UNIVERSITI TEKNOLOGI MARA

PROPERTIES OF TILTED UNIVALENT ANALYTIC FUNCTIONS OF ORDER *8*

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ABSTRACT

This thesis deals with the functions *f,* analytic and univalent in the open unit disk denoted as $U = \{z \in C: |z| < 1\}$. Let *A* be the class of analytic functions/defined in *U* and *S* be the subclass of *A* normalized by $f(o) = 0$, $f'(6) = 1$ and has the Taylor series expansion of the form

$$f(z) = z + a_2 z^2 + a_3 z^3 + \cdots = z + \sum_{n=2} a_n z^n.$$

Also, let *P* be the subclass of *A* consisting functions *h,* such that $\mathrm{Re}\{/^*(z)\} > 0$, $h(0) = 1$ and has the form of

$$h(z) = l + h_l z + h_2 z^2 + \cdots = 1 + \sum_{n=1}^{\infty} h_n z^n.$$

In this thesis, we investigate on the class $P(A,S)$ of *A*- tilted Caratheodory functions of order *5* and the subclasses of *S* denoted by $C_g(A, S)$ of *A* - close-to-convex functions of order *5.* Such functions in $P\{X,d)$ and $C_g(A,,S)$ satisfies

$$\mathrm{Re}\{e^{u}/^*(4><? \quad \text{and} \quad \mathrm{Re}\, je^{a} \wedge \wedge | > £ \qquad (zeU) \qquad ,$$

respectively with $|Jl| < \frac{}{2}$, $\cos(/l) > 5$, $0 < 8 < 1$ and $g_a(z) = \frac{}{(1\text{-}cuz)'}$ for $0 < a < 1$.

Some basic properties such as representation function, coefficient bounds, distortion theorem and growth theorem for the class $P\{X,d)$ and $C_g\{X,S) = C_{gx}(/I,S)$ are obtained. The bounds for real and imaginary part of *h* e $P(A.,S)$ and /' e $C_g(A,S)$ are also determined. We also discuss on the coefficient inequalities which consist of the upper bounds for the second Hankel determinant, $a_2 a_4 \bullet a,$ and the Fekete-szego functional, $a. \bullet //a_2$. We determined the upper bound for $a_2 a_A - a_3$ for function in $C_g(\&, S)$ and the upper bound for $a_3 - fux_2$ for function in $C_g\{X,S)$. Lastly, we discuss on the radius problems which focuses on finding the radius of convexity and the radius of starlikeness for the class $\boldsymbol{C_g}(A, S)$.

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