Graded Quiz # 6

Graded Quiz # 6

0.8/1.0 point (graded)

Please write below your BracU ID and Section Number. After submission, these may show WRONG answers. Please IGNORE these messages. Your score will be based on the questions below these two inputs:

=====

Your BracU ID#:

19101239 ✖

Your theory class section#

- [ ] 1
- [ ] 2

- [ ] 3
- [ ] 4
- [ ] 5
- [x] 6

✖

MCQs start from below. Answer the questions correctly:

=====

Q#1: Suppose for a function, $f(4.5) = 0$. For fixed-point iteration, if you derived $g(x)$ from $f(x)$, what should be the value for fixed-point x_* which is the root of $f(x)$?

- (•) 4.5
- ( ) 2.25
- ( ) 2
- ( ) 4

✔

Q#2: Let $g(x) = cos(\pi x)$ derived from $f(x)$. If $x_* = 1.2$ for $f(x_*) = 0$ what is the convergence rate for fixed point iteration?

- ( ) Super Linear Convergence.
- ( ) Numerical Approximation is redundant.

- ◯ Linear Convergence.
- ◉ Divergence.

✔

Q#3: Let $g(x) = 5 + \frac{29}{x^2}$ derived from $f(x)$. If $x_* = 6$ for $f(x_*) = 0$ what is the convergence rate for fixed point iteration?

- ◉ Linear Convergence.
- ◯ Numerical Approximation is redundant.
- ◯ Divergence.
- ◯ Super Linear Convergence.

✔

Q#4: Let $f(x) = 0$ at $x = -2, 2$. If you derive $g(x) = \frac{2}{5}\sqrt{5x + 6}$, then which root or roots will g(x) converge to?

- ◉ Only at x = 2.
- ◯ Only at x = - 2.
- ◯ Will not converge to any.
- ◯ Both roots

✔

Q#5: Let $f(x) = 0$ at $x = -2, 4$. If you derive $g(x) = \frac{4x^2 + 7}{5x - 5}$, then which root or roots will $g(x)$ converge to?

- ◯ Will not converge to any.
- ◉ Both roots
- ◯ Only at x = 4.
- ◯ Only at x = - 2.

✔

Q#6: Let $f(x) = x^3 - 9x + 1$. What are the roots of the function? Note: x_* can be considered as roots when $f(x_*) < 10^{-4}$

- ◯ 2.35345,1.77131,-1.77131.
- ◯ 5.41241, 2.22112, -2.22112.
- ◉ -3.05408, 2.94282, 0.11126.
- ◯ 3.23121, -3.23121, 7.21456.

✔

Q#7: Which of the following $g(x)$ can be derived from $f(x) = x^3 - 9x + 1$?

- ◯ $\frac{1}{9 - x^2}$.

- ○ $x^3 - 9x + 1$.
- ○ $(9x - 1)^2$.
- ● $\frac{x^3 + 1}{9}$.

✔

Q#8: Let's say $g(x) = (9x - 1)^{\frac{1}{3}}$ can be derived from $f(x) = x^3 - 9x + 1$. How many roots will $g(x)$ converge to?.

- ○ 3.
- ● 2.
- ○ 1.
- ○ None.

✔

Submit You have used 1 of 1 attempt

Question #9 : Read the following question carefully.

Let's say $g(x) = (9x - 1)^{\frac{1}{3}}$ can be derived from $f(x) = x^3 - 9x + 1$ and it has a unique fixed point p_* on [2, 3] which is also the root of f(x).

a) **[1.5 Marks]** Let $p_0 = 2.7$, perform 3 fixed point iterations for p_n where $n = [0, 1, 2]$ up to **5 decimal place**.

b)**[0.5 Marks]** What is the error bound after 3 iterations?

Note: Follow the instructions below to submit the `Problem Solving' part.

GRADED QUIZ # 6 SUBMISSION

Status

You have completed this assignment. Your final grade will be available when the assessments of your response are complete.

Your Response due Aug 26, 2021 21:00 +06 (in 0 minutes) ✔ COMPLETE

Staff Grade NOT AVAILABLE

Waiting for a Staff Grade

Check back later to see if a course staff member has assessed your response. You will receive your grade after the assessment is complete.

Your Grade: Waiting for Assessments

You have completed your steps in the assignment, but some assessments still need to be done on your response. When the assessments of your response are complete, you will see feedback from everyone who assessed your response, and you will receive your final grade.

Previous

Next

© All Rights Re

Copyright - 2020