

BAHRIA UNIVERSITY (KARACHI CAMPUS)

Department of Software Engineering.
Assignment 04 (Fall 2022)

Course Title: Calculus and Analytical Geometry

Class: BSE 1B

Course Instructor: Mr. Daniyal ur Rehman

Submission: 11 Jan 2023

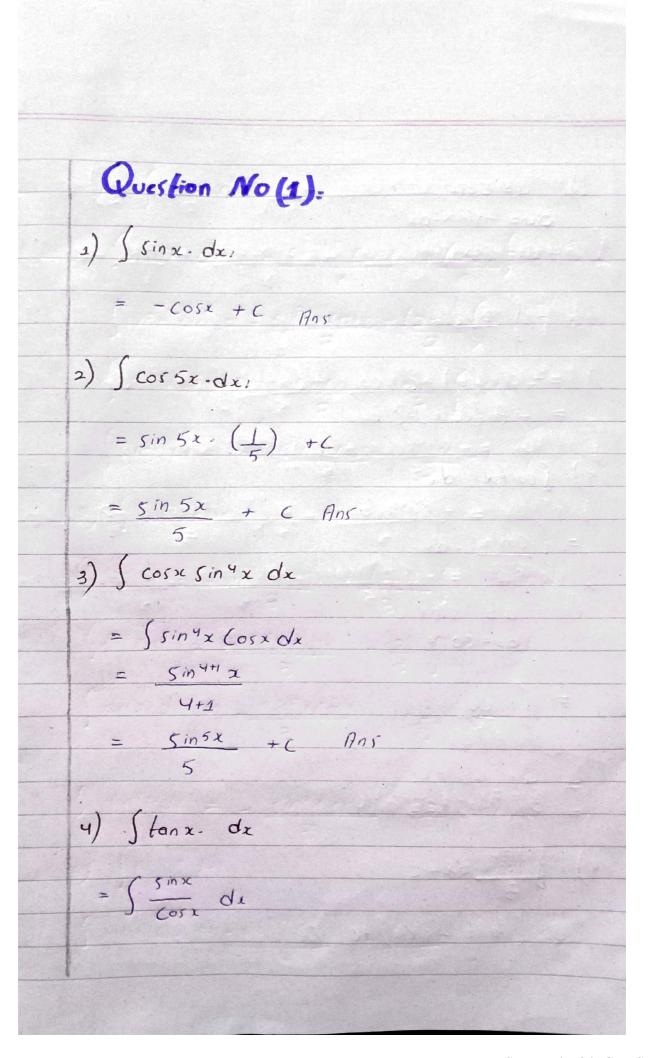
Course Code: GSC-110

Shift: Morning Date: 05 Jan 2023 Max Marks: 05 Points

Assignment No 04

Submitted By:

Name: _	Abdul	lah	
Registra	ation Number:	02-131222-099	
Sections	:1	l B	



let u= cose du= -sinx-dx -du= sinx-dx $=-\int du$ $=-l_n(u)+c$ = - ln (cose)+ c Ans 5) Scotx. dx. $= \int \frac{\cos x}{\sin x} \cdot dx$ let u = sinx du= corx = ln(u)+c = ln(sinx)+c Ans 6) : Secx-dx In (fanx + sax) +c Ans

$$\int \sin^{3}x \cdot dx = -\sin^{3}\frac{1}{2}(\cos x + (n-2)) \int \sin^{3}\frac{1}{2} dx$$

$$\int \sin^{2}x \cdot dx = -\sin^{3}\frac{1}{2}(\cos x + (2-2)) \int \sin^{3}\frac{1}{2} dx$$

$$\int \sin^{2}x \cdot dx = -\sin^{2}x(\cos x + (2-2)) \int \sin^{2}x \cdot dx$$

$$\int \sin^{2}x \cdot dx = -\sin^{2}x(\cos x + \frac{1}{2}) \int dx$$

$$\int \sin^{2}x \cdot dx = -\sin^{2}x(\cos x + \frac{1}{2}) \int \sin^{3}x \cdot dx$$

