(*Important Short Questions*)
Course: **Algebra and Trigonometry**

Chapter # 12   *Applications of Trigonometry*

> **Following short questions are selected from previous 5 years papers of different boards. Solve these at your own to perform well in annual exams.**

1. What do you mean by solution of a triangle?

2. State laws of cosines and laws of sines.

3. Define the terms, angle of elevation and angle of depression.

4. Solve the right triangle ABC in which $\gamma = 90°$, $\alpha = 37°20'$ and $a = 243$.

5. A vertical pole is 8m high and length of its shadow is 6m. What is the angle of elevation of sun at that moment?

6. At the top of a cliff $80m$ high, the angle of depression of a boat is $12°$. How far is the boat from the cliff?

7. A ladder leaning against a vertical wall makes an angle of $24°$ with the wall. Its foot is $5m$ from the wall. Find its length.

8. Find the smallest angle of the triangle ABC, in which $a = 37.34$, $b = 3.24$, $c = 35.06$.

9. Find the area of triangle ABC in which $b = 21.6$m, $c = 30.2$m and $\alpha = 52°40'$.

10. Find the area of triangle ABC, where $a = 13$, $b = 14$, $c = 15$.

11. Solve the triangle ABC in which $a = 7$, $b = 3$, $\gamma = 38°13'$.

12. Solve the triangle ABC in which $b = 125$, $\gamma = 53°$ and $\alpha = 47°$.

13. In a triangle ABC, $a = 7$, $b = 7$, $c = 9$. Find α and β.

14. Find the area of the triangle ABC, if $b = 37$, $c = 45$ and $\alpha = 30°50'$.

15. Prove that $r_1 = \frac{\Delta}{s-a}$.

16. Prove that $R = \frac{abc}{4\Delta}$.

17. Show that $r_2 = s\tan\frac{\beta}{2}$.

18. With usual notations, show that $\gamma_1 = s\,\tan\frac{\alpha}{2}$.

19. With usual notations, show that $\tan\frac{\alpha}{2} = \sqrt{\frac{(s-b)(s-c)}{s(s-a)}}$.

20. Find r_2 of the triangle ABC, when $a = 34$, $b = 20$, $c = 42$.

Best of Luck