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(Dedicated to Professor J.N. Kapur on his 70th Birthday)

**PROFESSOR J.N. KAPUR : MAN AND
MATHEMATICIAN**

By

R.C. Singh Chandel

Secretary, Vijnana Parishad of India,
D.V. Postgraduate College, Orai - 285001 U.P., India

Professor J.N. Kapur (Jagat Narain Kapur), today needs no introduction to the academic community of India. However, to make formality we may say that simple, unassuming, energetic, dynamic, witty and over mailing, a varasious reader, an aloquent speaker, a prolific writer, an out standing researcher, an excellant teacher, an able administrator, an eminent educationist, encouraging his followers, a true and devoted salesman of Mathematics; these are only some of the qualities of Professor Kapur as a man.

Professor Kapur was born in Delhi on September 7, 1923. He was educated at D.A.V. High School, Daryaganj and at Hindu College, University of Delhi. He had a first class first throughout. He beat the Delhi University records in B.A. (Hons) and M.A. examinations by wide margins securing 91% and 97% marks respectively. He also won three gold medals for his brilliant performance.

Soon after passing his M.A., Professor Kapur joined Hindu College Delhi as a Lecturer, where he served for fifteen years and established himself as a teacher of repute. In 1957, he got Ph. D. from Delhi University. In 1959 he joined the University of Delhi as a Reader. In 1961 he left Delhi to join I.I.T. , to organise Mathematics Department. His stay at Kanpur (1961- 1970) was a period of intense research activity. By his imagination, foresight, understanding and hard work, he established to Department at I.I.T. as one of the strongest schools of Mathematics in the Country. On 31st December, 1970, Professor Kapur took up an assignment as Vice-Chancellor of Meerut University Meerut at so early an age of forty seven. He produced himself as good administrator as a mathematician. During the period of his Vice-Chancellorship, he visited all the 56 Colleges affiliated to the Meerut University many times and talked with students, teachers, managements and public to solve their problems. He made the atmosphere of the University peaceful and brought the University to the top. It was due to his scrious efforts that the right kind of academic atmosphere prevailed and the academic activities of the University were consequently at their peak during the period he was the Vice-Chancellor.

During his Vice-Chancellorship, he continued his academic work also with same sprite and when he found that his administrative duties were interfering with his academic work, he resigned during

the second term of Vice-Chancellorship of Meerut University and Joined back IIT, Kanpur in August, 1974.

In September, 1983 his 60th birthday was celebrated in different part of India. He was retired but was requested to continue for three years more at I.I.T., Kanpur. He was only the Professor of the pre-stigious Institute to have been given this honour.

In October, 1986 he returned to Delhi and joined I.I.T., Delhi, Delhi University as an Honourary Visiting Professor for a period of two years.

He was also selected as an Indian National Science Academy (INSA) Senior Scientist for 1987, 1988 and 1989. In October 1988, he joined the School of Computer and System Sciences of Jawahar Lal Nehru University, New Delhi as Honourary Professor for life. Associated with Professor Kapur since 1970 through "JANABHA" a Journal of "VIJNANA PARISHAD OF INDIA" whose I am one of the Editors and Prof. Kapur is its Chief Advisor. He always encourages us. The "VIJNANA PARISHAD OF INDIA" in its present form is due to inspiration of Professor Kapur. He may be treated as founder President of present "VIJNANA PARISHAD OF INDIA" because before him Parishad was an unregistered body having no President.

There are millions of students who appear in university examination. Out of these, there are a few thousands who get first division in all positions in all their examinations. Out of these, three may be a few who beat earlier university records in both their first and second degree examinations. Out of these there is only one who beat these earlier records by wide margins of 4% and 15% marks. This man is Professor Kapur.

There are tens of thousand of persons who get Ph.D. degrees. A number of their theses are based on ten or more published papers. There was one thesis of more than 900 pages submitted for Ph.D. degree and this was based on 30 published papers. This was submitted by Prof. Kapur.

There are tens of thousand of mathematicians who publish research papers. Out of these, a few hundred publish more than 100 research papers. Prof. Kapur is one of them, having published more than 400 research papers.

There are research workers who work in one area all their life. Some work in two or three areas. Very few worked in ten or more different areas. Prof. Kapur is one of them.

There are many research guides who guide students for Ph.D. degree. There are some who guide more than 30 students. Prof. Kapur is one of them.

There are many persons who write general scholarly, articles on educational matters. There are a few who publish more than 500 such articles. Prof. Kapur is one of them.

There are many authors who write dozens of non-fiction books. Prof. Kapur is one of them, having written more than 60 books, more than 50 of which are innovative in nature.

There are a large number of authors whose books are published locally. There is a smaller number of authors whose books are published by international publishers. Prof. Kapur is one of them. Four of his books have already been published in USA and Canada.

