

**Test Code - SAMPLE**

The questions given below is an indicative set of questions for the Gyanville Admission Test. It should not be construed that the admission test will contain exactly similar topics. Question numbers change.

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|----------|---------|
| A. One   | B. Many |
| C. Three | D. None |

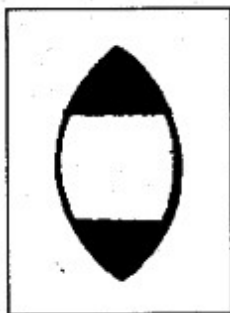
**Chemistry**

**PART A**  
**Mathematics**

1. If  $x + \frac{1}{x} = 3$  then find the value of  $x^2 + \frac{1}{x^2}$   
A. 7                                      B. 4  
C. 9                                      D. none
2.  $\cot \theta + \tan \theta =$   
A.  $\sec \theta \tan \theta$                       B.  $\sec \theta \operatorname{cosec} \theta$   
C.  $\cot \theta \operatorname{cosec} \theta$                       D. none
3. The centroid of the triangle whose vertices are (1, 2), (2,3) and (3,4) is  
A. (2, 3)                                  B. (2, 4)  
C. (2, 2)                                  D. none
4. A pair of fair dice are rolled. Find the probability that the two dice show the different numbers.  
A.  $\frac{1}{6}$     B.  $\frac{1}{4}$   
C.  $\frac{5}{6}$     D.  $\frac{5}{7}$

**Physics**

5. Light travel with a speed of  
A.  $3 \times 10^8 \text{ ms}^{-1}$                       B.  $3 \times 10^8 \text{ cms}^{-1}$   
C.  $3 \times 10^7 \text{ cms}^{-1}$                       D.  $3 \times 10^{10} \text{ ms}^{-1}$
6. A convex lens is made up of three different materials. How many of images does it form?



7. What happens in exothermic reactions?  
A. Heat is liberated  
B. Heat is absorbed  
C. Heat remain constant  
D. None of these
8. Which solution is used for white washing?  
A. Calcium bicarbonate  
B. Calcium hydroxide  
C. Calcium oxide  
D. None of these

**PART B**  
**Mathematics**

9. Sum of the Areas of the two squares is  $468 \text{ m}^2$ . If the difference of their perimeters is 24m. Find the length of the sides of two squares  
A. 18m                                      B. 17m  
C. 16m                                      D. 10m  
E. 12m
10. Solve For z,  $36z^2 - 12cz + (c^2 - d^2) = 0$   
A.  $\frac{c-d}{6}$                                       B.  $\frac{c+d}{4}$   
C.  $\frac{c-d}{4}$                                       D.  $\frac{c-d}{3}$   
E.  $\frac{c+d}{6}$
11. A farmer wishes to grow  $100\text{m}^2$  rectangular corn field. Since he has with him only 30 metre wires, he fences three sides of the rectangular garden letting compound wall of the house act as fourth side fence. Find the dimensions of the garden  
A. 5    B. 20  
C. 25    D. 4  
E. 10

**Physics**

12. Which of the following is poor conductor of heat?  
A. Water                                      B. Air  
C. Steel                                         D. Copper  
E. None

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13. Magnetic Lines of Forces
- A. Are mere directions
  - B. Have no physical reality
  - C. Can be used to indicate direction of Magnetic field at a point
  - D. Donot form closed loop
  - E. None

**Chemistry**

14. Out of the following elements which are the d block elements
- A. Fe
  - B. He
  - C. Li
  - D. Cr
  - E. Al
15. Main Ores of the metal Mg are
- A. Bauxite
  - B. Magnetite
  - C. Haematite
  - D. Carnalite
  - E. dolomite