International Talent Search Examination - 2023-24

अंतर्राष्ट्रीय प्रतिभा खोज परीक्षा – २०२३-२४

Organized by

Savitri Skill Development Institute, Training Partner with
Ministry of Micro Small & Medium Enterprises (MSME), Govt. of India.

TEST BOOKLET

Name : ....

Class : .... School: ....

Father's Name : .... Father's Occupation : ....

Mother's Name : .... Mother's Occupation : ....

Categories : Gen ☐   OBC ☐   SC ☐   ST ☐

Correspondence Address : ....

Date of Birth : ☐☐ ☐☐ ☐☐☐☐

Father's Contact No : ☐☐☐☐☐☐☐☐☐☐

Home/Mother's Contact No. : ☐☐☐☐☐☐☐☐☐☐

WhatsApp No. : ☐☐☐☐☐☐☐☐☐☐

Basic Instructions:

i.   Ensure that your personal data has been entered correctly.
ii.   Immediately after opening the test booklet verify that all the pages are printed properly and are in order. If there is a problem with your test booklet, immediately inform the invigilator. You will provided with the replacement.
iii. All questions in are compulsory.
iv.   For every correct answer you will be awarded with 4 marks and for all incorrect answer 1 mark will be deducted.
v.   Directions for answering the questions are given. Read those directions carefully and answer the question by circling the bubble in the OMR Sheet Provided to you. Test booklet/OMR Sheet will be submitted at the end of the examination.
vi.   Follow the instructions given by the invigilator. Students found violating the instructions will be disqualified.
vii. Rough work can be done separately or on the Question paper.
viii. Please fill the bubbles in OMR sheet with Blue or Black pen only.
ix.   Do not tear the question paper or OMR sheet else you will be disqualified in the examination.

CLASS-7 MATHEMATICS

1. The product of two integers is –144 and sum of the integers is –7. Find the smallest number.
   (A) 10   (B) –10   (C) –16   (D) 16

2. Product of multiplicative inverse and additive inverse of 5 is
   (A) 1   (B) –1   (C) –5   (D) 5

3. Walking $\frac{5}{6}$ th of its usual speed, a train is 10 minutes late. Find the usual time to cover the journey.
   (A) 60 minutes   (B) 50 minutes   (C) 40 minutes   (D) 30 minutes

4. Which of the following integers has most number of divisors?
   (A) 176   (B) 182   (C) 99   (D) 101

5. The smallest number which must be added to 1780 to make it a perfect square is
   (A) 69   (B) 156   (C) 149   (D) 59

6. What decimal of an hour is a second?
   (A) 0.0025   (B) 0.0256   (C) 0.00027   (D) 0.000126

7. A piano teacher has $4\frac{1}{2}$ hours available to teach in a night. Each lesson will last to $1\frac{1}{2}$ hours. How many lessons can the teacher schedule in a night?
   (A) $2\frac{1}{2}$ (B) 2   (C) 4   (D) 3

8. Find the sum of $\frac{1}{2}+\frac{1}{6}+\frac{1}{12}+\frac{1}{20}+\frac{1}{30}+\frac{1}{42}+\frac{1}{56}+\frac{1}{72}+\frac{1}{90}+\frac{1}{110}+\frac{1}{132}$.
   (A) 718   (B) $\frac{11}{12}$ (C) $\frac{15}{16}$ (D) $\frac{17}{18}$

9. $\dfrac{0.1+0.75}{2.5+0.05} \div \left(0.125+\dfrac{1}{4.8}\right)$
   (A) 5   (B) 4   (C) 3   (D) 1

10. $\dfrac{(0.55)^2+(0.07)^2+(0.027)^2}{(0.055)^2+(0.007)^2+(0.0027)^2}=?$
    (A) 100   (B) 10   (C) 1000   (D) 1

11. One seventh of a number is same as increased of one eight of that number by 3. Find the number.
    (A) 165   (B) 168   (C) 158   (D) 169

12. Ram's grandfather's age is 65 and 23 more than three times more than Ram's age. Find Ram's age.
    (A) 15   (B) 13   (C) 14   (D) 12

