Inverse triganometry, Integrals

Time:45 minutes | Class 12 scert | Max mark: 23

1. (a) If $xy < 1$, $tan^{-1}x + tan^{-1}y =$ **(1)**
   (b) If $\int f(x)dx = log|tanx| + c$ find f(x)? **(1)**

2. (a) $\int_{\frac{-\pi}{2}}^{\frac{\pi}{2}} sin^7(x)$ **(1)**
   (b) $\int xsin(3x)dx$ **(2)**

3. (a) Integrate $\int sinxsin(cosx)dx$ **(3)**

4. (a) What is the domain of the function $cos^{-1}x$ **(1)**
   (b) Find the value of $cos^{-1}(\frac{-1}{2}) + 2sin^{-1}(\frac{1}{2})$ **(2)**

5. (a) $\int \frac{1}{x^2-a^2} =$ **(1)**
   (b) Find : $\int \frac{1}{x^2-4x-5}dx$ **(2)**
   (c) Evaluate : $\int_2^3 \frac{x}{1+x^2}dx$ **(3)**
6. (a) $\int \frac{x}{(x+1)(x+2)}dx =$ **(3)**
   (b) Evaluate : $\int_0^{\frac{\pi}{2}} \frac{sin^4(x)}{sin^4(x)+cos^4(x)}$ **(3)**