There are persons who have written books for primary level or secondary level or senior secondary level or undergraduate level or post graduate level or reserach level or general books or books on education. Prof. Kapur has written books at all these levels.

There are tens of thousands of scientists in the country. Out of these about a thousand are Fellows of one or the other of the three National Science Academies. There are about 200 who are Fellows of all the three Academies. Proff. kapur is one of them and is quite senior among them.

There are many mathematicians who have been president of Indian mathematical Society or Calcutta Mathematical Society or Bharat Ganita Parishad or Indian Society of Theoretical and Applied Mechanics or indian Society of Agricultural Statistics or Mathematical Section of Indian Science Congress or Physical Science Section of National Academy of Sciences or of Associations of mathematics Teachers of India or of Vijnana Parishad of India or of Mathematical Association of India or of Indian Society of Industrial and Applied Mathematics. Only Prof. Kapur has been the president of all of them.

He has also been Vice-President of Operation Research Society of India, Indian Society for History of Mathematics, and Society of Scientific Values. This also reflects his wide interest in Pure and Applied Mathematics, Statics Theoretical and Applied Mechanics, Operations Research, Mathematics Education, History of Mathematics and Scientific Values.

There are many Indian mathematicians who have been visiting professors abroad and out of them, some have been visiting professors in developed countries like USA, Canada and Australia. Prof. Kapur has been a full visisitng professor in eight universities of developed countries. He has been a visiting professor not only in departments of Pure and Applied Mathematics but also in departments of Management Science, Industrial Engineering, School of Business and System Engineering. At present he is honorary professor in a school of Computer and System Sciences. This also shows the wide range of his interests.

There are many persons who worked as editors of journals or on editorial boards of journals. Prof. Kapur has worked as editor of four journals and has been on the editorial board of two dozen other journals.

Many persons have directed summer schools organised by the UGC or NCERT. Some have directed a number of them. Prof. Kapur has directed about 30 of them. What is the more important is that he is one of few persons who have organised the summer schools on their own initiative.

There have been thousands of Vice-Chancellors of Indian Universities, but only a few who got this position before they were even 47 years old and fewer still who were requested to accept this position. Infact his Cancellor got levave of absence for him from IIT/K without his even asking for it. He was a Vice Chancellor who stood firmly for 100% fairness and impartiality in all admissions, appointments and examinations. It was he who conducted the CPMT examination in UP for four years without a single complaint. There were plenty of complaints before and after his time, but none during his time. In fact in an extraordinary resolution, the UP government congratulated him on his outstanding work which looked like a miracle at that time.

Again many eminent persons like their birthdays to be celebrated. However, when his students collected some funds for celebrating his 50th birthday, he prohibited them from doing so and these funds became the nucleus for a mathematical Sciences Trust Society to work for the development of Mathematical Sciences in India.

When the UP government wanted to give honararium for the work he did for CPMT, he refused to accept it and at his instance the UP governement donated the amount to MSTs. He gave the royalty of most of his books to the Trust. The Trust has published about 30 books so far and gives prizes worth about Rs. 20,000 per year to mathematical Olympial winners and to all those who stand first in Mathematics in Board and University examinations all over the country.

Many persons can claim to have done something for mathematics educations research by using government money. He does not use government money. He believes in giving and not in taking. He believes that the country will develop when the people depend on their own resources rather than on government resources for serving the country.

Many persons in India have personal libraries. Some mathematicians and Scientists in India have their personal libraries. But few have a library of the size of Prof. Kapur's Library. His library consists of more than 5000 books, 1000 journals and 200 Ph.D. theses.

Prof. Kapur has won many awards including GP Chatterjji award of ISCA, Education Minister's Gold medal of N.A.S.C., Yogjiji Maharaj Cncretary Award and best paper awards in many international conferences. He has won honours including Visiting Professorships, Fellowships of Academies, Presidentships of Societies, Vice- Chancellership etc. but he has never asked for them. He has never hinted to anybody that he should be considered for any one of these.

He believes in the joy of work. He enjoys reading, writing, lecturing, scvering. He neither expects appereciation or reward for his work. If there is anything he expects from his students. Friends and admires, it is only that they may give their best to mathematics science country and man-kind.

Prof. Kapur has many firsts to his credit. He was the first to organise the summer schools in India, of course with the cooperation of others. He was the first head of the mathematics department of IIT, Kanpur and he built this department to international standards in a short time. He was the first author to write books on Mathematical Statics, Mathematical Modelling, Mathematical Models in Biology and Medicine, Maximum Entropy Models and Entropy Optimisation Principles, Biographies of Indian Mathematicians and Olympiad Problems. In many cases his books were the first of their kind in the world.

