STATE LEVEL EXAM (2025 – 2026)

MATHS MARATHON Competition For Excellence	CLASS **7**
Total Questions : 100	**Total Marks : 100** **Time : 80 Minutes**

INSTRUCTIONS TO THE STUDENT'S

1. Please do not open this question paper unless you are instructed.
2. **Don't write anything on question paper, you can carry blank page for rough calculations**
3. Additional 5 minutes will be given to the candidates for filling up the student's details before the start of the competition.
4. The paper consists of 5 different chapters of the textbook.
5. All questions are compulsory and consist of equal marks.
6. Each question is carrying 1 mark; there is no negative marking.
7. There is only one correct answer, hence mark one answer only.
8. **Darken the circle on OMR sheet with blue/black ball pen only.**
9. **Return the answer sheet along with the question paper** to the supervisor at the end of the exam.

Name - _____

SCHOOL - _____

ROLL NO - _____ CLASS - _____

SECTION 1 - OPERATIONS ON ALGEBRAIC EXPRESSIONS

1. Add: $10p^2 + 7q$ and $15p^2 - 3q$
   A) $25p^2 + 14q$ B) $25p^2 + 10q$ C) $25p^2 + 4q$

2. Add: $(7x^2 - 2y^2)$ and $(-4x^2 + 6y^2)$
   A) $11x^2 + 8y^2$ B) $3x^2 + 4y^2$ C) $3x^2 - 8y^2$

3. Add: $(2p - 3q)$ and $(6p + q)$
   A) $8p - 4q$ B) $4p - 2q$ C) $8p - 2q$

4. Subtract: $(5x + 7y)$ from $(9x + 10y)$
   A) $4x + 3y$ B) $14x + 17y$ C) $-4x - 3y$

5. Subtract: $(-3p^2 + 5q^2)$ from $(p^2 - 4q^2)$
   A) $4p^2 + q^2$ B) $4p^2 - 9q^2$ C) $2p^2 + q^2$

6. Multiply: $2x^2y$ X $3xy^2$
   A) $6x^3y^2$ B) $5x^2y^2$ C) $6x^3y^3$

7. Multiply: $-2a$ x $(3a - 4)$
   A) $6a^2 - 8a$ B) $-6a^2 - 8a$ C) $-6a^2 + 8a$

8. Multiply: $-4y$ x $(3y + 7)$
   A) $-12y^2 + 28y$ B) $-12y^2 - 28y$ C) $12y^2 - 28y$

9. Multiply $(x + 2)(x^2 + x + 3)$:
   A) $x^3 + 3x^2 + 5x + 6$ B) $x^3 + 3x^2 + 5x + 3$ C) $x^3 + 2x^2 + 4x + 6$

10. Multiply $(x^2 + 2x + 3)(x + 4)$:
    A) $x^3 + 6x^2 + 11x + 12$ B) $x^3 + 8x^2 + 12x + 12$ C) $x^3 + 4x^2 + 9x + 12$

11. Solve $-5x + 3(2x - 1) = 7x - 3$
    A) 1 B) 2 C) 0

12. Solve $-4y + 7 = 2(y + 7) + y$
    A) 9 B) -1 C) -5

13. If $a + b = 5$ and $ab = 6$, find the value of $a^2 + b^2$.
    A) 13 B) 19 C) 25

14. Factorise completely: $4x^2 - (y - 2)^2$
    A) $(x - y)(x + y)$ B) $(2x - y - 2)(2x + y + 2)$ C) $(2x - y + 2)(2x + y - 2)$

15. A number is 4 more than 3 times another number. Sum of the numbers is 20, find numbers.
    A) 4, 16 B) 8, 4 C) 5, 15

16. The ratio of present ages of A & B is 5:7. Four years later, ratio becomes 3:4. Find current ages.
    A) 25 and 35 B) 20 and 28 C) 15 and 21

17. Simplify: $\frac{x^2-9}{x^2-3x}$
    A) $\frac{x+3}{x}$ B) $\frac{x-3}{x}$ C) $\frac{x+3}{x-3}$

18. Simplify:$(2x-1)^2-(x+3)(x-3)$
A) $3x^2-4x+10$ B) $3x^2-4x-10$ C) $2x^2-4x+1$

19. A father's age is 3 times his son's age. In 5 years, their total age will be 70. Find son's current age.
A) 18 B) 20 C) 15

20. What principal will amount to ₹8,400 in 5 years at 8% p.a. simple interest?
A) ₹7,500 B) ₹7,000 C) ₹ 6,000

SECTION 2 - DIRECT PROPORTION AND INVERSE PROPORTION

21. A truck uses 15 liters of fuel to travel 120 km. How much fuel will it use to travel 200 km?
A) 20 liters B) 25 liters C) 30 liters

