

MAC 2312 EXAM V TOPICS (9<sup>th</sup> Ed.) (80 pts.)

9.7, 9.8 ① Finding a Taylor (or Maclaurin) polynomial or series. (10)

notes, printout ② Lagrange's form of the remainder. (5)

9.10 ③ Using known Maclaurin series to find the Maclaurin series of a given function and its interval of convergence. (10)

9.8 ④ Determine the interval of convergence of a power series. (10)

9.9 ⑤ Binomial series (5)

9.10 ⑥ Integrating or differentiating known series. (Also see notes) (5)

page 656, EX. 7, 9.9 ⑦ Computations using Taylor or Maclaurin series. (10)

9.10 ⑧ Definite integral using series approximation. (10)

9.10 ⑨ Algebraic manipulation of series. (10)

⑩ Prove the series for  $\tan^{-1}x$  by integration, or that the Maclaurin series for  $\sin x$  converges to  $\sin x$  for all  $x$ . (5)