



V.V. Sangha's

# VEERASHAIVA COLLEGE





V.V.Sangha's

**VEERASHAIVA COLLEGE, BALLARI.**

(Re-accredited by NAAC with 'B' Grade)  
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[www.veerashaivacollege.org](http://www.veerashaivacollege.org)

**SMRUTHI-2015**

**College Magazine**



## TEACHING STAFF





## EDITORIAL BOARD

*EDITOR: Ms. Evangeline Nerella.*

*CO-EDITOR: Ms. A. Shirly Jones.*

*MEMBERS: Mr. H. Jayaprakash Goud*

*Mr. P. Masatanappa.*

*Dr. B. R. Manjunath.*

*Dr. H. B. Jalajakshi.*







## EDITORIAL

I feel elated to present 'SMRUTHI 2015' for the perusal of our dear readers. The purpose of this magazine is to provide a platform to the students and staff to give expression to their thoughts and thus develop an important aspect of their personality.

SMRUTHI is designed to present to its readers the year's events in academic, co-curricular and extra-curricular activities as well as in research and development. Empowerment of students for their all round development through education is important. Today, education means much more than mere acquiring knowledge. It is acquisition of knowledge and skills, building character and improving the employability of young talent, the future leadership.

With all the efforts put in by the principal, staff and students, I hope that the pages that follow will make some interesting reading.

I congratulate the editorial team on making SMRUTHI innovative and inspiring. I extend my warm wishes to all our readers.

**Ms. EVANGELINE NERELLA**

भारतीय अन्तरिक्ष अनुसंधान संगठन  
अन्तरिक्ष विभाग, भारत सरकार, अन्तरिक्ष भवन  
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Indian Space Research Organisation  
Department of Space, Government of India  
Antariksh Bhavan, New BEL Road, Bangalore - 560 231, India  
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**Prof. U R Rao**

(Former Chairman, Space Commission & Secretary, Department of Space)  
Chairman, PRL Council, ISRO-DOS  
Chairman, Karnataka Science & Technology Academy



ISRO/URR/P.1

June 1, 2015

**MESSAGE**

*I understand that Veerashaiva College, Ballari has started publishing its in-house magazine. In-house magazines of institutions are very important to ensure that students and staff keep in touch with the interesting events, developments and activities of relevance which assist in improving their professional growth and knowledge. I wish Veerashiva College authorities as well as the editorial staff involved in the publication of their In-house Magazine all success.*

  
(U R Rao)



Justice G.Patri Basavana Goud  
#58, 'Ganga', ISRO Road,  
Judicial Officers' Layout,  
RMV II Stage, Sanjay Nagar,  
Bangalore – 560 094.  
Telephone: 23418880,  
Cell:9845011144.

Date: 01/06/2015.

## *Message*

I feel proud and privileged that I studied in Veerashaiva College, Ballari. While helping to continue the large hearted rural background that I came from, the College environment also helped me to lay a firm foundation for my subsequent career in law, first as a lawyer and eventually to end up as Judge, High Court of Karnataka. Subsequently I also had the opportunity to fight corruption among public servants, as Upalokayukta in the state of Karnataka.

I am grateful to all those in that noble institution that shaped my career and character. I wish the Editorial team success in bringing out 'SMRUTHI-2015'.

In the context of NAAC Peer Team visit to the College, I wish that the College will get the highest grade. Wishing you, all the best.

With regards,

Sincerely Yours,

(G. Patri Basavana Goud)

Former Upalokayukta

State of Karnataka

Former Judge  
High Court of Karnataka





*G.M.P.Reddy, IPS  
Director General & Inspector General of Police,  
West Bengal  
Nabanna, 325 Sarat Chatterjee Road,  
Howrah - 711 102*

*Dated June 24, 2015*

## *Message*

I am extremely happy to note that the Veerashaiva College is bringing out 'Smruthi 2015'. It came as a pleasant surprise when the Principal Shri Jayaprakash asked me to send a message for this issue. As an alumni of this institution, it is indeed an honour.

I passed out from this college in the year 1977. Virtually in the previous century. It's been so long ago. But the memories are still very fresh... as if it was just the other day. Veerashaiva College, even then had a rich tradition & had produced some great achievers in various fields. I still remember listening awestruck to Dr UR Rao, the eminent space scientist on one of the 'College Day' functions. I have no doubt the College has produced many such gems over the years.

The college had some of the best faculty members. Mr Mariappa and later Mr Eswarappa as Principals, Mr. Sathyanarayana, the English professor, Mr.Veerabhadrappe, Kannada professor, Mr Ramaswami who taught Indian Economy, Mr. Badrinath who taught History and many others. Foremost among them was Professor Sheshadri. We considered ourselves extremely lucky to be his students. His quality of teaching was such he could have been in the faculty of any of the eminent universities in the world. I owe a lot to him, other eminent teachers and the College, for instilling inquisitiveness and a quest for knowledge and for ingraining that learning never ends.

I am very honoured that I was remembered as an alumni of this great College and was given an opportunity for sharing few of my experiences as a student. I am very grateful to the present Principal for the same. I am also extremely happy that some of the valued traditions of this esteemed institution are being carried forward.

My best wishes & regards to the editorial team, faculty members and students.

*G.M.P. Reddy, IPS  
Director General & Inspector General of Police  
West Bengal*



KOTILINGANGOUD PATIL  
I.A.S

Res.: 871/A, 17th E-Main, 8th  
Block, Koramangala, Bangalore  
560 095.  
Ph.:25501177, 9916941239.

## *Message*

Boundless is my joy to recall my days from 1961 to 1964 as a student of Veerashaiva College, Bellary the most prestigious educational institution in North Karnataka.

After my graduation, I moved over to Mysore for Post-Graduation, where I secured 1st Rank and the only first class in M.A. (Economics) from Mysore University. And I was awarded two gold medals. This was made possible for me as the firm foundation was laid in Veerashaiva College, Bellary under the able stewardship of Prof. D.Mariappa the Principal. Having secured two gold medals, I was then appointed to teach the POST GRADUATE STUDENTS of Mysore University for three years. I simply enjoyed teaching .... a noble profession to serve in.

