INDIAN SCHOOL DARSAIT
MIDTERM EXAMINATION, SEPTEMBER-2017

Sample Question Paper- 1

### SCIENCE(086)

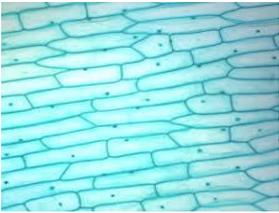Class: IX   Max. Marks: 80
Date: Time: 3 hrs

	General Instructions: i) ***The question paper comprises of two sections A and B.*** ii) All questions are compulsory. iii) Questions **1** and **2** are very short answer questions and carry **1** mark each. iv) Questions **3** to **5** are short answer questions and carry **2** marks each. v) Questions **6** to **14** are long answer questions and carry **3** marks each. *vi) Question number 15 is a value based question of three marks* vii) Questions **16** to **21** are long answer questions and carry **5** marks each. viii) Question number 22 to 27 are practical based questions and carry 2 marks each.	
	Section A	
1)	Antibiotics are effective against bacterial infections and not viral. Give reason.	1
2)	Define acceleration and state its SI unit	1
3)	(a) Define latent heat of fusion (b) A gas exerts pressure on the walls of the container. Why?	2
4)	Calculate the force of gravitation between two objects of masses 50 kg and 120 kg respectively kept at a distance of 10 m from one another. (Take gravitational constant $G=6.7 \times 10^{-11} \ Nm^2 \ kg^{-2}$)	2
5)	Differentiate between mass and weight.	2

6)	(a) Define concentration of the solution.
	
	(b) 110 g of salt is present in 550 g of solution. Calculate the concentration of the solution.
	
	(OR)
	
	(a) Identify the method of separation used to separate
	
	     (i) colours in a dye
	
	     (ii) butter from cream.
	
	(b) Also, explain the principle used in the method of separation.
		3

7)	Differentiate between solids, liquids and gases on the basis of compressibility and fluidity.	3
8)	Explain why the motion of a body which is moving with constant speed in a circular path is said to be accelerated? Give any two examples for such kind of motion.	3

9)	(a) State Newton's Third law of motion.
	
	(b) Identify the action and reaction force in the following situation:
	    (i) When a bullet is fired from a gun.
	    (ii) The rising up of Jet aeroplane
	    (iii) The case of a horse pulling a cart
	    (iv) When the bullet is fired the gun moves backward
		3

10)	A bullet of mass 10 g moving with a velocity of 400m/s gets embedded in a freely suspended wooden block of mass 900 g. What is the velocity acquired by the block?	3
11)	Derive the relation between G and g	3
12)	(a) What is immunisation? Name any two diseases against which vaccines are available. (b) State the ways to prevent and control malaria in your locality.	3

13)	Name the following:
	    (i) Epithelial tissues containing thin, flat and irregular
	    (ii) Connective tissues which act as insulators
	    (iii) Epithelial tissues lining the salivary glands
	    (iv) Connective tissues present between skin and muscle
	    (v) Connective tissue that connects two bone
	    (vi) Epithelial tissues arranged in many layers to prevent wear and tear
		3

14)	Show with the help of a diagram show the location of the different meristematic tissues in the plant body and mentions its functions. **(OR)** With the help of a diagram explain the structure and function of the nucleus in a cell.	3
15)	Meenu took her younger brother for her friend's birthday party. She noticed that some kids were suffering from cold and cough so she stopped her brother from going close to the kids. She also came back home early. (a) Why did menu stop her brother from going near the kids who were suffering from cold and cough? (b) Do all children in the party be affected by common cold and cough? Explain (c) State any two values exhibited by Meenu?	3
16)	(a) Write two differences between simple distillation and fractional distillation.	5

	(b) Give one example for mixtures that can be separated by above methods.		
	(c) Draw a diagram showing the simple distillation method.		
17)	(a) Define evaporation.	5	
	(b) Explain the four factors affecting evaporation.		
	(c) Give two practical examples to show that evaporation leads to cooling.		
18)	(a) Derive the formula v =u+ at by means of graphical method.	5	
	(b) Brakes applied to a car produce a uniform retardation of $0.9 m/s^2$. If the car was travelling with the velocity 27m/s, what distance will it cover before coming to rest		
	(c) Consider the position vs. time graph below for cyclists A and B and answer the following questions		
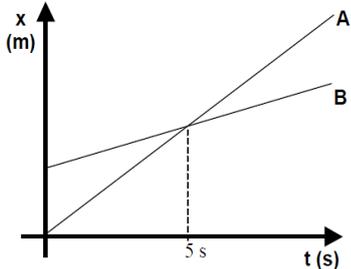
i) Do the cyclists starts at the same point?

ii) At t=7S which cyclist is ahead?

iii) What is happening at the intersection of the two lines A and B?

(OR)

(a) Derive: $s = ut+1/2\ at^2$

(b) A stone is thrown in a vertically upward direction with a velocity of 5m/s. If the acceleration of the stone during its motion is 10m/s2 in the downward direction, what will be the height attained by the stone and how much time will it take to reach there?

19)	(a) State and explain Newton's second law of motion.	5
	(b) A truck starts from rest and rolls down a hill with constant acceleration. It travels a distance of 400m in 20 s. Find its acceleration . Find the force acting on it if its mass is 7 metric tonnes.	
20)	(a) Write any three differences between prokaryotic and Eukaryotic cells and give examples.	5
	(b) Define Plasmolysis.	
	(c) State any one function of	
	(i) Golgi bodies	
	(ii) Mitochondria	

	(iii) Plasma membrane	
	(iv) Lysosomes	
21)	(a) Complete the given table:	5

Disease	Causative Agent	Mode of transmission
Cholera	(i)	(ii)
Japanese encephalitis	(iii)	(iv)
(v)	HIV	(vi)

(b) Differentiate between

    (i)   Acute and chronic Diseases.

    (ii) Infectious and Non-infectious diseases

	Section B	
22)	Compare the properties of true solution and colloids with respect to (a) Filtration criterion (b) Transparency	2
23)	Write any two precautions to be taken while doing the experiment to determine the melting point of ice.	2
24)	A small piece of granulated zinc is added to a test tube containing 2 ml of dilute Sulphuric acid. Write any two observations that you will make during the experiment.	2
25)	Explain the steps in order for the separation of a mixture of sand, common salt and ammonium chloride	2
26)	Draw and label the parts of a nerve cell.	2
27)	Teacher focussed the slide shown below under the compound microscope. Identify the cells and justify your answer. 	2

3 marks questions

1. (a) Define concentration of the solution.

   (b) 110 g of salt is present in 550 g of solution. Calculate the concentration of the solution.

OR

Identify the method of separation used to separate

   i) colours in a dye

   ii) butter from cream

Also, explain the principle used in the method of separation.

2.

Five marks questions:

1.

2.

Two marks questions

1. (a) Define latent heat of fusion

   (b) A gas exerts pressure on the walls of the container. Why?

Practical based questions:

1.

  2.

 3.

4.