

Mid Term Test

September 18, 2021 @3:00 PM

Duration: 60 Minutes (+ 30 Minutes for other formalities)

- Login in to usual Google meeting and remain logged in during the exam.
 - Keep you video on
 - Check your Roll no on the question paper.
 - Answer all the questions.
 - All iquestions carry equal marks.
 - Answer questions explicity, with all the necessary step.
 - Upload the answer script as PDF file to welearn.
 - You need not upload question paper.
 - Have a good day.
-
-

[1 of 4] Consider the function

$$f(z) = \frac{-z^2 - z + 1}{-z^2 - z + 1} \quad (1)$$

find if the $f(z)$ has any sigularities. Evaluate the residue at all sigularity

[2 of 4] Compute the contour integral of the function

$$f(z) = \frac{z^2 + z - 1}{-z^2 - z + 2} \quad (2)$$

over a contour $|z| < 1$

[3 of 4] What is the Laurent series expansion of

$$f(z) = \frac{1}{z^2 + z - 1} \quad (3)$$

at $z_0 = 0$ in the region $0 < |z| < 1$

[4 of 4] Compute the contour integral of the function

$$f(z) = \frac{1}{(z^2 + z + 1)^2} \quad (4)$$

over a contour $|z| < 1$
