KOTHARI INTERNATIONAL SCHOOL, NOIDA
TERM END ASSESSMENT, 2023-2024
GRADE 7   SUBJECT: MATHEMATICS
SET: A   SECTION B (SUBJECTIVE QUESTIONS)

DAY & DATE: Tuesday, 23.2.24   **TIME ALLOWED: 2 hr 40 Mins.**

NAME: _____   **MAXIMUM MARKS: 60**

GENERAL INSTRUCTIONS:
1. This question paper consists of 4 pages and 22 questions.
2. It is compulsory to attempt all the questions.
3. Show steps/working wherever necessary.

<u>**Do as directed**</u>: -

Q1. Simplify: **2M**

a. $3^8 \div 3^2 \times 3^4$

b. $\dfrac{125 \times 5^3 \times a^4}{10^3 \times a^4}$

Q2. Which shape encloses more area, a triangle of height 10 cm and base 8 cm or a parallelogram of height 10 cm and base 8 cm?   **2M**

Q3. Find a number such that one fourth of the number is 3 more than 7.   **2M**

Q4. Solve: **2M**

$(i)\ \dfrac{29}{4} - \dfrac{30}{7}$

$(ii)\ -3\dfrac{2}{13} - \left(\dfrac{-8}{26}\right)$

Q5. What rate gives Rs. 280 as interest on a sum of Rs. 56,000 in two years?   **2M**

Q6. If z = 10, find the value of $z^3 - 2(z+5)$ **2M**

Q7. Write the faces and edges of following shapes: **2M**

a. Triangular Prism

b. Square Pyramid

Q8. **2M**

If $\dfrac{p}{q} = \left(\dfrac{3}{2}\right)^2 \div \left(\dfrac{9}{4}\right)^0$, find the value of $\left(\dfrac{p}{q}\right)^3$.

Q9. One of the exterior angles of a triangle is 80^0 and the interior opposite angles of it are in the ratio 4 : 4. Find the angles of the triangle. **2M**
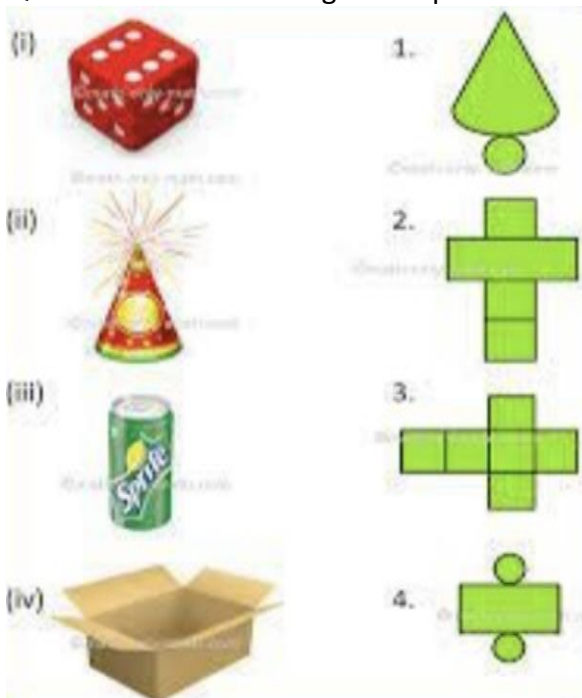
Q10. In an isoceles triangle, the base angles are equal. If the vertex angle is 80^0, find the base angles of the triangle. **2M**

Q11. Match the following 3D shapes with their nets: **2M**

Q12. In triangle XYZ, the measure of angle X is 30° greater than the measure of angle Y and angle Z is a right angle. Find the measure of ∠Y. **3M**

Q13. How many times a wheel of radius 28 cm must rotate to cover a distance of 352 m? **3M**

Q14. Answer the following questions: **3M**

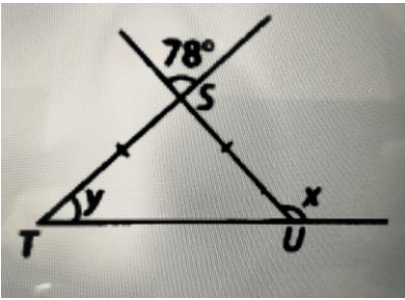(a) What must be added to $2x^2 + 3x - 5$ to get $4x^2 + x + 1$ **(2)**

