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<b>ICO</b> INTERNATIONAL CYBER OLYMPIAD	<b>NISO</b> NATIONAL INTERACTIVE SCIENCE OLYMPIAD	<b>NIMO</b> NATIONAL INTERACTIVE MATHS OLYMPIAD	<b>NBTO</b> NATIONAL BIOTECHNOLOGY OLYMPIAD	<b>IEO</b> INTERNATIONAL ENGLISH OLYMPIAD	<b>IGO</b> INTERNATIONAL G.K. OLYMPIAD	<b>BIFO</b> BSE INTERNATIONAL FINANCE OLYMPIAD	<b>NIPO</b> NATIONAL IIT-PMT OLYMPIAD
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**Level - 1** : All Level-1 successful\* participants will get certificate, aptitude report and online subscription, and school toppers will be eligible for school hero medals.

**Level - 2** : School toppers\* will be selected for level-2-National level - online computer based interactive test held at exam centres all over India. Besides selection for level-3, winner will get merit certificate, medals, educational CDs, laptop, scholarship and other prizes. There is no level 2 in Art, Cricket, Cyber, NIPO and Biotech.

**Level - 3** : Toppers will qualify# for level 3-International level-where you will compete with students globally. Get selected for EHF's International Olympiad training camp. Only Indian organization giving students exposure to global competitions. Represent India & win laurels. Guidance by top scientists. Prizes ranges from cash (millions of \$), gadgets, foreign trips, publicity, fame, scholarships, Internships, conference participation and more.

\*# See prospectus/website for details

1. You are allowed additional 10 minutes to fill the required details in the **RESPONSE SHEET (OMR)**.
2. The question paper is made as per syllabus guidelines & pattern given in the information Booklet. The Question Paper for Classes 1 to 6 contains 25 Questions each to be answered in 40 minutes. The Question paper for classes 7 to 12 contains 50 Questions each to be answered in 60 minutes. All questions are compulsory. Further instructions are given in the instruction letter to the teacher.
3. Use the response sheet to mark your responses by darkening the required circle. The response sheet has to be returned to the foundation, duly filled in. **THE STUDENT CAN RETAIN THE QUESTION PAPER.**

**EHF**  
**NATIONAL**  
**IIT-PMT**  
**OLYMPIAD**

**N I P O**

**7**  
Class

**A1**  
Paper  
Code

**L E V E L - 1**

## SCIENCE

1. The heat produced in a current carrying conductor is directly proportional to the value of its resistance. From this information, one can say that the coil of an electric heater must have
  - (1) High resistance
  - (2) Low resistance
  - (3) Any moderate value of resistance
  - (4) None of these
2. Which of the following can form image of objects spread over a large area?
  - (1) A concave mirror
  - (2) A convex mirror
  - (3) A concave lens
  - (4) None of these
3. A thermos flask is polished well
  - (1) To make it attractive
  - (2) For shining
  - (3) To reflect all radiations from outside
  - (4) None of these
4. A speed of 90 kmph is equivalent to
  - (1) 25 m/s
  - (2) 20 m/s
  - (3) 30 m/s
  - (4) None of these
5. A body moves 4m towards east and then 3 m north. The distance covered by the body is
  - (1) 7 m
  - (2) 6 m
  - (3) 5 m
  - (4) None of these