Thereafter I joined IAS and it was my proud privilege to serve three eminent GOVERNORS of Karnataka as Secretary to governor for over decade from 1980 to 1989. Since the Governor is the Chancellor of all Universities, I did have golden opportunity to serve the academic community in my capacity as Secretary to the Chancellor. Even in my last leg of service as administrative judge of Karnataka Administrative Tribunal, wherein I was given the responsibility of delivering justice, education and academic community was uppermost in my mind. Thus, the Veerashaiva College has been a strong source for rolling out the much needed robust citizens who have moved into all walks of life and through hard work, made Veerashaiva College the unique educational institution in pursuit of academic excellence.

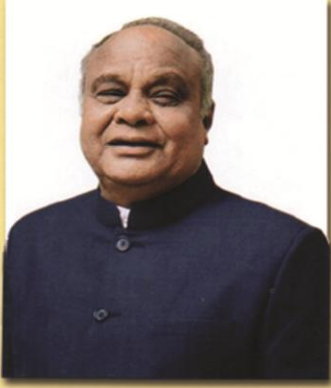
I remember every member of the Teaching Staff with reverence and greatly admire and cherish the love and affection showered on me. All this speaks volumes about the highest standard of education being imparted by Veerashaiva College, Bellary.

I wish the Principal, Editorial Board, Staff and the Students success in bringing out 'SMRUTHI-2015'.

With warm regards,

Yours Sincerely  
Kotilingangoud .. 3.4.2015





ALLUM BASAVARAJ  
President  
V.V.Sangha, Ballari

## Message

*I am pleased to learn that Veerashaiva College, a component of Veerashaiva Vidyavardhaka Sangha's Group of Institutions, is bringing out its college magazine "SMRUTHI-2015" showcasing the academic and cultural talents of the students, faculty and staff. Veerashaiva College has an excellent tradition of fostering talents and supporting creativity.*

*As the President of Veerashaiva Vidyavardhaka Sangha, I would like to convey my heartiest wishes on the occasion of the release of the said magazine. I wish the magazine is widely read and cherished and hope it will continue to inspire one and all.*

(ALLUM BASAVARAJ)



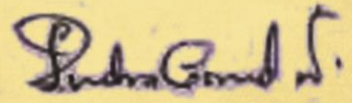


N RUDRAGOUDA  
Secretary  
V.V.Sangha, Ballari

## Message

*I am happy to know that, Veerashaiva College is coming up with a magazine – Smruthi-2015. From its inception, Veerashaiva College has made a steady progress without compromising to provide quality education. I am confident that this college magazine will epitomize the hidden talents of the students and staff of the college to share their views. A coordinated effort by staff and students will definitely enrich the reputation of the institution to grow to newer height.*

*I wish the management, teaching and non-teaching staff, editorial team and also the students of the college all success in all their activities.*

  
(N RUDRAGOUDA)



MUNDASADA MUPPANNA  
Treasurer  
V.V.Sangha, Ballari

### *Message*

It is certainly a matter of pleasure that Veerashaiva College has been imparting quality education and providing opportunity to the students to groom to excel and is now bringing out a college magazine "SMRUTHI-2015". I hope that the magazine will provide a platform for staff and students to express their novel ideas and unseen abilities.

I wish to congratulate the entire faculty and other staff for encouraging and guiding the students in all facets for their all round development.

(MUNDASADA MUPPANNA)





SRI SAHUKAR SATISHBABU  
CHAIRMAN  
VEERASHAIVA COLLEGE  
BALLARI

ಶ್ರೀ ಎಸ್.ಸತೀಶ್ ಬಾಬು  
ಅಧ್ಯಕ್ಷರು,  
ಕಾಲೇಜು ಆಡಳಿತ ಮಂಡಳಿ  
ವೀರಶೈವ ಮಹಾವಿದ್ಯಾಲಯ,  
ಬಳ್ಳಾರಿ.

### ಸಂದೇಶ

ಹೈದರಾಬಾದ್-ಕರ್ನಾಟಕ ಭಾಗದ ಶೈಕ್ಷಣಿಕ ರಂಗದಲ್ಲಿ ವಿಶಿಷ್ಟ ಸಾಧನೆಯ ಮೂಲಕ ತನ್ನದೇ ಆದ ಭಾಷನ್ನು ಮೂಡಿಸಿರುವ ವೀರಶೈವ ವಿದ್ಯಾವರ್ಧಕ ಸಂಘಡದಲ್ಲಿ ನಡೆಯುತ್ತಿರುವ ವೀರಶೈವ ಮಹಾವಿದ್ಯಾಲಯಕ್ಕೆ ಸುದೀರ್ಘ 70ವರ್ಷಗಳ ಭವ್ಯ ಇತಿಹಾಸವಿದೆ.

ಬಳ್ಳಾರಿಯ ವೀರಶೈವ ಕಾಲೇಜು ನಿರಂತರವಾಗಿ ಜ್ಞಾನದಾಸೋಹವನ್ನು ನೀಡುತ್ತಾ, ಬಳ್ಳಾರಿ ಮತ್ತು ಕೊಪ್ಪಳ ಜಿಲ್ಲೆಗಳಿಗಷ್ಟೇ ಸೀಮಿತಗೊಳ್ಳದೆ, ಆಂಧ್ರದ ಕರ್ನಾಲ್ ಮತ್ತು ಅನಂತಪುರ ಜಿಲ್ಲೆಗಳ ಜನರಿಗೂ ವಿದ್ಯಾಭ್ಯಾಸವನ್ನು ಒದಗಿಸಿ, ಈ ಭಾಗದ ಜನರ ಜ್ಞಾನ ತೃಷೆಯನ್ನು ನೀಗಿಸಿ, ವಿದ್ಯೆಯ ಮೂಲಕ ಜನರ ಜೀವನ ಮಟ್ಟವನ್ನು ಶೈಕ್ಷಣಿಕವಾಗಿ, ಆರ್ಥಿಕವಾಗಿ ಮತ್ತು ಸಾಮಾಜಿಕವಾಗಿ ಉನ್ನತೀಕರಿಸುವಲ್ಲಿ ಮಹತ್ವದ ಪಾತ್ರವಹಿಸಿದೆ.