PROFESSOR J.N. KAPUR AT A GALANCE

NEME	Jagat Narain Kapur
DATE OF BIRTH	7-9-1923
AFFILIATIONS	Honorary Professor School of Computer and Systems Sciences, Jawahar Lal Nehru University, New Delhi - 110067 & Honorary Director Mathematical Science Trust Society, New Delhi
ADDRESS	C-766, New Friends Colony, New Delhi, 110065 India (001) 6832290.
EDUCATION	B.A. (Hons.) Mathematics, 1942, Delhi University, India First Class First M.A. Mathematics, 1944, Delhi University, India First Class First Ph.D. Mathematics, 1957, Delhi University, India Certificate course in Statistics (ICAR) First Class First in first batch. Broke Previous Delhi University Records in both B.A. (Hons.) and M.A. examinations by margins of 4 percent and 15 percent marks by securing 91 and 97 percent marks respectively. Won Three Gold Medals and Six Scholarships.
POSITIONS HELD	
1944-59	Senior Lecturer, Hindu College (Graduate School) Delhi University, India 1945-1959
1959-1961	Reader (Associate Professor) Institute of Postgraduate Studies, Delhi University, India. 1959-1961
1961-86	Professor, Indian Institute of Technology, Kanpur, India 1961- 1986.
1986-88	Visiting Professor , Mathematics Department, IIT, Delhi & Delhi University,

- 1987-89 Senior Scientist, Indian National Science Academy,
 1988-90 Adjunct Professor, Waterloo University Canada
 1988 upto date Hon'ble Professor, school of Computer and Systems Science, Jawahar Lal Nehru University, New Delhi.

VISITING PROFESSOR

University	Country	Year	Department
Arkansas	USA	1969	Mathematics
Carnegie-Mellon	USA	1969-70	Mathematics
Siena	Italy	1970	Mathematics
Manitoba	Canada	1980-81	Business and Acturial Mathematics
Waterloo	Canada	1981-82	Applied Mathematics
Waterloo	Canada	1982	System Engineering
Manitoba	Canada	1983	Actuarial and Management Sciences
Manitoba	Canada	1984	Industrial Engineering
New South Wales	Australia	1984	Applied Mathematics
Flinders	Australia	1984	Mathematical Sciences
Carleton	Canada	1985	Business School
Waterloo	Canada	1985	Systems Design Engineering
Waterloo	Canada	1986	System Design Engineering
I.I.T. Delhi	India	986-88	Mathematics
Waterloo	Canada	1987	System Design Engineering
Delhi	India	1987-88	Mathematics
Waterloo	Canada	1988-89	Systems Design Engineering
Waterloo	Canada	1990, 91 & 1992	Systems Design Engineering

FELLOWSHIPS IN PROFESSIONAL ORGANISATIONS

	YEAR OF ELECTIONS	
Indian Academy of Science	F.A.Sc.	1965
national Academy of Sciences	F.N.A.Sc.	1965
Institute of Mathematics and its Applications, UK	F.I.M.A.	1966
Indian National Science Academy	F.N.A.	1969

PRESIDENTSHIP OF PROFESSIONAL ORGANISATIONS

Indian Science Congress Association (Mathematics Section)	1968
Bharat Ganita Parishad	1969

Indian Mathematical Society	1971,1972
Calcutta Mathematical Society	1975
Association of Mathematics Teachers of India	1977-90
Indian Society of Theroretical and Applied Mechanics	1978
Mathematical Association of India	1979*
Indian Society of Agricultural Statistics	1984
National Academy of Sciences (Physical Sciences Sect.)	1984
Mathematical Sciences Trust Society	1973*
Vijnana Parishad of India	1985*
Indian Society of Industrial and Applied Mathematics	1993*
Indian National Commission on History of Sciences (Modern Period)	1993

CHIEF EDITOR

The Mathematics Seminar	1963-68
Bulletin, Mathematical Association of India	1969*
The Mthematics Student (IMS)	1968-70
The Mathematical Education (UGC)	1984*
National Council of Educational Research and Training Upper Primary mathematics Text Books	1987-89
Indira Gandhi National Open University Text books on Mathematics	1987-89

MEMBERSHIP (PAST OR CURRENT)

- ➔ of Editorial Boards of Twenty Indian and Foreign Journals
- ➔ (Chief Advisor : Jnānābha Published by Vijnana Parishad of India, since 1970)
- ➔ of 25 professional societies in the worded
- ➔ International Commission of Mathematics Instruction (India's Representative)
- ➔ Indian National Commission on History of Sciences
- ➔ Excutive Committee and Council, Indian Science Congress Association.
- ➔ Council, Sectional Committee and Basic Sciences Committee of INSA
- ➔ Council, of National Academy of Sciences
- ➔ Organizing Committee of Fourth International Conference on Mathematical Modelling.
- ➔ Organizing Committee of First and Second International Congress of Teaching of Mathematical Modelling.
- ➔ International Conference on Transporation (Chairmann, Mathematics Committee)

