

University of Bahrain
Department of Mathematics
MATHS101: Calculus I
Fall 2016



Test 1

Student's Name: _____ ID: _____

Section: _____ Serial Number: _____

- *Do not* open the exam until you are instructed to do so.
- Calculators are allowed but cell phones are *not* allowed during the exam.
- Exchange of any material such as calculator, pen, eraser is *not* allowed.
- **No** questions are allowed.
- You have 1 hour to finish this exam. You can leave only after 30 minutes of the exam.
- There is 1 question consists of 17 multiple choice questions and 5 pages in this exam.
- The multiple choice question should be filled in the bubble sheet and will be graded by the computer.

Question	Points	Score
1	50	
Total:	50	

Exam Version: **B**

$$(5) \lim_{x \rightarrow 0} \frac{x^3 - 3x^2}{x^2} =$$

A. 1

B. -3

C. -1

D. 7

E. 0

F. 3

(6) What is the largest interval where the function $f(x) = \sqrt{4x - 12}$ continuous?

A. $[3, \infty)$ B. $(3, \infty)$ C. $(\infty, 3)$ D. $[12, \infty)$ E. $[-3, \infty)$ F. $(-\infty, 3]$

$$(7) \lim_{x \rightarrow 1^-} \frac{4x - 4}{x^2 - 1} =$$

A. -3

B. -2

C. -1

D. 0

E. 2

F. 1

(8) If

$$f(x) = \begin{cases} x^2 + 3x + 2, & x \leq 2 \\ 2x, & x > 2 \end{cases}$$

, then $\lim_{x \rightarrow 2} f(x) =$

A. 12

B. 4

C. Does not exist

D. 2

E. 3

F. -4

- (9) The function $f(x) = \frac{x-1}{2x-x^2}$ is discontinuous at
- A. 0 and 2 only B. 0 only C. 1 only
D. 0, 1, and 2 only E. 2 only F. None of the above
- (10) If $\frac{x^2+x+2}{2x+2} \leq f(x) \leq \frac{x^2+4x-4}{x}$, then $\lim_{x \rightarrow 1} f(x) =$
- A. 4 B. 2 C. -3
D. -2 E. None of the above F. 1
- (11) $\lim_{x \rightarrow 3^-} \frac{x^2-9}{|x-3|} =$
- A. 4 B. 0 C. 3
D. -6 E. -3 F. Does not exist
- (12) If $\lim_{x \rightarrow 5} f(x) = 21$, then $\lim_{x \rightarrow 5} \sqrt{f(x)+4} =$
- A. 5 B. 2 C. 4
D. -5 E. $\frac{1}{5}$ F. Does not exist

