



King Abdul Aziz University
Faculty of Sciences
Mathematics Department

Spring 2014 First Exam
Calculus I- Math 110
Allowed Time: 90 M

لا يُسمح باستخدام الآلة الحاسبة الإلكترونية ولا الجوال

D

Name:

ID:

تعليمات هامة:

- تستطيع – بمشيئة الله – تحقيق أفضل نتيجة من خلال إتباع التعليمات الآتية:
- يجب أن يكون نموذج الإجابة الذي أمامك هو D
- التأكد من أن عدد أسئلة الاختيار 30 سؤالاً.
- كتابة البيانات وتظليل الرقم الجامعي بطريقة صحيحة.
- احرص ما أمكن على التسلسل في الإجابة ، اجابة السؤال الأول ثم الثاني وهكذا.
- التأكد من اجابتك قبل تظليلها.
- ركز على رقم السؤال الذي ستظلل اجابته و الحرف الذي يحمل الإجابة الصحيحة ، وتظليل اجابة واحدة فقط ولن يسمح بالتظليل بعد انتهاء الوقت المحدد.
- تظليل جميع الإجابات في نموذج الاجابة بشكل واضح وكامل.

Q.1	The equation of a line with a slope $m = \frac{3}{2}$, and y - intercept -3 is			
(A)	$2y + 3x - 6 = 0$	(B)	$3y + 2x - 6 = 0$	
(C)	$2y - 3x + 6 = 0$	(D)	$3y - 2x + 6 = 0$	

Q.2	If $f(x) = \frac{x+5}{x^2+4x+3}$, then $D_f =$			
(A)	$\mathbb{R} \setminus \{-3, -1\}$	(B)	$\mathbb{R} \setminus \{-3, 1\}$	(C) $\mathbb{R} \setminus \{1, 3\}$
		(D)	$\mathbb{R} \setminus \{-1, 3\}$	

Q.3	If $f(x) = \frac{1}{x-1} + \sqrt{16-x^2}$, then $D_f =$			
(A)	$\mathbb{R} \setminus \{1\}$	(B)	$[-4, 1) \cup (1, 4]$	
(C)	$[-4, 4]$	(D)	$\mathbb{R} \setminus [-4, 4]$	

Q.4	The roots of $2x^2 + 5x + 2 = 0$ are			
(A)	$x = \frac{1}{2}$ or $x = 2$	(B)	$x = -2$ or $x = \frac{1}{2}$	
(C)	$x = -\frac{1}{2}$ or $x = 2$	(D)	$x = -2$ or $x = -\frac{1}{2}$	

Q.5	$\sec\left(\frac{7\pi}{6}\right) =$			
(A)	$\frac{2}{\sqrt{3}}$	(B)	$-\sqrt{3}$	(C) $\sqrt{3}$
		(D)	$-\frac{2}{\sqrt{3}}$	

Q.6	$\cot x \sec x =$			
(A)	$\sec x$	(B)	$\csc x$	(C) $\cos x$
		(D)	$\sin x$	

Q.7	$2\sin^2 x =$			
(A)	$1 - \sin(2x)$	(B)	$1 - \cos(2x)$	(C) $1 + \sin(2x)$
		(D)	$1 + \cos(2x)$	

Q.8	The slope and the y - intercept of the line $2x + 3y - 5 = 0$ are			
(A)	Slope $= -\frac{3}{2}$ and y - intercept $= \frac{5}{2}$	(B)	Slope $= -\frac{2}{3}$ and y - intercept $= \frac{5}{3}$	
(C)	Slope $= -\frac{2}{3}$ and y - intercept $= -\frac{5}{3}$	(D)	Slope $= -\frac{3}{2}$ and y - intercept $= -\frac{5}{2}$	

Q.9	$210^\circ =$				
(A)	$\frac{5\pi}{3}\text{rad}$	(B)	$\frac{4\pi}{3}\text{rad}$	(C)	$\frac{11\pi}{6}\text{rad}$
		(D)	$\frac{7\pi}{6}\text{rad}$		

Q.10	If $\sin x = -\frac{\sqrt{5}}{3}$ and $\pi < x < \frac{3\pi}{2}$, then $\tan x =$				
(A)	$\frac{2}{\sqrt{5}}$	(B)	$-\frac{2}{\sqrt{5}}$	(C)	$\frac{\sqrt{5}}{2}$
		(D)	$-\frac{\sqrt{5}}{2}$		

Q.11	The root of the equation $\sqrt{x-3}-2=0$ is				
(A)	$x=5$	(B)	$x=-7$	(C)	$x=7$
		(D)	$x=-5$		

Q.12	The roots of $ 2x+5 =7$ are				
(A)	$x=1$ or $x=6$			(B)	$x=-6$ or $x=1$
(C)	$x=-1$ or $x=6$			(D)	$x=-6$ or $x=-1$

Q.13	The function $f(x) = \frac{1}{x}$ is decreasing in				
(A)	$(-\infty, 0)$	(B)	$\mathbb{R} \setminus \{0\}$	(C)	$\mathbb{R}$
		(D)	$(0, \infty)$		

