OGO
ORANGE GLOBAL OLYMPIAD

School **L**evel **E**xamination
SLE 2022

GRADE
7

MATHEMATICS

Subject Code: | 2 | 0 | 1 |

Total Questions: 40

Time: 1 hour

DO NOT OPEN THIS BOOKLET UNTIL INSTRUCTED TO DO SO

➢ All questions are compulsory.

➢ Read the instructions on the **ANSWER SHEET** and fill in your **NAME**, **CLASS** and **OTHER INFORMATION**.

➢ To mark your choice of answer by darkening the circles in the **ANSWER SHEET**, use a **BLUE/BLACK BALL PEN** only.

➢ You **MUST** record your answers on the **ANSWER SHEET** only.

➢ There are **40 MULTIPLE CHOICE QUESTIONS**.
Use the information provided to choose the **BEST** answer among the four possible options.
On your **ANSWER SHEET** fill in the circle that matches your answer.

➢ Marks are **NOT** deducted for incorrect answers.

➢ Return the **ANSWER SHEET** to the invigilator at the end of the examination.

➢ You are **NOT** allowed to use a calculator.
You may use a ruler and spare paper for rough work.

MATHEMATICS

Section A (Logical Reasoning)

(This section contains 8 multiple choice questions. Each question has four choices (A), (B), (C) and (D), out of which only ONE is correct.)

1. If A is the mother of B, B is the sister of D, D is the father of M, then how A is related to M?

   (A) Mother

   (B) Grandmother

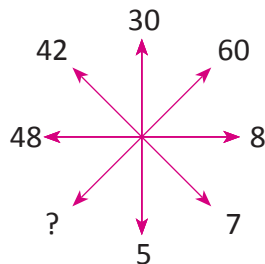   (C) Aunt

   (D) Need more information

2. Which of the following options completes the given series?
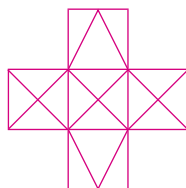
   B C A Y Z X E F D ?

   (A) U

   (B) V

   (C) W

   (D) T

3. A paper cutout contained six joined squares, labelled as shown, and was folded along the edges of the square to from a cube. What will come opposite to 2?

		5
2	1	3
	4	
	6	

   (A) 6

   (B) 5

   (C) 3

   (D) 1
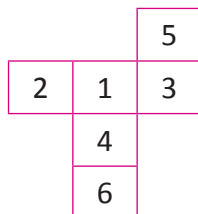
4. Indentify the missing number in the given diagram.

   (A) 12

   (B) 10

   (C) 9

   (D) 6

5. How many squares are there in the given figure?

   (A) 10

   (B) 9

   (C) 7

   (D) 5

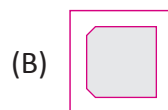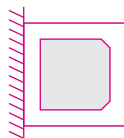6. What should be the next term?

   AC, CF, FJ, JO, _____.

   (A) OU
   (B) OV
   (C) PT
   (D) PU

7. Which of the following is the correct mirror image, when mirror is placed as shown?

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

8. Reaching the meeting on Monday, 20 minutes before 11:30 hours, I found myself half an hour earlier than the manager who was 25 minutes late. What was the scheduled time of the meeting?

   (A) 11:10 hours
   (B) 11:20 hours
   (C) 11:15 hours
   (D) 11:40 hours

Section B (Subject Specific)

(This section contains 25 multiple choice questions. Each question has four choices (A), (B), (C) and (D), out of which only ONE is correct.)

9. x% of y is y% of _____.

   (A) $100\,x$
   (B) $\dfrac{x}{100}$
   (C) x
   (D) $\dfrac{y}{100}$

10. The value of $\dfrac{\frac{1}{2} \div \frac{1}{2} \text{ of } \frac{1}{2}}{\frac{1}{2} + \frac{1}{2} \text{ of } \frac{1}{2}}$ is _____.

    (A) $2\frac{2}{3}$
    (B) 1
    (C) $1\frac{2}{3}$
    (D) 3

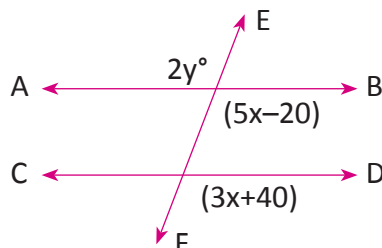11. The solution of $0.2(2x - 1) - 0.5(3x - 1) = 0.4$ is _____.

