M T W T F S

Date:

Que :- 05

Find radius of convergence from series of simplar terms

a) $\sum_{n=2}^{\infty} \frac{n(n-1)(2-2i)^n}{3^n}$

b) $\sum_{n=1}^{\infty} \frac{n}{2}(2-2i)^{2n}$

c) $\sum_{n=1}^{\infty} \frac{3^n n(n+1)(2-i)^{2n}}{5^n}$

Que :- 06

Find the taylor of the given function with given centre and determine the radius of convergence.

a) $\sin z$, $\pi/2$

b) $1/1-z$, i

c) $\log(1-z)$, i

Que :- 07

Determine the location and kind of singularities of the following in case of pole also state the order

a) $z^3 \frac{1}{e^{z-1}}$

b) $\frac{1}{\cos z - \sin z}$

M T W T F S

Assignment # 03

Ques:- 01

For what contours C will it follow from Cauchy's integral theorem that

i) $\oint_C \frac{1}{z^2}\,dz = 0$

ii) $\oint_C \frac{\cos z}{z^6 - z^2}\,dz = 0$

iii) $\oint_C \frac{e^{z/2}}{z^2+9}\,dz = 0$

Que:- 2

Integrate $\int_C \operatorname{Re} z\,dz$ C the parabolla $y = x^2$ from 0 to $1+i$

Que:- 03

Find the upper bound of the absolute value of the integral in problem 2.

Que:- 04

Are the following sequences bounded? Convergent find their limit point?

a) $z_n = \ln(z_n + c)^n$

b)

c) $z_n = (0.9 + 0.1)^{an}$