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| INTERNATIONAL CYBER OLYMPIAD | NATIONAL INTERACTIVE SCIENCE OLYMPIAD | NATIONAL INTERACTIVE MATHS OLYMPIAD | NATIONAL BIOTECHNOLOGY OLYMPIAD | INTERNATIONAL ENGLISH OLYMPIAD | INTERNATIONAL G.K. OLYMPIAD |


**Level - 1** : Level-1 winners will get certificate, apititude report, medals for the school toppers and online subscription.

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Prizes ranges from cash (millions of $), gadgets, foreign trips, publicity, fame, scholarships, Internships, conference participation and more.

**1.** You are allowed additional 10 minutes to fill the required details in the **RESPONSE SHEET.**

**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 coordinator 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.

**NATIONAL INTERACTIVE MATHS OLYMPIAD**

**NIMO**

**9 Class** **A1 Paper Code**

**L E V E L - 1**



## MENTAL ABILITY

**1.** If in a certain language MYSTIFY is coded as NZTUJGZ, how is NEMESIS coded in that language ?

(1) MDLHRDR (2) OFNFTJT
(3) ODNHTDR (4) None of these

**2.** In a certain code language,

(A) '*pit dar na*' means '*you are good*'
(B) '*dar tok pa*' means '*good and bad*'
(C) '*tim na tok*' means '*they are bad*'

In that language, which word stands for 'they' ?

(1) na (2) tok
(3) tim (4) None of these

**3.** Anil introduces Rohit as the son of the only brother of his father's wife. How is Rohit related to Anil ?

(1) Cousin (2) Son
(3) Uncle (4) None of these

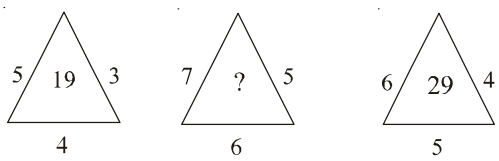
**4.** Kailash faces towards north. Turning to his right, he walks 25 metres. He then turns to his left and walks 30 metres. Next, he moves 25 metres to his right. He then turns to his right again and walks 55 metres. Finally, he turns to the right and moves 40 metres. In which direction is he now from his starting point?

(1) South-West (2) South
(3) South-East (4) None of these

**5.** Ramakant walks northwards. After a while, he turns to his right and a little further to his left. Finally, after walking a distance of one kilometre, he turns to his left again. In which direction is he moving now ?

(1) North (2) South
(3) West (4) None of these

**6.** Find the missing character from the given alternatives.




(A) (B) (C)

(1) 25 (2) 37
(3) 41 (4) None of these

**7.** Choose the correct option

(1) $\text{Speed} = \frac{\text{Distance}}{\text{Time}}$ (2) $\text{Distance} = \frac{\text{Speed}}{\text{Time}}$

(3) Time = Distance × speed (4) None of these

**8.** How long does a train 110 metres long running at the rate of 36 km/hr take to cross a bridge 132 metres in length ?

(1) 34.2 seconds (2) 24.2 seconds
(3) 30.2 seconds (4) None of these

**9.** Hitesh is richer than Jaya where as Mohan is richer than Pritam. Lalit is as rich as Jaya. Amit is richer than Hitesh. What conclusion can be definitely drawn from the above statements ?

(1) Jaya is poorer than Pritam
(2) Mohan is richer than Amit
(3) Lalit is poorer than Hitesh
(4) None of these

**10.** If in a certain language, Nature is coded as MASQUE, how is FAMINE coded in that code ?

(1) FBMJND (2) FZMHND
(3) EALIME (4) None of these

## MATHEMATICS

**11.** Find the square root of 3481 ?

(1) 59 (2) 69
(3) 39 (4) None of these

**12.** The present population of a town is 8000. If it increases at the rate of 5% per annum, what will be its population after 3 years?

