ACKNOWLEDGEMENT

"He who goes in search of knowledge walks in the path of GOD". Perhaps, this is the most appropriate quote to sum up this quest. I take this opportunity to thank the Almighty for His benevolent presence and invisible prowess to guide me in His path. It was my immense faith in Him which kept me going undeterred and reach this destination. I pray to Him to keep my faith strong and guide me with His guiding light. After all 'Light dawns after every darkness, believe in the divine'.

In this search for knowledge, my mind automatically goes to my supervisor, Dr. Najmul Islam, who worked hand in glove with me to achieve this mission. We were on no ordinary mission, it was a 'mission impossible' and for us where the odds weighed heavily against the evens, mutual understanding was the key words. He was willing to discuss my problems at all levels, convince me and console me in moments of despair. I was allowed to voice my opinions too and together we could knit this piece of work in its present shape. I can never thank him enough for being a friend, philosopher and guide to me. Ms. Zeba Islam was also always around to put in a word of encouragement.

I am grateful to Prof. Rashid Ali for allowing me to work in his laboratory which was a great source of help in executing my experiments. Without this, I could have never accomplished this task. I am also thankful for his constructive criticism often at the cost of his great discomfort and inconvenience.
I owe a deep sense of gratitude to Dr. Asif Ali, Chairman, who has been a great source of help and encouragement during some of the trying moments. Whenever, the going was tough, he did his best to remove every hurdle that came my way. I am particularly grateful to him for his affectionate ways and encouragement for this humble effort of mine.

Thanks are also due to Drs. Khushtar Salman, A.F. Faizy and Moinuddin for their help from time to time. A special note of thanks to Dr. M.U. Siddiqui, who always shielded me and gave a lot of moral support whenever I needed it.

There have been noteworthy contributions from persons outside this department who have always encouraged me to go ahead when the pace slowed down and did their best whenever I approach them for help. This includes Prof. W.A. Nizami, Deptt. of Zoology, A.M.U. and Dr. Saad Tayyab, Reader, Interdisciplinary Biotechnology Unit.

This work would have remains a distant dream but for the love and encouragement from my uncle, Dr. M. Khalilullah, Consultant in Cardiology, Inderprastha Apollo Hospital, New Delhi. He has been a father figure and source of inspiration to me. He was the one who was really keen that I should undertake a study in the field of cardiology. He helped me during the course of this study in every possible way. In his absence, Dr. M. Ahmad, Cardiologist, J.N.M.C., Aligarh ably supported me with the clinical details and also encouraged me to forge ahead. Thanks are also due to Prof. Amit Bannerjee, Deptt. of Cardiothoracic Surgery, G.B. Pant Hospital, New Delhi for providing a human heart which formed the pivotal basis of this study.
My thanks are also due to my departmental colleagues, Drs. Aslam and Sajid, Mr. Rizwan Ahmad, Waris, Deepak, Haseeb, Sharique, Humra, Talat and Subia for their support at times. Here, I would like to mention a special note of thanks to Dr. Rizwan Manzer whose incorrigible support helped me to overcome the last and most crucial phase of this crusade.

My friends Drs. Shagufta and Farah, Rana, Shahroz, Farah, Lubna, Minhaj, Salman and especially Saba and Jehangir, who stood with me through thick and thin and gave me comfort whenever I needed it. I also extend my thanks to my close friends and relatives who may be far but yet near to encourage me.

I would also like to mention the relentless effort of Mr. Wajid and Mr. Mansoor of Central Photographs. My genuine thanks are also due to Mr. Saleemuddin, cartographer for his fine sketches.

The non-teaching staff of the department mainly Mr. Aleem, Mr. Dabeer and Jumman who were everready to help me. The office staff, mainly Mr. Gautam and the staff of clinical lab, Mr. Aslahuddin. The animal house attendants also need a special mention for taking care of my animals.

Financial assistance from the U.G.C. Government of India in the form of S.R.F. is gratefully acknowledged.

Last but not the least, I would like to express my gratitude to Mr. Alaishya Hood for taking pains to print this manuscript in its present form.

Nabiha Yusuf