Grade 08
Unit 09

Maths

Course Outline

- Mensuration
- Playing with Numbers

MAT

(Monthly Achievement Tests)

Short Code: 447309

Test ID: NMM08U090

SOUVENIR INFOTECH

Guide Lines

1. Each set consists of:

50	Warm-up/Foundation Questions
30	Regular Questions
20	Thinking Ability Questions
06	Non-routine Questions

2. The time allocation and instructions regarding the questions are printed clearly in the beginning of each question types. The answers should be written or tick marked as per the instructions given. It is suggested to use pencil initially, so as to enable you to reuse the practice papers.
3. **According to the new pattern of CBSE these practice papers will be very useful especially for syllabus related Quiz, Debates, Visuals related checking and Orals etc.,**
4. After marking the answers, the scores of students can be checked and for marks obtained guidelines are given along with the question solving instructions. Follow those instructions and if, you are fully satisfied with your performance then check for your expected grades as per the CBSE guidelines as given on the back of each set.
5. Remember that this is only a guideline not the finally worked out result. You can further improve your performance by increase your practice.
6. For your convenience please follow following essential examiner's advices:
   a. Answer all the questions
   b. Read all the Options carefully
   c. Understand and use correct scientific language in your responses.

We from SOUVENIR INFOTECH **wish skillful learning for your bright future.**

Before going for the test, look at least :

1. First of all go through the syllabus of the test according to the **Course Outline** provided at the front page of each MAT.
2. After going through the syllabus once or twice or even more time as per your satisfaction, first of all do the Warm-up questions. If you score A+ grade in those 50 questions go to the next level otherwise go through the chapter again.
3. The box for **Specific Information** is very useful as it adds to your concept building. Try to fill specific information in the proper way so that you will get the maximum benefit of it.
4. **Let's Chat** portion will help you to prepare for oral assessment. Through this you can increase your capacity to interact on a particular topic related to your syllabus.
5. The **Extra Diet** portion is also there to enhance you knowledge through visulization of concept. This portion provides you added knowledge on various related concepts.
6. The information related to time factor is there to enhance your time management skills.
7. From the examiners point of view it is always advised to use Pencil for initial efforts. The use of pen is fruitful only when the final effort comes.

Examiner's Tips:

- Read the question carefully. Make sure you understand exactly what is required.
- If you find that you are unable to do a part of a question, do not give up. The next part may be easier and may provide a clue to what you might have done in the part you found difficult.
- Note the number of marks per question as guide to the depth of response needed.
- Underline or note the key words that tell you what is required.
- Underline or note data as you read the question.
- Structure your answer carefully.
- Show all steps in calculations. Include equations you use and show the substitution of data. remember to work according to units given.
- Make sure that your answers contain suitable significant figures (wherever necessary) and must include units in numericals.
- Draw diagrams and graphs carefully.
- Read data from graphs carefully; note scales and prefixes on axes.
- Keep your eye on the clock but don't panic.
- If you have time at the end, use it. Check that your descriptions and explanations make sense. Consider whether there is anything you could add to an explanation or description. Repeat calculations to ensure that you have not made a mistake.

50

Opening Window

To enlighten your fundamental/basic topic knowledge.

A+. If you score 45 or above marks, move to the next section confidently.

A. If you score between 40 and 45 marks, it is satisfactory. Bit more knowledge will bring excellent result.

B. If you score below 40, kindly go through the topic more seriously.

Section A (50 marks) **Time given – 50 minutes + 5 minutes for revision**

Questions 1 to 50 carry 1 mark each.

For questions 1 to 20 four options are given one of them is the correct answer make your choice and write its name (a, b, c or d) in the answer box provided.

1. Determine which of the following number is completely divisible by 5?
   (a) 6 (b) 37
   (c) 94 (d) 95

   T – 1 min
   S – Divisibility

   Ans.

2. Which of the following numbers is completely divisible by 2?
   (a) 31 (b) 97
   (c) 180 (d) 193

   T – 1 min
   S – Divisibility

   Ans.