(1) 8261 (2) 9261
(3) 9211 (4) None of these

**13.** Evaluate $(601)^3$

(1) 217081801 (2) 217018801
(3) 217181801 (4) None of these

**14.** The range of a class is called its

(1) Frequency (2) Range
(3) Class interval (4) None of these

**15.** The area of the base of a right circular cylinder is 165 $cm^2$ and its height is 17 cm. Find the volume of cylinder

(1) 2805 $cm^3$ (2) 3805 $cm^3$
(3) 38.6 $cm^3$ (4) None of these

**16.** Find the value of $\sqrt{(-27)^3}$ ?

(1) $(-27)^3$ (2) –27
(3) $(-27)^{3/2}$ (4) None of these

**17.** Find the mean of first 7 prime numbers ?

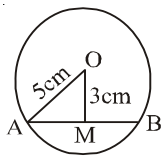
(1) 8.15 (2) 9.16
(3) 8.14 (4) None of these

**18.** Reduce the rational expression to the simplest form

$$\frac{16x^2 - 9}{4x - 3}.$$

(1) $(4x + 3)$ (2) $(2x + 3)$
(3) $4x$ (4) None of these

**19.** Find the length of the chord which is at a distance of 3 cm from the centre of a circle whose radius is 5 cm.




(1) 9 cm (2) 10 cm
(3) 8 cm (4) None of these

**20.** The height of a cone is 8 cm and the diameter of its base is 12 cm. What is the volume of the cone ?

(1) 301.71 $cm^3$ (2) 407.01 $cm^3$
(3) 387.91 $cm^3$ (4) None of these

**21.** Solve for $x$

$$\frac{17(2 - x) - 5(x + 12)}{1 - 7x} = 8$$

(1) 1 (2) 2
(3) 3 (4) None of these

**22.** What is the multiplicative inverse of $3\frac{1}{4}$ ?

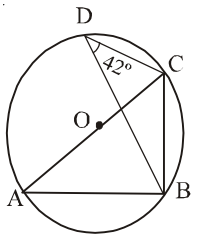
(1) 4 (2) $\frac{4}{3}$

(3) $\frac{4}{13}$ (4) None of these

**23.** A quadrilateral whose all the sides, diagonals and angles are equal is a

(1) Square (2) Rhombus
(3) Trapezium (4) None of these

**24.** In the figure O is the centre of the circle. ∠BDC = 42°. Calculate ∠ACB.




(1) 45° (2) 42°
(3) 75° (4) None of these

**25.** The surface area of a sphere is :-

(1) $4\pi r^2$ sq. units (2) $4\pi r^3$ sq. units

(3) $\frac{4}{3}\pi r^3$ sq. units (4) None of these

**26.** Find a number such that one-fifth of it is less than its one fourth by 3.

(1) 40 (2) 60
(3) 70 (4) None of these

**27.** $\frac{-5}{7}$ lies

(1) To the left 0 on the number line

(2) To the right 0 on the number line

(3) Sometimes to the left and sometimes to the right of 0 on the number line

(4) None of these

**28.** Which property is used in the identity given below?

$$x + y = y + x$$

(1) Associative Property
(2) Distributive Property
(3) Commutative Property
(4) None of these

**29.** The sum of $\frac{-3}{5}$ and $\frac{6}{5}$ is equal to

(1) 2 (2) –2
(3) 3/5 (4) None of these

**30.** The area of a circle is 616 $cm^2$. Find its diameter.

(1) 29 cm (2) 28 cm
(3) 17 cm (4) None of these

**31.** Find the cube roots of –125.

(1) – 4 (2) – 5
(3) –7 (4) None of these

**32.** Choose correct option.

(1) Profit = Cost price – Selling Price

(2) Loss = Cost Price – Selling Price

(3) $\text{Profit \%} = \left(\frac{\text{Profit} \times 100}{\text{Selling Price}}\right)$