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$$\int$$

 $\int \sin^4 x - dx = -\frac{\sin^3 x \cos x}{4} + \frac{3}{4} \left(-\frac{\sin x \cos x}{2} + \frac{1}{2} \right) + C$ \(\sin^4x \, \dx = -\sin^3 \cdot \(\cos x \) -3 \(\sin^2 x \, \dx \) + 3x + C 10), (sin5x-dx $\int \sin^5 x \cdot dx = -\sin^{5-2} x \cos x + (6-1) \int \sin^{5-2} x \cdot dx$ $\int \sin^5 x dx = -\sin^4 x (\cos x + 4) \int \sin^3 x - dx$ $\int \sin^{5}x \, dx = -\sin^{4}x(\cos x) + \frac{4}{5} \left(-\sin^{2}x(\cos x) - \frac{2}{3}(\sin x)\right) + C$ S sinsxdx = - Sin 4xcosi = 45in2xcosx - 8cosx +C _: Question No 2:-1) (053x dx. 5in 32 . (1)+C

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2) (sec 8 fan 8 de.
  Seco fond do = seco +c Ani
3) (sec20-do
     Sec2 Odo = fon 0 to Ani
4) (cos2xdx
Scosnxdx = (05 n-2x sinx + (n-1) (cosn-2x dic.
\int \cos^2 x \, dx = \frac{\cos^2 \frac{1}{2} \sin x + (2-1)}{3} \int \cos^{2-2} x \cdot dx
\int \cos^2 x \cdot dx = \cos x \sin x + \int \int dx
Scos2x-dx = Cosx sinx +1x+6 Ani
5) Sco3x dx
   S cos3xdx = cos32xsinx + (3-1) (cos32 dx
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$$\int (os^{3}x \cdot dx = cos^{2}xsinx + 2 - (sinx) + C$$

$$\int (os^{3}x \cdot dx = cos^{2}xsinx + 2 - sinx + C + 4ns$$

$$\int (os^{4}x \cdot dx = cos^{4-2}xsinx + 2 - sinx + C + 4ns$$

$$\int (os^{4}x \cdot dx = cos^{4-2}xsinx + 3 - (sinx + 2 - sinx + 2 - sinx) + C$$

$$\int (os^{4}x \cdot dx = cos^{4-2}xsinx + 3 - (sinx + 2 - sinx) + C$$

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$$\int (os^{4}x \cdot dx = cos^{4-2}xsin + 3 - (sinx + 2 - sinx) + C$$

$$\int (os^{5}x \cdot dx = cos^{4-2}xsin + (sinx + 2 - sinx) + C$$

$$\int (os^{5}x \cdot dx = cos^{4-2}xsin + 4 - (sinx + 4 - sinx) + C$$

$$\int (os^{5}x \cdot dx = cos^{4-2}xsin + 4 - (sinx + 4 - sinx) + C$$

$$\int (os^{5}x \cdot dx = cos^{4-2}xsin + 4 - (sinx + 4 - sinx) + C$$

$$\int (os^{5}x \cdot dx = cos^{4-2}xsin + 4 - 4 - (sinx + 2 - sinx) + C$$

$$\int (os^{5}x \cdot dx = cos^{4-2}xsin + 4 - 4 - (sinx + 2 - sinx) + C$$

$$\int (os^{5}x \cdot dx = cos^{4-2}xsin + 4 - 4 - (sinx + 2 - sinx) + C$$

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$$\int (os^{4}x \cdot dx = cos^{4-2}xsin + 2 - ($$