(b) Write the numerical coefficient of x from the answer you get in part (a). **(1)**

Q15. By selling a book for ₹ 50, a shopkeeper suffers a loss of 10%. Find the cost price of the book. **3M**

Q16. In the given figure, if ST = SU, then find the values of x and y. **3M**

Q17. The area of a rectangle and area of a circle are equal. If the dimensions of the rectangle are 14 cm x 11 cm, then find the radius of the circle. **3M**

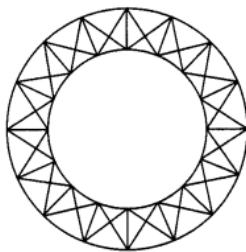Q18. Each symbol given below represents an algebraic expression. **4M**

$\triangle = 2x^2 + 3y$, $\bigcirc = 5x^2 + 3x$, $\square = 8y^2 - 3x^2 + 2x + 3y$

The symbols are then represented in the expression

$\triangle + \bigcirc - \square$

Solve the expression which is represented by the above symbols.

Q19.   A dinner plate is in the form of circle. A circular region encloses a beautiful design as shown in the given figure. The inner circumference is 352 mm and outer is 396 mm. Find the width of circular design. **4M**

OR

A circular pond is surrounded by a 2 m wide circular path. If outer circumference of circular path is 44 m, find the inner circumference of the circular path. Also, find area of the path.

Q20. Romesh borrowed Rs 2000 at 2% per annum and Rs 1000 at 5% per annum. He cleared his debt after 2 years by giving Rs 2800 and a watch. What is the cost of the watch? **4M**

Q21. In our earth 36141900 square km of area is covered with water and 148647000 square km of area is covered with land. **4M**
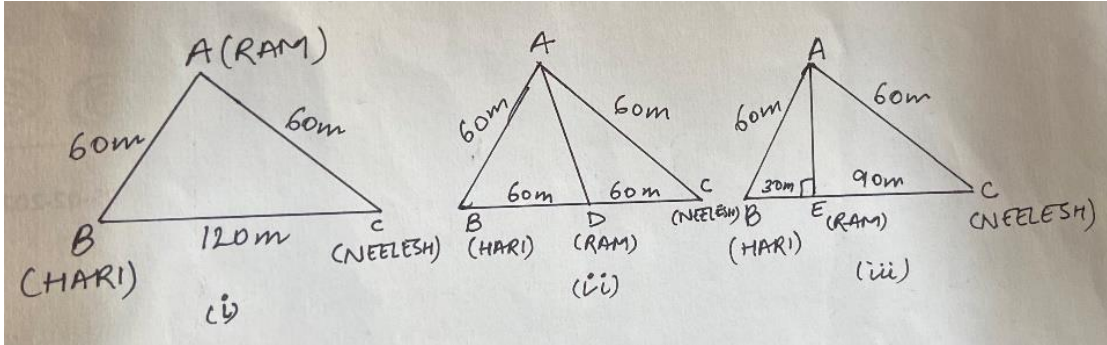a. Write area of water in standard form. **(1)**

b. Write area of land in standard form. **(1)**

c. Which has greater area and by how much? **(2)**

Q22. Case Study: (Attempt any one of the following) **4M**

Triangles: Three friends Ram, Hari & Neelesh are standing at position A, B & C respectively as shown in figure (i). Ram wants to join the line passing through Hari & Neelesh, Hari suggest Ram to move along AD & take the position at D as in figure (ii). Neelesh suggest Ram to move along AE & take the position at E as in figure (iii).

a. In figure (ii) AD is _____ (median/altitude).

b. In figure (iii) AE is _____ (median/altitude).

c. State true or false for the following and justify your answer:

  i. ABD is isosceles.

  ii. BE = EC

  iii. ABC is right angled.

OR

Jayanti takes shortest route to her home by walking diagonally across a rectangular park. The park measures 60 metres × 80 metres. How much shorter is the route across the park than the route around its edges?

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