6. Martin takes 15 minutes from his house to reach his school on a bicycle. If the bicycle has a speed of 2m/s calculate the distance between his house and the school.
- (1) 2000 m                      (2) 1900 m  
(3) 1800 m                      (4) None of these
7. In a standard symbol, representing a battery, the longer line represents
- (1) The negative terminal  
(2) The positive terminal  
(3) Neutral  
(4) None of these
8. The process of selecting parents for obtaining special characters is termed as
- (1) Selection  
(2) Selective breeding  
(3) Separating  
(4) None of these
9. The eggs of silkworm are stored in
- (1) Wooden box  
(2) Metal box  
(3) Strips of cloth  
(4) None of these
10. Which of the following is used in fire extinguishers?
- (1) Sodium hydroxide  
(2) Sodium carbonate  
(3) Sodium bicarbonate  
(4) None of these
11. Which of the following is not an indicator?
- (1) Blue litmus                      (2) Methyl orange  
(3) Sulphur                          (4) None of these
12. Calcium hydroxide is also called
- (1) Quick lime                      (2) Marble  
(3) Slaked lime                      (4) None of these
13. In the gaseous states, particles can move:
- (1) Only in one direction  
(2) Only in fixed path  
(3) Randomly in all directions  
(4) None of these
14. Black soil does not exhibit one of the properties
- (1) Porous  
(2) Rich in iron and magnesium  
(3) Rich in humus  
(4) None of these
15. Finger like projections called villi are present in
- (1) Mouth                              (2) Stomach  
(3) Small intestine                  (4) None of these
16. A structure which guards the larynx, prevents the entry of food into the trachea, is called
- (1) Bronchi                              (2) Pleura  
(3) Epiglottis                          (4) None of these
17. Transportation of food materials in Amoeba and Paramecium occurs by
- (1) Xylem                                  (2) Diffusion  
(3) Phloem                              (4) None of these
18. Which of the following is the advantage of an accumulator over a dry cell?
- (1) Leak proof                          (2) Cheap  
(3) Rechargeable                      (4) None of these
19. During the dispersion of white light, violet colour suffers the greatest deviation while red colour suffers the least deviation. Arrange colours yellow, green, orange in ascending order of deviation.
- (1) Yellow, green, orange  
(2) Green, yellow, orange  
(3) Orange, yellow, green  
(4) None of these
20. Which of the following phenomenon does not involve convection?
- (1) Sea breeze  
(2) Land breeze  
(3) The flow of electricity in a conducting wire  
(4) None of these
21. Which kind of mirror is used by an E.N.T. doctor to see the internal parts of the body?
- (1) Convex mirror  
(2) Concave mirror  
(3) Plane mirror  
(4) None of these

**22.** Which of the following statements is incorrect?

- (1) In a distance time graph, steeper the line, slower is the speed of the moving body.
- (2) The distance time graph of a body in uniform motion is a straight line.
- (3) Waxing and waning of the moon is periodic
- (4) None of these

**23.** Which of the following shows that certain solids are bad conductors of heat?

- (1) The particles in the substance cannot vibrate freely
- (2) The particles are far apart in the substance
- (3) The particles in the substance cannot move randomly
- (4) None of these

**24.** Jennifer was performing an experiment bare handed. After the experiment was over, she realised that her palms became slippery and slimy. What do you think is the reason for it?

- (1) She must have dropped NaOH on her hands
- (2) She must have dropped HCl on her hands
- (3) She must have dropped NaCl on her hands
- (4) None of these

**25.** A colourless liquid turns blue litmus red and reacts with magnesium to produce a gas. What type of substance must the colourless liquid be?

- (1) Acid
- (2) Base
- (3) Salt
- (4) None of these

## MATHEMATICS

**26.**  $\frac{2}{3}$  of a number is less than the original number by 11. The original number is

- (1) 30
- (2) 33
- (3) 36
- (4) None of these

**27.** Two complementary angles differ by  $6^\circ$ . The measure of the smaller angle is

- (1)  $54^\circ$
- (2)  $36^\circ$
- (3)  $42^\circ$
- (4) None of these

**28.** The ages of A and B are in the ratio 7 : 5. After ten years, the ratio of their ages will be 9 : 7. The present age of B is

- (1) 20 yrs
- (2) 25 yrs
- (3) 30 yrs
- (4) None of these

**29.** 8 men or 12 boys can do a piece of work in 25 days. In how many days can 6 men and 11 boys do it?

- (1) 9
- (2) 11
- (3) 15
- (4) None of these

**30.** 70% of students in a school are boys. If the number of girls is 240, how many boys are there in the school?

- (1) 440
- (2) 480
- (3) 560
- (4) None of these

**31.** The length of a rectangle is 12 m and the length of its diagonals is 15 m. The area of the rectangle is

- (1)  $108 \text{ m}^2$
- (2)  $90 \text{ m}^2$
- (3)  $180 \text{ m}^2$
- (4) None of these

**32.** The radius of a wheel is 7 cm. In covering 44 km, how many revolutions will it make?

- (1) 90,000
- (2) 100,000
- (3) 140,000
- (4) None of these

**33.** A sum amounts to ₹ 3584 in 219 days at 4% per annum simple interest. The sum is

- (1) ₹ 3250
- (2) ₹ 3260
- (3) ₹ 3500
- (4) None of these

**34.** A circle is  $\frac{7}{11}$  of a square in area. If the diagonal of the square is 7.7 cm, the diameter of the circle is.

