Jaffna Hindu College

1st Term Evaluation Exam - 2022

Grade - 09	Mathematics	Time : 2.30 hours

Name/ Index No: .....

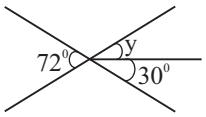
Part - I

❖ **Answer the all questions**.

01. Write the next two term of the following number pattern.

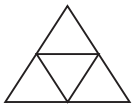
1, 3, 6, 10, ..., ...

02. Find the value of y in the given diagram.



03. Represent the decimal number 2^5 as a binary number.

04. Shade $\frac{3}{8}$ of the given diagram.

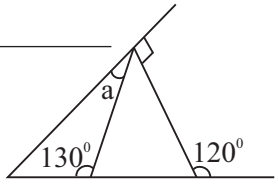


05. Express 0.7 as a percentage.

06. If $74 \times 143 = 10582$, find the value of $10.582 \div 1.43$

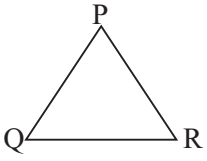
07. Solve. $2x - 1 = 5$

08. Find the value of a in the given diagram.



09. Area of the rectangle is $a^2 + 8a - 20$ and breadth of it is $(a - 2)$. Find expression for the length of the rectangle in terms of 'a'.

10. In the figure, PQ = QR and QR = RP. If PQ = 7.5cm, find the perimeter of triangle PQR.



11. Find the value of 2m - 3n when $m = 5$ and $n = \frac{1}{3}$

12. Factorize: $b^2 - 121$

13. Set A = {Digits of the number 20102}, find n(A).

14. A table was sold at a discount of 10% of the marked price. If it was sold for Rs. 4 500, find its marked price.

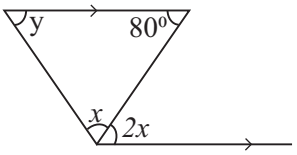
15. Remove the brackets and simplify. $(x + 7)(x - 3)$

16. Put '✓' sign against the true statement and '✗' sign against the false statement below.

$27 \times 1.1 < 27$	
$3^2 + 4^2 = 5^2$	

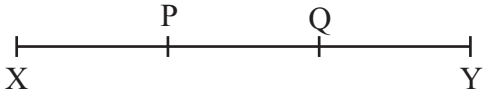
17. Convert $0.5\,m^3$ into ℓ.

18. Find the value of x and y in the given figure.



19. Express $\frac{2}{3}$ of a day in hours.

20. The points P and Q are located on the line XY such that XQ = PY, If XY = 20 cm and QY = 6 cm find the length of PQ.



(20 x 2 = 40 Marks)

Part - II

Q1. a) A Pineapple vendor bought 400 fruits at Rs. 250 each. Out of these, 10% fruits were rotten before selling. The rest of the fruits were sold at Rs. 300 each.

i. Find the price at which the vendor bought 400 pineapples.
ii. How many pineapples were rotten?
iii. How much money did he earn by selling the fresh fruits?
iv. State whether the vendor gained was a profit percentage or a loss percentage.

b) Find the value of b and c if
$(x+7)\ (x-4) = x^2+bx+c$.

(8+2=10 Marks)

Q2. a) A long wire is cut into pieces in such a way that the first piece is 20 cm and every other piece that is cut next is 4 cm longer than the preceding piece.

i. Write down the lengths of the first three pieces separately.
ii. When the lengths of these pieces are taken in order, what is the common term of the progression?
iii. Which piece is 0.56 m long?

b) Find the value.
i. $1011_{two} + 11_{two}$
ii. $10110_{two} - 1011_{two}$

(6+4=10 Marks)

Q3. a) Base area of a cuboid shaped water tank is 4 000 cm^2 and its height is 0.75 m. Water is filled in the tank up to a height of 0.5 m.
i. Find the capacity of the tank in ℓ.
ii. Find the volume of water in the tank (given m^3).

b) Complete the table.

The inner dimensions of the cuboid shaped tank			The capacity of the tank	
Length (m)	Wight (m)	Height (m)	m^3	ℓ
3	1	2	.....	.....
3	2	.....	.....	9000
2	1.5	.....	3	.....

(4+6=10 Marks)

Q4. a) Kobi travels $\frac{2}{3}$ of the journey by bus and $\frac{1}{4}$ of the journey by train.
i. Find the distance travel by bus and train as fraction of the whole journey.
ii. The rest of the journey he traveled by a three wheeler. find the distance traveled by three wheeler as fraction of the whole journey.

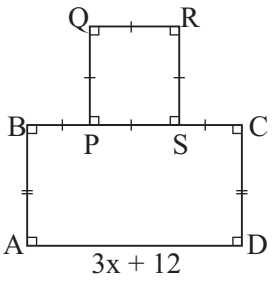
b) Simplify.

i. $\left(\frac{1}{2} - \frac{1}{3}\right) \div 2\frac{5}{6}$

ii. $\frac{3}{7}$ of $1\frac{3}{4}$

c) How many metres in $\frac{1}{8}$ of 2 km? **(4+4+2= 10 Marks)**

Q5. a) If the length and breadth of rectangle ABCD respectively $3x + 12, 10$. PQRS is a square.



i. Find the side of the square in terms of x.
ii. Find the perimeter of the given figure in terms of x.
iii. Find the area of the rectangle ABCD in terms of x.
iv. What is the total area of the whole figure in term at x.

b) Factorize.
$ax - a - x + 1$ **(8+2= 10 Marks)**

Q6. a) A Person bought a bed at Rs. 80 000 and he marked the price keeping 25 % profit.

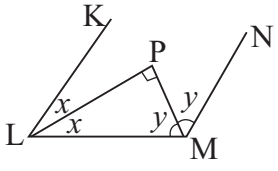
i. Find the marked price.
ii. If 10 % of the discount is given from the marked price at sale, what is the discount?
iii. Find the selling price.
iv. Find the percentage of profit.

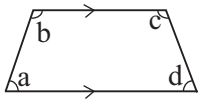
b) If a broker charged Rs. 20 000 for selling a motor cycle which was worth Rs. 250 000, calculate the commission percentage that he charged.

(8+2= 10 Marks)

Q7. a)

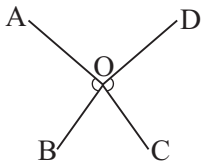
i. Find the value of $x + y$
ii. What is the relationship of KL and MN (give the reason).



b) 

Show that
$a - c = d - b$

c) $A\hat{O}B = C\hat{O}D$
In the given figure.
Show that reflex $B\hat{O}D$ = reflex $A\hat{O}C$



(4+3+3= 10 Marks)