

BCM SCHOOL BASANT AVENUE DUGRI ROAD LUDHIANA
ASSIGNMENT (INTEGRALS)
CLASS XII SC

1 $\int \frac{x^4+1}{x^2+1} dx$ is equal to
 (a) $\frac{x^3}{3} + x + \tan^{-1} x + c$ (b) $\frac{x^3}{3} - x + \tan x + c$
 (c) $\frac{x^3}{3} + x + 2\tan^{-1} x + c$ (d) $\frac{x^3}{3} - x + 2\tan^{-1} x + c$

2 $\int (e^{x \log a} + e^{a \log x} + e^{a \log a}) dx$
 (a) $\frac{a^x}{\log a} + \frac{x^{a+1}}{a+1} + a^a x + C$ (b) $\frac{a^x}{\log a} + \frac{x^{a+1}}{a-1} + ax^a + C$
 (c) $\frac{a^x}{\log a} + \frac{x^a}{a+1} + ax^a + C$ (d) $\frac{a^x}{\log x} + \frac{x^{a+1}}{a+1} + a^a x + C$

3 If f and g are continuous functions in $[0, 1]$ satisfying $f(x) = f(a - x)$ and $g(x) + g(a - x) = a$, then $\int_0^a f(x)g(x)dx$ is equal to
 (A) $\frac{a}{2}$ (B) $a \int_0^a f(x)dx$ (C) $\frac{a}{2} \int_0^a g(x)dx$
 (D) $\frac{a}{2} \int_0^a f(x)dx$

4 Evaluate $\int \tan 3x \tan 2x \tan x dx$

5 Evaluate $\int_0^{2\pi} \frac{1}{e^{\sin x} + 1} dx$

6 Evaluate $\int \sqrt{\tan x} dx$

7 Find $\int \frac{dx}{\sin x + \sin 2x}$

8 Evaluate $\int \frac{\sin x}{\sin 3x} dx$

9 Evaluate $\int_0^{\frac{\pi}{2}} \frac{2^{\sin x}}{2^{\sin x} + 2^{\cos x}} dx$