

ஆண்டறிதிப் பரீட்சை - 2023 (2024)/ Final Term Test - 2023 (2024)

Grade 9

MATHEMATICS

Two hours

வீனா எண்
சட்டிலக்கம்
Index No.

- Answer questions from 1 to 20 on this paper itself.
- 02 marks for each question.

- 03) Remove brackets and simplify. $(x + 4)(x - 1)$

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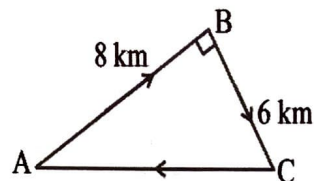
- iv) 26.3

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- A right trapezoid with interior angles labeled 110° , $3x$, $2x$, and a right angle symbol.

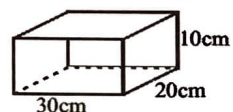
- 09) Write 22_{ten} as a binary number.

10) Make I the subject of the formula, $V = IR + Ir$

- 11) The following diagram shows the way of a boat travelling from harbour A to islands B and C and back to A. Find the distance between A and C.

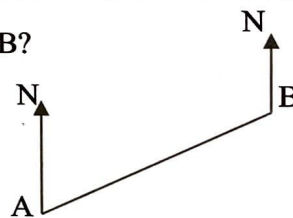


- 12) To fill the following cuboid shaped vessel completely, how many times is it needed to pour water using 600 ml vessel?



- 13) Simplify $\frac{3}{7} + \frac{5}{14}$ of $\frac{2}{5}$

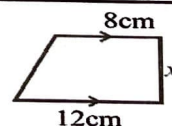
- 14) The bearing of B from A is 080° . What is the bearing of A from B?



- 15) Simplify and write the answer with positive indices. $\left(\frac{3x}{x^{-2}}\right)^2$

- 16) Find the distance of one round of a circular running track with radius 35m.

- 17) The area of the given trapezium is 60cm^2 . Find the value of x .



- 18) Solve the inequality $x - 3 \leq -2$ and find the positive integer suitable for x .

- 19) On a certain day the exchange rate of 1 US Dollar was Rs.325. How many US Dollars were needed to change Rs.65 000?

- 20) PQ is a straight pathway. Draw a rough sketch to represent the locus of a snail which always moves 2 m away from the path

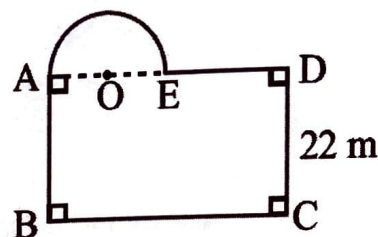


Part II

➤ Answer only 5 questions. Each question carries 12 marks.

- 01) The given figure is a sketch of a park consisting of a semi-circular and a rectangular part. E is the mid-point of AD. The radius of the semi-circle is 7 m.

- i) Find the length of BC. (02 marks)
- ii) Calculate the arc length AE. (02 marks)
- iii) Find the perimeter of the park. (03 marks)
- iv) Find the area of the semi-circular part. (02 marks)
- v) Write the ratio between the area of semi-circular part and the rectangle in the simplest form. (03 marks)



- 02) An incomplete table of values prepared to draw the graph of the function $y = -2x + 1$ is given below.

x	-2	-1	0	1	2	3
y	5	1	-1	-5

- i) Fill in the blanks of the table by representing the way you obtained the answers. (02 marks)
- ii) Draw the graph on a suitable Cartesian plane. (04 marks)
- iii) Write the gradient and the intercept of the graph. (02 marks)
- iv) Write the equation of the straight line which is parallel to $y = -2x + 1$ and passes through the point (0,-3) (02 marks)
- v) Draw the graph of $y = 3$ on the same cartesian plane. Write the coordinates of the point of intersection of the two straight lines $y = -2x + 1$ and $y = 3$. (02 marks)

- 03) i) Solve $\frac{2y}{3} - 1 = 3$ (03 marks)

- ii) Simplify $\frac{2x+1}{5x+1} - \frac{x-2}{5x+1}$ (03 marks)

- iii) In a cricket match, a cricket player scores x number of fours and y number of sixes. Total number of fours and sixes are 12. Number of fours are 2 more than the number of sixes. Using the above information construct a pair of simultaneous equations and by solving them find the number of fours and sixes separately. Find the score obtained from only fours and sixes. (06 marks)

- 04) a) An ungrouped frequency distribution prepared using the information collected on the ages of a group of students who practiced gymnastic is given below.

Age (years) (x)	12	13	14	15	16	17
No. of students (f)	2	3	4	7	5	4

- i) Find the range of the ages of students. (01 mark)
- ii) Find the median age of a student. (02 marks)

iii) By preparing a table including fx column, calculate the mean age of a student to the nearest whole number. (04 marks)

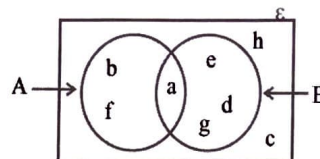
b) Answer the following questions according to the Venn diagram given.

i) Copy the given Venn diagram and shade the region $(A \cup B)'$ (01 mark)

ii) Write $(A \cup B)$ (01 mark)

iii) Find $n(A)'$ (01 mark)

iv) Write the probability of a letter selected from the above universal set being an element of the set A or set B. (2 marks)



05) Use only a straight edge with a cm/mm scale and a pair of compasses for the following constructions.

i) Construct a straight line segment of length 7 cm and name it as AB. (01 mark)

ii) Construct the perpendicular bisector of AB and name the point of intersection of it and AB as O. (02 marks)

iii) Construct a semi-circle with centre O and the radius OA. (02 marks)

iv) Mark the point C on the semi-circle such that $\angle BAC = 60^\circ$ and complete the triangle ABC. (03 marks)

v) Construct the locus of a point equidistant to CA and CB. Mark the point of intersection of that locus and the above perpendicular line as D. Write the relationship between AD and BD. (04 marks)

06) a) Paint should be applied on a 180 m long wall. On the first day the workers who were assigned for the task painted $\frac{4}{9}$ of the wall.

i). Find the length of the wall painted on the first day in meters. (02 marks)

ii). On the second day $\frac{1}{6}$ of the wall was painted and finished painting on the third day.

What fraction of the wall painted on the third day? (03 marks)

b) A Rs. 60 000 worth refrigerator can be bought at Rs. 54 000 for an outright purchase.

i) Find the discount given. (02 marks)

ii) If the seller bought that refrigerator for Rs. 45 000, What is the profit percentage gained by him when selling it for outright purchase. (02 marks)

iii) If Rs. 900 was received as the discount when buying an another electrical equipment of which a 15% of discount is given, what is the marked price of it? (03 marks)

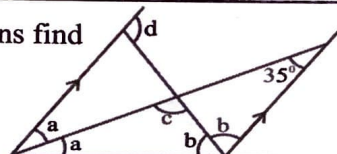


07) a) According to the information given in the figure, by giving reasons find

i) the value of a (02 marks)

ii) the value of $2a + 2b$ (01 mark)

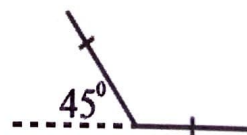
iii) the values of b, c and d (06 marks)



b) A vertex of a regular polygon is given in the figure. The magnitude of an exterior angle is 45° .

i). How many sides are there in the polygon? (01 mark)

ii). Find the sum of the interior angles of the polygon. (02 marks)





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