Q.14	The set of solutions of $ 2x+5 \leq 7$ is				
(A)	$[-1, 6]$			(B)	$[-6, -1]$
(C)	$[1, 6]$			(D)	$[-6, 1]$

Q.15	The set of solutions of $ 2x+5 \geq 7$ is				
(A)	$(-\infty, -1] \cup [6, \infty)$			(B)	$(-\infty, 1] \cup [6, \infty)$
(C)	$(-\infty, -6] \cup [-1, \infty)$			(D)	$(-\infty, -6] \cup [1, \infty)$

Q.16	The equation of a line passing through the point $(1, -2)$ and parallel to the $3x+2y-5=0$.				
(A)	$2y+3x-5=0$	(B)	$2y+3x-1=0$	(C)	$2y+3x+1=0$
		(D)	$2y+3x+5=0$		

Q.17	If $f(x) = 3^x$, then				
(A)	$D_f = \mathbb{R}$, and $R_f = (0, \infty)$			(B)	$D_f = [0, \infty)$, and $R_f = \mathbb{R}$
(C)	$D_f = (0, \infty)$, and $R_f = \mathbb{R}$			(D)	$D_f = \mathbb{R}$, and $R_f = [0, \infty)$

Q.18	The midpoint between the points $(-2\sqrt{2},3)$ and $(4\sqrt{2},-5)$ is						
(A)	$(-3\sqrt{2},1)$	(B)	$(3\sqrt{2},1)$	(C)	$(-\sqrt{2},1)$	(D)	$(\sqrt{2},-1)$

Q.19	If $f(x) = \sqrt[3]{x-1}$, then $D_f =$						
(A)	$(-\infty, \infty)$	(B)	$(-\infty, 1]$	(C)	$[1, \infty)$	(D)	$\mathbb{R} \setminus \{1\}$

Q.20	$[-6,5] \setminus [3,7) =$						
(A)	$[-6,3)$	(B)	$[-6,3]$	(C)	$(-6,3)$	(D)	$(-6,3]$

Q.21	The distance between the points $(2,-3)$ and $(-3,-3)$ is						
(A)	5	(B)	6	(C)	7	(D)	8

Q.22	If $f(x) = \sec x$, then $D_f =$		
(A)	$\mathbb{R} \setminus \{\pm \frac{\pi}{2}, \pm \frac{3\pi}{2}, \pm \frac{5\pi}{2}, \dots\}$	(B)	$\mathbb{R} \setminus \{0, \pm \pi, \pm 2\pi, \pm 3\pi, \dots\}$
(C)	$\mathbb{R} \setminus (-1, 1)$	(D)	$\mathbb{R}$

Q.23	$\frac{3\pi}{2}$ rad =						
(A)	120 ⁰	(B)	150 ⁰	(C)	270 ⁰	(D)	210 ⁰

Q.24	The domain of the function $f(x) = \sqrt{5 - \sqrt{x}}$ is						
(A)	$[0,5]$	(B)	$[0,25]$	(C)	$(-\infty,25]$	(D)	$[0,\infty)$

Q.25	If $X = \{1, 2, 3\}$ and $Y = \{4, 5\}$, then $Y \times X =$		
(A)	$\{(1, 4), (1, 5), (2, 4), (2, 5), (4, 3), (3, 5)\}$	(B)	$\{(4, 1), (5, 1), (4, 2), (5, 2), (4, 3), (5, 3)\}$
(C)	$\{(1, 4), (1, 5), (2, 4), (2, 5), (3, 4), (3, 5)\}$	(D)	$\{(4, 1), (5, 1), (2, 4), (5, 2), (4, 3), (5, 3)\}$

Q.26	If $f(x) = \sqrt{4 - x^2}$, then $D_f =$						
(A)	$(-2, 2)$	(B)	$(-\infty, -2] \cup [2, \infty)$	(C)	$[-2, 2]$	(D)	$(-\infty, -2) \cup (2, \infty)$

Q.27	If $f(x) = -\sqrt{4-x^2}$, then $R_f =$						
(A)	$(-2, 0)$	(B)	$[-2, 0]$	(C)	$(0, 2)$	(D)	$[0, 2]$

Q.28	The function $f(x) = \log_2 x$ is		
(A)	An exponential function	(B)	A power function
(C)	A trigonometric function	(D)	A logarithmic function

Q.29	The equation of a line passing through the points $(-1, -2)$, and $(8, -5)$ is		
(A)	$3y + x + 7 = 0$	(B)	$y + 3x + 7 = 0$
(C)	$3y - x + 7 = 0$	(D)	$y - 3x + 7 = 0$

Q.30	The set of solutions of the inequality $x^2 - 2x - 3 > 0$ is		
(A)	$(-\infty, -1) \cup (3, \infty)$	(B)	$(-\infty, -1] \cup [3, \infty)$
(C)	$(-\infty, -3) \cup (1, \infty)$	(D)	$(-\infty, -3] \cup [1, \infty)$