

## SCIENCE

## Class – IX

Time Allowed : 3 hours

Date: 22-9-2014

Maximum Marks : 90

**General Instructions :**

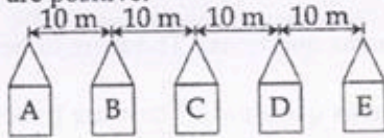
1. The question paper comprises of **two Sections, A and B**. You are to attempt both the sections.
2. **All questions are compulsory**
3. **All questions of Section-A and all questions of Section-B** are to be attempted separately.
4. Question numbers **1 to 3 in Section-A** are **one mark** questions. These are to be answered in **one word or in one sentence**
5. Question numbers **4 to 6 in Sections-A** are **two marks** questions. These are to be answered in about **30 words** each.
6. Question numbers **7 to 18 in Section-A** are **three marks** questions. These are to be answered in about **50 words** each
7. Question numbers **19 to 24 in Section-A** are **five marks** questions. These are to be answered in about **70 words** each.
8. Question numbers **25 to 33 in Section-B** are multiple choice questions based on practical skills. Each question is a **one mark** question. You are to select one most appropriate response out of the four provided to you.
9. Question numbers **34 to 36 in Section-B** are questions based on practical skills are two **marks** questions.

**SECTION-A**

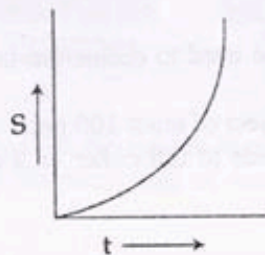
- B* 1. What is the name given to components of the cell? 1
- P* 2. How are action – reaction forces related in magnitude and direction? 1
- P* 3. Mention the quantity shown by the slope of a speed 2 time graph. 1
- C* 4. Define centrifugation. Write its any one application. 2
- B* 5. Which parts of our body are composed of nervous tissue? Name the cells that make up the nervous tissue. 2
- P* 6. "All the objects in the universe attract each other".  
(a) What is this force of attraction called as? 2  
(b) Name any two factors on which this force of attraction depends. 2
- C* 7. After a hot sunny day when we sprinkle water on floor we feel cool. Explain the reason for it. 3
- C* 8. Compare solution, suspension and colloids in terms of:  
(a) stability (b) filterability (c) Tyndall effect 3
- C* 9. (a) A sponge can be compressed, yet it is a solid why? Explain. 3  
(b) Name the state of matter that has minimum space between particles. 3
- B* 10. (a) Draw a neat and well labelled diagram of sclerenchyma tissue as seen in the transverse section. 3  
(b) Mention the function of this tissue. 3
- B* 11. Draw the diagram of smooth muscle cell and a cardiac muscle cell. Comment on the variety of shapes of cell by taking additional examples. 3
- P* 12. Write Newton's second law of motion.  
Explain how Newton's Second law of motion can be used to define the unit of force. Name the unit. 3
- P* 13. i) On Earth, how much force is needed to lift an object of mass 100 gm. 3  
ii) In a high jump athletic event, the athletes are made to fall either on a cushioned bed or on a sand bed. 3

14. Answer the following questions :
- P (i) The distance – time graph of motion of a body is parallel to 'X' axis. Identify the nature of motion of the body.
- (ii) Name the quantity measured by the slope of the distance – time graph of a moving body.
- (iii) Write two advantages of graphical representation of variation of velocity with time over tabular representation of velocity and time. 3
- P 15. (i) Define mass and weight.
- (ii) Write their SI units.
- (iii) Distinguish between the two quantities 3

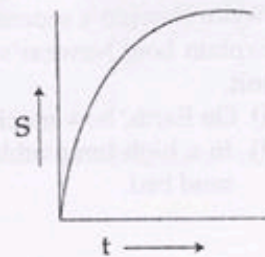
- P 16. There are 5 houses on a street, A, B, C, D and E. For all cases, assume that positions to the right are positive.

