## **Dedication**

To my father , mother , brothers and sisters

### Acknowledgement

I would like to express my deepest and sincere gratitude and everlasting appreciation to my supervisor Dr. Shawgy Hussein Abd Alla for his very kind invaluable help, criticism, directing and supervising this work .

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#### **ABSTRACT**

In wide class of weighted Bergman spaces, we construct inevitable non-cyclic elements, these are then used to produce z- invariant subspaces of index higher than one generated non trivial bilaterally invariant subspaces in a nti symmetricallyweighted Hilbert Spaces of sequences. We also study the boundary behavior of the Berezin transform on C\*-algebra generated analytic Toeplitz operators on the Bergaman Spaces.

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# Large Bergman Spaces and The Berezin Transform on the Toeplitz Algebra

 $\mathbf{B}\mathbf{y}$ 

### A thesis Submitted in Partial Fulfillment for the Degree of M.Sc. in Mathematics

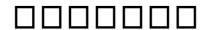
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## **List of symbols**

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B(z)	:	Blashcke product	1
$H^{p}$	:	Hardy Space	4
$L^{p}$	:	Space of Lebesgue integrable functions	1
5	:	Unit disc	1
$M_{\scriptscriptstyle  m so}$	:	The maximal ideal space	1
$H^{\infty}$	:	Commutative Banach algebra	1
X.	:	dual Banach Space	
	:	Gelfand-transform	1
$\vec{L}_k^2$	:	The Bergman Space	1
$B\!\!\left(L_a^2 ight)$	:	The set of bounded operator on	2
İ	:	The Toeplitz algebra	2
$B^{\scriptscriptstyle P}(D)$	:	The Bergman Space	۷
Z(D), d	<b>;</b>	The soft topology space	3
min	:	Minimum	3
	:	The Spectrum	
exp	:	exponential	4
arg	:	argument	6
sup	:	Supremum	6
may	•	mavimum	O



فى عائلة واسعة من فضاءات بيرجمان ذات الوزن تم بناء معكوس عناصرغير دوارة استخدمت في انتاج فضاءات جزئية ثابتة ح لها دليل اكبر من واحد. اضافة الي ان هذه العناصر ولدت فضاءات جزئية ثابتة ثنائية الجانب وغير بديهية في فضاءات هلبرت ذات الوزن للمتتاليات قطرية التناظر أيضا تمت درا سة حدود ية تحول بيرزن علي جبر ٢٠٠ـ المولد بمؤثرات التبولتز التحليلية علي فضاءات بيرجمان .