ZONAL EDUCATION OFFICE - JAFFNA

Second term Examination - 2017

Grade - 10	Mathematics	Time - 3 hours

Part II A

(Answer any 5 questions)

01. A person who has obtained a loan for 3 years at 15% annual simple interest has paid Rs. 116 000 as total amount to realeased from loan.

1) Calculate the interest he had to pay for Rs. 100 for 3 years?
2) Find the amount of loan obtained by him?
3) What is the amount interest he has to pay for 3 years?

(10 marks)

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

x	-3	-2	-1	0	1	2	3
y	8	3	0	.....	0	3	8

a)

1) Complete the table
2) Draw the graph of the function $y = 2x^2 - 1$ by taking 10 small squares as one unit of $x - axis$ and y-axis.

b) Using the graph

1) Write the equation of axis of symmetry?
2) What is the minimum value of the function?
3) Find the interval of values of x for which the function increses positively?

(10 marks)

03.

1) When a particular number us added to both the numerator and denominalo of $\frac{5}{8}$, we get $\frac{7}{8}$. Find the particular number which was added.
2) The price of 2 pens and a pencil is Rs. 26 the price of a pen is Rs. 8 morethan the price of a pencil. Taking the price of a pen is Rs x and the price of a pencil is Rs y.
3) Contruct two simultaneous equations?
4) Find the price of a pen and a pencil by solving two equations.

(10 marks)

04.

1) Simplify $\frac{x+3}{x^2-1} - \frac{1}{x+1}$

2) A water tank of which length 4m, breadth. 3m and height 1.5m issued water in a howe hold.

   a) Find the capacity of water tank.

   b) Find the capacity of water tank in litre?

   c) Find the time taken to filled with water completely by the pipe flow uniform speed of $300l$ per minute.

(10 marks)

05.

1) Find the value of

   $lg50 + lg60 + lg20 - lg6$

2) Solve

   $log_2 50 - log_2 4 = log_2 x - log_2 5$

3) If $lg2 = x, lg3 = y$, Write $lg12$ in x and y

4) Find the value by using logarithimic table.

   $\frac{4.875 \times 83.21}{5.74 \times 12.75}$

(10 marks)

06.

1) Expand and simplify $(2x - 5)(x + 3)$

2) Find the value by using the knowledge of factors $97^2 - 3^2$

3) If $x + y = 7$, $xy = 5$ findthe value of $x^2 + y^2$

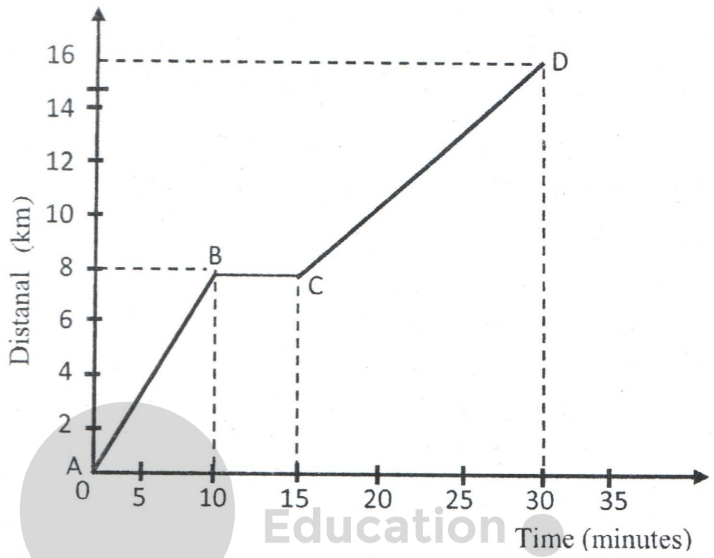
4) Find the solutions of the equation $x^2 - 5x - 6 = 0$

(10 marks)

Part - II B

07. Answer any 5 questions

A distance – time graph illustrating the metion of kumar who cycled to his friend's house and then returned back home after spending some time with his friend is given below.



Answer the following questions by using gruph.

1) Calculate the distance between kumar's home and his friend's home?
2) Howlong did it take him friend's home?
3) Calculate his speed at which kumar cycled to his friend's home?
4) How much time kumar spent at friend's home?
5) Calulate the speed at which kumar retured home?
6) Calculate the total time taken spend by kumar?

