

MAA MANGLA COACHING INSTITUTE
MANGLA BHAWAN MARANPUR HANUMAN NAGAR GAYA

CLASS 08 - MATHEMATICS
MATHEMATICS

Time Allowed: 3 hours

Maximum Marks: 100

Section A

1. $1 \times \frac{12}{13} = \underline{\hspace{2cm}}$ [1]
a) $\frac{12}{13}$ b) 1
c) 0 d) 12
2. $\frac{13}{19} + \left(-\frac{13}{19}\right) = \underline{\hspace{2cm}}$ [1]
a) $-\frac{13}{19}$ b) 0
c) 13 d) 19
3. Without doing any calculation, find the numbers which are surely perfect squares. [1]
a) 2657 b) 2673
c) 2025 d) 2688
4. 29^2 would have digit at the unit place. [1]
a) 4 b) 2
c) 3 d) 1
5. Find the cube root of -132651. [1]
a) 51 b) -51
c) 15 d) 41
6. What is the cube of double of x? [1]
a) $4x^3$ b) $6x^3$
c) $8x^3$ d) None of these
7. The factors of $x^2 - 4$ are [1]
a) $(x - 2), (x - 2)$ b) $(x - 4), (x - 4)$
c) $(x + 2), (x - 2)$ d) $(x + 2), (x + 2)$
8. Subtract $3pq(p - q)$ from $2pq(p + q)$. [1]
a) $5pq$ b) $5pq^2$
c) $-p^2q + 5pq^2$ d) $-p^2q$
9. Cube of $-\frac{1}{2}$ is [1]
a) $\frac{1}{16}$ b) $\frac{1}{-8}$

- c) $-\frac{1}{16}$ d) $\frac{1}{8}$
10. Evaluate: 7^3 [1]
- a) 343 b) 3
- c) 49 d) 7
11. Write the additive inverse of $\frac{-5}{9}$. [1]
12. Find $\frac{4}{7} \times \frac{14}{3} \div \frac{2}{3}$. [1]
13. Without adding, find the sum: $1 + 3 + 5 + 7 + 9$ [1]
14. Find the square of 32 [1]
15. What is cube of 0.3? [1]
16. What is the smallest number by which $2 \times 2 \times 2 \times 3 \times 3 \times 5$ be divided so that the quotient becomes a perfect cube? [1]
17. Find the value of $983^2 - 17^2$ using identity. [1]
18. Multiply: $(a^2 + 2b^2)$ and $(5a - 3b)$ [1]
19. Express 4^{-3} as a power with the base 2. [1]
20. Express 3.61492×10^6 in usual form. [1]

Section B

21. Subtract the first rational number from the second [2]
- a. $\frac{3}{8}, \frac{5}{8}$
- b. $\frac{-8}{33}, \frac{-7}{22}$
22. Find the multiplicative inverse of $\frac{-5}{8} \times \frac{-3}{7}$. [2]
23. Find the least number that must be added to 1500 so as to get a perfect square. Also find the square root of the perfect square. [2]
24. Find the square root of 9604 by the Prime Factorisation Method. [2]
25. Find out if 10648 is a perfect cube? [2]
26. Prove that if a number is doubled, then its cube is 8 times the cube of the given number. [2]
27. The area of a circle is given by the expression $\pi x^2 + 6\pi x + 9\pi$. Find the radius of the circle. [2]
28. Subtract: $5a^2b^2c^2$ from $-7a^2b^2c^2$ [2]
29. Find x, so that $\left(\frac{2}{9}\right)^3 \times \left(\frac{2}{9}\right)^{-6} = \left(\frac{2}{9}\right)^{2x-1}$ [2]
30. Simplify and write in exponential form : $(-2)^{-3} \times (-2)^{-4}$ [2]

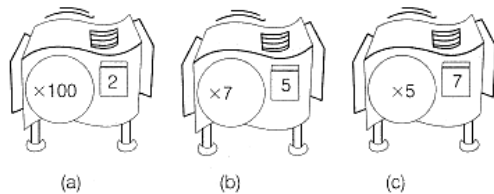
Section C

31. Four friends had a competition to see how far could they hop on one foot. The table given shows the distance covered by each. [3]

Name	Distance covered (in km)
Seema	$\frac{1}{25}$
Nancy	$\frac{1}{32}$
Megha	$\frac{1}{40}$
Soni	$\frac{1}{20}$

- a. How farther did Soni hop than Nancy?

- b. What is the total distance covered by Seema and Megha?
c. Who walked farther, Nancy or Megha?
32. The cost of $2\frac{1}{3}$ meters of cloth is ₹ $75\frac{1}{4}$. Find the cost of cloth per meter. [3]
33. There are 500 children in a school. For a P.T. drill they have to stand in such a manner that the number of rows is equal to number of columns. How many children would be left out in this arrangement. [3]
34. Find the least number which must be added to 252 so as to get a perfect square. Also find the square root of the perfect square so obtained. [3]
35. Add $p^3 - 1$, $p^3 + p + 2$ and $p^2 - 2p + 1$. [3]
36. Find the sum of $4x^2 - 3x + 2$ and $3x^2 + 4x - 8$. [3]
37. Find the value of : $\left\{ \left(\frac{-2}{3} \right)^{-2} \right\}^2$ [3]
38. For the following repeater machines, how many times the base machine is applied and how much the total stretch is? [3]



Section D

39. $\frac{2}{5}$ of total number of students of a school come by car while $\frac{1}{4}$ of students come by bus to school. All the other students walk to school, of which $\frac{1}{3}$ walk on their own and the rest are escorted by their parents. If 224 students come to school walking on their own, how many students study in that school? [4]
40. Find the smallest whole number with which 768 should be multiplied so as to get perfect square number. Also find the square root of the square number so obtained. [4]
41. Find the smallest whole number with which 180 should be multiplied so as to get perfect square number. Also find the square root of the square number so obtained. [4]
42. Divide the number 26244 by the smallest number so that the quotient is a perfect cube. Also, find the cube root of the quotient. [4]
43. Subtract a number x from 6 times that number and then take the cube of the difference. If the result of the difference is 625, then find the value of x . [4]
44. Expand: $(9.7)^2$ [4]
45. Simplify: $(a + b)(2a - 3b + c) - (2a - 3b)c$ [4]
46. Simplify. $(3^{-5} \times 10^{-5} \times 125) \div (5^{-7} \times 6^{-5})$ [4]
47. Simplify : $\frac{25 \times t^{-4}}{5^{-3} \times 10 \times t^{-8}} (t \neq 0)$ [4]