COMSATS University Islamabad (CUI)

Park Road, Tarlai Kalan, Islamabad 45550, Pakistan.

(Department of Computer Sciences)

Mid Term Examination Fall 2023

Class: BAI, BDS & BCT - I
Subject: Pre-Calculus I
Instructor: Dr. Rabia Fayyaz

Date: 13th November, 2023
Time Allowed: 80 Minutes
Marks: 25

Instructions:

- Attempt all the questions. Each question carries 5 marks.
- Mobile phones and digital calculators are not allowed in the examination room.
- Understanding of questions is part of examination.

Question 1:

An investor earned Rs 6000 for year 1980 and Rs 12000 for year 1990 on the same investment. If his earning have increased by same amount each year , how much income has received from the investment over the past eleven years.

Question 2:

Solve equation $\sqrt{2x-4}-\sqrt{x+7}-2=0$

Question 3:

Find the equation of the line passing through (1,-2) and perpendicular to $y = 2x - 31$.

Question 4:

Find the values of x such that $|x^2+x-1| \geq 1$

Question 5:

Find the functions $(f.g)(x), \left(\frac{f}{g}\right)(x), \left(\frac{g}{f}\right)(x)$ and their domains,

where $f(x) = 4x^2 + x^4$, *and* $g(x) = \sqrt{x^2+4}$.

Good Luck