TECHNICAL UNIVERSITY OF MOMBASA	
Continuous Assessment Test II COURSE CODE/TITLE: AMA 4105: CALCULUS II	
SEMESTER: II DURATION: 1 HR DATE:	
i.) $\int_{-1.5}^{3} \frac{dx}{x^2 + 4}$	(4 marks)
i.) $\int_{-1.5}^{3} \frac{dx}{x^2 + 4}$ ii.) $\int_{2}^{4} \frac{\sqrt{16 - x^2}}{x} dx$	(4 marks)
iii.) $\int_{1}^{3} x^{3} \ln x  dx$	(4 marks)
2. Find the area bounded by x axis, y axis, the line $x = 3$ and the curve $y = x^2 + 1$	(5 marks)
3. Find the length of the curve $z = \ln(\cos t)$ from $t = 0$ to $t = \frac{\pi}{4}$	(5 marks)
4. Find the area of a surface generated by $y^2 = 4x$ between the origin and the point (4,4) about the x-axis.	is rotated (4 marks)
5. Find the approximate value of $\int_0^1 \frac{5}{1+x^2} dx$ using trapezium rule with five ordinates.	(4 marks)
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TECHNICAL UNIVERSITY OF MOMBASA  CAT II AMA 4105: CALCULUS II SEMESTER: II DURATION: 1 HR DATE:	
1. Evaluate the following definite integrals	
	(4 marks)
i.) $\int_{-1.5}^{3} \frac{dx}{x^2+4}$	
ii.) $\int_{-1.5}^{1.5} \frac{x^2 + 4}{x^2} dx$	(4 marks)
ii.) $\int_{2}^{4} \frac{\sqrt{16-x^{2}}}{x} dx$	, ,
ii.) $\int_{2}^{4} \frac{\sqrt{16-x^{2}}}{x} dx$ iii.) $\int_{1}^{3} x^{3} \ln x dx$	(4 marks) (4 marks) (5 marks)
ii.) $\int_{2}^{4} \frac{\sqrt{16-x^{2}}}{x} dx$ iii.) $\int_{1}^{3} x^{3} \ln x dx$ 2. Find the area bounded by x axis, y axis, the line $x = 3$ and the curve $y = x^{2} + 1$	(4 marks)
<ul> <li>ii.) ∫<sub>2</sub><sup>4</sup> √(16-x<sup>2</sup>)/x dx</li> <li>iii.) ∫<sub>1</sub><sup>3</sup> x<sup>3</sup> ln x dx</li> <li>2. Find the area bounded by x axis, y axis, the line x = 3 and the curve y = x<sup>2</sup> + 1</li> <li>3. Find the length of the curve z = ln (cos t) from t = 0 to t = π/4</li> <li>4. Find the area of a surface generated by y<sup>2</sup> = 4x between the origin and the point (4,4) about the x-axis.</li> </ul>	(4 marks) (5 marks) (5 marks)
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<ul> <li>ii.) \$\int_2^4 \frac{\sqrt{16-x^2}}{x} dx\$</li> <li>iii.) \$\int_1^3 x^3 \ln x dx\$</li> <li>2. Find the area bounded by x axis, y axis, the line \$x = 3\$ and the curve \$y = x^2 + 1\$</li> <li>3. Find the length of the curve \$z = \ln (\cos t)\$ from \$t = 0\$ to \$t = \frac{\pi}{4}\$</li> <li>4. Find the area of a surface generated by \$y^2 = 4x\$ between the origin and the point (4,4) about the x-axis.</li> <li>5. Find the approximate value of \$\int_0^1 \frac{5}{1+x^2} dx\$ using trapezium rule with five ordinates.</li> </ul>	(4 marks) (5 marks) (5 marks) is rotated (4 marks)

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i.) 
$$\int_{-1.5}^{3} \frac{dx}{x^{2}+4}$$
 (4 marks)
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$$\int_{2}^{4} \frac{\sqrt{16-x^{2}}}{x} dx$$
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$$\int_{1}^{3} x^{3} \ln x dx$$
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$$\int_2^4 \frac{\sqrt{16-x^2}}{x} dx$$
 (4 marks)

iii.) 
$$\int_{1}^{3} x^{3} \ln x \, dx \tag{4 marks}$$

2. Find the area bounded by x axis, y axis, the line 
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 and the curve  $y = x^2 + 1$  (5 marks)

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4. Find the area of a surface generated by 
$$y^2 = 4x$$
 between the origin and the point (4,4) is rotated about the x-axis. (4 marks)

5. Find the approximate value of 
$$\int_0^1 \frac{5}{1+x^2} dx$$
 using trapezium rule with five ordinates. (4 marks)