National Institute of Technology Goa

Programme Name: **B.Tech./M.Tech./Ph.D.**

Minor Semester Examinations, 2022-23

Course Name: **MTHEMATICS-3**

Date: **07/10/20~~**

Duration : **1 Hour**

Course Code: **MA200**

Time: **4.00 PM - 5.00 PM**

Max. Marks: **10**

ANSWER ALL QUESTIONS

1. Find all roots of the equation $\tanh z + 2 = 0$.

2. Find the real part of the principal value of 4^{4+i}.

3. Discuss the type of singularity at singular points of $\tan 1/z$.

4. Evaluate the integral $\int_{|z+1|=2} \dfrac{z^2}{4-z^2}\,dz$.

$\sin^{-1}\dfrac{\sqrt{2}i}{4}$

$i\left(\dfrac{\pi}{2}+2k\pi\right)+\log\sqrt{3}$

$e^{\ln 4\,(4+i)}$

$\sinh z = \dfrac{e^z - e^{-z}}{2}$

$\cosh z = \dfrac{e^z + e^{-z}}{2}$

non isolated

$2\log a$

$\Rightarrow x=0, y=1$