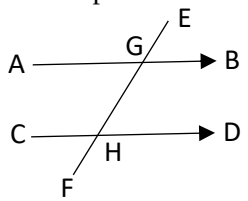
Basic Level Examination 2079
Set - A

F.M.:100 **Class : 8 (Eight)**
Subject: Mathematics **Time: 3 hrs.**

Group A [1 × 10 = 10]

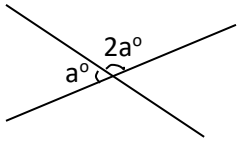
1. a) Write a pair of co-interior angles from the adjoining figure.



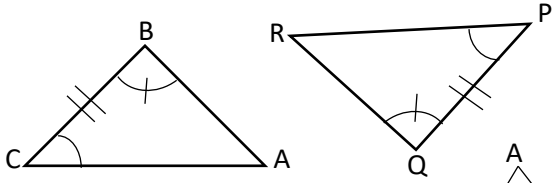
   b) The radius of a circle is x cm. Find the circumference of it.
2. a) Find the distance between the points O(0, 0) and P(x, y).
   b) Draw a bearing of 030°.
3. a) If U = {a, e, i, o, u} and A = {a, c, e}, find $\bar{A}$.
   b) Write down 251000000 in scientific notation.
4. a) What is the value of $\left(\frac{4}{y}\right)^{\circ}$?
   b) Find the mode of the given data:
   10, 40, 20, 30, 20, 40, 10, 30, 40, 20, 40
5. a) What digits are used in quinary number system?
   b) Find the common factor in the given algebraic expressions.
   x(a + b) and y(a + b)

Group B [17 × 2 = 34]

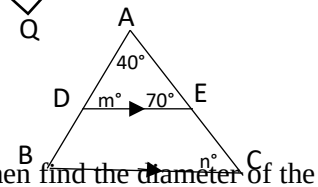
6. a) Find the value of 'a°' from the given figure.



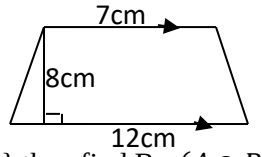
   b) Write any two properties of rhombus and square.
   c) By which axiom are the following triangles ΔABC and ΔPQR congruent? Also write the corresponding angle of $\angle BAC$.



7. a) In the figure, DE is parallel to BC.
   If ∡BAC = 40° and ∡AED = 70°,
   find the values of m° and n°.



   b) If the area of a circle is 616 cm^2 then find the diameter of the circle.
   c) Draw the net of a pyramid.
8. a) Find the distance between the points A(4, -5) and B(-2, 3).
   b) Find the area of given plane figure:



   c) If A = {1, 2, 3, 4} and B = {3, 4, 5, 6} then find B - $(A \cap B)$.
9. a) Convert 1001_2 into decimal number system.
   b) If 3, 7, m and 21 are proportional then find the value of m.
   c) Find the median of the given data: 5, 10, 15, 20, 25, 30, 35
10. a) Factorize: $2p^2 - 13p + 15$
   b) If a = 2, b = 3 and c = 4, find the value of $a^b + b^c - c^a$.
   c) Simplify: $\frac{3^x + 3^{x+1}}{4 \times 3^x}$
11. a) Solve: $196x^2 - 169 = 0$
   b) Solve the given inequality and show in number line.
   $4x + 3 \geq 23$

Group C [14 × 4 = 56]

12. Construct the rectangle ABCD whose length is 6 cm and breadth is 4 cm.
13. Verify experimentally that the sum of angles of a triangle is 180°. (Three figures of different measures are necessary.)
14. Reflect the ΔABC with vertices A(-1, 5), B(2, 1) and C(-4, -1) in X – axis and draw the figure on graph paper.

15. Out of 77 students, 15 students failed in science, 27 failed in math and 2 students failed in both subjects. By drawing Venn-diagram, find the number of students who passed in both subjects.
16. The ratio of length, breadth and height of a box is 3:2:1. If the volume of the box is 30 cm^3. Find the base area of the box.
17. Simplify: $\sqrt{800} + \sqrt{648} - \sqrt{512} + \sqrt{450}$
18. 30 workers can do a piece of work in 50 days. How many workers should be added to complete the work in 30 days?
19. What is the selling price of a scooter whose marked price is Rs.2,00,000 and is sold after 20% discount and levying 13% VAT? Find it.
20. What sum of money amounts to Rs.8600 in 6 years at the rate of 12% per annum?
21. Find the mean from the following data:

Wages in Rs	10	20	30	40	50
No. of students	4	6	10	7	3

22. If $\left(m - \frac{1}{m}\right) = 3$, find the value of $m^3 - \frac{1}{m^3}$.
23. Find the HCF of:
    $x^2 - 25$, $x^2 - 6x + 5$ and $x^2 - 10x + 25$
24. Simplify: $\frac{1}{a-b} - \frac{1}{a+b} + \frac{2b}{a^2 - b^2}$
25. Solve graphically:
    $x + y = 7$ and $2x + y = 10$