Math 231 C,D. Midterm 2. March 20, 2014

Name: _____ **Section Code:** | | | |

Three points will be deducted if these instructions are not followed.

1. Write your full name legibly above.
2. Write your section code from the list in the boxes above.
3. Code your name, netid, and test form D correctly on the scantron form.

CDC – WF 10:00-10:50 -Instructor: Menezes, Glen
CDD – WF 11:00-11:50 -Instructor: Menezes, Glen
CDE – WF 12:00-12:50 –Instructor: Mastroeni, Matthew
CDF – WF 1:00-1:50 -Instructor: Butler, Stacey
CDG – WF 2:00-2:50 -Instructor: Butler, Stacey
CDH – WF 3:00-3:50 -Instructor: Mastroeni, Matthew
CDA – WF 8:00-8:50 -Instructor: Orlow, Nathan
CDJ – WF 11:00-11:50 -Instructor: Orlow, Nathan
DDG – WF 2:00-2:50 -Instructor: Jang, Donghoon
DDH – WF 3:00-3:50 -Instructor: Golze, Hiram
DDA – WF 8:00-8:50 -Instructor: Ahmed, Iftikhar
DDF – WF 1:00-1:50 -Instructor: Vellis, Vyron
DDD – WF 11:00-11:50 -Instructor: Heersink, Byron
DDC – WF 10:00-10:50 -Instructor: Heersink, Byron
DDE – WF 12:00-12:50 -Instructor: Golze, Hiram

- **Answers must be marked on scantron form.**
- You must not communicate with other students during this test.
- No written materials of any kind allowed.
- The only scratch paper allowed is the last page of the exam. It may be detached.
- No phones, calculators, iPods or electronic devices of any kind are allowed for ANY reason, including checking the time (you may use a simple wristwatch).
- Do not turn this page until instructed to.
- There are several different versions of this exam.

Violations of academic integrity (in other words, cheating) will be taken extremely seriously, and will be handled under the procedures of Article I, Part 4 of the student code.

Mark answers on scantron form.

Your test form is D. Code this on the scantron form now.

(3 points each) Choose the correct answer for each given sequence $\{a_n\}$.

1. $a_n = n^{100}e^{-n}$

(A) Converges to 0

(B) Converges to 1

(C) Converges to e

(D) Converges to e^{-1}

(E) Diverges

2. $a_n = \dfrac{n^4 + 2n^3 + 2}{5n^4 + 2}$.

(A) Converges to 1

(B) Converges to $\frac{1}{5}$

(C) Converges to $\frac{2}{5}$

(D) Converges to 0

(E) Diverges

3. $a_n = \dfrac{\sin(n)}{2\sqrt{n+1}}$.

(A) Converges to 1

(B) Converges to $\frac{1}{\sqrt{2}}$

(C) Converges to $\frac{1}{2}$

(D) Converges to 0

(E) Diverges

For each series mark **C** if the series **Converges** or **D** if the series **Diverges.** **Mark answers on Scantron form.**

4. $\sum_{n=1}^{\infty} \frac{n^4 + 15n}{n^5 + n^3}$

5. $\boxed{\sum_{n=0}^{\infty} \frac{n^3 + 15n}{5^n + n^3}}$

6. $\boxed{\sum_{n=1}^{\infty} \frac{n^{\frac{3}{2}}}{13 + n^{\frac{7}{2}}}.}$

7. $\sum_{n=1}^{\infty} \arctan(n).$

8. $\boxed{\sum_{n=1}^{\infty} \frac{\ln n^3}{n^2}.}$

9. $\boxed{\sum_{n=2}^{\infty} \sin\left(\frac{1}{n^2}\right).}$