ವೀರಶೈವ ಮಹಾವಿದ್ಯಾಲಯದಲ್ಲಿ ಓದಿದ ವಿದ್ಯಾರ್ಥಿಗಳು, ಇಂದು ದೇಶ-ವಿದೇಶಗಳಲ್ಲಿ ವಿಜ್ಞಾನಿಗಳಾಗಿ, ರಾಜಕಾರಣಿಗಳಾಗಿ, ಸಾಹಿತ್ಯ, ಸಂಗೀತ, ಮತ್ತಿತರ ಕ್ಷೇತ್ರಗಳಲ್ಲಿ ಉನ್ನತ ಹುದ್ದೆಗಳಲ್ಲಿ ಸೇವೆಸಲ್ಲಿಸಿ ಕೀರ್ತಿ ಪ್ರತಿಷ್ಠೆಗಳಿಗೆ ಭಾಜನರಾಗಿದ್ದಾರೆ.

ನ್ಯಾಕ್ ಅಧ್ಯಯನ ಸಮಿತಿ ಬರುತ್ತಿರುವ ಈ ಶುಭ ಸಂದರ್ಭದಲ್ಲಿ ಕಾಲೇಜಿಗೆ ಸಮಗ್ರ ಪರಿಚಯವುಳ್ಳ ಒಂದು ಕಿರು ಹೊತ್ತಿಗೆ ಹೊರತರುತ್ತಿರುವುದು ಸಂತಸದ ಸಂಗತಿ.

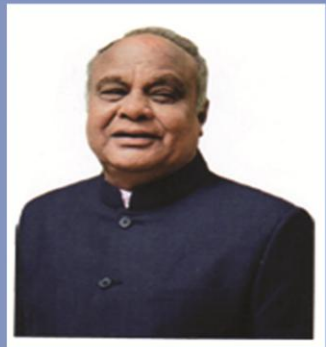
ಕಾಲೇಜಿನ ಸಮಗ್ರ ಬೆಳವಣಿಗೆಗೆ ಹಗಲಿರುಳು ಶ್ರಮಿಸುತ್ತಿರುವ ಪ್ರಾಂಶುಪಾಲರಾದಿಯಾಗಿ ಎಲ್ಲಾ ಭೋಧಕ ಮತ್ತು ಭೋಧಕೇತರ ಸಿಬ್ಬಂದಿಯನ್ನು ಈ ಸಂದರ್ಭದಲ್ಲಿ ಸ್ಮರಿಸುತ್ತಾ ಶುಭಹಾರೈಸುತ್ತೇನೆ.

ವಂದನೆಗಳು,

**Satish Babu**  
(ಸಾಹುಕಾರ್ ಸತೀಶ್ ಬಾಬು)



**OFFICE BEARERS OF THE PRESTIGIOUS V.V.SANGHA,  
BALLARI.**



**ALLUM BASAVARAJ  
PRESIDENT**



**Y.SATISH  
VICE PRESIDENT**



**N.RUDRAGOUDA.APPAJI  
SECRETARY**



**IGOL CHIDANANDA  
JOINT-SECRETARY**



**MUNDASADA MUPPANNA  
TREASURER**

## **MC MEMBERS OF V.V. SANGHA, BALLARI.**



**ALLUM  
DODDAPPA**



**UDED  
BASAVARAJ**



**SAHUKAR  
SATISHBABU**



**PALLEDA  
POMPAPATHEPPA**



**GURU  
SIDDASWAMY**



**GONAL  
M.VIRUPAKSHAGOUDA**



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**HAVINAL  
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**ARVIND  
PATIL**



**B.V. BASAVARAJ**



**CHANNABASAVANA  
GOUDA PATIL**



**H.MAHARUDRA  
GOUDA**



**D.S.  
GYANAMURTHY**



**KATHYAYANI  
MARIDEVAIAH**



**KARIBASAVARAJ  
BADAMI**



**K.V.  
BASAVARAJ**



**J.S.  
BASAVARAJ**



**JALI  
PRAKASH**



**DARUR SHANTHANA  
GOUDA**



**Dr.BHAGYA  
LAKSHMI**



**S MALLANA  
GOUDA**



**VEERESH  
GOUDA**



**KANEKAL  
MAHANTESH**



**BANAPURA  
NAGABHUSHANA  
GOUDA**



**GUTTI ANUR  
VIRUPAKSHA  
GOUDA**



## **COLLEGE GOVERNING COUNCIL**



**SAHUKAR SATISH BABU  
CHAIRMAN**



**SUNIL KUMAR  
G.B. MEMBER.**



**KORI VIRUPAKSHAPPA  
G.B. MEMBER.**



## FROM THE PRINCIPAL'S DESK

*It gives me immense joy to pen a few lines on the occasion of the release of the college magazine 'SMRUTHI 2015'. The Annual college magazine is a vehicle through which the college can disseminate its vision and mission, its values and achievements, its various activities, academic excellence etc. It is all the more pertinent in a fast changing globalized world. Colleges are schools for training men and women of thought as well as of action. The youth must possess an integrated personality. He is not to be a mere specialist in any one branch of any discipline. A happy combination of humanities and science is what is necessary. Our institution in this regard feels proud to provide quality education by equipping students with skill, confidence and a positive approach for all round development so as to retain the beauty of mind and intellect as well of the soul.*

*Finally I congratulate the editorial team for bringing out 'SMRUTHI-2015', replete with meaningful insight, thought provoking articles, etc which will go a long way in greatly enriching and helping to broaden the academic horizon of the students.*

**H. JAYAPRAKASH GOUD**



# VISION AND MISSION OF THE COLLEGE

## VISION

To produce students with potential qualities of skill, competence, human values and will power to face the challenges of life boldly.

## MISSION

To cater to the educational aspirations of the needy students.

To produce competent human resource so as to contribute to the economic and social progress of the country.

To foster a sense of social responsibility through moral and human values.

