Zonal Education Office, Vadamaradchy
SECOND TERM EXAMINATION-2019

Grade - 09	**MATHEMATICS**	Time : 2 hrs.

Index No.:   Marks :

PART I

❖ **Answer all questions**

1) Write the next two terms of the number pattern.

     2 , 5, 8 , ... , ...

2) Simplify : $\dfrac{1}{3} + \dfrac{1}{2}$

3) How much is 15% of Rs.500

4) Finid the magnitude of x
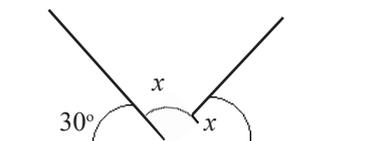
5) Write the prime factors of 24.

6) Indicate the order in which the keys need to be pressed to obtain $2^2 = 4$. with arrow mark, using a scientific calculator.

7) The volume of a bottle is $1500 cm^3$. Write the quantity of soft drink in litre to fill the bottle.

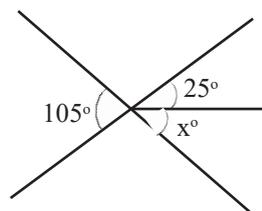8) Write 2019.7 in scientific notation

9) The exchange is Rs. 182.50 for a swiss frank. How many SriLankan rupees will a person who converts 50 swiss franks receive?

10) The general term of the number pattern is $2 + 3n$. Find the 13th term.

11) Simplify : $3 + \dfrac{3}{2} \times 1\dfrac{1}{3}$
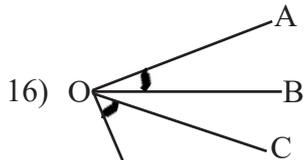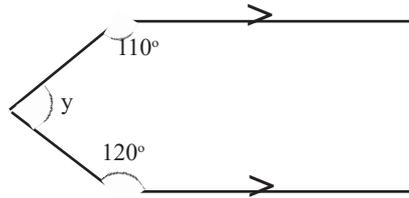
12) Convert 1011_{TWO} as decimal number

13) Find the magnitude of x

14) Round off 1099 to the

i) nearest 10

ii) nearest 100

15) Find the magnitude of y

110°

) y

120°

16) O

A

B

C

If $A\hat{O}B = C\hat{O}D$ prove that

$A\hat{O}C = B\hat{O}D$

17) The area of cross section of a cuboid shaped tank is 750cm². If 3 litres of water is poured in the tank. Find the height of water.

18) When the cost of a bag is Rs.80. The selling price will be Rs.100 Find (i) the profit

(ii) the percentge of profit

19) The length of a side of an equailateral triangle is 20cm. If it made a square shape. Find the length of a side.

20) The distance between the points A and B is 8m. construct the locus of a point moving equidistance from the points A and B and a length of 5m from A. mark the location of the point on the rough diagram.

A   8m
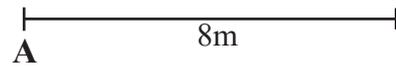
(20x2=40 marks)

PART - II

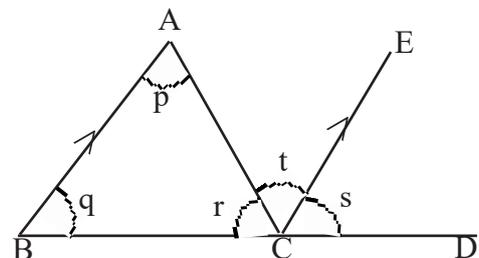**Answer first question and any other four questions.**

1)   a)   Can 70°, 50° and 70° be an interior angles of a triangle. Give the reason.

b)   i) Write an angle equal to "S" , give the reason.