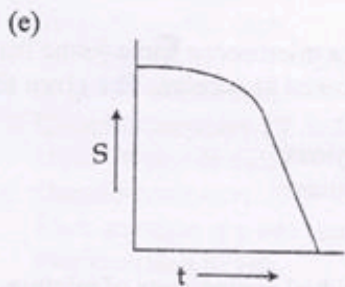
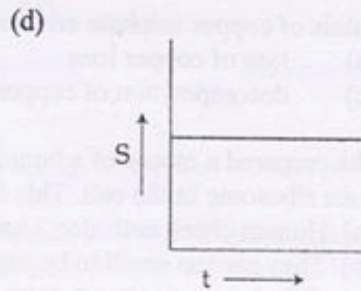
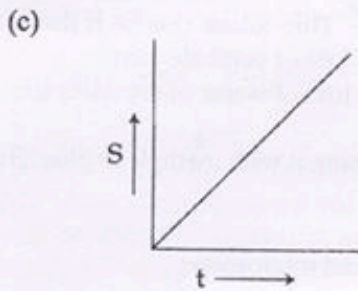


- (a) Draw a frame of reference with house A as the origin and the positions of houses B, C, D and E.
- (b) You live in house C. What is your position relative to house E ?
- (c) What are the positions of houses A and D, if house B is taken as the reference point ? 3
- B 17. India is a country with three fourth of the population engaged in agriculture. Even though financial conditions of some farmers do allow them to take higher level farming practices and improved agriculture technology, yet they are hesitant to use of HYV seeds with traits such as resistance to disease and pests, high quality that would results finally in higher yield.
- (i) What is meant by genetically modified crops ?
- (ii) What are the desired agronomic characters for fodder and cereal crops ?
- (iii) In your opinion what should be done so that the modern agriculture technology is adopted by most of the farmers ? 3
- B 18. Define organic farming. State its two advantages.
- C 19. Differentiate between homogeneous and heterogeneous mixtures. Give an example of each of the following –
- (i) Solid-solid homogeneous mixture
- (ii) Solid-Liquid heterogeneous mixture
- (iii) Liquid – Liquid heterogeneous mixture 5
- C 20. (a) Illustrate an activity to demonstrate that particles of matter have spaces between them.
- (b) Explain why a diver is able to cut through water in a swimming pool. 5
- B 21. (i) Define tissue. What is the utility of tissues in multicellular organisms ?
- (ii) Are plant and animals made of same types of tissues ? If no, then. Write three points of difference. 5
- P 22. Describe the nature of force acting in the following displacement-time graphs : 5
- (a)



(b)

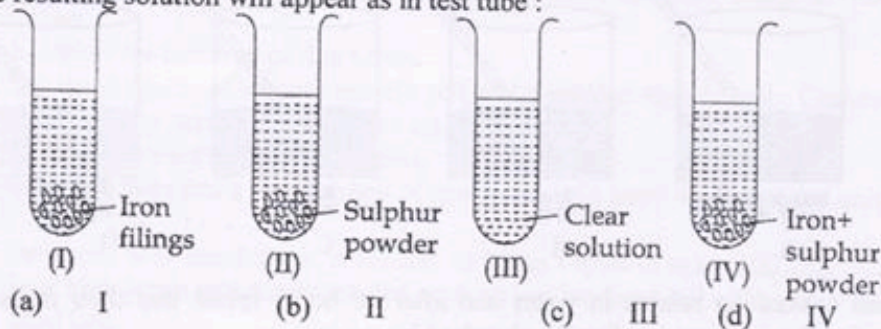




- P 23. (a) A bar of silver is found to have a mass of 50 g and weight 0.48 N at a place. When weighed at the equator its mass is same but weight reduces. Explain the reason.  
 (b) A body is thrown up with a velocity of  $40 \text{ ms}^{-1}$ . How long does it take to reach the highest point and to reach the ground ( $g = 10 \text{ ms}^{-2}$ )
- B 24. Define crop rotation? How is it done to increase the yield of crops? Why is this process called environment friendly?

