



**Royal College - Colombo 07**

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**Grade 9 – First Term Test – April 2019**

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**Mathematics – I**

**.Ks;h – I**

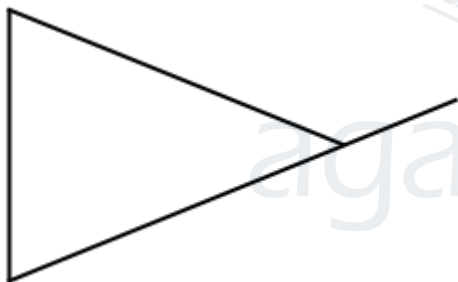
Name :- ..... Grade : -..... Index number:-.....

◆ **Answer all the questions on the paper itself. Each question carries 2 marks.**

1' If the price of the petrol litre is Rs. 200, find the price of 500ml.

2' Express  $1.5m^3$  in litres.

3' Find the value of  $a$ .



4' Find the value of  $100^2 - 99^2$  by applying the knowledge of the factors.

5' If an item is bought at Rs. 5000 and it is sold at Rs. 5500, find the profit percentage.

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6' How many pieces of wire of length  $3\frac{1}{2}$ cm can be cut from a wire of length 70cm?

7' How much is  $\frac{2}{3}$  of  $\frac{3}{7}$  ?

8' Fill in the blanks.

$$a^2 - ab - a = \square \quad (a \square - 1)$$

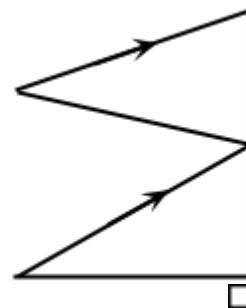
9' Factorize.

$$6 - 15p + 9q$$

10' Write down the complement of  $10^0$ .

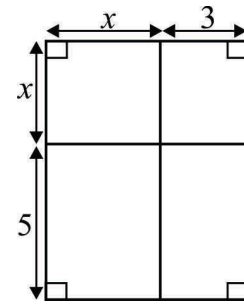
11' The  $n^{\text{th}}$  term of a number pattern is  $2n + 1$ . Find its  $5^{\text{th}}$  term.

12' In the following figure,  $AB \parallel CD$ . Find the value of  $x$ .

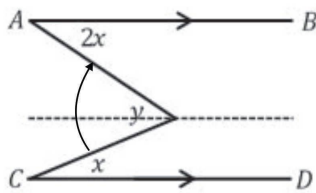


13' When  $a = -2$  and  $b = 4$ , find the value of  $2a - 3b$ .

14' Find the total area of the figure given below in terms of  $x$ .



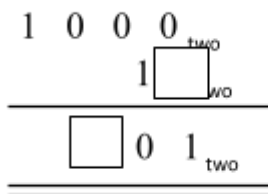
15' In the given figure  $AB$  and  $CD$  are two parallel straight lines. Write the value of  $y$  in terms of  $x$ .



16' Write down the reciprocal of  $3\frac{3}{4}$ .



17' Fill in the blanks.



18' Write down the general term of the number pattern.

7, 10, 13, ...

19' 3% commission is charged on the sale of a land. After paying the commission, the owner of the land is left with Rs. 9700000. What is the selling price of the land?

- 20' A square shaped land is equally divided among two sisters of a family. Each sister has three children. If they divide their portion of the land among their children equally, on what fraction of the total land is owned by one child?

## Mathematics – II

### .Ks;h – II

- ◆ Answer the first question and another 4 questions only. First question carries 16 marks and other questions carry 11 marks each.

- 1' (a) (i) What is a discount? (2 marks)
- (ii) State a purpose of giving discounts. (2 marks)
- (iii) There are two companies which sell the same type of school bags. Among these, the company 'DI' marks the price of a bag as Rs. 2000 and a discount 25% is offered when a bag is sold.
- The company 'CAL' marks the price of a bag as Rs. 1800 and a discount of 20% is offered. Is it more beneficial for the customer to buy a bag from shop 'DI' or shop 'CAL'? Give reasons. (4 marks)
- (b) A land worth Rs. 5000000 is sold through a broker. A commission of 3% is given to the broker.
- (i) How much is the commission?
- (ii) How much does the land owner receive after paying the commission? (4 marks)
- (c) A seller earns a profit of Rs. 9,600 when selling an almirah. If profit percentage is 12%, calculate the purchase price of the almirah. (4 marks)
- 2' (a) Write down the following algebraic expressions as product of two factors.

(i)  $7 - y - 7y + y^2$

(ii)  $x^3 + a + ax^2 + x$

(4 marks)

(b) Factorize the quadratic expressions given below.

(i)  $x^2 + 13x + 42$

(ii)  $x^2 + 5x - 50$

(4 marks)

(c) Simplify the following product of binomial expression.

$(x - 3)(2x + 3)$

(3 marks)

3' (a) Simplify.

$3\frac{1}{3} + 1\frac{1}{2} \times \frac{2}{3}$

marks)

(3

(b)  $\frac{3}{4}$  of a container has been filled with oil.  $\frac{1}{2}$  of the volume of oil has been used. What is the remained portion of oil in the container?

marks)

(4

(c) A person gave  $\frac{1}{2}$  of his money to his wife and  $\frac{1}{5}$  to his son. He decided to give remaining portion to his daughter.

(i) Express the amount received by the daughter as a fraction.

(ii) If the amount received by the daughter is Rs. 60000, find the total amount of money which father had. (4 marks)

4' (a) The general term of a number pattern is  $2 - 5n$ .

(i) Write down first three terms.

(3 marks)

(ii) Which term is  $- 43$ ?

(2 marks)

(iii) Is  $+ 32$  a term of this number pattern? Give reasons.

(2 marks)

(b) (i) Express  $37_{\text{ten}}$  as a binary number.

(2 marks)

(ii) Find the value.



$$\hat{P}OR + \hat{R}OQ = 180^0 \text{ (angles on a straight line)}$$

$$\hat{R}OQ + \underline{\hspace{2cm}} = 180^0 \text{ (angles on a straight line)}$$

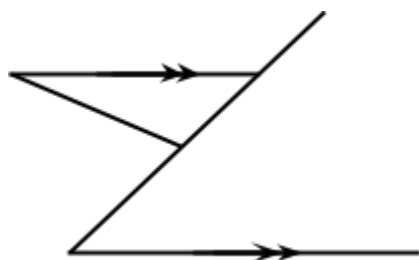
$$\hat{P}OR + \hat{R}OQ = \hat{R}OQ + \hat{Q}OS \wedge \underline{\hspace{2cm}} \&$$

Deduct  $\hat{R}OQ$  from both sides,

$$\underline{\hspace{2cm}} = \hat{Q}OS$$

(3 marks)

(c) Find the values of  $a$  and  $b$  in the given figure.



(4 marks)



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