3. Test the complete divisibility of the following by 10.
   (a) 735 (b) 260
   (c) 652 (d) 415

   T – 1 min
   S – Divisibility

   Ans.

4. Which of the following number is completely divisible by 4?
   (a) 7234 (b) 8236
   (c) 3719 (d) 9631

   T – 1 min
   S – Divisibility

   Ans.

5. Find the area of right angled triangle of base = 12 cm and hypotenuse = 13 cm.
   (a) 15 cm^2 (b) 20 cm^2
   (c) 30 cm^2 (d) 50 cm^2

   T – 1 min
   S – Mensuration

   Ans.

6. What is area of circle with diameter 14 cm?

(a) 145 cm^2 (b) 18 cm^2

(c) 208 cm^2 (d) 154 cm^2

T – 1 min
S – Mensuration

Ans.

7. What is the semi perimeter of circle with area 154 cm^2?

(a) 14 cm (b) 22 cm

(c) 35 cm (d) none of these

T – 1 min
S – Mensuration

Ans.

8. Find the volume of cube whose side is 2 cm.

(a) 7 cm^3 (b) 8 cm^3

(c) 10 cm^3 (d) 12 cm^3

T – 1 min
S – Mensuration

Ans.

9. A cuboidal vessel is 20 cm long and 16 cm wide. How high it must be made to hold 960 cm^3 of a liquid?

(a) 4 cm (b) 5 cm

(c) 3 cm (d) none of these

T – 1 min
S – Mensuration

Ans.

10. What is weight of cuboidal block of ice 50 cm in length, if one cubic metre of ice weight 1800 kg.

(a) 200 kg (b) 150 kg

(c) 225 (d) 250 kg

T – 1 min
S – Mensuration

Ans.

True or False

For questions 11-15, state whether the following statements are true or false:

11. A number completely divisible by 2, is also completely divisible by 4.

T – 1 min
S – Divisibility

Ans.

12. A number completely divisible by 4, is also completely divisible by 2.

T – 1 min
S – Divisibility

Ans.

13. If a number is completely divisible by 5 and 6 both, than it is also completely divisible by 10.

T – 1 min
S – Divisibility

Ans.

14. If two numbers are completely divisible by number 9 then, Their sum is also divisible by the number 9.

T – 1 min
S – Divisibility

Ans.

15. The sum of two odd numbers is always completely divisible by 4.

T – 1 min
S – Divisibility

Ans.

16. Volume of the cylinder is πr^2.

T – 1 min
S – Mensuration

Ans.

For questions 17-18

$$\begin{array}{r} 4\ A \\ 3\ 5 \\ \hline B\ 2 \end{array}$$

17. Find the value of A is 7

T – 1 min
S – Playing with numbers

Ans.

18. The value of B in 9.

T – 1 min
S – Playing with numbers

Ans.

19. A number is odd if one digit is 9.

T – 1 min
S – Playing with numbers

Ans.

20. A number is even one digit is 6.

T – 1 min
S – Playing with numbers

Ans.

Fill in the blanks

For questions 21-25, find the value of A, B and C:

21.
$$\begin{array}{r} A\ 8 \\ +\ 6\ B \\ \hline C\ 0\ 7 \end{array}$$

T – 1 min
S – Playing with numbers

Ans. A = _____
B = _____
C = _____

22.
$$\begin{array}{r} 4\ A \\ +\ B\ 9 \\ \hline C\ 1\ 4 \end{array}$$

T – 1 min
S – Playing with numbers

Ans. A = _____
B = _____
C = _____

23.
$$\begin{array}{r} 7\ A \\ -\ B\ 7 \\ \hline C\ 1\ 5 \end{array}$$

T – 1 min
S – Playing with numbers

Ans. A = _____
B = _____
C = _____

24.
$$\begin{array}{r} 3\ A\ 5 \\ -1\ 9\ B \\ \hline C\ 3\ 1 \end{array}$$

T – 1 min
S – Playing with numbers

Ans. A = _____
B = _____
C = _____

25.
$$\begin{array}{r} B\ 8 \\ \times\ 3\ A \\ \hline 2\ 7\ 2 \\ +C\ 0\ 4 \\ \hline C\ 3\ 1\ 2 \end{array}$$

T – 1 min
S – Playing with numbers

Ans. A = _____
B = _____
C = _____

26. The diagonals of a rhombus bisect each other at _____.

T – 1 min
S – Mensuration

Ans.

