YASODARA DEVI BALIKA MAHA VIDYALAYA

1st Term Test 2020 - Grade 9

Mathematics | E | I | | **2 Hours**

Name : ……..

- Answer all questions.

01. Find the nest two terms of the number pattern 5 , 11 , 17 , ……. , …….

02. Find the first terms of the number pattern with general term $T_n = 4n - 1$

03. 16 write as a binary number.

04. Find the value of $1100_{two} - 110_{two}$

05. $8 \div \frac{4}{5}$ Find the answer.

06. Simplify $\frac{1}{4} \times 3\frac{1}{3} \div 2\frac{1}{6}$

07. Simplify and find the value of $8 - 14 + 24 \div 3$

08. Find the profit percentage of an item sold at Rs 600, which is bought at the price of Rs 500.

09. If 10% profit percentage can earn by selling an item for Rs 6600. Calculate its purchase price.

10. Simplify $0.071 + 1.53$

11. Find the value of $(-5) + 6 \times (-2)$

12. Remove the bracket and simplify $-3(3 - m) + 1$

13. If $p = (-1), q = (2)$. Find the value of
    (i) $2p + q$
    (ii) $3pq - 1$

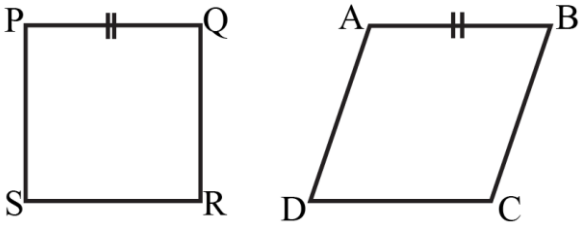
14. Find the factors
    (i) $a - am$ (ii) $x^2 - 2x$

15. Express as a multiples of two factors. $m^2 + 6m - 16$

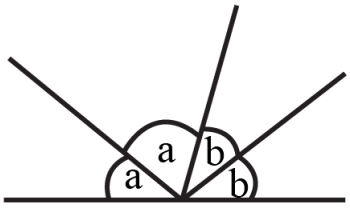
16. Express as a multiples of two factors $4m^2 - n^2$

17. Perimeter of both PQRS square and ABCD rombus are equal.

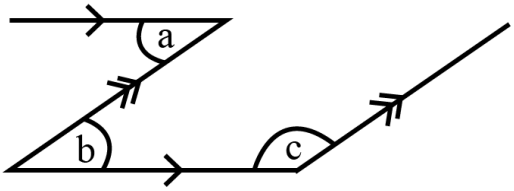
If PQ = 6cm. Find the perimeter of ABCD rombus.



18. Find the value of (a + b) shown in the figure.



- According to the given diagram answer the question 19 and 20.



19. Name a pair of allied angles.

20. Name a pair of altenate angles.

(marks 2 × 2 = 40)

Part II

- Answer five questions including the first question.

01. Two notices displayed during the festive season in two shops which sell the same type of electrical items are given below.

Shop A	Shop B
A discount of 6% on all purchases	A reduction of Rs 6000/= on all purchases of value grater than Rs 100 000/=

(i) How much is offered as a discount when purchasing a television of marked price Rs 150 000/= from "A" shop. (3 marks)

(ii) How much need to be paid when purchasing a television of marked price Rs 150 000/= from "A" shop. (3 marks)

(iii) How much need to be paid when purchasing a television of marked price Rs 150 000/= from "B" shop. (3 marks)

(iv) What is the discount percentage offed by shop "B" for this television (4 marks)

(v) Is it more beneficial for the customer to buy the television from shop "A" or from shop "B" ? (3 marks)

02. (A)

(i) Write as a product of two factors $2(a-1)+3a-3$ (2 marks)

(ii) Simplify using the 'BODMAS' rule $7-(3+1)+4\div 2\times 2^2\div 2$ (3 marks)

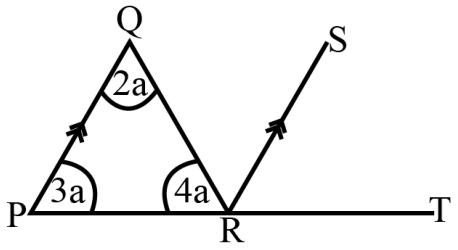
(B)

(i) Find value (i) 10% of Rs 50/= (2 marks)

(ii) $\frac{1}{2}$ of $\frac{1}{3}$ (2 marks)

(C) Find the answer. $101_{two}+11_{two}$ (2 marks)

03.



(i) Shade a pair of corresponding angles in the diagram given above (2 marks)

(ii) Find the magnitude of $S\hat{R}T$ and $Q\hat{R}S$ using a° (4 marks)

(iii) Find the value of a° (2 marks)

(iv) Find the magnitude of each angles given in the diagram using a°. (3 marks)

04. The length , breadth and height of a tank are 3m , 2.5m and 2m respectively.

(i) Express the capacity of the tank in liters (2 marks)

(ii) If the daily water requirement of a person is $100l$, how much water is required daily for 6 people? (2 marks)

(iii) For how many days will the water in this tank be sufficient for 6 people if it is full ? (2 marks)

(iv) If water is supplied to the tank at a rate of $500l$ per minute, how much time is needed to fill the tank if it is empty ? (2 marks)

(v) On a day when the tank is filled to its capacity, $1500l$ of water leaks out due to a fault in the delivery pipeline. Find the height of the remaining water. (3 marks)

05. (A)

(i) $\frac{1\frac{1}{2}+\frac{1}{4}}{\frac{3}{4}}$ (3 marks)

(ii) $\left(1\frac{2}{7} \text{ of } 2\frac{1}{3}\right) \div \frac{3}{5}$ (3 marks)

(B)

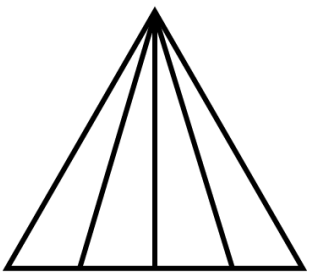
(i) $\frac{1}{4}^{\text{th}}$ of a certain land contains coconut trees. What fraction of total land is the remaining portion of land? (1 marks)

(ii) If $\frac{1}{3}$ of the remaining land contains Manioc. Express the portion of land in which the area Manioc are grown as a fraction of the whole land. (2 marks)

(iii) If the area of the portion in which these trees are not grown is 3 hectares, what is the total area of the land? (3 marks)

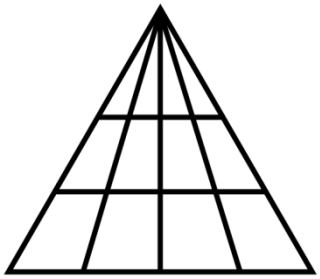
06.

(i) Find the number of triangles in the given figure, using the knowledge of number pattens.



(i) (2 marks)

(ii) Considering the above answer, find the number of triangles in the second diagram given below.



(ii) (3 marks)

(iii) Fill in the boxes and blanks using the knowledge of number patterns.

1. $\frac{2}{1}, \frac{6}{2}, \frac{12}{3}, \frac{20}{4}, \frac{\square}{\square}$ (2 marks)

2. $\frac{1}{8}, \frac{1}{4}, \frac{3}{8}, \frac{1}{2}, \frac{\square}{\square}$ (2 marks)

3. 6 , …….. , 16 , 21 , 26 (2 marks)