13. In a class, there are total 90 students. Commerce students are twice the arts of students & science students are thrice the commerce students. Then, arts, commerce and science students in the ratio respectively are
    (A) 2 : 1 : 6   (B) 6 : 2 : 1   (C) 3 : 6 : 9   (D) 1 : 2 : 6

14. Some people go for picnic at a river and hills. They made a camp there. One fourth of people stay at camp while one fifth of people go to hill and remaining to the river which were in number of 55. Find the number of people.
    (A) 90   (B) 95   (C) 100   (D) 110

15. A number has three digits. The unit and tenth digit is thrice the hundredth digit. If number is reversed, then it is 396 more than original number. What is the number?
    (A) 266   (B) 132   (C) 264   (D) 386

16. In the given figure, $l_1 \parallel l_2$ and transversal x intersects l_1 at l_2 points M and N respectively. MO and NO bisects angle AMN and angle BNM respectively such that $\angle OMN : \angle ONM$ is 2 : 1, then angle MNB is
    (A) 60°
    (B) 120°
   (C) 30°
    (D) 50°
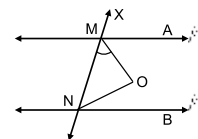
17. What is the value of C if a : b is 2 : 1 and a and b are supplementary angles?
    (A) 30°
    (B) 60°
    (C) 120°
    (D) 45°
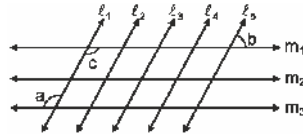
18. In the given figure, if PAQ is parallel to BC and angles of △ABC are in the ratio of 2 : 1 : 3, then value of x is
    (A) 30°
    (B) 60°
    (C) 15°
   (D) 45°
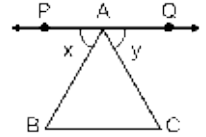
19. In the given figure, AB || CD and transversal CE intersects AB and CD respectively at points B and C. BF || CH such that ∠FBC = ∠HCD = 30°, then value of ∠ABE is
    (A) 120°
    (B) 30°
   (C) 150°
    (D) 60°
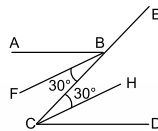
20. If the supplementary of an angle is seven times of its complementary angle, then the angle is
    (A) 75°   (B) 60°   (C) 80°   (D) 120°

21. In a right angled triangle, if one acute angle is half the other, then the smallest angle is
    (A) 15°   (B) 25°   (C) 30°   (D) 35°

22. In a △ABC, ∠A = ∠C. If BC = 3 and AC = 4, then the perimeter of the triangle formed by joining mid points of the sides of △ABC is
    (A) 3.5   (B) 5   (C) 6   (D) 7

23. If △ABC is right angled at B, then
   (A) AB = AC   (B) AC < AB   (C) AB = BC   (D) AC > AB

24. In the given figure, AD is the median, then ∠BAD is
    (A) 55°
    (B) 50°
    (C) 100°
    (D) 40°
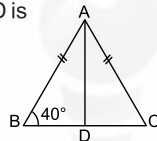
25. P is a point on side BC of △ABC such that AP bisects ∠BAC, then
    (A) BP = CP   (B) BA > BP   (C) BP > BA   (D) can not be determined

26. In the given figure, AP and BQ are perpendicular to AB and AP = BQ. If AO = 6 m, then find OB.
    (A) 8 m
    (B) 10 m
    (C) 6 m
    (D) 11 m
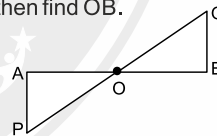
27. In the given figure, ABC and DBC are two isosceles triangle on the same base BC such that AB = AC and DB = DC. If ∠ABD = 120°, then find ∠ACD.
    (A) 100°
    (B) 60°
    (C) 140°
    (D) 120°
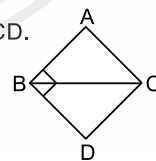
28. In △ABC, if AB = AC and BC is produced to D such that ∠ACD = 100°, then ∠A = ?
    (A) 20°   (B) 40°   (C) 60°   (D) 80°

29. In isosceles triangle, if vertex angle is twice the sum of base angle, then the measure of vertex angle is
    (A) 100°   (B) 120°   (C) 110°   (D) 130°