27. A cuboid is also known as a rectangular_____.

T – 1 min
S – Mensuration

Ans.

28. A triangular pyramid is called a_____.

T – 1 min
S – Mensuration

Ans.

For questions 29-30

$$\begin{array}{r} A\ B \\ \times\ \ 5 \\ \hline 3\,A\,B \end{array}$$

T – 2 min
S – Playing with numbers

29. The value of A is _____.

Ans.

30. The value of B is _____.

Ans.

31. Write the following numbers in generalised form:
(a) 25 (b) 73

T – 1 min
S – Simple maths

Ans.

32. Write the following in the usual form:
(a) 10 + 5 + 6 (b) 100 × 7 + 10 × 1 + 8

T – 1 min
S – Simple maths

Ans.

33. Check the complete divisibility of 2146587 by 9.

T – 1 min
S – Divisibility

Ans.

34. Check the complete divisibility of 152875 by 9.

T – 1 min
S – Divisibility

Ans.

35. If the three digit number 24x is divisible by 9, what is the value of x?

T – 1 min
S – Divisibility

Ans.

Match the column

T – 10 min
S – Mensuration

	Column A		Column B
36.	Area of square	(i)	$\pi(\text{radius})^2$
37.	Area of a rectangle	(ii)	$\pi(\text{radius})^2 \times \text{height}$
38.	Volume of a cube	(iii)	$\frac{1}{2}$ diogonal $\times$ diagonal 2
39.	Volume of a cuboid	(iv)	$2\pi \times \text{radius}$
40.	Volume of a cyclinder	(v)	$(\text{side})^3$
41.	Area of a rhombus	(vi)	length × breadth × height
42.	Circumference of a circle	(vii)	length × breadth
43.	Area of triangle	(viii)	$\frac{1}{2}$ × Base × Altinude
44.	Area of a circle	(ix)	Base × height
45.	Area of Parallogram	(x)	$(\text{side})^2$

T – 1 min
S – Mensuration

Ans.

46. Find the total surface area of a cone, if its slant height is 9 dm and diameter of its base is 24 dm.

T – 1 min
S – Mensuration

Ans.

47. The radius of the base of a closed right circular is 21 cm and its height is 1 m. Find the total surface area of the cylinder.

T – 1 min
S – Mensuration

Ans.

48. The areas of two circles are in the ratio 25 : 36. Find the ratio of their circumference.

T – 1 min
S – Mensuration

Ans.

49. Find the area of trapezium whose bases are 24 cm and 16.4 cm and whose altitude is 1.5 dm.

T – 1 min
S – Mensuration

Ans.

50. Find the area of a parallelogram whose base is 12 cm, and the corresponding side being 7 cm.

T – 1 min
S – Mensuration

Ans.

30

Opening Window

To enlighten your regular knowledge of topic. If you score more than 55 marks here, you have achieved this level brilliantly. Move to the next level of test papers.

Section B (60 marks) **Time given – 45 minutes + 5 minutes for revision**

Questions 51 to 80 carry 2 marks each.

For questions 51-52, find the value of A, B, C, D and E.

51.

$$\begin{array}{r} 7\ A \\ \times\ B\ 6 \\ \hline 4\ 3\ 8 \\ +\ 1\ 4\ 6\ 0 \\ \hline 1\ C\ 9\ 8 \end{array}$$

T – 1 min
S – Playing with number

Ans. A = _____
B = _____
C = _____

52.

$$\begin{array}{r} 4\ C \\ 8\overline{)\ 3\ A\ B} \\ D\ E \\ \hline 5\ B \\ 5\ B \\ \hline x \end{array}$$

T – 1 min
S – Playing with number

Ans. A = 7
B = 6
C = 7
D = 3
E = 2

For questions 53-55, complete the square given below with number 0–9.