- Central Board of Secondary Education (Chairman, Mathematics Committee)
- national Council of Teacher Education
- university Grants Commission Mathematics Panel
- Innovations Committee of National Council of Educational Research and Training, India
- Review Committee of Regional Colleges of Education (Chairman)
- Council of Indian Society of History of Mathematics (Vce-President)

- Council of Operations Research Society of India (Vice-President)
- Science Education Forum of Indian Scieince Congress (Convenor)
- Parmar Institute of Mathematial Sciences Shimla, India (Honorary Dicector)
- Indian Mathematical Society (Academic Secretary)
- Council of Society of Scientific Values (Vice-Chairman)
- National Commiitee on Mathematical Sciences (DST) (Chairman)
- National Committee on Mathematical Education and Research (DST)
- Governing bodies of nine U.P. Engineering Colleges.

PUBLICATIONS : RESEARCH PAPERS (ABOUT 4000 PUBLISHED PAGES)

Internal Ballistics of Orthodox Guns (21), Internal Ballistics of Special Guns and Rockets (15), Form Function for Multitubular Charge (8), International Ballistics of Cpmposite and Moderated Charges (14), General Fluid Flows (15), Compressible Fluid Flows (9), General Non-Newtonian Fluid Flows (27), Non-Newtonian Fluids in Inlet Regions (14), Conducting Non-Newtonian Fluid Flows (3), Megneto Hydrodynamics (20), Heat Transfer (2), General Ppulation Dynamics (8), Difference Equation Population Models (6), Population Models with Time Delays (8), Prey Predator and Competition Models (7), Age-Structured Population Models (16), Mathematical Bioeconomics (14) Bio-mechanics (4), Compartment Analysis (3), Stochastic Processes (14), Measures of Information and Their Properties (50), Entropy Optimization Principles (16), Maximum Entropy Principle in Statistics Statistical Mechanics, and Operations Research (19). MEP Models in Marketing, Political Science, Economics Business, Search Theory, Population Dynamics, Pattern Recognition, Image processing, Flexible Manufacturing Systems, Coding Theory and Regional and Urban Planning (16), General Information Theory (9), Financial Mathematics Decision Theory and Social Sciences (7), Flexible Manufacaturing Systems (12), Fibonacci Numbers (12). Geometry (23), Innovation Deffusion Models (2) Survey Papers (9), Miscellaneous (10), Measures of Information and Their Applications (60), Statistics (4).

PUBLICATIONS : GENERAL ARTICLES (ABOUT 10000 PAGES)

Mathematical Education (178), Expository Mathematics (135), Applications of Mathematics (55), Mathematics Problem (12), Education (22) Higher Education (86), Vice-Chancellor Addresses (34), Convocation Address (6), Articles/Book Reviews (115), General Articles (18), Editorial (30), Scientific Values (6).

PUBLICATIONS BOOKS : (ABOUT 16,000 PAGES)

Advanced Level Books (13), Expository Mathematics (23), Mathematics Olympiad Problem Solving (6), Text Books (12), Mathematics Education (17), Higher Education (3), Book Edited (10).

ADMINISTRATIVE EXPERIENCE

Vice-Chancellor, Meerut University, India (1971-74). Head of postgraduate mathematics Deptt. (32 Years), Acting Director, Indian Institute of Technology, Kanpur, India on different occasions for approximately 250 days Director of Thirty Summer Schools of Mathematics, Organizer of a dozen national and international Conferences.

AWARDS

National Academy Gold Medal for best research	1980
National Lecturer, University Grants Commission	1982-83
G.P. Chatterjee Award, Indian Science Congress Association	1988
Distinguished Service Award,	1983
Mathematical Association of India	
Platinum Jubilee Lectureship, Indian Science Congress Association	1988
Best paper Award, Administrative Science Congress Association	1986
Best paper Award, Administrative Science Association, Canada	1986
Felicitation by Yogiji Maharaj Trust, Gandhigram	1992

UNIVERSITIES VISITED

USA (39), Canada (12), Italy (2), UK (12), West Germany (9), Australia (12), Netherlands (3), Singapore (1), Iran (2), Thailand (1), Bangladesh (1).

MATHEMATICS EDUCATION PROJECTS VISITED

USA (14), UK (8), Netherlands (2), Italy (3), Australia (8).

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For details please write to :

VINOD KUMAR

Editor, Epsilon Journal of Mathematics

Department of Mathematics

Christ Church College

Kanpur - 208 001, INDIA