To develop the individual potentialities as a means of success with exposure to the current social trends.



# ACADEMIC STAFF

## DEPARTMENT OF KANNADA



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**Dr.B.R.Manjunath**

**Mr.K.Mahabaleshwara**

**Mr.K.S.Bisaralli**

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**Dr.B.O.Satyanarayana Reddy**

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**Mrs.Shobha Singh**

**Mrs.Chandana**



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**Mr.P.G.Hegde**

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**Mr.C.M.Mantrajathaiah**  
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**Ms.P.R.Basamma**

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**Dr.G.Rajshekar**

**Mr.H.Jayaprakash Goud**

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**Mr.M.Bhojaraj**

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**Dr.H.Mallikarjuna**

**Mrs.S.M.Sudharani**

**Dr.B.Nagaraja Reddy**



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**Mr.H.M.Chandrashekar**

**Ms.N.Shwetha**



## **DEPARTMENT OF BOTONY**



**L to R**

**Mr.W.Sharanappa**

**Mrs.Mamatha**

## **DEPARTMENT OF ZOOLOGY**

**L to R**

**Mrs.Mamtha**

**Mr.G.Mallana Gouda**

**Mr.Veda vyasa sagar**

**Mrs.Arundathi**



## **DEPARTMENT OF BIOTECHNOLOGY**



**L to R**

**Mrs.K.Anuradha**

**Mr.G.Mallana Gouda**

## **DEPARTMENT OF STATISTICS**



**L to R**  
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**Mr.D.T.Janwad.**

## **DEPARTMENT OF COMPUTER SCIENCE**

**L to R Sitting.**

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**Mr.Bhojaraja**

**Mr.Sharan Kumar**

**L to R Standing.**

**Ms.D.Meenakshi,Ms.Vasavi,**

**Ms.Gousya Begam,**

**Mrs.Rajalakshmi Anandan.**



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**L to R Sitting.**

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**Dr.M.Pompapathi**

**Dr.M.Ramchandra**

**Mr.B.Thimmanagouda Patil**

**Dr.K.C.Thippeswamy**

**L to R Standing.**

**Ms.Neelashri Yadav, Mrs.Chandana, Ms.G.M.Aneesha,**

**Mrs.Shanthamma, Mrs.R.Mala, Ms.Vyshnavi, M r.K.M.Prashanth**

# P.G.DEPARTMENTS

## DEPARTMENT OF ENGLISH



**L to R**

**Mrs.D.Roopu,**  
**Ms.H.Jayashree,**  
**Dr.B.O.Satyanarayana Reddy,**  
(P.G.CO-ORDINATOR).  
**Ms.Afreen.**

## DEPARTMENT OF CHEMISTRY

**L to R**

**Ms.Gayathri,**  
**Mr.Basana Goud,**  
**Dr.B.Nagaraja Reddy,**  
(P.G.CO-ORDINATOR).  
**Mr.Nagesh Patil.**



## DEPARTMENT OF COMMERCE



**L to R**

**Ms.Reena Rachel,**  
**Dr.M.Ramachandra,**  
(P.G.CO-ORDINATOR).  
**Mr.R.Khayum Basha,**  
**Ms.M.Preethi.**



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Mr.R.Shivaprasad.**

**L to R Standing  
Mr.K.Veeresh,  
Mr.S.Nabisab,  
Mr.Viswanath,  
Mr.S.S.S.Patil.**

## **PHYSICAL DIRECTOR**

**Mr.H.Chandrashekhar  
Goud**



## **OFFICE STAFF**

## ASSOCIATIONS IN THE COLLEGE

1. KANNADA SAHITYA SANGHA
2. TELUGU SAHITYA SANGHAMU
3. ENGLISH LITERARY ASSOCIATION
4. SCIENCE ASSOCIATION
5. PLANNING FORUM

## COMMITTEES, CELLS AND CENTRES

1. INTERNAL QUALITY ASSURANCE CELL(IQAC)



Chairman:Mr.H.JAYAPRAKASH GOUD

Coordinator:Dr.B.O.SATYANARAYANA REDDY

Technical Assistant:Mr.M.MANJUNATH

- 2.SEXUAL HARRASSAMENT PREVENTION AND COMPLAINTS COMMITTEE(SHPCC) .



Convenor

Mrs.S.M.SUDHARANI



## ANTI-RAGGING COMMITTEE(ARC).



Nodal Officer  
Ms.A.SHIRLY JONES

Placement Officers  
L to R  
Ms.EVANGELINE NERELLA  
Mr.A.MALLIKARJUNAPPA  
Mr.M.BHOJARAJA  
Mr.B.T.PATIL

## PLACEMENT CELL



## HEALTH CENTRE



Convenor  
Mr.G.MALLANA GOUDA



## WOMEN'S GUIDANCE AND COUNSELLING CENTRE(WGCC)



Convenor  
Ms. EVANGELINE NERELLA

## STUDENTS GRIEVANCE AND REDRESSAL CELL(SGRC)

Convenor  
Ms. A. SHIRLY JONES



## STAFF CLUB



President: Mr. H. JAYAPRAKASH GOUD  
Secretary: Mr. P. SURESH  
Joint Secretary: Dr. D. NAGESH SASTRY

## Veerashaiva college Alumni Association (VSCAA)

The prestigious veerashaiva college has to its honor and pride an array of eminent legends, scientists, politicians, entrepreneurs, artists, literates and sports persons. The alumni cooperate in contributing their valuable academic excellence and by their presence.

Prof. U. R. Rao, the eminent space scientist visited the college twice to inaugurate university level science exhibition and recently, the KSTA conference.

The other alumni are very encouraging and are eager to part take in a mega project, which the college proposes to under take to develop the infrastructure of the college. The young and budding scientists, economists, entrepreneurs visit the college to encourage and guide the students.

### Staff Club

The secretary and joint-secretary of the club are Mr.P.Suresh and Dr.D.Nagesh Sastry. The club's primary activity is to promote the welfare of the staff members and speedy implementation of statutory and non-statutory benefits. The club plays an important role in coordinating the efforts in quickly recovering the arrears and other dues from the government.