53. So that the sum of the numbers along each row, column or diagonal is 12.

5	0	
	4	

T – 1 min
S – Playing with numbers

Ans.

54. So that each row, each column and each diagonal totals up to 21.

8	3	
	7	
4		

T – 1 min
S – Playing with numbers

Ans.

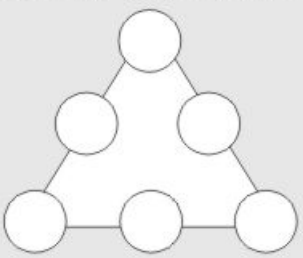
55. So that each row, each column and each diagonal total up to 34.

1		14	4
	6		9
8			
13	3		16

T – 1 min
S – Playing with numbers

Ans.

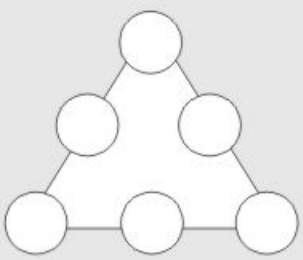
56. Fill in the numbers 1–7 (without repetition), so that each side of the magic triangle adds up to 15.



T – 1 min
S – Playing with numbers

Ans.

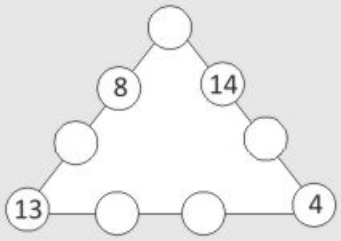
57. Fill the number 1–9 (without repetitions), so that each side of the magic triangle adds up to 18.



T – 1 min
S – Playing with numbers

Ans.

58. Fill suitable numbers (without repetition), so that each side of the magic triangle adds up to 35.



T – 1 min
S – Playing with numbers

Ans.

59. If 31z5 is a multiple of 3, where z is a digit, what might be the values of z?

T – 1 min
S – Playing with numbers

Ans.

60. If 31z5 is a multiple of 9, where 3 is a digit, what is the value of z?

T – 1 min
S – Playing with numbers

Ans.

61. If M three digit number 24P in dividible by 9. What is the value of P

T – 1 min
S – Playing with numbers

Ans.

62. Check the diviribity of 3894 by 3.

T – 1 min
S – Playing with numbers

Ans.

63. Check the diviribity of 68924 by 9

T – 1 min
S – Playing with numbers

Ans.

64. Check the diviribity of 78940 by 5

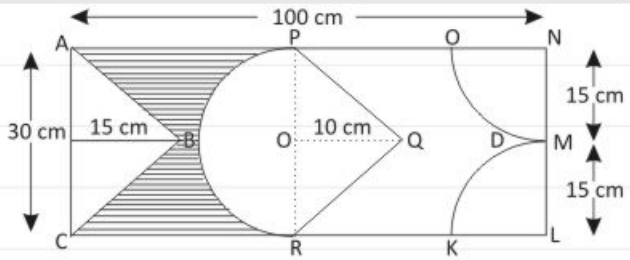
T – 1 min
S – Playing with numbers

Ans.

65. Check the diviribity of 897625 by 5

T – 1 min
S – Playing with numbers

Ans.



Calculate the area of following

66. Area of a triangle ABC.

T – 12 min
S – Mensuration

Ans.

67. Area of shaded region A B C R S P.

Ans.

68. Area of Semicircle P O R S

Ans.

69. Area of P S R Q

Ans.

70. Area of K L M N O D

Ans.

71. Area of P O D K R O P

Ans.

For question no. 72-74 The internal measures of a room are 14 m × 9 m × 4 m

72. Find the quantity of air inside the room.

T – 8 min
S – Mensuration

Ans.

73. Find the area of the floor

Ans.

74. Find the area of cost of white washing all four walls of a room. The cost of white

Ans.

75. What will be the cost of white washing in Rs 25 per m^2.

Ans.

76. Find the height of a cylinder when radius in 21 cm and the total surface area is 4400 cm^2.

T – 2 min
S – Mensuration

Ans.

