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Royal College - Colombo 07

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Year End Evaluation - 2021

Grade 8 **Mathematics** **Time- 2 hours**

Name..... **No** ..... **Class** .....

- **Answer all the questions in this paper itself.**
- **Each question carries 02 marks.**

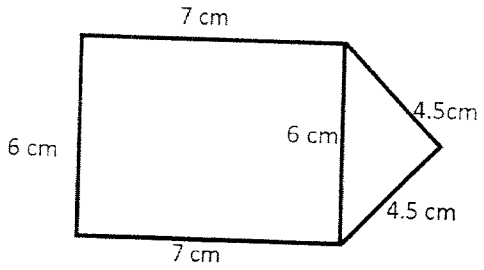
Part 1

(1) In the number pattern of the multiples of 15 starting from 15 and written in ascending order. Find the general term.

(2) The mass of a concrete pillar is 2 t 40 kg . Find the total mass of 6 such concrete pillars.

(3) Find the value of $(-1)^5 \times 3^3$.

(4) Find the perimeter of the figure below.



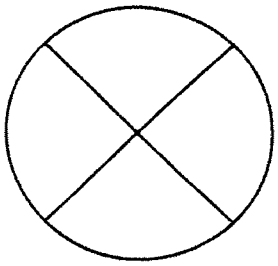
(5) At an angle of magnitude 35^0,

(i) Find the magnitude of the complementary angle.

(ii) Find the magnitude of the supplementary angle.

(6) What is the actual length shown in 8 cm by the scale of 1:50 000

(7) A circular surface shaped piece of wood was cut into 4 pieces of the same shape as shown in the figure. What is the geometric name of the surface shape of one piece?



(8) Find the value.

(i) (-9) - (+11) =

(ii) (-12) ÷(-4) =

(9) (i) What is the number of bilateral symmetrical axes of a rhombus?

(ii) What is the order of rotational symmetry of a regular pentagon?

(10) The values of the four exterior angles of a square are 55^0, 70^0, x^0 And 115^0. Find the value that x can take.

(11) Write two examples of Platonic solids.

(12) Find the square root of 324 using the prime factors.

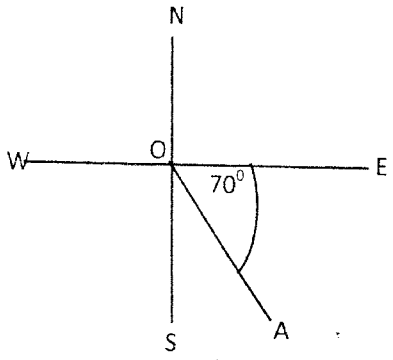
(13) 30 % employees working in an organization are male. If the number of female employees in the organization is 42, find the total number of employees.

(14) Write two plane figures that can be used to create a regular tessellation.

(15) Find the probability of getting a number less than 4 when a regular tetrahedron with its face numbered 1 to 4 is rolled.

(16) Represent the inequality $-3 < x \leq 0$ on a number line.

(17) Write down the direction of A as seen from O.



(18) Find the capacity of a cuboid shaped container of length, width and height are 4.5 m, 0.6 m and 4 m respectively.

(19) Calculate the time in Los Angeles, USA when the time in Sri Lanka $(+5\frac{1}{2})$ is 6.25 pm on 2022.02.22 (Los Angeles City Time Zone is -8)

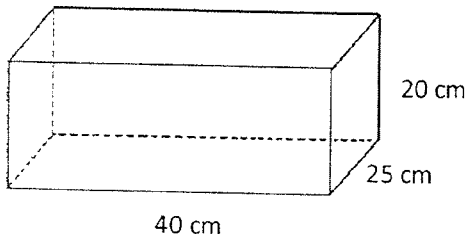
(20) The difference between two consecutive square numbers from 1 till 50 is a square number. Write those two square numbers.

