

CLASS

8

SAMPLE PAPER



## National Science Olympiad

The actual test paper has 50 questions. Time allowed : 60 minutes. There are 2 sections: 15 questions in section I and 35 in section II.

### SYLLABUS

**Section – I (Mental ability) :** Rational numbers, Operation on rational numbers, Decimal representation of rational numbers, Exponents and powers, Direct and inverse variations, Comparing quantities, Algebraic expression, Factorization of algebraic expressions, Linear equation in one variable, More about triangles, Congruent triangles, Quadrilaterals, Circles, Mensuration, Statistics, Arithmetic Ability, Squares and square roots, Cubes and cube roots, Problem based on figures, Find odd numeral out, Series completion, Coding-decoding, Mathematical reasoning, Analytical reasoning, Mirror images, Embedded figures.

**Section – II (Science) :** Crop Production and Management, Microorganisms, Synthetic Fibres and Plastics, Metals and Non-metals, Coal and Petroleum, Combustion and Flame, Conservation of Plants and Animals, Cell, Reproduction in Animals, Force and Pressure, Friction, Sound, Chemical Effects of Electric Current, Some Natural Phenomena, Light, Stars and Solar System, Pollution of Air and Water.

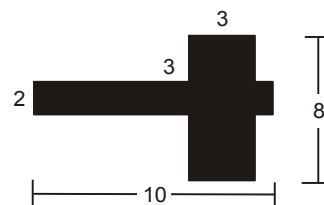


# National Science Olympiad

## MENTAL ABILITY

- A contest began at noon one day and ended 1000 minutes later. At what time did the contest end?  
(A) 10:00 p.m. (B) Midnight  
(C) 2:30 a.m. (D) 4:40 a.m.
- Which of the following sets of whole numbers has the largest average?  
(A) Multiples of 2 between 1 and 101 (B) Multiples of 3 between 1 and 101  
(C) Multiples of 4 between 1 and 101 (D) Multiples of 5 between 1 and 101.
- Beena used a calculator to find the product  $0.075 \times 2.56$ . She forgot to enter the decimal points. The calculator showed 19200. If Beena had entered the decimal points correctly, the answer would have been  
(A) 0.0192 (B) 0.192  
(C) 1.92 (D) 19.2
- Two cyclists,  $k$  km apart, and starting at the same time, would be together in  $r$  hours if they travelled in the same direction, but would pass each other in  $t$  hours if they travelled in opposite directions. The ratio of the speed of the faster cyclist to that of the slower is  
(A)  $\frac{r+t}{r-t}$  (B)  $\frac{r}{r-t}$  (C)  $\frac{r+t}{r}$  (D)  $\frac{r}{t}$

- The shaded area formed by the two intersecting perpendicular rectangles, in square units is  
(A) 23 (B) 38  
(C) 44 (D) 46

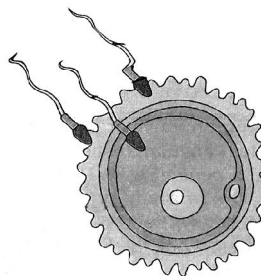


## SCIENCE

- A Brief History of Time** is the title of a book written by  
(A) Albert Einstein (B) Stephen Hawking  
(C) Hendrick Lorentz (D) Isaac Newton
- Which of the following can produce a virtual image ?  
(A) Plane mirror (B) Concave lens  
(C) Convex lens (D) All of these
- When a glass rod is rubbed with a piece of silk cloth  
(A) Both cloth and the rod acquire positive charge  
(B) Rod becomes positively charged while the cloth has a negative charge  
(C) Rod becomes negatively charged while the cloth has a positive charge  
(D) Both cloth and the rod acquire negative charge.
- A body immersed in a fluid experiences an upward thrust which depends on  
(A) The weight of the fluid displaced by it (B) The volume of the body  
(C) The mass of the body (D) All of these.
- A concave mirror may be used in all except one of the following. This is  
(A) A magnifying mirror (B) A torch reflector  
(C) A reflecting telescope (D) A car rear view mirror

11. How does the eye change in order to focus on near or distant objects?  
 (A) The lens moves in or out (B) The retina moves in or out  
 (C) The iris changes colour (D) The lens contracts or relaxes
- 
12. When Cu is exposed to moist air for a long time, which of the following is formed?  
 (A)  $\text{Cu}(\text{OH})_2$  (B)  $\text{CuCO}_3$   
 (C) Both (A) and (B) (D)  $\text{Cu}_2\text{O}$
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13. Which of the following statements is true with respect to diamond ?  
 (A) The carbon atoms are connected to each other by metallic bonds.  
 (B) In the diamond crystal, the carbon atoms are very loosely packed.  
 (C) Each carbon atom in the crystal is surrounded by four others at the corners of a regular tetrahedron.  
 (D) It is a very soft substance.
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14. Under Indian space programme, the abbreviation GSLV stands for  
 (A) Geosynchronous Satellite Launch Vehicle  
 (B) Global Satellite Link Vehicle  
 (C) Geostationary Solar Light Vehicle  
 (D) Geostationary Satellite Link Vehicle
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15. If there were no organic life on the Earth, the amount of oxygen in the atmosphere will  
 (A) Remain unchanged (B) Be approximately hundred percent  
 (C) Be almost nil (D) Be approximately fifty percent
- 
16. A vaccine is usually given  
 (A) At any time  
 (B) At the time disease causing germs enter the body  
 (C) Before the symptoms of the disease appear  
 (D) After the disease has appeared
- 
17. Mark the odd one out.  
 (A) Cholera (B) Tuberculosis  
 (C) Polio (D) Night blindness
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18. Some basic steps are needed in agricultural practice. Which of the following given as A, B, C, D is the right sequence?  
 (1) Preparation of the soil (2) Harvesting (3) Irrigation  
 (4) Broadcasting (5) Tilling (6) Weeding  
 (7) Manuring.  
 (A) 1, 5, 4, 7, 6, 3, 2 (B) 1, 3, 5, 6, 4, 2, 7  
 (C) 1, 3, 5, 2, 4, 6, 7 (D) 1, 5, 6, 2, 4, 7, 3
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19. The process shown in the given figure is  
 (A) Cleavage  
 (B) Fertilization  
 (C) Assimilation  
 (D) Budding.



20. Which of the following is not true?  
 (A) Burning of coal releases  $\text{SO}_2$ .  
 (B) Acid rain is harmful to crops.  
 (C) CNG is a clean fuel.  
 (D) Incomplete combustion of coal releases  $\text{O}_2$ .
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