



**Royal College - Colombo 07**  
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**Grade 10 - First Term Evaluation - July 2021**

Time : 2 hours  
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**Mathematics**  
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Name /Index No : - .....

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Certified Correct.

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Signature of Invigilator

- Important:**
- ❖ This paper consists of 8 pages.
  - ❖ Write your **Index Number** correctly in the appropriate places on this page and on page three.
  - ❖ Answer all questions on this paper itself.
  - ❖ Use the space provided under each question for working and writing the answer.
  - ❖ It is necessary to indicate the relevant steps and the correct units in answering the questions.
  - ❖ Marks will be awarded as follows.  
Two marks each for questions 1 - 25 in part A.  
Ten marks each for questions in part B.
  - ❖ A blank paper can be obtained for rough work from the supervisor on your request.

For Marking Examiner's use only		
Question Numbers		Marks
<b>A</b>	<b>1 - 25</b>	
<b>B</b>	<b>1</b>	
	<b>2</b>	
	<b>3</b>	
	<b>4</b>	
	<b>5</b>	
<b>Total</b>		

**Part A**Answer **all** questions on this question paper itself.

(01) A shirt which was bought for Rs. 450 was sold with a profit of half of its buying price. Find its selling price.

(02) Factorize:  $x^2 - \frac{1}{25}$

(03) Express in the index form  $\log_2 8 = 3$

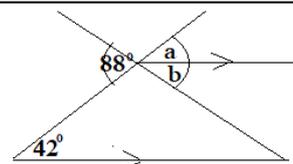
(04) Solve  $5\{3(x+2) - 2(x-1)\} = 15$

(05) Simplify  $\frac{5}{x} + \frac{3}{2x}$

(06) If  $A = \{2,3,7,9\}$  and  $B = \{3,6,9,12\}$ , write the set  $A \cup B$

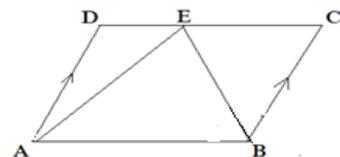
(07) If a small wheel of radius 7 cm rolls around a circular compound of radius 3.5 m once. Find the number of rotations completed by the small wheel.

(08) Find the value of  $a$  and  $b$  based on the information given in the figure.

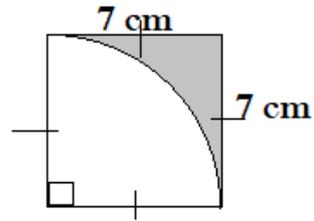


(09) The gradient of the straight line  $2x + ay = 12$  is  $-\frac{2}{3}$ . Find the value of  $a$ .

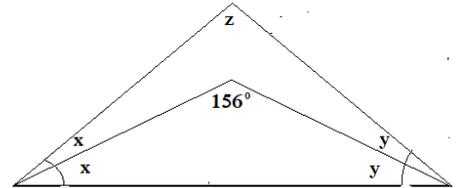
(10) The angles bisectors of  $\widehat{DAB}$  and  $\widehat{ABC}$  meet DC at E. Find the value of  $\widehat{AEB}$ .



(11) Find the perimeter of the shaded part of the given figure.



(12) Using the information given in the figure, find the value of  $z$ .

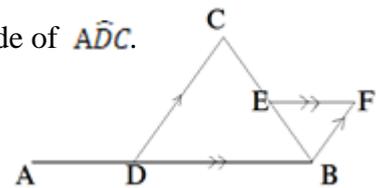


(13) Five men can complete  $\frac{1}{4}$  of a certain task within 4 days. Find the number of days required to complete the same task by 10 men.

(14) If a cyclist travels at a uniform speed of  $24 \text{ kmh}^{-1}$ , find the distance he travels in  $2\frac{1}{2}$  hours.

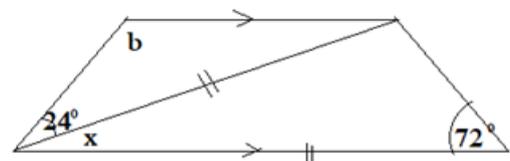
(15) Make  $x$  the subject of the formula  $a = \frac{1+x}{x}$

(16) In the given figure,  $\widehat{CEF} = 150^\circ$  and  $\widehat{EFB} = 70^\circ$ . Find the magnitude of  $\widehat{ADC}$ .

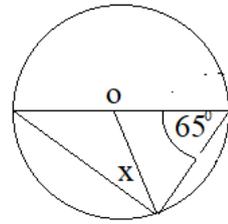


(17) A discount of 20% is offered when a certain item of marked price Rs. 4250 is purchased. Find its selling price.

(18) According to the information given in the figure, find the value of  $b$  and  $x$ .

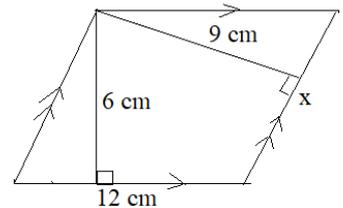


(19) O is the centre of the circle. Find the value of  $x$ .



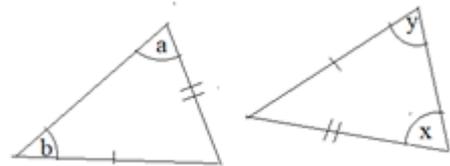
(20) Find the least common multiple of  $5x^2$ ,  $2xy$  and  $4x^2y^2$ .

(21) According to the information given in the figure, find the value of  $x$ .



