

King Fahd University of Petroleum and Minerals
Department of Mathematical Sciences
MATH 102, Sections 4 and 8(042)
Quiz -3(a)

Time: 15 Minutes

Marks:...../9

Name :

Serial #:

ID#:

Section #:

(i) Evaluate $\int \sec^4 3x \tan^3 3x \, dx$.

(ii) Differentiate w.r.t.x and simplify your calculations:

$$f(x) = \frac{\sin hx}{\cos hx - \sin hx}$$

(i)

(ii)

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Quiz -3(b)

Time: 15 Minutes

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Section #:

(i) Evaluate: (i) $\int \tan^6 x dx$ (ii) $\int \cos \sqrt{x} dx$ (iii) If $f(x) = \tan h^{-1}(\sin 3x)$, then find $f^1(x)$.

(i)

(ii)

(iii)

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Quiz -3(c)

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Section #:

(i) Evaluate: $\int \tan^{-1} x \, dx$

(ii) Check whether or not the relation holds:

$$\sin h^{-1}x = \ln(x + \sqrt{x^2 + 1}).$$

(i)

(ii)

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Quiz -3(d)

Time: 15 Minutes

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Section #:

(i) Evaluate: $\int_0^{\pi/4} e^x \sin x \, dx$

(ii) Let $f(x) = \cos h^{-1}\sqrt{x} + \sqrt{\cos h^{-1}x}$. Find $f^1(x)$.

(i)

(ii)