22. A printer can print 300 pages in 20 minutes. How many pages can it print in 1 hour?
A) 600 B) 900 C) 800

23. A car consumes 8 liters petrol to run 120 km. How much petrol will it consume to run 180 km?
A) 10 liters B) 15 liters C) 12 liters

24. The cost of 15 chocolates is ₹45. What will be the cost of 25 chocolates?
A) ₹75 B) ₹90 C) ₹60

25. A pump fills a tank with water at rate of 45 liters in 9 mins. How much water can it fill in 25 mins?
A) 128 liters B) 110 liters C) 125 liters

26. A printing press can print 600 pages in 50 minutes. How long will it take to print 1800 pages?
A) 2 hours and 30 minutes B) 2 hours C) 2 hours and 15 minutes

27. If 8 men can complete a task in 18 days, how many men will complete the task in 12 days?
A) 10 men B) 12 men C) 14 men

28. A pipe fills a tank in 12 hours. How long will it take for 3 pipes to fill the same tank?
A) 3 hours B) 4 hours C) 5 hours

29. A pump can empty a tank in 12 hrs. Calculate time to empty the same tank if 3 pumps are used?
A) 4 hours B) 3 hours C) 6 hours

30. If 5 workers can build a wall in 25 days, how long will it take for 10 workers to build the same?
A) 12.5 days B) 15 days C) 20 days

31. The wages of 5 workers for 8 days is ₹4,000. How much will 7 workers earn in 8 days?
A) ₹5,200 B) ₹5,600 C) ₹6,000

32. If 12 taps can fill a tank in 10 hours. How many hours will 15 taps take to fill the same tank?
A) 6 hours B) 10 hours C) 8 hours

33. If 18 workers can complete a job in 20 days, how many days 12 workers will take for same?
A) 25 days B) 30 days C) 35 days

34. If 20 men can build a wall in 18 days, how many days will 30 men take to build the same wall?
A) 10 days B) 15 days C) 12 days

35. A train takes 6 hours to cover a distance at 50 km/h. How long will it take at 75 km/h?
A) 3 hours B) 4 hours C) 5 hours

36. The cost of printing 500 pages is ₹2,000. What will be the cost of printing 1,200 pages?
A) ₹4,800 B) ₹4,000 C) ₹5,200

37. If 10 machines can produce goods in 15 days. How many days will 15 machines take for same ?
A) 10 days B) 8 days C) 12 days

38. If 6 pipes can fill a tank in 10 hours. How long will 12 pipes take to fill the same tank?
A) 4 hours B) 5 hours C) 6 hours

39. A student reads 30 pages in 2 hours. How many pages will he read in 5 hours at the same speed?
A) 60 pages B) 90 pages C) 75 pages

40. A factory uses 450 units of electricity in 15 days. How many units will it use in 25 days ?
A) 700 units B) 750 units C) 800 units

SECTION 3 - CIRCLE, PERIMETER AND AREA

41. What is the formula for the circumference of a circle?
A) $C = 2\pi r$ B) $C = \pi r^2$ C) $C = 2r^2$

42. A wheel has a radius of 0.5 meters. How far will it travel in one complete revolution?
A) 3.14 m B) 1.57 m C) 6.28 m

43. A square ceiling panel measures 4 m on each side. Find perimeter of the ceiling panel?
A) 8 m B) 12 m C) 16 m

44. A square gift box has a side length of 10 cm. What is the length of ribbon required to wrap around its edges once?
A) 30 cm B) 40 cm C) 50 cm

45. A rectangular carpet has a length of 8 m and a width of 6 m. Find total length of the border?
A) 26 m B) 32 m C) 28 m

46. A swimming pool is 25 m long and 10 m wide. What is the perimeter of the pool?
A) 60 m B) 70 m C) 80 m

47. A rectangular room is 10 m long and 6 m wide. Find area of the room?
A) 50 m^2 B) 70 m^2 C) 60 m^2

48. A farmer has a rectangular field that is 40 m long and 25 m wide. What is the area of the field?
A) 900 m^2 B) 1,000 m^2 C) 1,200 m^2

49. A triangular flower bed has a base of 5 m and a height of 3 m. What is area of the flower bed?
A) 7.5 m^2 B) 6 m^2 C) 8 m^2

50. A cube-shaped gift box has a side length of 5 cm. What is the total surface area of the box?
A) 125 cm^2 B) 160 cm^2 C) 150 cm^2