(4) None of these

**33.** State the degrees of the polynomial $3x^3 + x^2y + y^3$

(1) 3 (2) 2
(3) 5 (4) None of these

**34.** Fill in the blank by using the correct symbol out of <, =, >

$\frac{7}{12} \square \frac{2}{3}$

(1) < (2) =
(3) > (4) None of these

**35.** If $y - \frac{y}{2} = \frac{7}{2}$, then the value of *y* is

(1) 5 (2) 6
(3) 7 (4) None of these

**36.** PQRS is a quadrilateral. PQ = QS = SR = RP and $\angle P = \angle Q = \angle R = \angle S = 90^\circ$. Then PQRS can be called

(1) Rhombus (2) Square
(3) Parallelogram (4) None of these

**37.** Half of $2^{20}$ equals

(1) $1^{10}$ (2) $1^{20}$
(3) $4.2^{17}$ (4) None of these

**38.** In a company, 40% of the employees are female.What is the ratio of the number of female employees to the number of male employees?

(1) 3 : 1 (2) 2 : 3
(3) 3 : 2 (4) None of these

**39.** The area of triangle formed by the points (1, 0), (1, 2) and the origin is

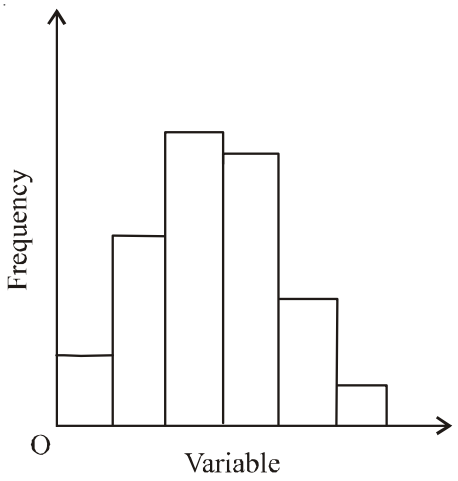
(1) 1 sq. unit (2) 2 sq. unit
(3) 3 sq. unit (4) None of these