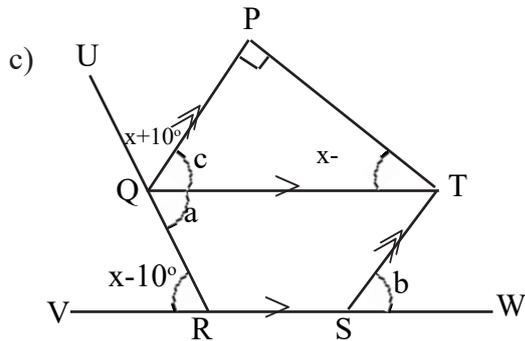ii) Write an angle equal to "t" give the reason.

iii)Represent the sum of   s + t in terms of p and q

A

E

p

q   r   s

B   C   D

iv) Write the theorem obtained from conclusion in question (iii)

v) If $P = 70°$, $q = 50°$ then find the magnitude of $A\hat{C}D$

c)   Find the magnitude of a, b and c

$(2+2+2+1+2+2+5)$

2) a) Solve the equations (i) 7 - 2(3x - 4)=45   (ii) $\dfrac{3x-4}{7}+9=1$

b) A student bought 5 pens and a book for Rs.110 another student bought same type 3 pens and a   book for Rs. 86

i) Construct a pair of simultaneous equations to represent the above information by taking the price   of a pen as Rs. x and the price of a book as Rs. y

ii) By solving the above simultaneous equations find the price of a pen and the price of a book
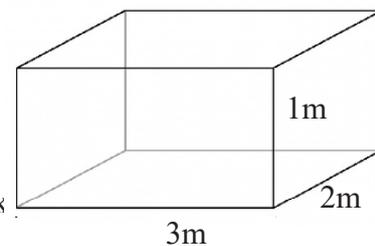
$(2+3+3+3)$

3) a) i) How many litres are there in $1m^3$

ii) Find the capacity of tank in m^3
iii)If the height of water in the tank is 70cm.
    Find the volume of water in it.
iv)How many litres required to completely fill in the tank

b) If 60 litres water flow out the tank in 30 seconds. Howmany litres of water flow out in 125 seconds.

$(2+3+3+3)$

4) a) i) Remove and simplify
        3(2x - 3) + 5(5 - 4x)

ii) Expand and simplify
    (5 - m) (3 - m)

b) Factorise
    i) 3m - 12 + mn - 4n   ii) $a^2 - 10a + 24$
    iii)$3a^2 b^2 - 12$

$(2+2+2+3+2)$

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5) In the follwing constructions, use only a straight edge with a cm/mm scale and pair of compasses show the construction lines clearly

   i) Construct the triangle ABC with AB=6cm , BC=5cm and $\hat{ABC} = 60^o$

   ii) Draw a perpendicular line to AB from C and mark the intersection Point on the line AB as D

   iii) Draw locus of a point equidistance from AB and AC. Mark the intersection point on the line CD as O.

   iv) Draw a circle as centre O and radius OB. Meaure and write the length of radius.

   (4+2+3+2)

6) a) Consider the number 23 and answer the following questions.
   i) Convert 23 as a binary number
   ii) denote the binary number on abacus
   iii)Simplify $23_{ten} + 11_{TWo}$

   b) i) Write 72 as product of power

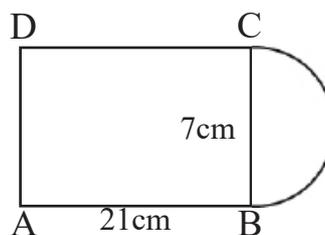   ii) Find the value of $\dfrac{4^2 \times 3^2}{2^3}$

   (2+3+2+2+2)

7) a) i) Make "U" as the subject in the formula $V = U + ft$

   ii) In the formula $S = \dfrac{2}{5}(a + b)$ Make "a" as the subject

   iii)If $S = 50$, $b = 25$. Find the vlaue of "a"

   b) Recall the activity done in the class to find the circumference of the circle
   i) Write the relationship between circumference (c) and diameter (d) of circular object.

   ii) Find the perimeter of compound figure formed by the rectangle and semicircle.

   (2+2+2+1+4)