(22) If two triangles given below are congruent under the case of AAS, fill in the blanks with angles that need to be equal.

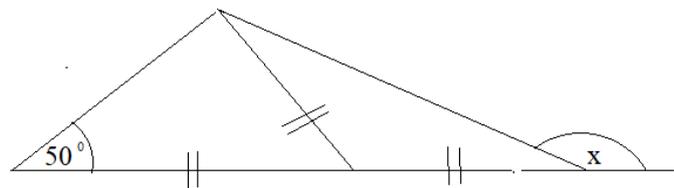
a = .....  
b = .....



(23) Find the mode and the median of the group of the data 5, 12, 3, 8, 9, 9, 4, 6, 15 .

i) Mode ..... ii) Median .....

(24) According to the information given in the figure, find the value of  $x$ .



(25) A and B are two points situated 10 m away from each other. Draw a rough sketch to find the location of the point Z which is 4 m away from AB and 6 m away from the point A.



**Part B**

Answer **all** questions **on this question paper itself.**

(01) In a certain day of a filling station out of the whole fuel stock  $\frac{3}{8}$  was petrol and  $\frac{1}{4}$  was diesel. Half of the remaining fuel was kerosene.

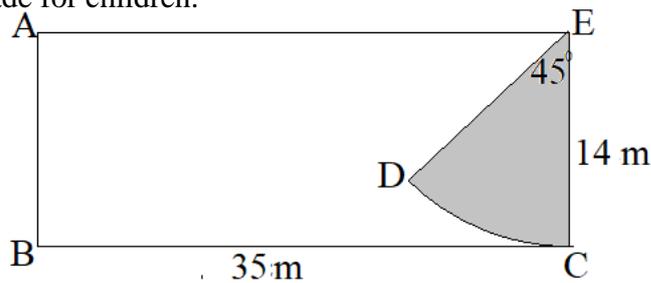
(i) What fraction of the whole fuel stock was filled with petrol and diesel.

(ii) What fraction of the whole fuel stock was filled with kerosene.

(iii) End of the day remaining amount of petrol was 400 l. That was  $\frac{1}{24}$  of the whole fuel stock. Find the amount of petrol, diesel and kerosene in the tank at the beginning of the day separately.

(02) The following figure illustrates a plan of a rectangular swimming pool. There is a children pool with a shape of sector DCE is made for children.

(i) Find the area of the children pool.



(ii) Around the children pool it requires to make a security fence. Find its perimeter.

(iii) Find the area of the pool which is separated for the adults.

(iv) A rectangular portion of ABPQ with a side of AB which is equal to the area of the children swimming pool was build. Draw a sketch diagram related to the above information with the measurements on the same diagram.

(03) (a) A building owner estimated that it would take 16 days to paint a building completely with 10 men. He hires 14 men for the initial 5 days.

(i) What is the magnitude of the task in man days?

(ii) How much of the task will be completed during the first 5 days?

(iii) If the building owner wishes to get the task done in 8 days, how many more men should be employed to complete the task?

(b) A person who wish to travel England, converted Rs. 85 000 into sterling pounds on a day when the exchange rate was Rs. 200. Due to increase of the price of a sterling pound up to Rs. 212 he converted all of the sterling pounds into rupees and bought American Dollars at a rate of Rs. 180.20.

(i) How much extra money did he make by converting the sterling pounds into rupees?

(ii) How many American dollars does he now have?

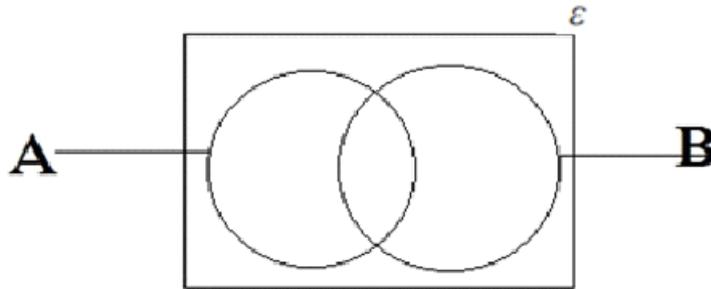
- (04) (a)  $\mathcal{E} = \{ \text{Counting number from 1 to 12} \}$   
 $A = \{ \text{Multiples of 2 between 1 and 10} \}$   
 $B = \{ \text{Prime numbers less than 11} \}$

(i) List the elements of the sets A and B.

A =

B =

(ii) Show these above sets in Venn Diagram given below



(iii) List the elements of the following sets.

(a)  $A \cap B$

(b)  $B \cup A$

(c)  $(A \cap B)'$

(d)  $A'$

(b) A bag contains 12 identical beads. Five of them are red colour beads 2 are yellow colour beads and the rest are pink colour beads. A bead is taken out at a random

(i) Find the probability of obtaining a red bead.

(ii) Find the probability of obtaining a black bead.

(iii) Find the probability of obtaining a red bead or a pink bead.



(05) Given below the weights of Grade 5 students obtained at a health clinic of a certain School

17 25 33 33 38 25 25 29 25 17  
 25 33 25 36 36 38 17 29 38 17  
 38 36 25 33 17 25 38 33 29 38

( i ) Include all the data given above in the following grouped frequency table.

$x$	Tally marks	Frequency ( $f$ )	$fx$
17	###	05	85

( i ) Write the range and the mode of the above distribution.

Range -

Mode -

( ii ) How many students are there having weight 30 kg or above.

( iii ) What is the total weight of the students?