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\int \cos^5 x \cdot dx = \frac{\cos^7 x \sin x}{5} + \frac{4(05^2 \sin x + 85 \cos x)}{15} + C
8) (sinx cos x - doc.
 =- ( cos 52 (-sinx)-dx
  = -\frac{(05^{5+1}x)}{5+1}
 = - (05'x + C Apri
a) Ston2x-dx
  Stannada = fannox + (tan x. da
   \int fan^2x dx = \int fan^{2-2}x + \int fan^{2-2}x dx
  (ton2x-dx = fanx + Sdx
  Stan2x . di = fanx +x + C
10) (sin 2a 6058a da.
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CIFV	$\frac{1}{2}$ $= 2 \sin \left(\frac{u+v}{2} \right)$	71 - V	
$\frac{d+V}{2} = 2a$		<u>u-v</u>	= 80
U+V= 4a	-0	U-V	= 16a - (ii
17 dding	(i) and (ii,		
	U+V = U-V =	16a	
	2u =	200	
	u =		
	40	1000 4	
	4a-10a		
V .	= -60	1 1 2 2	Contract.
Now pelli	ny istalie of c	1 and VIN	
5in10a +	sin(-6a) =	2 sin 2 a Cos	80
sin 10a -	_sin 6a = =	2 sinza Co	58a
	0580 = 1		
Now			
Ssinza (or	$8a-da = \begin{cases} 1 \\ 2 \end{cases}$	50010a	-sinbal da

$= \frac{1}{2} \left\{ \sin 30 a \operatorname{da} - \frac{1}{2} \right\} \sin 6a \operatorname{da}$ $= \frac{1}{2} \left[\left(-\frac{\cos 30}{10} \right) - \left(-\frac{\cos 6a}{6} \right) \right] + C$ $= \frac{1}{2} \left[\frac{\cos 30}{10} + \frac{\cos 6a}{6} \right] + C$ $= \frac{1}{2} \left[-\frac{\cos 30a}{10} + \frac{\cos 6a}{6} \right] + C$ $= \frac{1}{2} \left[-\frac{\cos 30a}{10} + \frac{\cos 6a}{12} + C \right] = \frac{1}{2} \left[-\frac{\cos 30a}{12} + C \right] = \frac{1}{2} \left[-\cos 3$	Total Control	
$= \frac{1}{2} \left[\left(-\frac{\cos 30a}{10} \right) - \left(-\frac{\cos 6a}{6} \right) \right] + C$ $= \frac{1}{2} \left[\left(-\frac{\cos 30a}{10} \right) - \left(-\frac{\cos 6a}{6} \right) \right] + C$ $= \frac{1}{2} \left[-\frac{\cos 30a}{10} \right] + \frac{\cos 6a}{6} $		
$= \frac{1}{2} \left[\left(-\frac{\cos 30a}{10} \right) - \left(-\frac{\cos 6a}{6} \right) \right] + C$ $= \frac{1}{2} \left[\left(-\frac{\cos 30a}{10} \right) - \left(-\frac{\cos 6a}{6} \right) \right] + C$ $= \frac{1}{2} \left[-\frac{\cos 30a}{10} \right] + \frac{\cos 6a}{6} $		
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$= \frac{1}{2} \left[\left(-\frac{\cos 30a}{10} \right) - \left(-\frac{\cos 6a}{6} \right) \right] + C$ $= \frac{1}{2} \left[\left(-\frac{\cos 30a}{10} \right) - \left(-\frac{\cos 6a}{6} \right) \right] + C$ $= \frac{1}{2} \left[-\frac{\cos 30a}{10} \right] + \frac{\cos 6a}{6} $		= 1 (sin 10 a da - 1 (sin 6 a - da
$\frac{1}{2} = \frac{1}{2} \left[\frac{-\cos 30a}{10} + \frac{\cos 6a}{6} \right] + C$		
		$=\frac{1}{2}\left[\left(-\frac{\cos 30\alpha}{10}\right)-\left(-\frac{\cos 6\alpha}{6}\right)\right]+C$
	1230	= 1 / -Cos 10a + cos 6a7 4
= t -(05)0a + Cos 6a + C Mns 20 12		2 [10 6]
$= t - (0) \cdot 100 + C \cdot 160 + C \cdot 170$ $= 12$		
		= E - cos 30a + Cos 6a - Tai
		20 12 + C 1/11
	-	
	1	