- (1) 2.45 cm
- (2) 2.5 cm
- (3) 4.9 cm
- (4) None of these

**35.** Serena made a rectangular shaped biscuit using 10 squares shaped biscuits. If the area of the rectangle is 1000 sq.cm. Then the area of each square is

- (1) 1000 sq. cm
- (2) 100 sq.cm
- (3) 10 sq. cm
- (4) None of these

**36.** A square is divided as 4 equal triangles (with same area). If the area of the square is 16 sq.cm, then the sum of the areas of two triangles are

- (1) 16 sq. cm
- (2) 4 sq. cm
- (3) 8 sq. cm
- (4) None of these

37. A car covers a distance of 89.1 km in 2.2 hours. Then how much distance it can cover in 10 hours?  
 (1) 405 km (2) 40.5 km  
 (3) 4.05 km (4) None of these
38. The two consecutive integers between which the rational number  $3\frac{1}{4}$  lies:  
 (1) 5 and 6 (2) 7 and 8  
 (3) 6 and 8 (4) None of these
39. The data 29, 32, 48, 50,  $2x$ ,  $2x + 4$ , 72, 78, 84, 95 is in ascending order and has median 64. The value of 'x' is  
 (1) 62 (2) 31  
 (3) 124 (4) None of these
40. The largest of three consecutive multiples of 7 whose sum gives 777 is:  
 (1) 259 (2) 352  
 (3) 266 (4) None of these
41. A trader has purchased pens at the rate of ₹ 42 per dozen. If he has earned a profit of ₹ 14.28. What is his selling price?  
 (1) ₹ 42 (2) ₹ 52  
 (3) ₹ 48 (4) None of these
42. Sum of three times  $x$  and 11 is 32. Which of the following represent this statement?  
 (1)  $x + 3 + 11 = 32$   
 (2)  $3x + 11 = 32$   
 (3)  $3(x + 11) = 32$   
 (4)  $x + 11 = 32$
43. Sum of  $(-19)$  and  $(-21)$  is  
 (1)  $-40$  (2) 40  
 (3) 2 (4) None of these
44. If  $\frac{p}{q}$  and  $\frac{r}{s}$  are rational numbers, then  $\frac{p}{q}$  is multiplicative inverse of  $\frac{r}{s}$  if,  
 (1)  $\frac{p}{q} = \frac{r}{s}$  (2)  $\frac{p}{q} + \frac{r}{s} = 1$   
 (3)  $\frac{p}{q} \times \frac{r}{s} = 1$  (4) None of these
45. What number should be subtracted from  $-\frac{3}{4}$  so as to get  $\frac{5}{6}$ ?  
 (1)  $-\frac{3}{10}$  (2)  $-\frac{5}{24}$   
 (3)  $-\frac{19}{12}$  (4) None of these
46. Fill in the blanks:  $\frac{5}{12} \div (\quad) = -\frac{35}{18}$   
 (1)  $-\frac{21}{36}$  (2)  $-\frac{12}{19}$   
 (3)  $-\frac{3}{14}$  (4) None of these
47.  $a^m \times a^n$  is equal to  
 (1)  $(a^2)^{mn}$  (2)  $a^{m-n}$   
 (3)  $a^{m+n}$  (4) None of these
48. Which of the following is equal to 1?  
 (1)  $2^\circ + 3^\circ + 4^\circ$  (2)  $2^\circ \times 3^\circ \times 4^\circ$   
 (3)  $(3^\circ - 2^\circ) \times 4^\circ$  (4) None of these
49. Dileep has 3 more marbles than Rohit. If both have 95 marbles then Dileep has \_\_\_\_\_ number of marbles  
 (1) 45 (2) 46  
 (3) 47 (4) None of these
50. The number which when added to its half gives 30. The number is \_\_\_\_\_ .  
 (1) 10 (2) 20  
 (3) 40 (4) None of these



END OF THE EXAM