PABSON Kageshwori Manohara, Kathmandu Pre-BLE-2079

Class:-8 | **Subject: O.Maths** | Full Marks:- 50

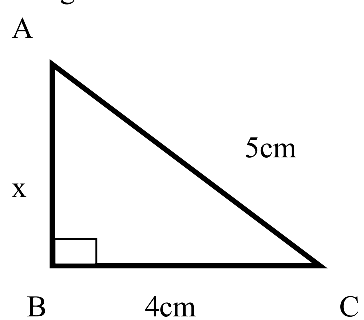
Time:1 Hr:30 min. | Date: 2079 Falgun 14 | Pass Marks:-20

[Students are suggested to give their answers in own words as far as practicable. Marks will be awarded to precise and analytical answer]

Attempt all questions

Group A [2x9=18]

1. a) A={a, b} and B={2,3}, find A×B
   b) Find the sum of given polynomial
   x^3-4x^2+x+3 and $2x^3+2x^2-3x+2$
2. a) Convert 40° 5″10″ into seconds
   b) Simplify $4\sqrt{8}+2\sqrt{18}$
3. a) Prove that $\frac{sin\theta.sec\theta}{cosec\theta.cos\theta}=\tan^2\theta$
   b) Find the length of unknown side in the given figure:



4. a) Prove that $\vec{a}=\begin{pmatrix}1\\0\end{pmatrix}$ is a unit vector
   b) If A=$\begin{bmatrix}2 & 8\\7 & 5\end{bmatrix}$ and $\begin{bmatrix}2 & 3\\5 & 9\end{bmatrix}$, find 3A+B
   c) Find the value of a and b in the ordered pair
   (a-2, b+1)=(4,7)

Group B [8x4=32]

5. Two angles of a triangle are in the ratio 2:7 and the third angle is 90°. Find all angles in degree.
6. Prove that: $\sqrt{\frac{1-cos\theta}{1+cos\theta}}=cosec\theta-cot\theta$
7. If $\tan\theta=\frac{\sqrt{3}-1}{\sqrt{3}+1}$, prove that $\cos\theta=\frac{\sqrt{3}+1}{2\sqrt{2}}$
8. Simplify: $\frac{\sqrt{3}+\sqrt{2}}{\sqrt{3}-\sqrt{2}}+\frac{\sqrt{3}-\sqrt{2}}{\sqrt{3}+\sqrt{2}}$
9. Show that the points A(3,4), B(7,3) and C(4,8) are the vertices of an isosceles triangle.
10. Find the median of the following data

x	10	15	20	25	30
f	2	4	6	5	4

11. If A=$\begin{bmatrix}3 & 0\\0 & 3\end{bmatrix}$, B=$\begin{bmatrix}1 & 1\\1 & 1\end{bmatrix}$, C=$\begin{bmatrix}1 & 0\\1 & 1\end{bmatrix}$ find A+B-2C
12. The vertices of ΔABC are A(2,4), B(6,8) and C(5,-3). Rotate ΔABC through 180° about the origin in anticlockwise direction. Draw the graph of ΔABC and its image on the same graph paper.

All the best