STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI-86.

M.Sc DEGREE : BRANCH I - MATHEMATICS

(Effective from the academic year 2019-2020)

SUBJECT CODE: 19MT/PC/CA44

TITLE: COMPLEX ANALYSIS

TIME: 1 ½ HRS **MARKS: 50**

Section-A

Answer all the questions **2×2=4**

1. Is it possible to define $logf(z)$ and $\sqrt[n]{f(z)}$ to be analytic functions when $f(z)$ is a non-zero analytic function?
2. Define equi-continuity.

Section-B

Answer any two questions **2×6=12**

3. State and prove Cauchy's Integral formula.
4. State and prove Mean value property.
5. Prove that a family $\mathfrak{F}$ is normal if and only if its closure is compact

Section-C

Answer any two questions **2×17=34**

6. Derive a series expression for sine function.
7. State and prove Cauchy's theorem for a rectangle
8. State and prove the Riemann mapping theorem.