A

E -803

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SECOND TERMINAL EVALUATION 2023-24
MATHEMATICS

Time : 1½ Hours

Standard: VIII

Total Score : **40**

Instructions

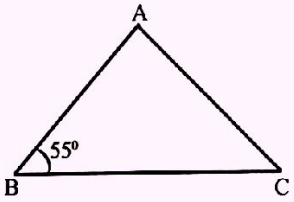
- There is a 'cool off' time of 15 minutes in addition to the writing time. Use this time to get familiar with questions and plan your answers.
- Read the instructions carefully before answering the questions.
- Keep in mind, the score and time while answering the questions. Give explanations wherever necessary.

Write any 4 questions from 1 to 5. Each question carries 2 scores. (4 × 2 = 8)

1. In the figure AB = AC. Then,

   (a) ∠C = ...

   (b) ∠A = ...



2. An inner angle of a regular polygon is 135^0.

   (a) What is the measure of an outer angle?

   (b) How many sides does it have?

3. $(x+y)^2 = x^2 + y^2 + 2xy$.

   Using the above concept, find 101^2.

4. The number of boys and girls in a class are in the ratio 4 : 3. If the number of girls is 21, then

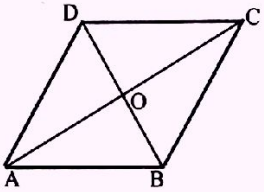
   (a) What is the number of boys?

   (b) Find the total number of students in the class.

5. In the rhombus ABCD, AC = 8 centimetres and BD = 6 centimetres.

   (a) ∠AOD = ...

   (b) AD = ...



Answer any 4 questions from 6 to 11. Each question carries 3 scores. (4 × 3 = 12)

6. Babu deposited 20000 rupees in a bank which pays 6% interest compounded annually.

   (a) What amount will he get after two years?

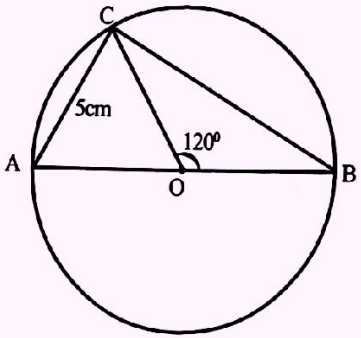
   (b) How much interest will he get?

7. The length of a rectangle is 2 metres more than 3 times its breadth. If the perimeter is 44 metres,

   (a) length + breadth =.....

   (b) Calculate the length and the breadth.

8. In the figure, O is the centre, AB is a diameter and C is a point on the circle.



   (a) What is the measure of $\angle AOC$?

   (b) What is the measure of $\angle OAC$?

   (c) What is the radius of the circle?

9. $(a+b)(a-b)=a^2-b^2$.

   (a) $(a+2)(a-2)=$.....

   (b) Calculate $5.6^2-4.4^2$.

10. (a) Which of the following statements is true regarding the diagonals of a rectangle?

   (i) Diagonals are equal.

   (ii) Diagonals are parallel.

   (iii) Diagonals are perpendicular bisectors of each other.

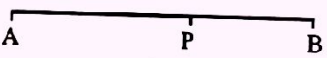
   (iv) Diagonals are different.

   (b) Draw a rectangle of side 5 centimetres and diagonal 6 centimetres.

11. The line AB is divided in to seven equal parts. First four parts together is AP.

   (a) What portion of AB is AP ?

   (b) What portion of AB is PB ?



   (c) What multiple of PB is AP ?

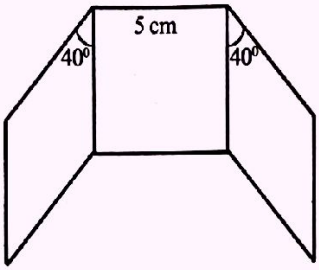
Answer any 5 questions from 12 to 18. Each question carries 4 scores. (5 x 4 = 20)

12. Nithya deposited 40000 rupees in a bank which pays interest compounded half yearly. The annual rate of interest is 10%. After one year she withdraw 15000 rupees.

   (a) How much would she have in her account after withdrawing 15000 rupees?

   (b) How much amount would she have in her account again after six months?

13. A square and two rhombuses are joined as shown in the figure. Draw the figure as per the given measures?



14. Nine numbers in a calender forming a square are marked as shown below.

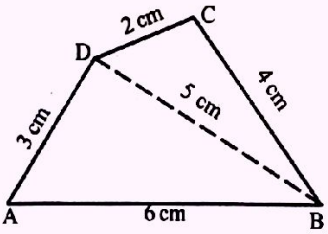
(8)	9	(10)
15	16	17
(22)	23	(24)

(a) Write the diagonal pairs.

(b) Find the difference of the sum of the diagonal pairs.

(c) Explain using algebra, why the difference of sums of diagonal pairs is always equal in all such squares.

15. Draw the quadrilateral ABCD with the given measurements.



16. A company increases the price of a laptop at the rate of 5% every year. If the current price of the laptop is 50000 rupees, then

(a) What will be the price of a laptop after one year?

(b) After two years, what will be the amount of increase in the price of a laptop ?

17. Given $(x+y)^2+(x-y)^2=2(x^2+y^2)$. Using the concept complete the following.

(a) $(3+y)^2+(.....)^2=2(3^2+y^2)$

(b) $(x+1)^2+(x-1)^2=2(x^2+.....)$

(c) $21^2+19^2=2(.....+.....)$

18. Read the mathematical concept given below and answer the following questions.

$1\times3=(1+1)^2-1$

$2\times4=(2+1)^2-1$

$3\times5=(3+1)^2-1$

$4\times6=(4+1)^2-1$

.....

.....

In three consecutive natural numbers, the product of first and third numbers is equal to 1 subtracted from the square of the sum of first and 1.

(a) Write the next line.

(b) $10\times12 = (.....+1)^2-1$

(c) $13\times..... = (13+1)^2-1$

(d) $x\times(x+2) = (.....+.....)^2-1$