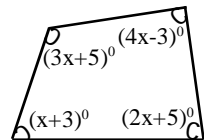43. Consider the following figure:

Find the sum of $\angle A$ and $\angle C$ is

(A) 175^0 (B) 38^0

(C) 137^0 (D) 35^0

44. Sanathoi went to school at the rate of $2\frac{1}{2}$ km/hr and reached the school 6 minutes late. Next days he went to school at the speed of 3km/hr, he reached 10 minutes early. The distance of the school is

(A) 4km   (B) $3\frac{1}{2}$ km

(C) 1km   (D) $3\frac{1}{4}$ km

46. The value of the expression:
$25(x+y)^2 + z^2 + 10z(x+y)$,
when x = -5, y = 5, z = 10

(A) 81   (B) 625

(C) 121   (D) 100

47. A fruitseller sells 5 oranges for a rupee thus gaining 40%. How many oranges did he buy for a rupee?

(A) 6   (B) 8

(C) 7   (D) 9

48. Speed if 55m/s is same as

(A) 198km/h   (B) 11km/h

(C) $15\frac{5}{8}$ km/h   (D) 275km/h

49. Which number is 60% less than 80?

(A) 48   (B) 42

(C) 32   (D) 12

50. The scientific notation of this distance in metre if the mean distance of the earth from the sun is 150000000 km

(A) 15×10^7 (B) 1.5×10^{10}

(C) 1.5×10^8 (D) 1.5×10^{11}

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SPACE FOR ROUGH WORK

27th MVII
(MATHEMATICS)

Time Allowed 1 hour   Maximum Marks : 100

Read the following instructions carefully before you begin to answer the questions.

1. This booklet contains 50 questions in all.
2. All questions are compulsory and each question carries 2 marks.
3. Before you start to answer the questions you must check up this booklet and ensure that it contains all the pages 7 (Seven) and see that no page is missing or repeated. If you find any defect in this Booklet, you must replace it immediately.
4. There will **NOT** be any negative marking for wrong answers.
5. You are required to fill the information on the answer sheet which you will get in the examination hall by **H.B. pencil or BALL point pen(Blue or Black).**
6. **Answer Sheet** and **Question Paper** will be supplied in examination hall. After the test is over, you should hand over the answer sheet to the invigilator before leaving the room.
7. You should write your **Name, Roll No., School name** carefully on the space provided in the answer sheet. Otherwise you will be awarded **ZERO** mark.
8. If you wish to change your answer, **ERASE** completely the darkened circle by using an **ERASER** and then blacken the new circle. If not erased completely, smudges will be left on the erased circle and the question will be read as having two answers and will be ignored for giving any credit. (only for pencil users)
9. Answer the questions as quickly and as carefully as you can. Some questions may be difficult and others easy. Do not spend too much time on any question.
10. You are not allowed to leave the examination hall until you are advised to do so by the invigilator.

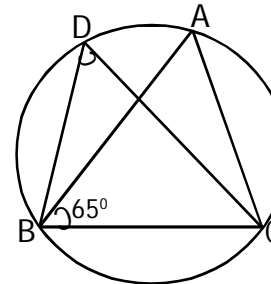For Result out and other information please visit www.moraleducationcentre.in

1. In the standard form of a rational number, the common factor of numerator and denominator is always
   (A) 0   (B) 1
   (C) -2   (D) 2

2. x is a non-zero rational number. Product of the square of x with the cube of x is equal to the
   (A) Second power of x   (B) Third power of x
   (C) Fifth power of x   (D) Sixth power of x

3. Consider the following fractions:
   I. $\dfrac{11}{20}$ II. $\dfrac{8}{15}$ III. $\dfrac{223}{1247}$
   Which of the following is terminating decimals?
   (A) I & II   (B) I & III
   (C) I only   (D) III only

4. Which of the following can be four interior angles of a quadrilateral?
   (A) $140^0, 50^0, 20^0, 160^0$
   (B) $270^0, 150^0, 30^0, 20^0$
   (C) $40^0, 70^0, 90^0, 60^0$
   (D) $110^0, 40^0, 30^0, 180^0$

5. If $x-\dfrac{1}{x}=5$, then the value of $\left(x+\dfrac{1}{x}\right)^2$ is
   (A) 25   (B) 27
   (C) 29   (D) 30

6. A train passes a man standing on a platform in 20 seconds and the platform 250m long in 45 seconds. The length of the train is
   (A) 400m   (B) 200m
   (C) 300m   (D) 250m

7. A shopkeeper bought balloons at the rate of 4 for a rupee. How many balloons must be sold for a rupee so as to gain $33\dfrac{1}{3}$% ?
   (A) 2.5   (B) 2
   (C) 3   (D) 4