The club organized a retirement function for Sri.M.Mallikarjun, Dept of Physics, Dr.Nippani, Dept of Sanskrit, Sri Nazamuddin Baag, Dept of Urdu and Dr.Yeshwanth Kumsi, Dept of Commerce in the academic year.

The club has the practice of organizing a two day picnic to have a day of relaxation and recreation from their regular duties.

### Hostels

The Institution accommodates students from far places and nearby rural areas in hostels. The boys are accommodated in two hostels, one situated on the campus and the other near Koppagal road. The girls are accommodated in Akkamahadevi Women's hostel, Gandhi nagar and in the VSC girls hostel on the campus. However many students are accommodated in SC/ST/BC hostels also in Sakkarappa Karadisha hostel for boys, Ballari.

### Endowment Prizes

The college has the practice of honoring the toppers in various subjects by giving cash prizes endowed by philanthropists. Dr. Syed Ibrahim, Nuclear Physicist, USA, alumni sponsors full fee for five economically backward rural students.

some of the philanthropists are:

1. Late.Sri.Hirehal Ibrahim Saheb-Rs 2,00000.
2. B.com 2013-14 students- Rs 30,000.
3. Late.Sri.B.R.V.Goud- Rs 20,000.
4. Late.Sri.S.N.Niranjan Swamy- Rs 11,111.
5. Sri.R.M.Mruthunjaya- Rs 5000.
6. Late.Ms.Israth Sameena- Rs 5000.
7. Sri Sheela Brahmaiah- Rs 5000.



## MY MOM

*I was born by giving her pain  
But she was very happy with my birth  
She played with my playing,  
She learned with my learning  
I love my mom.*

*My mother is my good teacher  
For each and every step of my future  
She is the first & best friend  
For every need and deed  
I love my mom*

*She is the great gift in my life  
She is the good supporter in my strife  
We have a beautiful world  
With our aims to build  
I love you mom*

*She cares for me a lot.....,,,  
But in my hostel life I miss her a  
lot.....  
I love my mom*

**MEGHA Kapli**  
BCA I year

## FLOW BACK MY WORDS; FLOW BACK TO THY BONELES PART....

*If I had a boon  
Of taking back the words flown  
The words that pierced and torn  
Your loving heart's concern*

*If I could change thy  
Double edge sword to  
A source from which run  
Words of soothing oil, fine*

*And heal the wound  
Caused by thy word,  
And walk back that road  
Where we met at first as friends*

*Those million thoughts that rushed  
And moments of joy that we shared  
All that without being changed  
We shall live on as life goes on.*

**MONICA . K. J. NIDHI**  
B.SC iii year (CBZ).



## QUOTES FROM THE QUEEN OF THE POOR

### MOTHER TERESA

*Whatever I have done  
Is like a drop of water  
In a mighty ocean  
What I have to do  
Is more than  
What I have done.*

*Life is a gift  
That God has given us,  
That life is present  
Even in the unborn  
Therefore a human hand  
Should never end a life.*

*If we worry too much  
About ourselves  
We won't have time for others.*

*The less we have the more we give  
It seems absurd but it's the logic of  
love.*

*Someone once told me  
That not even for a million dollars  
Would they touch a leper.  
I responded: neither would I.  
If it were a case of money  
I would not even do it  
For two million,  
On the other hand,  
I do it gladly.  
For love of God.*

*Poverty gives one  
An opportunity  
To get closer to God.*

**Compiled by  
Hanumantha , BSC III year.**

## MANGALYAN: THE PRIDE OF INDIA

The made in India MANGALYAN, the unmanned robotic machine reaches Mars , the red planet on September 24th, 2014, successfully. The Indian space research organization (ISRO) made history and a land mark by successfully placing it in its maiden attempt.

Mars orbitary mission (MOM), the cost effective and indigenously built Mangalyan travelled a distance of 680 crore km for over 300 days to reach its destination, to explore the planet's surface features, morphology, mineralogy and its atmosphere by indigenous scientific instruments and camera. India has joined the allied group and is the 4th country which has successfully launched the space craft on Mars. The latest US satellite MAVEN(Mars atmosphere and volatile evolution) was launched in Nov 2013 and is worth of 671 million dollars and our Mangalyan is 67 million dollars or 450crores Indian currency, which is 50 percent of Indian bollywood cinema budget. Mangalyan weighs 1300 kg in which a 25kg package of –

1. MCC—Mars color camera

TIS—Thermal infrared imaging spectrometer, to study the environment

2. MENCA--Mars exospheric with photometer and Methane sensor to study the particles and environment.

3. LAP—Lyman Alpha photometer

MSM—Methane sensor for mars to study the atmosphere.

The earlier studies by US and Russia showed that Mars has plenty of water and  $\text{CO}_2$ , and is very cold. But recent study showed that Mars lost its water and is dry. The reason is yet to be probed and is of great interest.

Launched on 5th Nov, 2013 from Shriharikota, AP using PSLV (pollar satellite launch vehicle), the MOM revolved round the earth and its orbit radius increased in 5 steps from 78,276 km to 11,86,242 km.

By Dec 2013 a space of 5,36,000 km from earth is crossed, which is greater than the distance between earth and moon.

On 4th Dec, 2014 the space craft travelled beyond the sphere of influence of earth i.e. 9,25,000 km.

On 11th Feb, 2014 hundred days journey of MOM completed.

On 9th April, 2014 MOM crosses half way mark of its journey.

On 12th June, 2014 Trajectory correction Manoeuvre was performed by firing 22 newton thrusters for 16 sec. Then the distance of MOM is 102 million km.

On 15th and 16th Sep, 2014 the date of insertion to Mars atmosphere is fixed and time tagged commands were uploaded.

On 22nd Sep, 2014 the test of firing liquid engines is successfully done.

On 24th Sep, 2014 the successful entry was done in the following time schedule.

24th Sep 2014- the golden day

At 4.17 am-----operation began with change of antenna i.e. changed over to medium Gain antenna.

At 6.56 am-----forward rotation of space craft begins.

At 7.12 am-----MOM encounters eclipse, no telemetry communication for 26mins.

