International Talent Search Examination - 2022-23

अंतर्राष्ट्रीय प्रतिभा खोज परीक्षा – २०२२-२३

Organized by

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

Ministry of Micro, Small and Medium Enterprises,
Government 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-8 MATHEMATICS

1. Which of the following is not true for an exterior angle of a regular polygon with n sides?

   (a) Each exterior angle $= \dfrac{360°}{n}$

   (b) Exterior angle $= 180° -$ interior angle

   (c) $n = \dfrac{360°}{\text{exterior angle}}$

   (d) Each exterior angle $= \dfrac{(n-2) \times 180°}{n}$

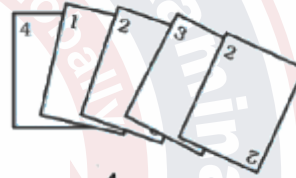2. PQRS is a square. PR and SQ intersect at O. Then $\angle POQ$ is a

   (a) Right angle   (b) Straight angle

   (c) Reflex angle   (d) Complete angle

3. Rohan and Shalu are playing with 5 cards as shown in the figure. What is the probability of Rohan picking a card without seeing, that has the number 2 on it?

   (a) $\dfrac{2}{5}$ (b) $\dfrac{1}{5}$ (c) $\dfrac{3}{5}$ (d) $\dfrac{4}{5}$
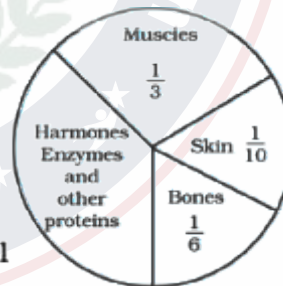
4. The following pie chart represents the distribution of proteins in parts of a human body. What is the ratio of distribution of proteins in the muscles to that of proteins in the bones?

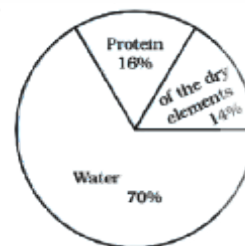   (a) $3:1$ (b) $1:2$ (c) $1:3$ (d) $2:1$

5. The following pie chart gives the distribution of constituents in the human body. The central angle of the sector showing the distribution of protein and other constituents is

   (a) $108°$ (b) $54°$ (c) $30°$ (d) $216°$

6. $\dfrac{x+y}{2}$ is a rational number.

   (a) Between x and y
   (b) Less than x and y both.
   (c) Greater than x and y both.
   (d) Less than x but greater than y.

7. Which of the following statements is always true?

   (a) $\dfrac{x-y}{2}$ is a rational number between x and y.

   (b) $\dfrac{x+y}{2}$ is a rational number between x and y.

   (c) $\dfrac{x \times y}{2}$ is a rational number between x and y.

   (d) $\dfrac{x+y}{2}$ is a rational number between x and y.

8. Between two given rational numbers, we can find

   (a) one and only one rational number.
   (b) only two rational numbers.
   (c) only ten rational numbers.
   (d) infinitely many rational numbers.

9. If m is the cube root of n, then n is

   (a) m^3 (b) $\sqrt{m}$ (c) $\dfrac{m}{3}$ (d) $\sqrt[3]{m}$

10. The value of $\sqrt{248+\sqrt{52+\sqrt{144}}}$ is

    (a) 14   (b) 12   (c) 16   (d) 13

11. Given that $\sqrt{4096}$ = 64, the value of $\sqrt{4096} + \sqrt{40.96}$ is

    (a) 74   (b) 60.4   (c) 64.4   (d) 70.4

12. The digit in the tens place of a two digit number is 3 more than the digit in the units place. Let the digit at units place be b. Then the number is

(a) $11b + 30$　　　(b) $10b + 30$　　　(c) $11b + 3$　　　(d) $10b + 3$

13 Arpita's present age is thrice of Shilpa. If Shilpa's age three years ago was x. Then Arpita's present age is

(a) $3(x - 3)$　　　　　　　　　(b) $3x + 3$

(c) $3x - 9$　　　　　　　　　(d) $3(x + 3)$

14. A linear equation in one variable has

(a) Only one solution

(b) Two solutions

(c) More than two solutions

(d) No solution

15. Which of the following is the top view of the given shape?

    (a)　　　　　　　(b)　　　　　　　(c)　　　　　　　(d)

16. The net shown below can be folded into the shape of a cube. The face marked with the letter L is opposite to the face marked with which letter?

