

SUBJECT: Mathematics EXAM II - Annual 2022 CLASS: II-Y  
 GROUP: It DATE: 07-12-22

**(GENERAL INSTRUCTIONS FOR MARKING KEY)**

Q.6(a)  $\int \frac{\sqrt{2}}{\sin x + \cos x} dx$  using

$y - y_1 = -\frac{1}{m}(x - x_1)$

$y - \frac{13}{2} = -2(x - 6) \quad (2M)$

$4x + 2y - 37 = 0 \quad (1M)$

Q.7(a)  $\int_0^{\pi/4} \frac{\cos \theta + \sin \theta}{2 \cos^2 \theta} d\theta$

$= \frac{1}{2} \int_0^{\pi/4} \left( \frac{1}{\cos \theta} + \frac{\sin \theta}{\cos \theta \cos \theta} \right) d\theta$

$= \frac{1}{2} \left[ \int_0^{\pi/4} \sec \theta d\theta + \int_0^{\pi/4} \sec \theta \tan \theta d\theta \right]$

$= \frac{1}{2} \left[ \ln(\sec \theta + \tan \theta) + \sec \theta \right]_0^{\pi/4} \quad (3M)$

Q.6(b) A(3,5), B(9,8)

M.P. of AB  $\left( 6, \frac{13}{2} \right) \quad (1M)$

Slope of AB  $m = \frac{8-5}{9-3} = \frac{3}{6}$

$m = \frac{1}{2} \quad (1M)$

$= \frac{1}{2} \left( \ln(\sqrt{2}+1) + \sqrt{2} - 1 \right) \quad (2M)$

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RE-CHECKED BY ہم نے درج بالا سوال پر چ (انتخابیہ + معروضی) اور ہدایات کے حوالے سے مکمل طور پر تکی کر لی ہے۔ کسی قسم کی غلطی نہ ہے۔

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