Part II

- **Answer the first question and another 04 questions.**
- **First question carries 16 marks and the other questions carry 11 marks each**

(1) Recollect the activities in the lessons Area, Volume and capacity and solids you make in the classroom.

(a) Below is an image of a solid object which you created.



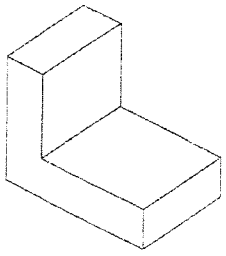
(i) Write the name of that solid object.

(ii) Draw the net of that solid object with the measurements.

(iii) Find the total surface area of it.

(iv) Find the volume of water required to fill the container completely same in liters?

(b) An image of a composite solid object is shown here. Show that the Euler's relationship is satisfied for this solid object.



(c) A solid object has 9 vertices and 16 edges. What is the number of faces of that solid object?

(d) If the total surface area of a cube is 600 cm^2, find the length of its edge.

(2) The marks obtained for a mathematics paper of grade 8A students are as follows.

24 32 7 12 98 46 75 86 13 63 86 88 59 39 90 86 91

(i) Find the number of students in the class ?

(ii) Find the minimum mark obtained by the students?

(iii) Find the maximum mark obtained by the students ?

(iv) Find the range of marks obtained by the students .

(v) Represent these data in a stem and leaf diagram.

(vi) From the marks obtained by the above students,

(a) Find the mode.

(b) Find the median.

(3) In the triangle ABC AB = 7 cm, BC = 5 cm and AC = 6 cm.

(i) Construct the ABC triangle using the straight edge and the pair of compasses.

(ii) What kind of triangle is the ABC triangle according to the lengths of the sides?

(iii) Measure and write the magnitude of the angles of the triangle ABC.

(IV) What type of triangle is the ABC triangle according to the magnitude of the angles?

(v) Can the lengths 7 cm, 16 cm and 8 cm be the lengths of the side of a triangle? Give reasons for your answer.

(4) (a) Simplify.

(i) $2\frac{1}{3} + 1\frac{2}{5}$

(ii) $1\frac{1}{4} \times 6\frac{2}{5}$

(iii) $8\frac{2}{6} \div 18\frac{1}{3}$

(b) (i) Find the value of $7875 \div 14$.

(ii) According to the answer $7875 \div 14$,find the value of $78.75 \div 1.4$.

(5) (a) (i) Find the HCF of $16xy$ and $40\,x^2$.

(ii) Remove the brackets and simplify. $2(a+2b)-3(2a-b)$

(iii) Find the value of the algebraic expression $5x+2y-7$

if $x=3$ and $y=-1$.

(b) A = {Triangular numbers from 1 to 20}

(i) Write the elements of set A using curly brackets.

(ii) Fill in the blanks using the suitable symbol from $\in$ and $\notin$.

(a) 2 .....A (b) 6 ..... A

(6) (i) Draw a cartesian plane with both the axis , $x-$ axis *and the* y-axis marked from -5 to 5.

(ii) Mark the following points there.

A (-2, 3) B (4, 3)

(iii) Draw a straight line joining A and B.

(iv) Write the coordinate of the point where the straight line intersects the y axis

(v) Draw the line $x=3$ on this cartesian plane

(vi) Write the coordinates of two points on a straight line $x=3$.

(vii) Write the equation of the x -axis.

(7) (a) For a dessert, flour and sugar are mixed in the ratio of 2 : 6 and milk powder and sugar in the ratio of 5 : 3.

(i) Find the ratio of flour, sugar and milk powder in its simplest form.

(ii) Find the amount of sugar in $180\ g$ of the mixture?

(iii) Find the amount of milk powder that is mixed with $40\ g$ of flour?

(b) Susith and Dinal are two friends. Susith started a business in January by investing Rs.24 000. Four months later, Dinal joined the business by investing Rs.30 000. At the end of the year, the profit from the business was Rs 22 000.

(i) Find the ratio in which the profit should be divided between them.

(ii) Find separately the amount received by each of them.