

ATOMIC ENERGY EDUCATION SOCIETY (AEES)

WORKSHEET

INTEGRATION – MODULE 5

INTEGRATE FOLLOWING FUNCTIONS:

$$1. \int_0^1 \frac{(\sin^{-1} x)^3}{\sqrt{1-x^2}} dx$$

$$2. \int_0^{\frac{\pi}{2}} \frac{\cos x dx}{(1+\sin x)(2+\sin x)}$$

$$3. \int_0^{\frac{\pi}{2}} \sin^3 x dx$$

$$4. \int_{-1}^1 \frac{dx}{x^2 + 2x + 5}$$

$$5. \int_0^{2\pi} |\cos x| dx$$

$$6. \text{ If } \int_0^1 (3x^2 + 2x + k) dx = 0 \text{ find the value of } k.$$

$$7. \text{ If } f(x) = \int_0^x t \sin t dt, \text{ then find the value of } f(x)$$

$$8. \int_0^1 \frac{e^t}{1+t} dt = a \text{ then find the value of } \int_0^1 \frac{e^t}{(1+t)^2} dt$$