COMSATS University Islamabad

Attock Campus

Department of Mathematics

Quiz # 01 (extension) [*Optional*]

Class: BCS (3rd) **Due Date:** 26-09-2024 (1140PST)
Subject: Calculus and Analytic Geometry **Course Code:** MTH104
Instructor: Dr. Atiq ur Rehman **Marks:** 13

Note: Students need to submit a handwritten quiz on a single page, and they have the option of submitting or not submitting. This is an extension of Quiz # 01, which will replace the existing marks of Quiz # 01 but not more than 13 marks. (**Only for students having less than or equal to 12 marks**).

Question # 1 (Activity Base): Understand all the questions with solutions of the Quiz # 1.

Question # 2: Write or justify the solutions of all the questions of Quiz # 1 given on next page.

Name: ....   Reg. No.: CUI/...............–BCS–............./ATK

Quiz 01: MTH104 Calculus and Analytic Geometry

Instructions:
- Please choose the most correct option by filling or ticking or crossing the box.
- Spoiled or overwritten selection has no credit.
- Use of whitner may leads to discredit the quiz at all.

Q. 1. Consider a function $f : (\infty, 0] \to \mathbb{R}$ defined by $f(x) = x^2 + 3$. A function has value 4 at

☐ ± 1 ☐ 19

☐ -1 ☐ 1

Q. 2. Between any two rational numbers there may not exists

☐ rational   ☐ real

☐ integer   ☐ irrational

Q. 3. Replace the comma between 1.44, $\dfrac{7}{5}$ with the appropriate symbol $<$, $>$, or $=$.

☐ $>$ ☐ $<$

☐ $=$ ☐ none of these

Q. 4. A function f with domain X is termed (i) even if $f(-a) = f(a)$ for every a in X, or (ii) odd if $f(-a) = -f(a)$ for every a in X. Which one of them is NOT odd function.

☐ $x + 5$ ☐ x^3

☐ $5 \sin x$ ☐ $2x^3 + x$

Q. 5. Solution of $\left| \dfrac{7 - 3x}{2} \right| \le 1$ in the form of interval is ....
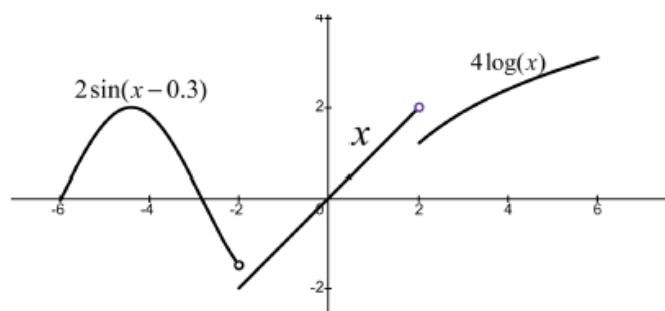
☐ $\left[-3, -\dfrac{5}{3} \right]$ ☐ $\left[\dfrac{5}{3}, 3 \right]$

☐ $\left[3, \dfrac{5}{3} \right]$ ☐ $\left[-\dfrac{5}{3}, 3 \right]$

Q. 6. $|1 - e^2| = $ ....

☐ 6.4   ☐ -6.4

☐ $1 - e^2$ ☐ $e^2 - 1$

Q. 7. Find the largest subset of $\mathbb{R}$ that can serve as the domain of the given function: $f(x) = \log(16 - 4x^2)$.

Q. 8. The graph of the function f define on interval $[-6, 6]$. Write the algebraic expression of the function.