



Royal College - Colombo 07

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Grade 9 – First Term Test – April 2019

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Mathematics – I

.Ks;h – I

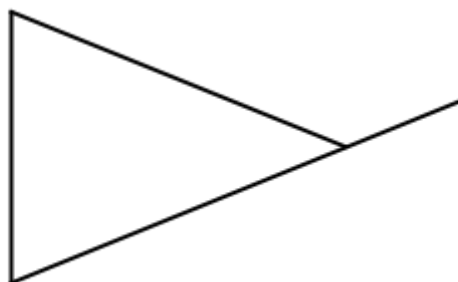
Name :- Grade : -..... Index number:-.....

◆ 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.

6' How many pieces of wire of length $3\frac{1}{2}\text{cm}$ 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.

$$a^2 - ab - a = \boxed{} \quad (a \boxed{} - 1)$$

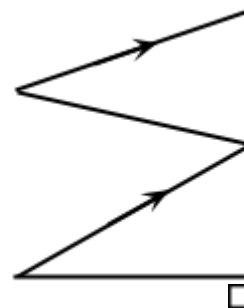
9' Factorize.

$$6 - 15p + 9q$$

10' Write down the complement of 10° .

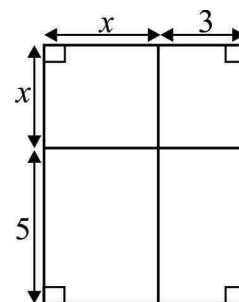
11' The n^{th} term of a number pattern is $2n + 1$. Find its 5^{th} term.

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

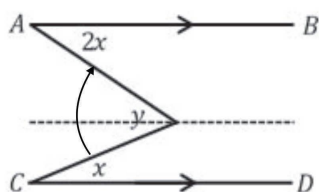


13' When $a = -2$ and $b = 4$, find the value of $2a - 3b$.

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

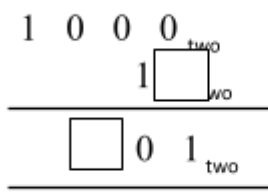


- 15' In the given figure AB and CD are two parallel straight lines. Write the value of y in terms of x .



- 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.

$3\frac{1}{3} + 1\frac{1}{2} \times \frac{2}{3}$ (3 marks)

(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? (4 marks)

(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_{ten} as a binary number. (2 marks)

(ii) Find the value.

$$\begin{array}{r}
 1 \ 0 \ 1 \ 1_{\text{two}} \\
 \underline{1 \ 1 \ 1_{\text{two}}} \\
 \hline
 \hline
 \end{array}$$

(2 marks)

- 5' (a) A cup contains $0.72l$ of medicinal syrup. A cuboidal shaped container with length, breadth and height equal to 8cm, 5cm and 6cm respectively is completely filled by the certain amount of medicinal syrup in the cup. The remaining amount of the syrup in the cup was poured into a cuboid shaped container which has a square base of area 120cm^2 .
- (i) Find the volume of the cuboidal shaped container with length, breadth and height equal to 8cm, 5cm and 6cm respectively in millilitres. (2 marks)
- (ii) Find the volume of syrup which was poured in to the cuboidal shaped container with base area 120cm^2 in millilitres. (2 marks)
- (iii) When the remaining amount of the syrup was poured in to the cuboidal shaped container of base area 120cm^2 , find the height of the syrup in the container. (3 marks)
- (b) The length, breadth and height of a cuboidal shaped container are 3m" 1.5m and 0.7m respectively. Find the capacity of the container.
- (i) in cubic meters.
- (ii) in litres. (4 marks)

6' (a)



- (i) Write a pair of alternate angles. (2 marks)
- (ii) Write a pair of corresponding angles. (2 marks)

(b)

PQ and RS are two straight lines. Fill in the blanks.

$$\hat{POR} + \hat{ROQ} = 180^0 \text{ (angles on a straight line)}$$

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

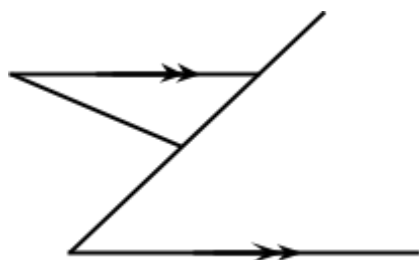
$$\hat{POR} + \hat{ROQ} = \hat{ROQ} + \hat{QOS} \wedge \underline{\hspace{2cm}} \&$$

Deduct \hat{ROQ} from both sides,

$$\underline{\hspace{2cm}} = \hat{QOS}$$

(3 marks)

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



(4 marks)