   (A) $\dfrac{1}{11}$
    (B) $\dfrac{-1}{11}$
    (C) $\dfrac{3}{11}$
    (D) $\dfrac{-3}{11}$

12. If AB||CD and EF is a transversal, then the value of y − x = _____.

(A) 30° (B) 35°

(C) 95° (D) 25°

13. If for ΔABC and ΔPQR the correspondence QPR ↔ CAB gives a congruence, then which of the following is not true?

(A) AP = QR (B) AC = QP

(C) ∠A = ∠P (D) ∠C = ∠Q

14. In the given figure, it is given that LM = MN, QM = MR, ML ⊥ PQ and MN ⊥ PR.

Is ΔMLQ ≅ ΔMNR?

(A) Yes (B) No

(C) May be congruent or may not be (D) Can't say

15. The CP of 25 articles is equal to the SP of 20 articles. Then gain % is _____.

(A) 50% (B) 30%

(C) 25% (D) 20%

16. $\frac{-4}{5} \div 0$ is equal to _____.

(A) $\frac{-4}{5}$ (B) $\frac{-5}{4}$

(C) 0 (D) Not defined

17. If the angles of triangle are in the ratio 1:2:6, then the triangle is _____ triangle.

(A) right angled isosceles (B) right angled

(C) acute angled (D) obtuse angled

18. If the base of a triangle is doubled and its height is halved, then area of the resulting triangle is _____.

(A) remain same (B) decreases

(C) doubles (D) increases

19. Which is the missing term in the following products?

$(2a^3 − 3) (5a^3 − 2) = 10a^6 +$ _____ $+ 6$

(A) $16 a^3$ (B) $−16 a^3$

(C) $19 a^3$ (D) $−19 a^3$
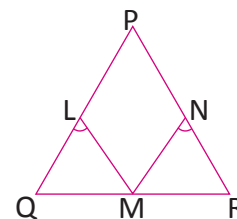
20. Which of the following is equal to 3?

(A) $2° + 3° + 11° + 2^1$

(B) $3 × 3° − 2° + 4°$

(C) $(5° − 11°) × 3$

(D) $(3° −2) + 3 × (3° + 2°) − 3$

21. Rhombus is a figure that has _____ lines of symmetry and has a rotational symmetry.

(A) 2, 2

(B) 3, 3

(C) 4, 4

(D) 2, 1

22. The value of M in $49 × (−7)^M = −343$ is _____.

(A) 1

(B) 0

(C) −1

(D) −2

23. Sneha collects the cards of three cartoon characters. If 2/9 of them are Tweety, 4/9 are Pokemon and the remaining are Noddy, then what fraction of the cards is of Noddy?

(A) $\frac{5}{9}$

(B) $\frac{1}{3}$

(C) $\frac{11}{18}$

(D) $\frac{4}{9}$

24. From a pack of 52 cards, 2 red ace cards have been lost. What is the probability of drawing 2 red kings?

(A) $\frac{1}{13}$

(B) $\frac{2}{25}$

(C) $\frac{2}{51}$

(D) $\frac{1}{25}$

25. Simplify $4.5 − \frac{1}{2}$ of $(7.6 − 3.5) + 2.3 × 4.05$

(A) 11.065

(B) 11.165

(C) 11.765

(D) 11.265

(Read the bar graph carefully and answer the questions from 26 to 28.)

Production of foodgrains in an Indian state during five consecutive years
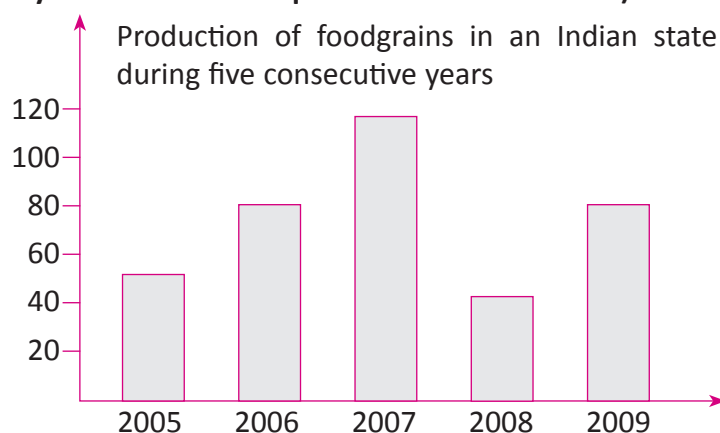
26. After which year was there a sudden fall in the production?