Here MOM is in the shadow of Mars and space craft is managed with thrusters.

At 7.17 am-----main liquid engine initiated and burns for 24mins.

At 7.30 am-----it is confirmed that it takes 12.5mins for to and fro communication.

At 7.41 am-----The space craft velocity is reduced, burning stops and it slips in to Mars atmosphere.



The 440 newton liquid engine and 8 small thrusters, which fired 24 mins, trimmed the speed of space craft to allow its smooth orbit insertion under Mars shadow. The successful entry into Mars orbit crowned India as the first country to put a space craft successfully in its maiden attempt. It is to be noted that china, Japan and others failed. 51 attempts were made by many countries since 1990 but 21 succeeded and India is successful in its first attempt. All praise to the dedicated physicists, engineers, computer engineers and the technical staff who made this launch possible with their precise thinking and workman skills. Hearty congratulations to Sri Arunam the project director and Sri Keshav Rao the mission director and the wonderful ISRO staff.

ISRO we are proud of you.....

**Ms. A. SHIRLY JONES**  
**Associate Professor of Physics**

## Physics Jokes

Physics is a serious subject, but sometimes we need a little light relief, take a look.....

1) What is the name of the first electricity detective?

• Answer: Sherlock Ohms

2) A neutron walked into a bar and asked, "How much for a drink?" The bartender replied, "For you, no charge."

3) Where does bad light end up?

• Answer: In a prism.

4) A Higgs Boson walks into a Church. The priest says, "We don't allow Higgs Bosons in here. The particle responds by saying: "But without me, how can you have Mass?"

5) How many theoretical physicists specializing in general relativity does it take to change a light bulb?

• Answer: Two. One to hold the bulb and one to rotate the universe.

6) Why can't you trust an atom?

• Answer: They make up everything.

7) What do you get when you mix sulfur, tungsten, and silver?

• Answer: SWAG

8) A photon checks into a hotel. The bellhop asks, "Can I help you with your luggage?" The photon replies, "I don't have any. I'm traveling light!"

9) An electron and a positron go into a coffee shop.

• Positron: "You're round."

• Electron: "Are you sure?"

• Positron: "I'm positive."

10) Why did Erwin Schrödinger, Paul Dirac and Wolfgang Pauli work in very small garages?

• Answer: Because they were quantum mechanics.

11) What is a physicist's favourite food?

• Answer: Fission chips

12) What did one uranium-238 nucleus say to the other? Answer: "Gotta split!"

**Compiled by**  
**A.SHIRLY JONES**



## FASCINATING FACTS

1. *A snail can crawl across a razor blade without getting hurt! This is possible because they secrete a slime that protects them.*
2. *An albatross can sleep while it flies. It apparently dozes while rising at 25mph.*
3. *Your nose and your ears continue growing throughout your entire life.*
4. *Your sense of smell is around 10,000 times more sensitive than your sense of taste.*
5. *Shrimps hearts are their heads.*
6. *A cuttlefish has 3 hearts.*
7. *Kangaroos and Emus can't walk backwards.*
8. *Thomas Edison, who invented the light bulb, movie camera and phonograph went to school only for 3 months.*
9. *The only land animal that can cry other than humans is the elephant.*
10. *The average fared-variety caterpillar has 248 muscles in its head.*
11. *The largest dragonfly from fossil records had a wing span of about 205 feet.*
12. *Nauru, an island country in the Pacific Ocean, is the only country in the world that doesn't have a capital.*
13. *About 75 acres of pizza is eaten everyday in America.*
14. *Salt was highly prized by Romans. So much so that soldiers were sometimes paid in salt. And that's where the word 'salary' came from.*
15. *The tallest cacti are the grand saguaros. They grow up to 18m tall, about the height of a six storied building.*

**Durgeshwari**  
**B.A. III year.**



# HAPPINESS



*Happiness  
comes from  
open-hearted  
conversations,  
the appreciation  
of small-moments,  
and lots of  
kindness!*



## HAPPINESS

*Is a state of mind,  
A choice, a way of living;  
It is not something to be achieved,  
It is something to be experienced.*



*Let smiles overshadow sadness.  
Let faith make you believe.  
Let confidence wash away doubts.  
Let love complete your life.*



*Don't sit around waiting for life to happen;  
It won't happen unless you make it happen.....*



## A SIMPLE FORMULA FOR HAPPY LIFE.

*Never try to defeat 'Anyone'  
Just try to win 'Everyone'  
Don't laugh 'At' anyone  
But laugh 'With' everyone.*



*Happiness is when  
You feel good about  
Yourself without  
Feeling the need for  
Anyone else's  
Approval.*



*Sure, having  
Everything on my wish list  
Would be nice, but I only  
Need three things  
To be happy, Friends, Love and Hope.*



*HAPPINESS is not having everything you want.  
It's having everything you need and little extra.*





## FACTS ABOUT ANIMALS

- Humming bird is the smallest of birds. It is the only bird that can fly backward at a speed of 40-50 miles/hour and it can beat its wings 80 times a second.
- Giraffe milk is seven times richer in protein than cow's milk.
- Horses are immune to tear-gas.
- Dodo, a bird once found in large number in Mauritius is now extinct.
- Mice and rats never drink water.
- The foot prints of no two lions are similar.
- Both flamingoes and horse sleep standing.
- A camel can go without water for several weeks but it loses weight. It can lose up to 25% of its body weight without falling ill.
- The Giraffe can see to the rear without turning its head.
- Pit wiper, a poisonous snake which is found in tea and coffee plantations in India is so named because it has a small pit between its nostrils and eyes.
- Rabbits cannot walk. Hopping and lolloping are the only forms of locomotion known to them.
- "Sidewinder" is a species of snake found in deserts. It is so called because it moves sideways of its body length.
- The Golden plover, a bird which weighs only 75-80 gms covers longest non-stop flight of over 4000 kms without food and drink during migration.
- To collect one pound of honey, bees must collect the nectar from two million flowers.
- No two zebras or giraffes ever have exactly the same placement of stripes. The stripes on a zebra or on a giraffe are as finger prints are to human beings.
- Most birds build a new nest for their eggs each year and some birds even construct two or three nests in one season. But the eagle constructs a single nest for its whole life time.
- The Giant squid is the largest animal without a back bone.
- A monkey's sense of smell is very poor.
- Eels have a keener sense of smell than any dog.
- Gorillas never snore.
- Octopus has blue blood.
- An insect-eating falcon (bird) can spot a dragon fly at a distance of half a mile.
- Wasps buzz at 110 wing beats a second, house flies at 190, mosquitoes at 500.
- Among the snakes, anaconda the largest variety which grows to an amazing length of 9 meters and which can swallow even a fully-grown deer.
- It is not usually harmful to swallow snake venom.
- The shark never sleeps.
- The life span of Mayfly, an insect is just 24 hours.