51. A sugar cube has a side length of 1 cm. What is the total surface area of the sugar cube?
A) 6 cm^2 B) 8 cm^2 C) 10 cm^2

52. A toy cube has a side length of 9 cm. What is its total surface area?
A) 450 cm² B) 486 cm² C) 512 cm²

53. A wooden crate has 25 m (length), 20 m (width), and 15 m (height). Find total surface area?
A) 2,350 m² B) 2,750 m² C) 3,000 m²

54. A wire is bent to form a circle of radius 7 cm. Find the length of the wire.
A) 22 cm B) 44 cm C) 88 cm

55. Find the area of a circular field whose radius is 21 m.
A) 1,254 m² B) 1,452 m² C) 1,386 m²

56. The perimeter of a rectangle is 84 m. If its length is 25 m, find its breadth.
A) 15 m B) 19 m C) 17 m

57. A circular running track has a radius of 28 m. Find distance athlete covers in one round?
A) 88 m B) 176 m C) 352 m

58. The side of a square garden is 25 m. What is the cost of fencing it at ₹8 per metre?
A) ₹600 B) ₹700 C) ₹800

59. A wall of length 15 m and height 4 m is to be painted. What is the area to be painted?
A) 60 m² B) 45 m² C) 75 m²

60. A room is 12 m long & 9 m wide. Find number of square tiles of side 1 m required to cover floor?
A) 96 B) 108 C) 120

SECTION 4 - SIMPLE INTEREST / PYTHAGORAS' THEOREM

61. If a sum becomes ₹13,500 in 3 yrs & ₹16,500 in 6 yrs at simple interest. Find the principal.
A) ₹10,500 B) ₹12,000 C) ₹15,000

62. The simple interest on a sum of money for 3 years is ₹1,080 at 6% p.a. Find the principal.
A) ₹5,000 B) ₹6,000 C) ₹7,000

63. A sum of ₹20,000 is invested for 8 yrs. If SI earned is 80% of principal, find the rate of interest.
A) 8% B) 10% C) 12%

64. The difference between simple interest on ₹15,000 for 5 years and on ₹20,000 for 3 years is ₹450. What is the rate of interest per annum?
A) 3% B) 4% C) 6%

65. A sum doubles itself in 10 yrs. In how many yrs will it become four times itself ?
A) 20 years B) 30 years C) 40 years

66. A sum of money triples itself in 10 yrs at simple interest. How much interest will it earn in 20 yrs?
A) 4 times the principal B) 3 times the principal C) 2 times the principal

67. A sum of money earns ₹2,400 as simple interest at 8% p.a. in 5 years. Find the principal.
A) ₹5,000 B) ₹6,000 C) ₹7,500

68. At what rate of simple interest will ₹4,000 amount to ₹4,800 in 4 years?
A) 4% B) 6% C) 5%

69. The simple interest on a sum for 2 years is ₹900 at 9% p.a. Find the sum.
A) ₹4,500 B) ₹5,000 C) ₹6,000

70. A sum becomes ₹8,400 in 5 years at 8% p.a. simple interest. Find the principal.
A) ₹6,800 B) ₹7,500 C) ₹6,000

71. A rectangular field is 12 m long and 5 m wide. Find the length of its diagonal.
A) 11 m B) 13 m C) 15 m

72. The hypotenuse of a right-angled triangle is 26 cm and one side is 10 cm. Find the other side.
A) 16 cm B) 20 cm C) 24 cm

73. A rectangular garden is 6 m long and 8 m wide. Find the distance between two opposite corners.
A) 19.6 m B) 21 m C) 10 m

74. A rectangular park is 9 m long & 12 m wide. Find the length of the diagonal path across the park.
A) 15 m B) 18 m C) 21 m

75. A boat goes straight across a river 8 m wide but is carried 6 m downstream by the current. Find the distance travelled by the boat.
A) 10 m B) 12 m C) 14 m

76. The diagonal of a rectangular door is 13 m and its height is 5 m. Find the width of the door.
A) 10 m B) 12 m C) 14 m

77. Two roads meet at right angles. A person walks 9 m along one road and 12 m along the other. Find the shortest distance between the starting and ending points.
A) 15 m B) 18 m C) 21 m

78. A rectangular field is 12 m long & 16 m wide. Find distance between two opposite corners of field
A) 20 m B) 25 m C) 28.3 m

79. A boy climbs a tree and reaches a point 15 m above the ground. The distance of the boy from the foot of the tree is 20 m. Find the length of the rope used by the boy.
A) 22 m B) 25 m C) 30 m

80. An electric pole is 12 m high. A wire from its top is fixed to the ground 5 m away from its base. Find the length of the wire.
A) 11 m B) 13 m C) 15 m

