SUBJECT: MATHEMATICS
Differentiation Application of differentiation,
Definite Integrals

1. The area in square units bounded by the curve $y=x^3, y=x^2$ and the ordinates x=1 and x=2 is

       1) 17/12   2) 12/13   3)2/7   4)7/2

2. $\int_0^{\frac{\pi}{2}} \cos x . e^{\sin x}\, dx =$

       1)0   2)1   3)-1   4)e-1

3. The max. value of sin x + cos x is

       1)$\sqrt{2}$ 2)$-\sqrt{2}$ 3) $\sqrt{3}$ 4)2

4. If $y=\tan^{-1}\left[\dfrac{\sqrt{1+x^2}-\sqrt{1-x^2}}{\sqrt{1+x^2}+\sqrt{1-x^2}}\right]$ then $y^1=$

       1)$\dfrac{1}{\sqrt{1-x^4}}$ 2) $\dfrac{-1}{\sqrt{1-x^4}}$ 3) $\dfrac{-x}{\sqrt{1-x^4}}$ 4) $\dfrac{x}{\sqrt{1-x^4}}$

5. The area of the figure bounded by the curves y=cos x & y=sin x & the ordinates x=0 & x=$\frac{\pi}{2}$ is

       1)$\sqrt{2}-1$ 2) $\sqrt{2}+1$ 3)$\dfrac{1}{\sqrt{2}}\left[\sqrt{2}-1\right]$ 4)$\dfrac{1}{\sqrt{2}}$

6. $\int_{-5}^{5}|x+2|dx =$

       1)15   2)40   3)29   4)10