77. A rectangular paper 12 cm × 8 cm is folded without overlapping to make a cylinder of height 8 cm. Find the volume of the cylinder.

T – 2 min
S – Mensuration

Ans.

78. Find the height of a cuboid whise base area is 180 cm^2 and volume in 900 cm^3.

T – 2 min
S – Mensuration

Ans.

79. The curved surface area of a cylinder in 1320 cm^2 and its volume in 2640 cm^3. Find its height..

T – 2 min
S – Mensuration

Ans.

80. The radius of a right circular cylinder in 5 cm and its height 9 cm. Find the total surface area.

T – 2 min
S – Mensuration

Ans.

20

Opening Window

To enlighten your regular knowledge of topic. If you score more than 50 marks here, you have achieved this level brilliantly. Move to the next level of test papers.

Section C (60 marks) **Time given – 45 minutes + 5 minutes for revision**

81. $8^n - 1$ (n is positive integer) is always divisible by

T – 2 min
S – Playing with numbers

Ans.

82. If $\overline{24y5}$ is a multiple of 3, where y is a digit, the value of y is

T – 2 min
S – Playing with numbers

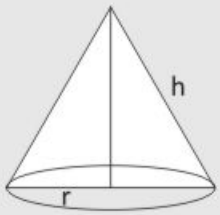
Ans.

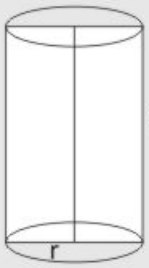
83. If $\overline{24x}$ is a multiple of 11, where x is a digit, the value of x is

T – 2 min
S – Divisibility

Ans.

84. A metallic solid cone is melted and cast into the form of a circular cylinder of the same base as that of the cone. If the height of the cylinder is 7 cm, what was the height of the cone





T – 2 min
S – Mensuration

Ans.

85. The capacity of a closed cylindrical vessel of height 1 m is 15.4 l. How many square metres of metal sheet would be needed to make it?

T – 2 min
S – Mensuration

Ans.

86. The diameter of the Moon is approximately one fourth the diameter of the earth. What fraction is the volume of the Moon of the volume of the Earth?

T – 2 min
S – Mensuration

Ans.

87. The radius of a circle is doubled. What is the ratio of the area of the new circle to the area of the given circle ?

T – 2 min
S – Mensuration

Ans.

88. Find the area of trapezium with base 15 cm and height 8 cm, if the side parallel to the given base is 9 cm long.

T – 2 min
S – Mensuration

Ans.

89. Find the area of a triangle whose area is 3.9 m^2 and whose height is 260 cm.

T – 2 min
S – Mensuration

Ans.

90. Find the area of an equilateral triangle of sides 30 cm each.

T – 2 min
S – Mensuration

Ans.

91. Find the area of an isosceles right triangle of equal sides 40 cm each

T – 2 min
S – Mensuration

Ans.

92. A field is in the form of a triangles. If its area is 2ha and the length of its base is 200 m, then find its altitude. [1ha = 10000 m^3]

T – 2 min
S – Mensuration

Ans.

93. A floral design on the floor of a building consists of 2800 tiles. Each tile is in the shape of parallelogram of altitude 3 cm and base 5 cm. Find the cost of polishing the design at the rate of 50 paise per dm^2.

T	– 2 min
S	– Mensuration

Ans.

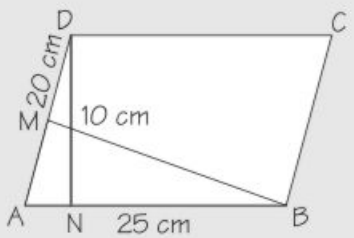
94. Find the altitude of a parallelogram one of whose sides is 10 cm, the area being 0.5 m^2.

T	– 2 min
S	– Mensuration

Ans.

95. Two sides of a parallelogram are 20 cm and 25 cm. If the altitude corresponding to the sides of length 25 cm is 10 cm, find the altitude corresponding to the other pair of sides.

T	– 2 min
S	– Mensuration



Ans.

96. The dimensions of metallic cuboid are 100 cm × 80 cm × 64 cm. It is melted and recast into a cube. Find surface area of cube.