**Mr.VEDAVYASA SAGAR**  
**Assistant Professor of Zoology**



**Know your scientist**  
**SIR .CHANDRASEKHARA VENKATA RAMAN**  
**(1888-1970)**



C.V Raman is an Indian physicist, who was awarded the 1930 Nobel Prize in Physics for his work on the scattering of light and for the discovery of Raman Effect which was named after him.

Raman was born in Tiruchirapalli, TamilNadu. At an early age , Raman moved to the city of Vishakapatnam, Andhra Pradesh. He completed his B.A. and M.A in physics and English from the Presidency College, Madras. He passed his B.A in 1904 winning the first place and the gold medal in Physics. In 1907, he gained his MA degree, obtaining the highest distinctions. Soon after that Raman started doing experiments at the Indian Association for the Cultivation of Science (IACS). This is where Raman did his Nobel Prize winning work.

In 1917, Raman resigned from his government service and took up Professorship in Physics, in the University of Calcutta. Raman used to refer to this period as the Golden Era of his career. Raman also worked on the acoustics of musical instruments.

In 1934, Raman became the director of the newly established Indian Institution of Science in Bangalore, where two years later he continued as a professor of Physics. In 1947 he was appointed as the first National Professor by the new government of independent India. He established the Raman Research Institute in Bangalore, serving as its director and remained active until his death in 1970

**Raman's Contribution And Achievements:**

On a sea voyage to Europe in 1921, Raman curiously noticed the blue colour of the glaciers and the Mediterranean. He was passionate to discover the reason of the blue colour. He performed many experiments regarding the scattering of light from water and thus established the scientific explanation for the blue colour of sea water and sky.

Raman commented that if the Compton Effect is applicable for x-rays then it must also be true for light. He carried out some experiments to establish his opinion.

Raman employed monochromatic light from a mercury arc which penetrated transparent material and was allowed to fall on a spectrograph to record its spectrum. Then Raman detected some new lines in the spectrum, which were later called "Raman Lines". On march 16th, 1928 he discovered the Raman Effect, for which he won the Nobel Prize in physics in 1930. The Raman Effect is considered very significant in analyzing the molecular structure of chemical compounds . After a decade of its discovery, the structure of about 2000 compounds were studied. Thanks to the invention of laser, the Raman Effect has proved to be a very useful tool for scientists.

**Honours and Awards :**

Fellow of Royal Society in 1924.

Nobel prize in Physics in 1930.

Franklin medal in 1941.

Bharat Ratna in 1954.

Lenin Peace Prize in 1957.

In 1998, the American Chemical Society and Indian Association for the Cultivation of Science recognized Raman's discovery as an International Association Historic Chemical Landmark.

India celebrates National Science Day on 28th February of every year to commemorate the discovery of the Raman Effect.

**KISHAN KUMAR**  
**Bsc III year**



## **THE SIGNIFICANCE OF BHARATIYA GURU SHISHYA PARAMPARA**

### **Bharatiya Guru Shishya**

The terms Bharatiya, Guru and Shishya explicitly portrait the image of rich tradition and heritage of our holy land and these also hint at the unique relation of Guru and Shishya. The term Bharatiya hints at ever praise-worthy glory of sagic period and onwards. It also apprises of the conventional discipline of highest standard. The Bharatiya is not merely an adjective but also a concept of purity, a code of conduct, home of holiness and a sacred mark of distinction. The term Guru can hardly be equated with teacher. The Bharatiya Guru is he, who is a treasure of rich and abundant knowledge free from doubts and demerits. He is also equally capable and competent to impart the gained knowledge and deliver the goods with thought provoking techniques. He never hesitates and keeps himself away from the responsibility, but readily comes forward to bear the responsibility with well preparation and thus clears the doubts away from the minds of the pupils. He is not only expected to teach the textual burnden of the branch of knowledge but also the discipline of that. He happens to be the source of inspiration to instill the hope and courage and evince the keen interest in the pupils for their overall success in the life. He plays the role of key promoter, he is Guru not by bulky physic but by the depth of abundant knowledge. He happens to be an ideal person of moral excellence and guiding spirit to the whole of mankind. Being well characterized and studious himself he has to impress upon and exert influence on pupils and others. With full devotedness he has to build up academic circle on moral base and thus check up and remove the moral setback and academic constipation. On the other hand, the Bharatiya Shishya is a symbol of obedience. His obedience is not a sign of submission, but a course of discipline. He is not only the receiver of imparted knowledge but also a real learner, critical reviewer, well depositor, faithful follower, truthful speaker and fruitful gainer.

The salient features of the relation of Bharatiya Guru-Shishya

1) It, although conditional, is cordial.

The Guru, at the beginning, lays down certain conditions to be followed by the aspirant pupil. The imposition of conditions is not to punish but to create the awareness of limitations and responsibility. It is also a way of knowing the trend and real interest of the pupil and also of confirming the eligibility. The observance of conditions and success in that makes the relation cordial and fruitful.

2) It is healthy and reciprocal

The awareness of responsibility in both the Guru and the Shishya basically avoids misunderstanding. It also does not give any scope for otherwise thinking and misconception. The thought and opinions of opposite nature, although dash to the mind and clash sometimes, will become dim and then disappeared through mutual understanding and healthy discussion. The Shantimantra says "Sahanavatu Sahanau Bhunaktu . . ."