8. The length of the diagonal of a square of side 5cm is :
   (A) 5cm   (B) 10cm
   (C) $5\sqrt{2}$ cm   (D) $10\sqrt{2}$ cm

9. Which is greater number in the following?
   (A) $\dfrac{-4}{5}$ (B) $\dfrac{5}{8}$
   (C) $\dfrac{3}{4}$ (D) $\dfrac{7}{6}$

37. In the figure, AB=AC, and $\angle ABC = 65$, $\angle DBC = 100^0$ then $\angle BCD =$

   (A) 30^0 (B) 35^0
   (C) 50^0 (D) 40^0

38. Solve: $\dfrac{x-1}{3}+\dfrac{1}{3}=\dfrac{2x+1}{21}-\dfrac{x}{7}$
   (A) $\dfrac{-1}{8}$ (B) 8
   (C) $\dfrac{1}{8}$ (D) -8

39. Mr. Korou spent 35% his salary on children education, 5% of his salary on food. In August of this year, he spend ₦17600 on this two items. His salary for this month is
   (A) ₦40000   (B) ₦44000
   (C) ₦48000   (C) ₦46000

40. Two rational numbers $\dfrac{a}{b}\ and\ \dfrac{c}{d}$ are equivalent or equal if
   (A) a x c = b x d   (B) a x b = c x d
   (C) a x d = b x c   (D) their product is 1

41. Consider the following relative to the number line
   I. Every positive rational number is greater than zero.
   II. Some positive or negative number may be equal to zero.
   III. If x, y, z are rational number such that x < y and y < z, then x < z.
   IV. If x > y, then x is on the right side of zero in the number line.
   Which of the following is/are true?
   (A) I & II   (B) I, II & III
   (C) I & III   (D) II, III, IV

42. Two vertical pillars of a building stand on a horizontal plane are of heights15m and 7m and the distance between their tops is10m. Find the distance between the foots of the two pillars.
   (A) 8m   (B) 9m
   (C) 6m   (D) 10m

29. A, B and C can complete a work in 10, 12 and 15 days respectively. A left the work 5 days before the work was completed and B left 2 days after, A had left. Number of days required to complete the whole work is

    (A) $8\frac{2}{3}$ (B) $6\frac{2}{3}$

    (C) 7   (D) 6

30. If a sum of 800 amounts to ₹920 in 3 years at the simple interest rate. If the rate is increased by 3% p.a. What will be the amount of the sum in the same period?

    (A) ₹992   (B) ₹962
    (C) ₹942   (D) ₹982

31. Which of the following is additive inverse of $\frac{-4}{7}$?

    (A) $\frac{-4}{7}$ (B) $\frac{4}{7}$

    (C) zero   (D) $\frac{7}{4}$

32. Sanahanbi had to sell vegetables worth ₹5750 for ₹4500 due to sudden curfew. What is the loss percent that she has incurred?

    (A) 21.74%   (B) 23.47%
    (C) 20%   (D) 23.45%

33. Which of the following is not true?

    (A) $ab = \left(\frac{a+b}{2}\right)^2 - \left(\frac{a-b}{2}\right)^2$

    (B) $a^2 + b^2 = (a+b)^2 - 2ab$

    (C) $a^2 + b^2 = (a+b)^2 + 2ab$

    (D) $(a+b)^2 + (a-b)^2 = 2(a^2 + b^2)$

34. The value of $(256)^{0.16} \times (16)^{0.18}$ is

    (A) 4   (B) -4
    (C) 16   (D) -16

35. Factorise: $x^2 + x(a-1) - a$

    (A) (x+a) (a-1)   (B) (x-1) (x+a)
    (C) (x+1) (x-a)   (D) (x-1) (x-a)

36. 40 men can complete a work in 18 days. Eight days after they started working together 10 more men joined them. How many days will they now take to complete the remaining work?

    (A) 6   (B) 8
    (C) 10   (D) 12

10. The product of two number is 1. If one of the number is $\left(\frac{-7}{9}\right)^6$, then the other number is

    (A) $\left(\frac{-9}{7}\right)^6$ (B) $\left(\frac{-7}{9}\right)^6$

    (C) $\left(\frac{-9}{7}\right)^5$ (D) $\frac{9}{7}$

11. The length of the hypotenuse and one side of a right triangle are 313cm and 312cm respectively. Find the length of the other side.

    (A) 40cm   (B) 39cm
    (C) 25cm   (D) 51cm

12. In how many days Doren, Suresh and Budhi can do a work if Doren and Suresh can do the work in 15 days, Suresh and Budhi can do in 10 days and Doren and Budhi can do the same in 12 days?