**40.** Find the value of $27^{\frac{2}{3}} \times 27^{\frac{1}{3}} \times 27^{-\frac{4}{3}}$ ?

(1) 1/3 (2) 2/3
(3) 3 (4) None of these

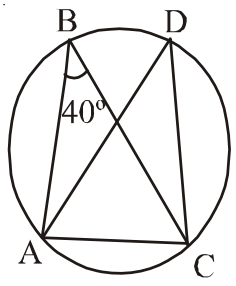
## ETG INTERACTIVE SECTION

**41.** The graph which is shown is a



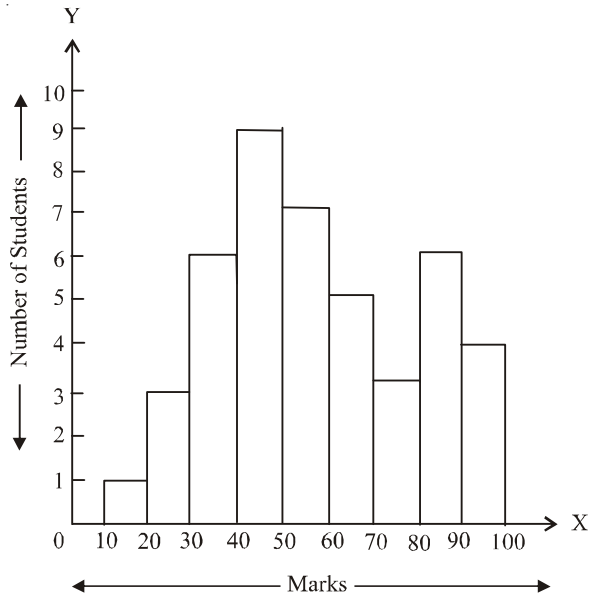

(1) Bar graph (2) Pie chart
(3) Histogram (4) None of these

**42.** In the figure $\angle ABC = 40^\circ$. If $\angle DAC = 65^\circ$, then find $\angle DCA$.




(1) 70° (2) 45°
(3) 75° (4) None of these

**(43– 46)** The following histogram shows the marks of 36 students of class VIII in a test on English out of 100 marks.



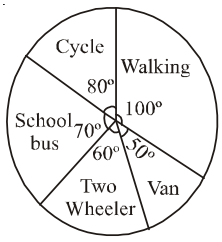

**43.** What is the class size?
(1) 5 (2) 10
(3) 12 (4) None of these

**44.** How many students obtained less than 10 marks ?
(1) 0 (2) 10
(3) 4 (4) None of these

**45.** How many students obtained more than 50 marks ?
(1) 30 (2) 25
(3) 20 (4) None of these

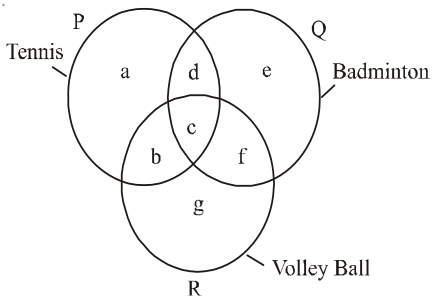
**46.** If passing marks are 30, what is the number of failures?
(1) 3 (2) 4
(3) 0 (4) None of these

**47.** A survey is conducted in a school to know the modes of transport used by students while commuting. The findings of the survey are represented by the given circle graph.



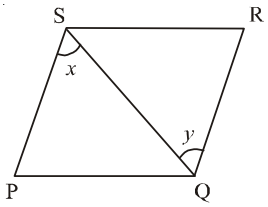

If there are 720 students in the school, then what is the difference between the number of students who come by the most preferred mode of transport and by the least preferred mode of transport ?
(1) 85 (2) 75
(3) 100 (4) 120

**48.** The figure given below consists of three intersecting circles which represent sets of students who play Tennis, Badminton and Volley Ball. Each region in the figure is represented by a small letter. Which letter represents the set of persons who play tennis & badminton but not volleyball?



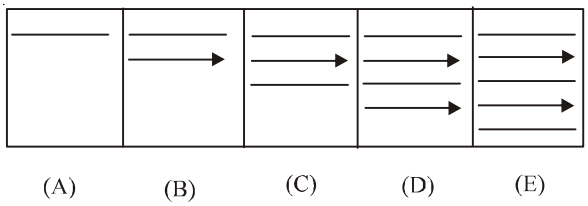

(1) b (2) c
(3) d (4) None of these

**49.** PQRS is a parallelogram as shown. Then the angles $x$ and $y$ are related as



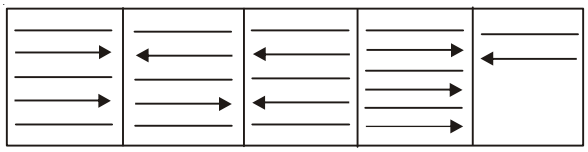

(1) $x = y$ (2) $x < y$
(3) $x > y$ (4) None of these

**50.** Find the figure from the Answer set (i.e. figure 1, 2 or 3) which will continue the series given in the problem set (i.e. figures A, B, C, D and E).

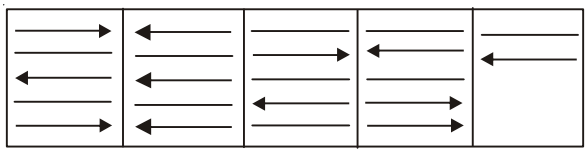


(A) (B) (C) (D) (E)

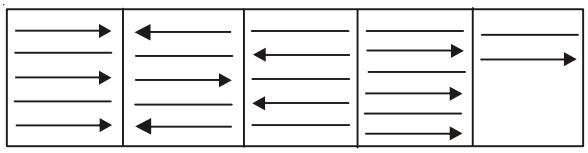
(1)



(2)



(3)



(4) None of these

**END OF THE EXAM**