SECTION 5 – ALGEBRAIC EXPRESSIONS - EXPANSION OF SQUARES

81. The expanded form of $(2x - 5)^2$ is:
A) $4x^2 + 10x - 25$ B) $4x^2 - 10x + 25$ C) $4x^2 - 20x + 25$

82. What is the expanded form of $(a - b)^2$?
A) $a^2 + 2ab + b^2$ B) $a^2 - 2ab + b^2$ C) $a^2 - b^2$

83. What is the expanded form of $(x + 2y)^2$?
A) $x^2 + 4y^2 + 4xy$ B) $x^2 + 4xy + 4y^2$ C) $x^2 + 2xy + 4y^2$

84. What is the expanded form of $(a + b)(a - b)$?
A) $a^2 - b^2$ B) $a^2 + b^2$ C) $a^2 + 2ab - b^2$

85. What is the factorization of $4x^2 - 25$?
A) (2x + 25)(2x - 5) B) (4x - 5)(4x + 5) C) (2x - 5)(2x + 5)

86. The factorization of $16a^2 - 81b^2$ is:
A) (4a - 81b)(4a + 81b) B) (16a - 81b)(16a + 81b) C) (4a - 9b)(4a + 9b)

87. What is the sum of squares of 4 and 5 ?
A) 41 B) 36 C) 29

88. Expand (a + b)(c + d):
A) ab + ac + bd + cd B) ac + bd + ab + cd C) ac + ad + bc + bd

89. Simplify (2x + 5) (2x - 5) .
A) $4x^2 - 25$ B) $4x^2 + 25$ C) $4x^2 - 10x + 25$

90. Simplify (3x + 10)(3x - 10) .
A) $9x^2 + 100$ B) $9x^2 - 100$ C) $9x^2 - 30x + 100$

91. Simplify $25x^2 - 49$.
A) (5x - 7)(5x + 7) B) (5x - 7)(5x - 7) C) (25x - 49)(25x + 49)

92. Simplify $81a^2 - 64b^2$.
A) (81a - 64b)(81a + 64b) B) (9a - 8b)(9a + 8b) C) (9a - 8b)(9a - 8b)

93. Simplify $169a^2 - 25b^2$.
A) (169a - 25b)(169a + 25b) B) (13a - 5b)(13a - 5b) C) (13a - 5b)(13a + 5b)

94. Expand and simplify: $(2x + 3y)^2 - (2x - 3y)^2$
A) $12xy$ B) $36xy$ C) $24xy$

95. If $x + y = 10$ and $xy = 21$, find the value of $x^2 + y^2$.
A) 58 B) 79 C) 100

96. Simplify: $(3a - 2b)^2 + (3a + 2b)^2$
A) $18a^2 + 8b^2$ B) $18a^2 + 16b^2$ C) $36a^2 + 8b^2$

97. Which of the following is equal to $(5x - y)^2 - (3x + y)^2$?
A) $16x^2 - 8xy$ B) $16x^2 - 16xy$ C) $8x^2 - 8xy$

98. If $(x - y)^2 = 49$and$x + y = 15$, find the value of xy.
A) 40 B) 48 C) 44

99. Simplify: $(2a + b)^2 - 2(a - b)^2$
A) $2a^2 + 6ab - b^2$ B) $2a^2 + 8ab - b^2$ C) $4a^2 + 6ab - b^2$

100. Find the value of $(10x - 1)^2 - (10x + 1)^2$
A) –20x B) –400x C) –40x

ANSWER

QUE		QUE		QUE		QUE		QUE	
1	C	21	B	41	A	61	A	81	C
2	B	22	B	42	A	62	B	82	B
3	C	23	C	43	C	63	B	83	B
4	A	24	A	44	B	64	A	84	A
5	B	25	C	45	C	65	B	85	C
6	C	26	A	46	B	66	A	86	C
7	C	27	B	47	C	67	B	87	A
8	B	28	B	48	B	68	C	88	C
9	A	29	A	49	A	69	B	89	A
10	A	30	A	50	C	70	C	90	B
11	C	31	B	51	A	71	B	91	A
12	B	32	C	52	B	72	C	92	B
13	A	33	B	53	A	73	C	93	C
14	C	34	C	54	B	74	A	94	C
15	A	35	B	55	C	75	A	95	A
16	B	36	A	56	C	76	B	96	A
17	A	37	A	57	B	77	A	97	B
18	A	38	B	58	C	78	A	98	C
19	C	39	C	59	A	79	B	99	B
20	C	40	B	60	B	80	B	100	C