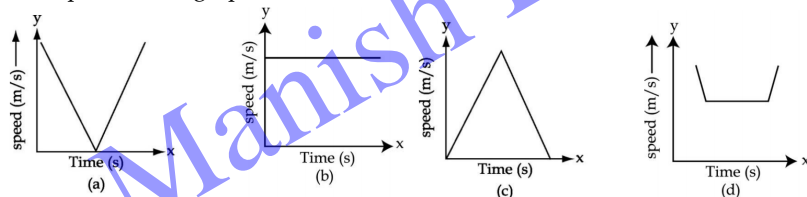
- Give one example to show that gases diffuse in liquids.
- What will happen to the momentum of a body whose velocity is doubled?
- Name the cell organelle which is able to destroy a damaged cell.
- Tabulate any two differences between mixtures and compounds.

5. State the universal law of gravitation. List two phenomena illustrating its importance.
6. What will happen to a plant cell if it is kept in a:
  - (i) hypotonic solution
  - (ii) hypertonic solution.
7. (a) What happens when acetone is poured on the palm?  
 (b) Name the process involved in the following changes :
  - (i) liquid to solid
  - (ii) gas to liquid
  - (iii) solid to gas
  - (iv) solid to liquid
8. List three differences between mixtures and compounds.
9. State the effect of force in each of the following cases :
  - (i) A spring is stretched
  - (ii) A hockey player hits an incoming ball
  - (iii) A football lying on the ground is kicked.
10. (a) Observe the diagram given below carefully and label the regions marked A and B in the diagram.



(b) Which meristematic tissue is responsible for increase in length of root and for the transformation of the stem of a plant into trunk when it grows into a tree.

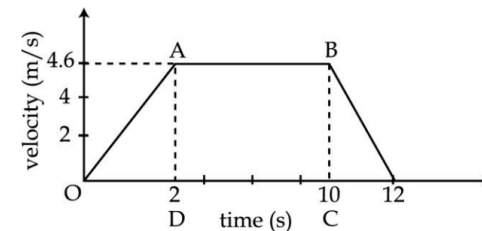
11. Four speed - time graphs are shown below.



Which graph represents the following case?

- (a) A ball thrown vertically upwards and returning to the hand of the thrower?
- (b) A body decelerating to a constant speed and then accelerating.
- (c) Uniform motion of a car.

12. Derive an expression for acceleration due to gravity on a planet of mass M and radius R.
13. Interpret force in terms of momentum. Represent the following graphically:
  - (a) momentum versus mass when velocity is constant.
  - (b) momentum versus velocity when mass is fixed.
14. A ball is gently dropped from a height of 20 m. If its velocity increases uniformly at the rate of  $10 \text{ m/s}^2$ , with what velocity will it strike the ground? After what time will it strike the ground?
15. List any six characteristics of parenchyma tissue.
16. Draw labelled diagrams to show the difference between the structures of any two types of muscle fibres.
17. Draw a diagram of a plant cell and label the following parts :
  - (i) Cell wall.
  - (ii) Nucleus.
  - (iii) Vacuole.
  - (iv) Golgi apparatus.
18. Give three management practices which are common in dairy and poultry farming.
19. Name and describe the method used for separating the components present in a sample of ink. List its any two applications.
20. (a) How can we separate a mixture of two miscible liquids?  
 (b) Draw a neat labelled diagram of the apparatus used for separating acetone and water (forming a miscible mixture) from their mixture.  
 (c) Can all mixtures of two or more miscible liquids be separated by this process?  
 (d) List two criteria needed for using this process.
21. Distinguish, in tabular form, between solids, liquids and gases under the following characteristics :
  - (i) Intermolecular attraction
  - (ii) density
  - (iii) fluidity
  - (iv) Diffusion
  - (v) Kinetic energy of particles at a given temperature
22. (a) How much momentum will an object of mass  $10 \text{ kg}$  transfer to the floor, if it falls from a height of  $0.8 \text{ m}$ ? ( $g = 10 \text{ ms}^{-2}$ )  
 (b) Explain why is it difficult for a fireman to hold a hose, which ejects large amount of water at a high velocity.
23. Study the velocity - time graph of an ascending passenger lift in the figure shown below. What is the acceleration of the lift:



- (a) During the first two seconds.
- (b) between second and tenth second

33. Spinal cord and brain are made of  
(a) muscular tissue (b) vascular tissue (c) nervous tissue (d) skeletal tissue
34. Geeta was asked to prepare a temporary mount of onion peel and list the steps. While writing she wrote following steps which may not be in proper sequence. The correct sequence would be:  
(i) Add few drops of safranin stain and transfer to a slide.  
(ii) Cover it with a cover slip.  
(iii) Add a drop of glycerine.  
(iv) Take out onion peel.  
(v) Keep the peel in water in a petri dish  
(a) (i) (ii) (iii) (iv) (v) (b) (iv) (v) (iii) (ii) (i)  
(c) (iv) (v) (i) (iii) (ii) (d) (v) (iv) (i) (iii) (ii)
35. A student recorded the mass of dry raisins as 2.5g and the mass of raisins after soaking in water as 4 g . While performing the above experiment. The percentage of water absorbed by raisin is:  
(a) 20% (b) 30% (c) 60% (d) 40%
36. Human cheek cells stained in methylene blue and mounted in glycerine were observed with the help of a compound microscope. The components of the cell which would be seen are:  
(a) Cell wall, cytoplasm, nucleus  
(b) Plasma membrane, cytoplasm, nucleus  
(c) Plasma membrane, cytoplasm, nucleus, mitochondria  
(d) Cell wall, plasma membrane, cytoplasm, nucleus



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