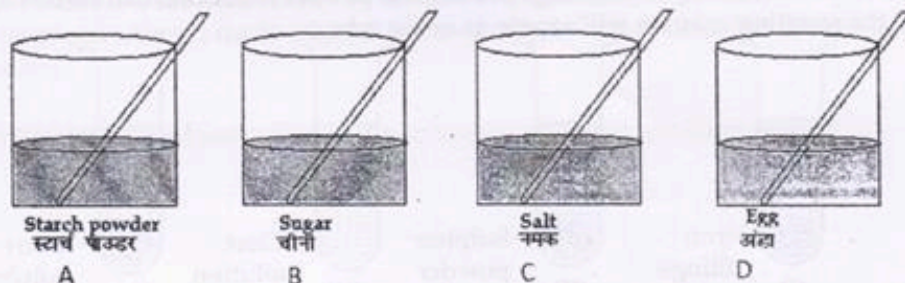
**SECTION - B**

- B 25. Sarita took the sample of arhar dal to laboratory from her house. She wants to test for the presence of adulteration in it. She got confused in choosing reagent. Please help her to choose the same from the following
- |                     |                            |   |
|---------------------|----------------------------|---|
| (a) Iodine solution | (b) methylene Blue         |   |
| (c) Safranin        | (d) conc hydrochloric acid | 1 |
- B 26. Metanil yellow is adulterant of food material :
- |                     |            |   |
|---------------------|------------|---|
| (a) Turmeric powder | (b) Pulses |   |
| (c) Spices          | (d) Seeds  | 1 |
- C 27. When a mixture of iron filings and sulphur powder is dissolved in carbon disulphide, the resulting solution will appear as in test tube :



- C 28. A student by mistake mixed iron filing and sulphur powder. He wanted to separate them from each other. The method you would advise him to use is to dissolve the mixture in :
- |                       |                |   |
|-----------------------|----------------|---|
| (a) boiling water     | (b) cold water |   |
| (c) carbon disulphide | (d) kerosene   | 1 |

29. Crystals of copper sulphate are heated, they turn white. This colour change is due to :  
C (a) loss of copper ions (b) loss of sulphate ions  
(c) decomposition of copper sulphate (d) loss of water of crystallization 1
30. Alisha prepared a mount of a human cheek cell by staining it with methylene blue. But she did not see ribosome in the cell. This is because :  
B (a) Human cheek cells don't have ribosomes  
(b) They are too small to be seen under the compound microscope  
(c) Ribosomes don't get stained by methylene blue  
(d) The microscope was not focussed correctly 1
31. While observing a mounted slide under the high power of a microscope, Sania found that the cells of a tissue have large central vacuole and irregularly thickened at corners. The given tissue must be :  
B (a) parenchymas (b) sclerenchymas  
(c) xylem (d) collenchymas 1
32. The purpose of separating the components of a mixture is :  
C (a) Separation makes it possible to study and use the individual components of mixture.  
(b) It is helpful in removing any harmful or undesirable constituents.  
(c) It is helpful in removing the pure form from impure form.  
(d) It is helpful in separation of all solids 1
33. Friction can be reduced by :  
P (a) applying oil/grease between the two surfaces  
(b) polishing the surface  
(c) both (a) and (b)  
(d) none of these 1
34. Dipti was asked to prepare four separate mixtures in four beakers A, B, C and D by mixing sugar, fine sand, thin paste of starch and chalk powder respectively in water and then categorise each as stable or unstable. What will be correct categorization? 2
35. Four students A, B, C and D are asked to prepare colloidal solutions. The following diagrams show the preparation done by them. Name the student, who will be able to prepare colloidal solutions. Write two properties of colloidal solution. 2



36. Prakash soaked 6g raisins in water and after 10 hours found that their mass has become 9g. Determine the percentage of water absorbed by raisins. 2