(10 marks)

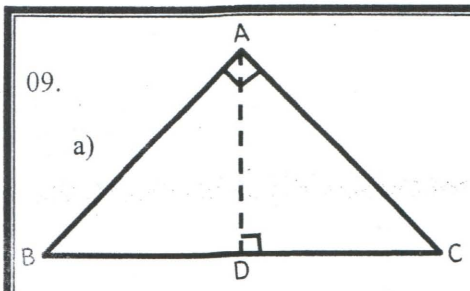
08.

1) Construct a triangle ABC of which $AB = 8cm, B\hat{A}C = 60^{\circ}$ and $AC = 6cm$ by using pairs of compass and ruler.
2) Draw the perpendicular bisector of the side AB.
3) Canstruct the locus of a point moving with equidistance from the points B and C.
4) Mark the point of intersection of (ii and (iii) drawn by you as O.
5) Construct the circle with centre. O and radius OA.
6) Measure and write the radius of circle?

(10 marks)

09.

a)

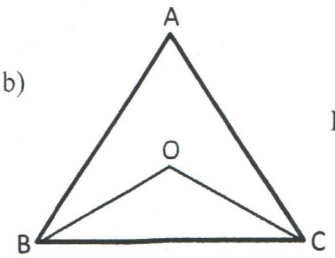


In triangle ABC, AC=40cm, $B\hat{A}C = 90^{\circ}$ and AD ⊥ BC

1) If the area of the triangle ABC is $180cm^2$, Find the length of AB.
2) Find the length of BC.
3) Find the length of AD to the nearest whole number.

(7 marks)

b)



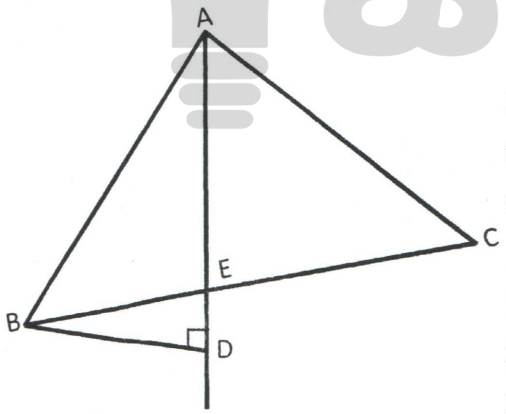
In triangle ABC, bisectors of the angles $A\hat{B}C$ and , $A\hat{C}B$ meet at 'O' Conside $A\hat{B}C = 2x$, , $A\hat{C}B$=2y and $B\hat{A}C = 36$.

Find

1) $2x + 2y$
2) $x + y$
3) the magnitude of $B\hat{O}C$

(3 marks)

10.

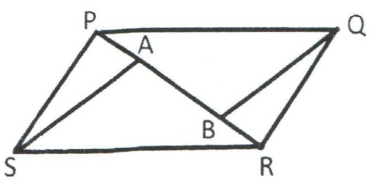


In the ΔABC, AE is the biseotor of the angle $B\hat{A}C$ and BC is the bisector of the angle $A\hat{B}D$. Wher $A\hat{C}B = 75^{\circ}$ by taking $B\hat{A}C = 2a$, and $A\hat{B}D = 2b$

1) Find the value of $2a + b$
2) Find the value of 2b+a
3) Find the value of b.
4) Find the magnitude of $A\hat{E}C$

(10 marks)

11.



$PQRS$ is a parallelogram and $P\hat{A}S = Q\hat{B}R$ prove that,

1) $\Delta PAS \equiv \Delta QBR$ .....
2) $SA \,//\, BQ$ .....
3) $SAQB$ is a parallelogram .....

(10 marks)

12. The following frequency distribution gives the the runs obtaind by mathan for a cricket match which played by him in a particular year.

No. of runs	Midvalue (x)	No. of competitions (frequency) (f)	Midvalue X freyuency x
00 – 20	10	1	$10 \times 1 = 10$
20 – 40	.....	3	
40 – 60	.....	5	
60 – 80	.....	11	
80 – 100	.....	5	
100 – 120	.....	4	
120 – 140	.....	1	

1) Find the total number of competitions of this cricket match played by him?

2) Complete the giventable above?

3) Find the mean value of runs obtainad by mathan?

4) If he played 40 competitions in that year, find the number of runs can obtained by mathan

(10 marks)

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