

# FOUNDATION COURSE

Date : 13.05.2012

## CLASS IX

Time : 2 hrs.

## PAPER : 01

Max. Marks. : 100

P<sub>R</sub> C<sub>S</sub> M<sub>A</sub> B<sub>G</sub>

### TOPICS COVERED:

PHYSICS : Motion

CHEMISTRY : Matter and Its Surroundings

MATHS : Number System

BIOLOGY : Introduction to Cell and Cell organelles – Endoplasmic reticulum, vacuoles, golgi apparatus, lysosomes, mitochondria, plastids

### GENERAL INSTRUCTIONS :

1. Paper consist of **4 Section** each for **Physics, Chemistry, Maths** and **Biology**. Answers for each question should be given in the space provided in the question paper itself.
2. Each section contains 13 questions, all questions are compulsory.
3. Question 1 - 5 are **objective type question** of 1 Mark each.
4. Question 6 - 7 consist of 1 Marks each.
5. Question 8 - 9 consist of 2 Marks each.
6. Question 10 - 12 consist of 3 Marks.
7. Question 13 consist of 5 Marks.

	Physics	Chemistry	Maths	Biology
Marks				
Total				

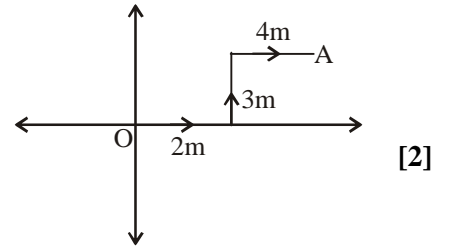
Name of the Student : \_\_\_\_\_

Centre : \_\_\_\_\_

Invigilator's Signature: \_\_\_\_\_



9. In the figure given below, find displacement of the body if it started its journey at O and ended at A.



10. Define displacement. Give one example where displacement is zero but distance is not zero. [3]

11. Define fundamental and derived physical quantity. Give three examples of each. [3]

12. A person goes out for a bike ride to a nearby town. A record of the trip is as follows : 30 minutes at 30 km/hr, 15 minutes at 40 km/hr, 5 minutes at 0 km/hr for a break for rest, and 20 minutes at 15 km/hr. Find average speed for the journey. [3]

13. (a) Define scalars and vectors. Give two examples of each.
- (b) What is momentum ? Write its unit.
- (c) Write the unit of force  $F$ , work  $w$ , and surface tension  $s$ . It is given  $F = ma$ ,  $w = F.d$  and  $s = \frac{\text{force}}{\text{length}}$  . [5]



9. Differentiate between boiling and evaporation. [2]
10. How will you show by experiment that air contains water vapours ? [3]
11. (a) A gas exerts pressure on the walls of the container, why ?  
(b) A gas fills completely the vessel in which it is kept, why ? [3]
12. What is the physical state of water at  
(a) 25°C                      (b) 0°C                      (c) 100°C [3]
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- 13.** Draw a cyclic figure to show interconversion of states and explain fusion, vapourisation, condensation, solidification and sublimation. **[5]**

**MATHS**

1. What is the decimal representation of  $\frac{-16}{45}$ ?  
(a) 0.35 (b)  $0.\overline{35}$  (c)  $0.3\overline{5}$  (d)  $0.3\overline{55}$  [1]
2. What is the value of 0.00026 in  $p/q$  form?  
(a)  $\frac{133}{50000}$  (b)  $\frac{13}{50000}$  (c)  $\frac{26}{100000}$  (d) none of these [1]
3. Convert  $5.\overline{2}$  in the form of  $p/q$   
(a)  $\frac{27}{2}$  (b)  $\frac{57}{9}$  (c)  $\frac{47}{9}$  (d)  $\frac{47}{99}$  [1]
4. What is the value of  $\left(\frac{64}{25}\right)^{-3/2}$   
(a)  $\frac{25}{64}$  (b)  $\frac{125}{512}$  (c)  $\frac{64}{25}$  (d) none of these [1]
5. If  $27^x = \frac{9}{3^x}$ , then  $x =$   
(a) 1 (b)  $\frac{1}{2}$  (c) 3 (d) 2 [1]
6. Simplify  $(25)^{-1/3} \times \sqrt[3]{16}$  [1]
7. Find two rational number between 2 and 3. [1]
8. Insert to rational numbers between  $\frac{-3}{11}$  and  $\frac{8}{11}$  [2]



9. Rationalise the denominator of  $\frac{5}{\sqrt{3}-\sqrt{5}}$  [2]

10. Represent  $\sqrt{5}$  on number line. [3]

11. Represent  $\sqrt{9.3}$  on the number line. [3]

12. Simplify  $\frac{2\sqrt{3}-\sqrt{5}}{2\sqrt{2}+3\sqrt{3}}$  by rationalising the denominator. [3]

13. Simplify  $\left(\frac{81}{16}\right)^{-3/4} \times \left[\left(\frac{25}{9}\right)^{-3/2} \div \left(\frac{5}{2}\right)^{-3}\right]$ .

[5]

## BIOLOGY

1. Cell theory was propounded by [1]  
(a) Schleiden and Schwann (b) Watson and Crick  
(c) Mendel and Morgan (d) Wallace and Darwin
  
2. Plastids which are responsible for storage of starch [1]  
(a) Aleuroplast (b) Leucoplast (c) Chloroplast (d) Chromoplast
  
3. Cell organelle which contain its own DNA [1]  
(a) Golgi body (b) Chloroplast (c) Lysosome (d) Endoplasmic reticulum
  
4. Smooth endoplasmic reticulum is well developed in the cells, which synthesise [1]  
(a) Steroids and lipids (b) Carbohydrates (c) Proteins (d) All the above
  
5. Packaging of protein in the cell is done by [1]  
(a) Lysosomes (b) Mitochondria (c) Chloroplast (d) Golgi apparatus/bodies
  
6. What is function of lysosomes in the cell ? [1]
  
  
  
  
  
  
  
  
  
  
7. Where transcription process takes place ? [1]
  
  
  
  
  
  
  
  
  
  
8. What is prokaryotic cell explain with example ? [2]

9. List those cell organelles. Which are double membrane bound ? [2]

10. Draw the labeled diagram of mitochondria and explain. Where energy production takes place ? [3]

11. What are endoplasmic reticulum ? Mention its function in the cell. [3]

12. What is vacuole ? Where it is located in the plant cell and in animal cell ? [3]

- 13.** (i) Draw well labelled diagram of nucleus. Mention its function in the cell.
- (ii) What is plasmid ? Mention its function.

**[5]**