

## R.S.ACADEMY OF BRILLIANCE

#443, 7<sup>TH</sup> MAIN, 13<sup>TH</sup> CROSS, BENGALURU-560078

10<sup>TH</sup> STATE- MATHEMATICS ASSIGNMENT-02

Without using table evaluate the following:

1.  $\sin^2 25^\circ + \sin^2 65^\circ$

12.  $\frac{\sin \theta \cos (90^\circ - \theta) \cos \theta}{\sin(90^\circ - \theta)} + \frac{\cos \theta \sin (90^\circ - \theta) \sin \theta}{\cos(90^\circ - \theta)}$

2.  $\sin^2 77^\circ - \cos^2 13^\circ$

13.  $\frac{\cos(90^\circ - \theta) \sec(90^\circ - \theta) \tan \theta}{\operatorname{cosec}(90^\circ - \theta) \sin(90^\circ - \theta) \cot(90^\circ - \theta)} + \frac{\tan(90^\circ - \theta)}{\cot \theta}$

3.  $\frac{\cos \theta}{\sin (90^\circ - \theta)} + \frac{\sin \theta}{\cos (90^\circ - \theta)}$

14.  $\frac{-\tan \theta \cdot \cot(90^\circ - \theta) + \sec \theta \cdot \operatorname{cosec}(90^\circ - \theta) + (\sin^2 75^\circ + \sin^2 15^\circ)}{\tan 20^\circ \tan 40^\circ \tan 45^\circ \tan 50^\circ \tan 70^\circ}$

4.  $\sin^2 20^\circ + \sin^2 70^\circ - \tan^2 45^\circ$

15.  $\left[ \frac{\tan 20^\circ}{\operatorname{cosec} 70^\circ} \right]^2 + \left[ \frac{\cot 20^\circ}{\sec 70^\circ} \right]^2 + 2 \tan 15^\circ \tan 37^\circ \tan 53^\circ \tan 60^\circ \tan 75^\circ$

5.  $\frac{\cos (90^\circ - \theta)}{1 + \sin (90^\circ - \theta)} + \frac{1 + \sin (90^\circ - \theta)}{\cos(90^\circ - \theta)} - 2 \operatorname{cosec} \theta$

16.  $\cos (60^\circ + \theta) - \sin (30^\circ - \theta)$

6.  $\frac{\cos^2 20^\circ + \cos^2 70^\circ}{\sin^2 59^\circ + \sin^2 31^\circ}$

7.  $\frac{1}{1 + \cos (90^\circ - \theta)} + \frac{1}{1 - \cos (90^\circ - \theta)}$

8.  $\frac{\sin \theta}{\sin (90^\circ - \theta)} + \frac{\cos \theta}{\cos (90^\circ - \theta)} - \sec \theta \operatorname{cosec} \theta$

9.  $\frac{\tan \theta}{1 + \cot^2 (90^\circ - \theta)} - \cos \theta \cos (90^\circ - \theta)$

10.  $\frac{\sin(90^\circ - \theta) \sin \theta}{\tan \theta} + \sin^2 \theta$

11.  $\frac{\sin \theta \cdot \cos \theta \cdot \sin(90^\circ - \theta)}{\cos (90^\circ - \theta)} + \frac{\cos \theta \cdot \sin \theta \cdot \cos(90^\circ - \theta)}{\sin (90^\circ - \theta)}$

$$+ \frac{\sin^2 27^\circ + \sin^2 63^\circ}{\cos^2 40^\circ + \cos^2 50^\circ}$$