30. Which of the following is not a criterion for congruence of triangle?
    (A) SAS   (B) SSA   (C) ASA   (D) SSS

31. Which of the following is / are true?
    (A) $\sqrt{6} \times \sqrt{6}$ is an irrational number   (B) $\sqrt{4} \times \sqrt{25}$ is a rational number
    (C) Both (A) and (B)   (D) Neither (A) nor (B)

32. If a = (−1)^{2009} and b = (−1)^{2010}, then find the value of ab.

(A) 1   (B) −1   (C) 2009   (D) 2010

33. $\sqrt[3]{\dfrac{125}{216}} - \sqrt{\dfrac{25}{36}} = .$ _____

(A) $\dfrac{5}{6}$ (B) $\dfrac{1}{6}$ (C) 0   (D) 1

34. The following are the steps involved in finding the positive value of x from the equation $x^2 = 12.96$. Arrange them in sequential order from the first to the last.

(a) $x^2 = \dfrac{(36)^2}{10^2}$ (b) $\therefore X = 3.6$ (C) $x^2 = 12.96 = \dfrac{1296}{100}$ (d) $x = \dfrac{36}{10}$

(A) cdab   (B) cabd   (C) cadb   (D) cdba

35. If $p = (-1)^{205}$ and $q = (-1)^{202}$, then $p + q$ is

(A) $(-1)^{407}$ (B) $(-1)^4$ (C) 0   (D) None of these

36. The value of $(a-1)(a^2 - 2a + 1)$ is

(A) $(a-1)^2$ (B) $(a-1)^3$ (C) $a^2 - 1)$ (D) 1

37. The degree of xyz is

(A) 1   (B) 2   (C) 3   (D) 4

38. If $x + \dfrac{1}{2x} = 4$, then the value of $4x^2 + \dfrac{1}{x^2}$ is

(A) 60   (B) 61   (C) 62   (D) 63

39. If $2x + \dfrac{1}{3x} = 6$, then the value of $9x^2 + \dfrac{1}{4x^2}$ is

(A) 75   (B) 76   (C) 77   (D) 78

40. Square root of $3^{6n^2} (36)^{2a} (16)^b$ is

(A) $3^{6n^2} 6^{2a} 2^{2b}$ (B) $3^{6n} 6^a 4^b$ (C) $3^{3n^2} 6^a 2^b$ (D) $3^{6n} 6^a 4^{2b}$

41. $2^x = 3^y = 6^{-z}$, then $\dfrac{1}{x} + \dfrac{1}{y} + \dfrac{1}{z}$ is equal to

(A) 1   (B) 0   (C) −1   (D) None of these

42. $2^{x+y} = 128$ and $4^{x-y} = 16$, and then find $\dfrac{x}{y}$.

(A) $\dfrac{2}{3}$ (B) $\dfrac{5}{9}$ (C) $\dfrac{9}{5}$ (D) $\dfrac{3}{5}$

43. If $a = 2^{-2} - 2^{-3}$, $b = (2^{-3} - 2^{-4})$ and $c = (2^{-4} - 2^{-2})$, then the value of $a^3 + b^3 + c^3$ is

(A) $-\dfrac{9}{1024}$ (B) $-\dfrac{9}{2048}$ (C) 0   (D) 1

44. Simplify: $\dfrac{\left(p + \dfrac{1}{q}\right)^{(p-q)} \left(p - \dfrac{1}{q}\right)^{p+q}}{\left(q + \dfrac{1}{p}\right)^{(p-q)} \left(q - \dfrac{1}{p}\right)^{(p+q)}}$

(A) $\left(\dfrac{p}{q}\right)^{2p}$ (B) $\left(\dfrac{q}{p}\right)^{2q}$ (C) $\left(\dfrac{p}{q}\right)^{p}$ (D) $\left(\dfrac{q}{p}\right)^{q}$

45. $\left[\dfrac{\left(a^0 + b^0\right)\left(a^0 - b^0\right)}{a^2 - b^2}\right]^{0^{4^5}}$ (where $a \neq 0$, and $b \neq 0$) is

(A) 0   (B) 1   (C) −1   (D) Not defined