පළාත් අධානපන දෙපාර්තමේන්තුව - උතුර மாகாணக் கல்வித் திணைக்களம் - வட மத்த DEPARTMENT OF EDUCATION – NORTH CENTRA Grade First Term Test - 2023	ப் லாதாணம் திய மாகாணம் AL PROVINCE 3					
11 Subject :- Mathematics I						
School Name :						
Index Number :	Time : 2 hours					
Part A						
Answer all the questions on the paper itself using the	e provided space.					
01) In which perfect square numbers, the value of $\sqrt{12}$ lies?						
02) If a person who lent 15 000 rupees at a simple interest rate, receive end of a year, find the annual interest rate charged.	ed 1 200 rupees as an interest at the					
03) According to the information given in the figure, find the magnitude 140 <sup>0</sup> (04) Find the gradient of the straight line passing through the point (1, 3)	and the intercept is 1.					
05) According to the information given, express the set represented by the $e = \{$ Students in a $P = \{$ Students those $Q = \{$ Students	he shaded region in words. class } e who study music } e who play cricket } Page 1					

06) Solve the inequality  $3x + 2 \le 8$  and write its positive integral solutions.

- 07) Find the time taken by a vehicle travelled by the uniform speed of  $50 \, kmh^{-1}$  to travel the distance which is travelled by a car travelled by the uniform speed of  $75 \, kmh^{-1}$  within two hours.
- 08) Put the sign  $\sqrt{}$  in front of the the correct statements from the given statements about the parallelogram ABCD.





- 09) Find the value of p and q of  $(x + p)^2 = x^2 + 10x + q$
- 10) 3 men took 4 days to complete  $\frac{1}{3}$  of a certain task. Find the number of days requires completing the remaining part of the task by 8 men.
- 11) Select and write a pair of congruent triangles from the given triangles.



12) Find the 11<sup>th</sup> term of the arithmetic progression of first term 5 and common difference 3.

13) Find the LCM of  $6x^2b$ , 3a,  $9b^2$ 

14) Center of the given circle is O. If AB = 16 cm and OX = 6 cm, find the radius of the circle.



15) Simplify,  $\frac{1}{2a} + \frac{3}{4a}$ 

16) The height of a cylinder of base circumference of 44 cm, is 10 cm. Find the area of the curved surface.



- 17) The probability of "getting a white bead" from a container which has similar size 12 white and black beads, is  $\frac{2}{3}$ . Find the number of black beads in the container.
- 18) The figure shows a circle of center O. According to the given information find the value of x and y angles.



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20) ABCD is a rhombus. According to the information given , find the value of x and y angles.



21) If the area of the cross section of the given prism is  $25 \text{ } cm^2$  and its length is 8 cm, find its volume.



22) Express,  $\log_5 125 = 3$  in index notation.

23) If the area of the parallelogram ABCD given in the figure is 90  $cm^2$ , find the area of the triangle ABE.



- 24) There are 45 students in a class. From them 12 has applied for the prefect guild. Find the angle at the center of the sector which is use to represent the above group of applicants in a pie chart.
- 25) A and B are two houses. A coconut plant must be planted by keeping 8 *m* distance from the straight line drawn by joining two houses and the equidistance from the two houses. Indicate the position where the coconut plant is going to plant in a rough sketch using the knowledge of loci.



## Part B

Answer all the questions on the paper using the provided space.

- 01) From the stock of the flour that had been brought for a coconut roti shop built for the Poson festival,  $\frac{3}{5}$  was used on Poson poya day,  $\frac{3}{4}$  of the remaining stock was used on the day after poya day and the rest of the flour stock was used on the day after that.
- i) What fraction of the whole stock is the amount of flour left at the end of the poya day? (01 mark)
- ii) What fraction of the whole stock is the amount of flour used on the day after the poya day? (02 marks)
- iii) If the amount of flour used on the third day (the next day of the day after poya day) is 15 kg, what is the mass of the whole stock of flour he brought to the shop? (03 marks)
- iv) If 1 kg of flour can make 12 rotis, What is the total number of rotis made on all three days? (01 mark)
- v) If 1 kg of flour is bought for 220 rupees and a roti is sold for 70 rupees, find the profit gained by the shop owner from the sale of roti on all three days. (03 marks)
- 02) The given figure shows a garden consists a rectangular shaped part ABCD and a sector shaped part which has arranged to plant the grass.



iii) If the area of the rectangular shaped part is three times the area of the sector shaped part of AC.	t, find the length ( 02 marks )				
iv) A fence is needed to build around the whole ground. Find the length of the fence.	( 02 marks )				
v) If 200 rupees is charged to plant the grass in $1m^2$ , find the total cost for this.	( 02 marks )				
03) a) Mrs. Thenuwara imported a television worth 70 000 rupees. The custom duty of 25% is	is charged for it.				
i) Find the custom duty charged.	(02 marks)				
ii) Find the cost of the item after charging the custom duty.	( 01 mark )				
15 000 rupees had to pay for landing and transportation of the television. In addition to all these expenses, the price of the television has marked to take a profit of 10000 rupees.					
iii) What is the marked price of the television?	(01 mark)				
iv) If VAT of 15% of the marked price should be paid when selling the television, find the has to be paid by the customer to purchase the television.	ne amount which (03 marks)				
b) The assessed annual value of a house was 120 000 rupees. The quarterly rates payable was 3 600 rupees.	on this property				
i) How much was the rate payable per year?	(01 mark)				

i) How much was the rate payable per year?

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ii) Find the percentage of annual rate charged.

04) a) A card is drawn at random from a box containing same shape and size 5 blue colour cards and 1 red colour card and its colour is recorded .After that it is put in the box and another card is drawn back again. (Blue colour cards are denoted by B<sub>1</sub>, B<sub>2</sub>, B<sub>3</sub>, B<sub>4</sub> and B<sub>5</sub> and the red colour card is denoted by R.)

i) Using the symbol '  $\times$  ', represent the sample space of the experiment in the given grid. (03 marks)

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			ii)
			tin

i) In the grid, encircle the event of drawing a red colour card only one ime, and find its probability. (02 marks)

- b) Five blue cards are named as 1, 2, 3, 4, 5 and the red card is named as 1 and put them in a container. As above, first take a card and noted whether it is an odd or an even number. Then it is put again in the container.
- i) Complete the diagram below to represent the first random drawn card from the container. (01 mark)



First taken

ii) The card taken first, is put back into the container and another card is drawn at random. Extend the diagram above to show the relevant probabilities to represent this experiment. (02 marks)

iii) Find the probability of "being the both cards drawn is same type of number". (02 marks)

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05) The following figure shows an uncompleted pie chart about the information of the travelling methods of all the students those who come to a certain school.



i) If 450 children come to school by motorcycles, what is the total number of students in this school?

(01 mark)

ii) If 650 students come by vans and public transport according to the ratio 1:1, find the number of children who come by vans and public transport separately.(02 marks)

iii) Find the angle at the center of the sector which represents the number of children who come from vans.

(02 marks)

iv) If the number of children coming by three wheelers is 6 times the number of children coming on foot and all the students come by using only one of the above methods, complete the pie chart by marking the magnitudes of the angles.