



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

B

Name:

ID:

تعليمات هامة:

- تستطيع – بمشيئة الله – تحقيق أفضل نتيجة من خلال إتباع التعليمات الآتية:
- يجب أن يكون نموذج الإجابة الذي أمامك هو B
- 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 إنتهاء الوقت المحدد.
- تظليل جميع الإجابات في نموذج الاجابة بشكل واضح وكامل.

Q.1	$330^\circ =$			
(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.2	If $f(x) = \sqrt[3]{x-2}$, then $D_f =$			
(A)	$(-\infty, 2]$	(B)	$[2, \infty)$	(C) $(-\infty, \infty)$ (D) $\mathbb{R} \setminus \{2\}$

Q.3	The function $f(x) = 3^x$ is			
(A)	An exponential function		(B)	A power function
(C)	A trigonometric function		(D)	A logarithmic function

Q.4	The roots of $ 2x - 7 = 5$ 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.5	The set of solutions of $ 2x - 7 \leq 5$ is			
(A)	$[-1, 6]$		(B)	$[-6, -1]$
(C)	$[1, 6]$		(D)	$[-6, 1]$

Q.6	The set of solutions of $ 2x - 7 \geq 5$ 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.7	The function $f(x) = x^2$ is decreasing in			
(A)	$(-\infty, 0)$	(B)	$\mathbb{R} \setminus \{0\}$	(C) $\mathbb{R}$ (D) $(0, \infty)$

Q.8	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.9	$2\sin^2 x =$			
(A)	$1 - \sin(2x)$	(B)	$1 - \cos(2x)$	(C) $1 + \sin(2x)$ (D) $1 + \cos(2x)$

Q.10	The equation of a line passing through the point $(1, -3)$ and parallel to the $2x + 3y - 5 = 0$ is			
(A)	$3y + 2x - 7 = 0$	(B)	$3y + 2x - 8 = 0$	(C) $3y + 2x - 1 = 0$ (D) $3y + 2x + 7 = 0$

Q.11	The domain of the function $f(x) = \sqrt{2 - \sqrt{x}}$ is						
(A)	$[0, 2]$	(B)	$(-\infty, 4]$	(C)	$[0, 4]$	(D)	$[0, \infty)$

Q.12	The root of the equation $\sqrt{2-x} - 3 = 0$ is						
(A)	$x = -7$	(B)	$x = 5$	(C)	$x = 7$	(D)	$x = -5$

Q.13	If $\cos x = \frac{\sqrt{5}}{3}$ and $\frac{3\pi}{2} < x < 2\pi$, then $\tan x =$						
(A)	$\frac{2}{\sqrt{5}}$	(B)	$-\frac{2}{\sqrt{5}}$	(C)	$\frac{\sqrt{5}}{2}$	(D)	$-\frac{\sqrt{5}}{2}$

Q.14	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.15	The slope and the y – intercept of the line $3x + 2y + 5 = 0$ 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.16	$\tan x \csc x =$						
(A)	$\sec x$	(B)	$\csc x$	(C)	$\cos x$	(D)	$\sin x$

Q.17	If $f(x) = 2^x$, then		
(A)	$D_f = [0, \infty)$, and $R_f = \mathbb{R}$	(B)	$D_f = \mathbb{R}$, and $R_f = (0, \infty)$
(C)	$D_f = \mathbb{R}$, and $R_f = [0, \infty)$	(D)	$D_f = (0, \infty)$, and $R_f = \mathbb{R}$

Q.18	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.19	$\csc\left(\frac{7\pi}{6}\right) =$						
(A)	-2	(B)	2	(C)	$\frac{1}{2}$	(D)	$-\frac{1}{2}$

Q.20	If $f(x) = \frac{x+5}{x^2+2x-3}$, 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.21	The roots of $2x^2 + 3x - 2 = 0$ 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.22	$(-6, 5] \setminus [3, 7) =$						
(A)	$[-6, 3)$	(B)	$[-6, 3]$	(C)	$(-6, 3)$	(D)	$(-6, 3]$

Q.23	The distance between the points $(2,-3)$ and $(-5,-3)$ is						
(A)	5	(B)	6	(C)	7	(D)	8

Q.24	If $f(x) = \cot x$, then $D_f =$					
(A)	$\mathbb{R}$			(B)	$\mathbb{R} \setminus \{0, \pm\pi, \pm2\pi, \pm3\pi, \dots\}$	
(C)	$\mathbb{R} \setminus (-1, 1)$			(D)	$\mathbb{R} \setminus \{\pm\frac{\pi}{2}, \pm\frac{3\pi}{2}, \pm\frac{5\pi}{2}, \dots\}$	

Q.25	$\frac{7\pi}{6}\text{rad} =$						
(A)	120^0	(B)	150^0	(C)	270^0	(D)	210^0

Q.26	If $f(x) = \sqrt{25 - x^2}$, then $D_f =$						
(A)	$[-5, 5]$	(B)	$(-5, 5)$	(C)	$(-\infty, -5] \cup [5, \infty)$	(D)	$(-\infty, -5) \cup (5, \infty)$

Q.27	If $f(x) = -\sqrt{25-x^2}$, then $R_f =$						
(A)	$[0,5]$	(B)	$(-5,0)$	(C)	$(0,5)$	(D)	$[-5,0]$

Q.28	The equation of a line passing through the points $(-2, -1)$, and $(6, -3)$.		
(A)	$4y + x - 6 = 0$	(B)	$4y - x + 6 = 0$
(C)	$4y + x + 6 = 0$	(D)	$4y - x - 6 = 0$

Q.29	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)	$(-\infty, -3] \cup [1, \infty)$

Q.30	If $f(x) = \frac{1}{x-1} + \sqrt{9-x^2}$, then $D_f =$		
(A)	$[-3, 1) \cup (1, 3]$	(B)	$[-3, 3]$
(C)	$\mathbb{R} \setminus \{1\}$	(D)	$\mathbb{R} \setminus [-3, 3]$