(a) M　　　　　　(b) N　　　　　　(c) Q　　　　　　(d) O

17. We have 4 congruent equilateral triangles. What do we need more to make a pyramid?

    (a) An equilateral triangle.

    (b) A square with same side length as of triangle.

    (c) 2 equilateral triangles with side length same as triangle.

    (d) 2 squares with side length same as triangle.

18. The standard form for 0.000064 is

    (a) 64×10^4 (b) 64×10^{-4} (c) 6.4×10^5 (d) 6.4×10^{-5}

19. The standard form for 234000000 is

    (a) 2.34×10^8 (b) 0.234×10^9 (c) 2.34×10^{-8} (d) 0.234×10^{-9}

20. The usual form for 2.03×10^{-5}

    (a) 0.203   (b) 0.00203   (c) 203000   (d) 0.0000203

21. The value of $(3x^3 + 9x^2 + 27x) \div 3x$ is

    (a) $x^2 + 9 + 27x$ (b) $3x^3 + 3x^2 + 27x$

    (c) $3x^3 + 9x^2 + 9$ (d) $x^2 + 3x + 9$

22. The value of $(a + b)^2 + (a - b)^2$ is

    (a) $2a + 2b$ (b) $2a - 2b$ (c) $2a^2 + 2b^2$ (d) $2a^2 - 2b^2$

23. The value of $(a + b)^2 - (a - b)^2$ is

    (a) $4ab$ (b) $-4ab$ (c) $2a^2 + 2b^2$ (d) $2a^2 - 2b^2$

24. If two quantities x and y vary directly with each other, then

    (a) $\dfrac{x}{y}$ remains constant.   (b) $x - y$ remains constant.

    (c) $x + y$ remains constant.   (d) $x \times y$ remains constant.

25. If two quantities p and q vary inversely with each other, then

    (a) $\dfrac{p}{q}$ remains constant.   (b) $p + q$ remains constant.

    (c) $p \times q$ remains constant.   (d) $p - q$ remains constant.

26. If the distance travelled by a rickshaw in one hour is 10 km, then the distance travelled by the same rickshaw with the same speed in one minute is

(a) $\dfrac{250}{9}$ m
(b) $\dfrac{500}{9}$ m
(c) 1000 m
(d) $\dfrac{500}{3}$ m

27. Meenakshee cycles to her school at an average speed of 12 km/h and takes 20 minutes to reach her school. If she wants to reach her school in 12 minutes, her average speed should be

(a) $\dfrac{20}{3}$ km/h
(b) 16 km/h
(c) 20 km/h
(d) 15 km/h

28. The original price of a washing machine which was bought for Rs 13,500 inclusive of 8% VAT is

(a) Rs 12,420
(b) Rs 14,580
(c) Rs 12,500
(d) Rs 13,492

29. Avinash bought an electric iron for Rs 900 and sold it at a gain of 10%. He sold another electric iron at 5% loss which was bought Rs 1200. On the transaction he has a

(a) Profit of Rs 75
(b) Loss of Rs 75
(c) Profit of Rs 30
(d) Loss of Rs 30

30. A TV set was bought for Rs 26,250 including 5% VAT. The original price of the TV set is

(a) Rs 27,562.50
(b) Rs 25,000
(c) Rs 24,937.50
(d) Rs 26,245

31. A sum is taken for two years at 16% p.a. If interest is compounded after every three months, the number of times for which interest is charged in 2 years is

(a) 8
(b) 4
(c) 6
(d) 9

32. A six-digit number is formed by repeating a three-digit number. For example 256256, 678678, etc. Any number of this form is divisible by

