



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

A

Name:

ID:

تعليمات هامة:

- تستطيع – بمشيئة الله – تحقيق أفضل نتيجة من خلال إتباع التعليمات الآتية:
- يجب أن يكون نموذج الإجابة الذي أمامك هو A
- 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	$(-6,5] \setminus (3,7) =$						
(A)	$[-6,3)$	(B)	$[-6,3]$	(C)	$(-6,3)$	(D)	$(-6,3]$

Q.2	The distance between the points $(2,-3)$ and $(-4,-3)$ is						
(A)	5	(B)	6	(C)	7	(D)	8

Q.3	If $f(x) = \tan x$, 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.4	$\frac{5\pi}{6}$ rad =						
(A)	120 ⁰	(B)	150 ⁰	(C)	270 ⁰	(D)	210 ⁰

Q.5	If $f(x) = \sqrt{9 - x^2}$, then $D_f =$						
(A)	$(-3,3)$	(B)	$[-3,3]$	(C)	$(-\infty,-3] \cup [3,\infty)$	(D)	$(-\infty,-3) \cup (3,\infty)$

Q.6	If $f(x) = -\sqrt{9-x^2}$, then $R_f =$						
(A)	$[-3,0]$	(B)	$(-3,0)$	(C)	$(0,3)$	(D)	$[0,3]$

Q.7	The equation of a line passing through the points $(-1,2)$, and $(3,-4)$ is					
(A)	$2y + 3x - 1 = 0$			(B)	$2y - 3x - 1 = 0$	
(C)	$-2y + 3x - 1 = 0$			(D)	$2y + 3x + 1 = 0$	

Q.8	The set of solutions of the inequality $x^2 + 2x - 3 \geq 0$ 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.9	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.10	$\sin\left(\frac{7\pi}{6}\right) =$						
(A)	-2	(B)	2	(C)	$\frac{1}{2}$	(D)	$-\frac{1}{2}$

Q.11	$\tan x \cos x =$						
(A)	$\sec x$	(B)	$\csc x$	(C)	$\cos x$	(D)	$\sin x$

Q.12	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.13	If $\cos x = \frac{\sqrt{5}}{3}$ and $\frac{3\pi}{2} < x < 2\pi$, then $\cot x =$						
(A)	$\frac{2}{\sqrt{5}}$	(B)	$-\frac{2}{\sqrt{5}}$	(C)	$\frac{\sqrt{5}}{2}$	(D)	$-\frac{\sqrt{5}}{2}$

Q.14	The root of the equation $\sqrt{3-x} - 2 = 0$ is						
(A)	$x = 5$	(B)	$x = -1$	(C)	$x = 1$	(D)	$x = -5$

Q.15	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.16	The set of solutions of $ 2x + 7 \leq 5$.					
(A)	$[-1, 6]$			(B)	$[-6, -1]$	
(C)	$[1, 6]$			(D)	$[-6, 1]$	

Q.17	The set of solutions of $2x + 7 \geq 5$.						
(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.18	The equation of a line passing through the point $(-1,3)$ and parallel to the $2x + 3y - 5 = 0$.						
(A)	$3y + 2x - 7 = 0$	(B)	$3y + 2x + 1 = 0$	(C)	$3y + 2x - 1 = 0$	(D)	$3y - 2x - 7 = 0$

Q.19	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.20	The function $f(x) = \sin x$ is			
(A)	An exponential function	(B)	A power function	
(C)	A trigonometric function	(D)	A logarithmic function	

Q.21	The function $f(x) = x^2$ is increasing in			
(A)	$(-\infty, 0)$	(B)	$\mathbb{R} \setminus \{0\}$	(C) $\mathbb{R}$
(D)	$(0, \infty)$			

Q.22	If $X = \{1, 2, 3\}$ and $Y = \{4, 5\}$, then $X \times Y =$			
(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.23	The equation of a line with a slope $m = -\frac{2}{3}$, and y -intercept 2 is			
(A)	$2y + 3x - 6 = 0$	(B)	$3y + 2x - 6 = 0$	
(C)	$2y - 3x + 6 = 0$	(D)	$3y - 2x + 6 = 0$	

Q.24	$300^\circ =$			
(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.25	If $f(x) = \log_2 x$, 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.26	$2\cos^2 x =$			
(A)	$1 - \sin(2x)$	(B)	$1 - \cos(2x)$	(C) $1 + \sin(2x)$
(D)	$1 + \cos(2x)$			

Q.27	If $f(x) = \frac{1}{x-1} + \sqrt{4-x^2}$, then $D_f =$			
(A)	$\mathbb{R} \setminus [-2, 2]$	(B)	$[-2, 2]$	
(C)	$\mathbb{R} \setminus \{1\}$	(D)	$[-2, 1) \cup (1, 2]$	

Q.28	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.29	The domain of the function $f(x) = \sqrt{3 - \sqrt{x}}$ is					
(A)	$[0, 3]$	(B)	$(-\infty, 9]$	(C)	$[0, \infty)$	(D) $[0, 9]$

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