    (A) 4 days   (B) 9 days
    (C) 8 days   (D) 5 days

13. Malangba invested ₹2100 in Atiya Finance company become ₹2352 in 2 years at simple interest. If the company reduce the rate of interest by 1%. His new interest is

    (A) ₹210   (B) ₹220
    (C) ₹242   (D) ₹252

14. Which of the following is not equal to $\left(\frac{-3}{5}\right)^6$?

    (A) $\left(\frac{-3}{5}\right) \times \left(\frac{-3}{5}\right) \times \left(\frac{-3}{5}\right) \times \left(\frac{-3}{5}\right) \times \left(\frac{-3}{5}\right) \times \left(\frac{-3}{5}\right)$

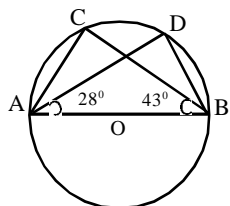   (B) $\frac{(-2)^6}{5^6}$

    (C) $\frac{2^6}{(-5)^6}$

    (D) $-\frac{2^6}{5^6}$

15. ABCD is a trapezium in which AB‖CD and $\angle A = 120^0$, $\angle B = 130^0$. The $\angle C$ is equal to

    (A) 70^0 (B) 60^0
    (C) 50^0 (D) 55^0

16. Match the following

Column I	Column II
(P) $\dfrac{a}{b} \div \dfrac{a}{b}$	(I) $-\dfrac{a}{b}$
(Q) $\dfrac{a}{b} \div \dfrac{c}{d}$	(II) 1
(R) $\dfrac{a}{b} \div (-1)$	(III) $\dfrac{ad}{bc}$
(S) $\dfrac{a}{b} \div \dfrac{-a}{b}$	(IV) -1

(A)
$(P) \rightarrow (I)$
$(Q) \rightarrow (II)$
$(R) \rightarrow (III)$
$(S) \rightarrow (IV)$

(B)
$(P) \rightarrow (II)$
$(Q) \rightarrow (III)$
$(R) \rightarrow (I)$
$(S) \rightarrow (IV)$

(C)
$(P) \rightarrow (II)$
$(Q) \rightarrow (I)$
$(R) \rightarrow (IV)$
$(S) \rightarrow (III)$

(D)
$(P) \rightarrow (IV)$
$(Q) \rightarrow (III)$
$(R) \rightarrow (II)$
$(S) \rightarrow (I)$

17. The value of $x^y - y^x + xy$, if x = 6, y = 2 is
(A) -16
(B) 12
(C) -12
(D) -40

18. Y is directly proportional to x^2, X=2 when Y=20, the value of x when y=1.25 is
(A) 0.3
(B) 0.6
(C) 0.5
(D) 0.8

19. If one-third of a two digit number exceeds its one-fourth by 8, then what is the sum of the digits of the number?
(A) 6
(B) 13
(C) 15
(D) 96

20. Two pipes A and B can fill a tank in 6 hours and 12 hours respectively. If both the pipes are opened simultaneously, how much time will be taken to fill the tank?

(A) 4 hours
(B) $4\dfrac{1}{2}$ hours
(C) 5 hours
(D) none of these

21. Consider the following:
(I) All squares is a rhombus.
(II) Diagonals of a rhombus bisect each other.
(III) There are two pairs of parallel sides in trapzium.
Which of the following statement is/are correct?
(A) I only
(B) II only
(C) I & II
(D) I, II & III

22. In the figure, AB is a diameter and $\angle ABD = 43^0$, $\angle CAB = 28^0$, then $\angle DBC =$

(A) 62^0
(B) 47^0
(C) 19^0
(D) none of these

23. The selling price of an article is $1\dfrac{1}{3}$ of the cost price, then the gain % is

(A) 25%
(B) $33\dfrac{1}{3}$%
(C) 1.33%
(D) $66\dfrac{2}{3}$%

24. Find the number which when decreased by 20%. Again increased 20% to the number obtained, the resulting number is 20 less than the original number.
(A) 200
(B) 400
(C) 500
(D) 600

25. How many men need to be employed to complete a job in 5 days, if 15 men can complete $\dfrac{1}{3}$ of the job in 7 days?
(A) 20
(B) 21
(C) 45
(D) 63

26. A man purchased a T.V. price ₹16000 in loan. He deposites ₹4000. He must clear the amount in 15 months on which he is charged a simple interest at the rate of 12% per year. The total amount he pays for the T.V. is
(A) ₹18200
(B) ₹17800
(C) ₹16800
(D) ₹17200

27. The reciprocal of a negative rational number
(A) is a positive rational number
(B) is a negative rational number
(C) can be either a positive or a negative rational number
(D) does not exist

28. A truck travels 90km/hr in valley area and 70km/hr in the hilly area. It takes $1\dfrac{1}{2}$ hours to cover the valley areas. In total it travels 310km, then the total time taken is
(A) 2.5hrs
(B) 3hrs
(C) 3.5hrs
(D) 4hrs