T – 3 min
S – Mensuration

Ans.

97. A cube of 18 cm edge is immerged completely in a rectangular vessel containing water. If the dimension of bases are 30 cm and 24 cm. Find the rise in water level in the vessel.

T – 3 min
S – Mensuration

Ans.

98. The outer dimensions of closed wooden box are 20 cm by 16 cm by 14 cm. Thickness of wood is 2 cm, find total cost of wood required to make box, if 1 cm^3 of wood cost Rs. 2

T – 3 min
S – Mensuration

Ans.

99. A circular kit whose diameter is 7m and dep 4m is dug in the ground and the sail in spread over a pear which in 38.5 m long and 12m wide. Find the height of the sail above the ground.

T	– 3 min
S	– Mensuration

Ans.

100. An iron pipe is 42 cm long and its exterior radius in 4 cm If the thickness of the pipe in 1 cm and iron weight 100/g cm^3. Find the height of the pipe.

T	– 3 min
S	– Mensuration

Ans.

These are not compulsory-type questions. But in favour of students, it is advised to solve these questions very carefully. No marks are allowed for this section.

Section D (10 questions) **Time given – 30 minutes + 5 minutes for revision**

101. Express the number appearing in the following statements in standard form:
(a) 1 micron is equal to 1/1000000 m.
(b) Change of an electron is 0.000, 000, 000, 000, 000, 000, 16 coulomb.
(c) Size of bacteria is 0.0000005 m.
(d) Size of a plant cell is 0.00001275 m.
(e) Thickness of a thick paper is 0.07 mm.

Ans.

102. The diameter of the sun 101.4 × 104 m and the diameter of the Earth is 1.2756 × 107 n. Compare the diameter of the Earth with the diameter of the sun.

Ans.

103. On a particular day, the temperature of Delhi at 10 a.m. was 15°C but by the mid night, it fell down at 6°C. The temperature of Chennai at 10 a.m. the same day was 18°C but fell down to 10°C by the mid night. Which fall is greater?

Ans.

104.

A	B	C
9	8	7
17	C	3

A	B	C
9	8	7
17	C	3

Ans.

For question 105-106 The radius of a cylinder in 14 cm and height 51 cm.

105. Find the volume

Ans.

106. covered surface area.

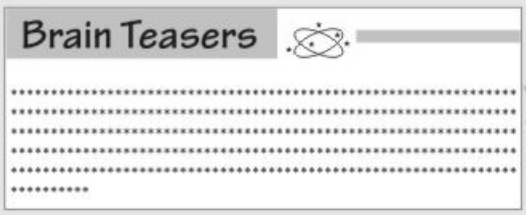
Ans.

Tools at a glance

Opening Window with instructions for your potential analysis and guideline to improve your performance.

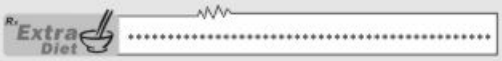
Let's Chat, the feature with suggestive topics for discussion so as to improve your capacity to debate on various topics.

Box with time break-up of questions **(T)** and its concept (**S**, i.e., subject)



Brain Teasers i.e., Questions with difference to make the concepts of students crystal clear. These are the questions with higher difficulty levels to check the grip of the students over the concepts.

Extra Diet, the web link, the notation: www._____ to provide additional information regarding the concept for more clarity of thoughts.



CBSE GRADING PATTERN

As the new pattern includes **CCE** (Continuous and Comprehensive Evaluation) which will be run in two terms i.e., from April to September and October to March. Thus the school will conduct four **Formative** and two **Summative** Assessments.

However, the most generalised version of grades is given below:

MARKS PERCENTAGE	GRADE	GRADE POINT	CATEGORY
91 to 100	A1	10	Exceptional
81 to 90	A2	9	Excellent
71 to 80	B1	8	Very Good
61 to 70	B2	7	Good
51 to 60	C1	6	Ordinary
41 to 50	C2	5	Average
33 to 40	D	4	Below Average
21 to 32	E1	3	Improvement Needed
Below 20	E2	Below 2	Unsatisfactory