* Question Bank for Unit-Test-II *

* 2 mark each.

① Find the value of $\sin(15°)$ using compound angles.

② Without using calculators find the value of $\cos(75°)$

③ Without using calculator find the value of $\tan(15°)$.

④ If $f(x) = x^4 - 2x + 7$, find $f(0) + f(2)$.

⑤ If $f(x) = x^2 + 6x + 10$, find $f(2) + f(-2)$.

⑥ State wheather the function:
$f(x) = x^3 + 4x + \sin x$ is even or odd.

⑦ State wheather the function:
$f(x) = \dfrac{e^x + e^{-x}}{2}$ is even or odd.

⑧ Find $\dfrac{dy}{dx}$; of $x^n + a^x + e^x + \sin x$

⑨ Find $\dfrac{dy}{dx}$; if $y = e^x \cdot x$.

⑩ Find the equation of line passing through $(2,3)$ & having slope is 5 units.

⑪ Find the intercepts of the line $2x + 3y = 6$ on both axes.

* 4 mark each *

① evaluate without using calculator
$$\frac{\tan 85° - \tan 40°}{1 + \tan 85°\cdot \tan 40°}$$

② evaluate without using calculator.
$$\frac{\tan 32° + \tan 88°}{1 - \tan 32°\cdot \tan 88°}$$

③ Show that :
$$\cos 15°\cdot \cos 30°\cdot \cos 60°\cdot \cos 75° = \frac{\sqrt{3}}{16}.$$

④ Find the equation of line passing through points $(-4,6)$ & $(8,-3)$.

⑤ If the slope of a line passing through points $(4,k)$ & $(-2,-5)$ is 2 then find k.

⑥ Find length of perpendicular from the points $P(2,5)$ on the line $2x + 3y - 6 = 0$.

⑦ Find the distance between two parallel lines :
~~2x~~
$$3x - y + 7 = 0 \quad \&$$
$$3x - y + 16 = 0.$$

⑧ Find the acute angle between the lines whose slopes are $\sqrt{3}$ & $\frac{1}{\sqrt{3}}$.

⑨ Find the Radius of curvature of $y = e^x$ at $(0,1)$

⑩ Find the maximum & minimum values of $y = 2x^3 - 3x^2 - 36x + 10$.

⑪ Find the maximum & minimum value of $y = x^3 - 9x^2 + 24x - 7$.