(a) 7 only
(b) 11 only
(c) 13 only
(d) 1001

33. If the sum of digits of a number is divisible by three, then the number is always divisible by

    (a) 2   (b) 3   (c) 6   (d) 9

34. If $x + y + z = 6$ and z is an odd digit, then the three-digit number xyz is

    (a) an odd multiple of 3   (b) odd multiple of 6

    (c) even multiple of 3   (d) even multiple of 9

35. The surface areas of the six faces of a rectangular solid are 16, 16, 32, 32, 72 and 72 square centimetres. The volume of the solid, in cubic centimetres, is

    (a) 192   (b) 384   (c) 480   (d) 2592

36. Ramesh has three containers.

    (a) Cylindrical container A having radius r and height h,

    (b) Cylindrical container B having radius $2r$ and height $1/2\ h$, and

    (c) Cuboidal container C having dimensions $r \times r \times h$

37. The arrangement of the containers in the increasing order of their volumes is

    (a) A, B, C

    (b) B, C, A

    (c) C, A, B

    (d) cannot be arranged

38. If R is the radius of the base of the hat, then the total outer surface area of the hat is

    (a) $\pi r\,(2h + R)$ (b) $2\pi r\,(h + R)$

   (c) $2\,\pi rh + \pi R^2$ (d) None of these

39. Shyama purchases a scooter costing Rs 36,450 and the rate of sales tax is 9%, then the total amount paid by her is

    (a) Rs 36,490.50   (b) Rs 39,730.50   (c) Rs 36,454.50   (d) Rs 33,169.50

40. The marked price of an article is Rs 80 and it is sold at Rs 76, then the discount rate is

(a) 5%   (b) 95%   (c) 10%   (d) appx. 11%

41. Rahul, Varun and Yash are playing a game of spinning a coloured wheel. Rahul wins if spinner lands on red. Varun wins if spinner lands on blue and Yash wins if it lands on green. Which of the following spinner should be used to make the game fair?

(i)   (ii)   (iii)   (iv)

(a) (i)   (b) (ii)   (c) (iii)   (d) (iv)
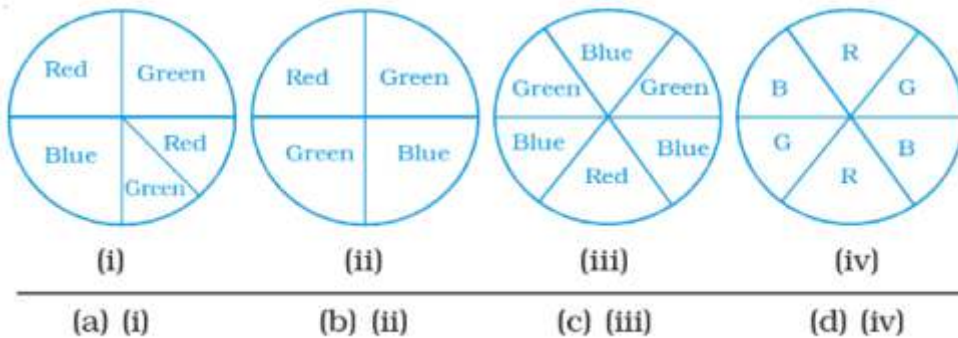
42. Which of the following is not a random experiment?
(a) Tossing a coin   (b) Rolling a dice
(c) Choosing a card from a deck of 52 cards
(d) Thowing a stone from a roof of a building

43. What is the probability of choosing a vowel from the alphabets?

(a) $\dfrac{21}{26}$ (b) $\dfrac{5}{26}$ (c) $\dfrac{1}{26}$ (d) $\dfrac{3}{26}$

44. By travelling at a speed of 48 kilometres per hour, a car can finish a certain journey in 10 hours. To cover the same distance in 8 hours, the speed of the car should be

(a) 60 km/h   (b) 80 km/h (c) 30 km/h   (d) 40 km/h

45. In which of the following case, do the quantities vary directly with each other?

(a)
x	0.5	2	8	32
y	2	8	32	128

(b)
p	1^2	2^2	3^2	4^2
q	1^3	2^3	3^3	4^3

(c)
r	2	5	10	25	50
s	25	10	5	2	0.5

(d)
u	2	4	6	9	12
v	18	9	6	4	3

46. Which quantities in the previous question vary inversely with each other?

(a) x and y (b) p and q (c) r and s (d) u and v