(A) 2008

(B) 2007

(C) 2006

(D) 2005

27. What information is given by the bar graph?
   (A) The given graph shows the annual production of foodgrains in an Indian state during the period 2005 to 2006.
   (B) The given graph shows the annual production of foodgrains in an Indian state during the period 2005 to 2007.
   (C) The given graph shows the annual production of foodgrains in an Indian state during the period 2005 to 2008.
   (D) The given graph shows the annual production of foodgrains in an Indian state during the period 2005 to 2009.

28. The ratio between the maximum and minimum production is _____.
   (A) 5 : 7
   (B) 5 : 4
   (C) 5 : 3
   (D) 3 : 1

29. The solution of $3(b + 2) - (b - 8) = 3(b + 8)$ is _____.
   (A) -10
   (B) 10
   (C) 2
   (D) -3

30. A 26 m ladder is placed against the wall in such a way that the foot of the ladder is 10 m away from the wall. How up on the wall is the upper end of the ladder?
   (A) 20 m
   (B) 18 m
   (C) 24 m
   (D) 25 m

31. In the given figure, if AD = BC and AD || BC, then _____.
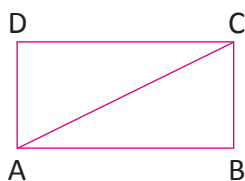
   (A) AB = AD
   (B) BC = CD
   (C) AB = AC
   (D) AB = DC

32. If $3x - 2 = 4$ and $0.06 y = 0.12$, then value of $y^3 - x^3$ is _____.
   (A) 0
   (B) 16
   (C) -8
   (D) -16

33. Write the given expressions in descending order.
   (i) $\dfrac{4^6}{4^4}$
   (ii) $\dfrac{(-2)^7}{(-2)^{12}}$
   (iii) $\left(\dfrac{-4}{2}\right)^4 \div \left(\dfrac{-3}{4}\right)^2$
   (iv) $46 \div 48$

   (A) (i), (iv), (iii) and (ii)
   (B) (iii), (i), (iv) and (ii)
   (C) (i), (iv), (ii) and (iii)
   (D) (i), (iii), (ii) and (iv)

Section C (Competency Based)

(This section contains 7 multiple choice questions. Each question has four choices (A), (B), (C) and (D), out of which TWO are correct.)

34. Which of the following pairs show equivalent rational numbers?

    (A) $\frac{-2}{16}$ and $\frac{1}{-8}$

    (B) $\frac{7}{15}$ and $\frac{15}{7}$

    (C) $\frac{3}{15}$ and $\frac{-9}{-45}$

    (D) $\frac{15}{30}$ and $\frac{-1}{2}$

35. Which of the following CANNOT be written as a rational number with denominator 5?

    (A) $\frac{7}{10}$

    (B) $\frac{35}{25}$

    (C) $\frac{35}{250}$

    (D) $\frac{1}{-5}$

36. Which of the following sets of lengths could be the lengths of the sides of a right angled triangle?

    (A) 1.5 m, 3.6 m, 3.9 m

    (B) 6 cm, 12 cm, 13 cm

    (C) 7 m, 24 m, 25 m

    (D) 9 m, 8 m, 10 m

37. If a wire in the shape of a square is rebent into a rectangle, then the _____ of both shapes remain same, but _____ may vary.

    (A) Sizes

    (B) Perimeters

    (C) Areas

    (D) Shapes

38. If x = 2 and y = 3, then value of $\left[\frac{1}{x^y} + \frac{1}{y^x}\right]$ is _____.

    (A) $\frac{4^2 + 1}{2 \times 6^2}$

    (B) $\frac{3^2 + 2^2}{2 \times 6^2}$

    (C) $\frac{17}{72}$

    (D) $\frac{3^2 \times 2^2}{6^2 \times 9}$

39. Which of the following statements are true?

    (A) The congruent figures superimpose each other completely.

    (B) Two coins of different denominations are congruent.

    (C) Two acute angles are congruent.

    (D) Two angles of same measure are congruent.

40. The simplest value of 2x − [3y − { 2x − (y − x)}] is _____.

    (A) 5x − 4y

    (B) −2x + 3y

    (C) −4y + 5x

    (D) 2x − 3y