3) It is a means of joint venture for inquiry

The relation of Bharatiya Guru-Shishya is not of the nature of one way commanding. And it is also not the kind of one way receiving. The Guru does not entertain and enjoy the bossism in delivering the goods. His commanding instruction ensures the scope for free thinking, decent discussion and dialogue. The Guru is equally generous in sanctioning freedom and open minded to regard and receive the outcome of discussion whole-heartedly. The knowledge of Guru basically supplies the material for inquiry and ultimately yields the coveted results to realize the reality. Thus, it is a means of joint venture for inquiry. The following Upanishadic statement corroborates this "Saha Viryam Karavahai Tejaswinavadhitamastu . . ."

4) It is moral and discipline based

The Guru-Shishya relation focuses its moral light and makes the both incumbents to identify their limitations and know the discrimination of what is right and wrong. Both of them are expected to follow certain norms as a disciplinary course of life. The Guru should be a faithful follower and truthful observer of norms of morality, before he intends to instruct his own pupil. With textual teaching, he instructs to his pupil as "Satyam Vada, Dharmam Chara, Svadhyayanma Pramadah" etc. And this would positively hint at and reaffirm the very strict adherence and observance in respect a pupil.



5) It is a boon to unearth the secrecy and realize the reality.

The aim of teaching and learning is to realize the reality. And the means of realization is under the grab of secrecy. The cordial relation of Bharatiya Guru-Shishya stimulates the free inquiry and lets loose the tied threads of secrecy. The proper understanding of the connected link of threads of secrecy makes the course of observance of meditation more easier and accessible to reach the goal of realization of reality. The Guru tells about the secrecy to that pupil who is very much liked by the Guru and who has won the very goodwill of the Guru. Bhagavata states "Brooyuh Snigdhasya Shishyasya Guravo Gurhyamapyuta"

Hence, a student-pupil should sincerely put his efforts to win the good will of the Guru, otherwise, his efforts will be futile and bear no any desired results.

6) It ultimately aims at Adhyatmasiddhi and hence divine natured.

This is a distinct characteristic of the relation of Bharatiya Guru-Shishya. The Shishya approaches and prostrates before the Guru and then faithfully requests him to teach that by which he could gain the Adhyatma siddhi. The Bhagavadgita states. "Shishyasteham Shadhi Mam Tvam Prapannam".

The Shishya is not fully happy with secular gain or mundane wealth. To him, it is an obstacle for the attainment of Adhyatmasiddhi. Hence, he tries his best to secure the graceful favour and blessings from his Guru for, it is understood that the attainment of Adhyatma siddhi is subject to the blessings of the Guru.

Since, the Adhyatmasiddhi is not a result of personal intellectual exercise, it is divine natured.

7) It is a sourceful base and infrastructure for successful career.

The real success in life depends upon the industrious and harmless way of living. The cordial relation of Bharatiya Guru-Shishya alarms them at every walk of their life. The timely good advice of the Guru keeps the hurdles of his pupils away from their march of advancement. It not only sets the negative aspects but also infuses the positive aspects simultaneously. The gain of flawless knowledge and vast practical experience help to attain the maturity and this maturity places the pupil on a right path and also pushes him on rightly for the attainment of success.

8) It, although appears Gurukul confined, has intense impact and broad application at later stage.

The Gurukul is the holy abode and initial spot of blooming the healthy relation of Bharatiya Guru-Shishya. It is the center of beginning and not the end. It is also the center of personality building. The relation in Gurukul, although explicitly, appears to be academic oriented, but in reality, it is career oriented. And hence, even when a Shishya, after the completion of prescribed period, comes out of the Gurukul, he leads his life with discipline and dedication. He inherits the very experience of Gurukul and steps into practical field for better social interaction. The experience of Gurukul trains him for better dealings and thus comes for his rescue in facing and solving some problems of life.

9) It initiates the quest or the zeal of inquiry and thus promotes the scope of utility through practical testing.

The relation of Bharatiya Guru-Shishya is practical utility oriented. The skillful Shishya is not happy with only theoretical knowledge. He is ever keen in its practice and results. That does not mean that he is doubtful at the imparted knowledge and its validity. Being a true aspirant, he wishes to experience and enjoy the results of gained knowledge through practice. In this case, the Guru would be a guiding agent and source of inspiration. At the success of the Shishya, the Guru will be more joyful and jubilant. The incidents of Uddalaka and Shwetaketu and Yama and Nachiketus may be cited for reference.

The prime aim of the Bharatiya Guru-Shishya is to gain the knowledge. To them there is, other than this, nothing holier and beneficiary. They strive and struggle hard for the gain of knowledge and its merits. Thus, the Bharatiya Guru-Shishya Parampara is holy natured, ideal based, noble characterized, quality souled, worthy aimed, ethics destined etc. It is visioned with social development as an obligation in general and individual upliftment in particular.

**Dr.G.K.NIPPANI M.A. Ph.D**  
**ASSOCIATE PROFESSOR OF SANSKRIT.**



## LET ME BE THERE FOR YOU

*Walked off from me  
Why abandon me all alone  
Why so lonely  
Walked off from me.  
Have I been too far  
That I couldn't feel you  
Your tears rolled down so near  
Then was I so hard  
That I couldn't feel you?  
Distance never took us far  
Words never brought us near  
It was always your silence:*

*Love that was spread through your silence  
Brought me closer, took me deeper.  
Your image as an impression  
Brought me out of all depression  
Now then why fade off from me  
It was only your memories'  
That gave life to me  
Don't move away from me  
Let us walk together  
Until my last breath let me be there  
For you as a rain drop,  
To your broken heart as a hope.*

**MONICA . K. J. NIDHI**  
**bsc III year.**

## SOME IMPORTANT DEFINITIONS:

1. *Conference :The confusion of one man multiplied by the number present .*
2. *Life Insurance :A contract that keeps you poor all your life so that you can die rich.*
3. *Philosopher :A fool who torments himself during his life, to be wise after death.*
4. *Atom Bomb : An invention to end all inventions .*
5. *Etc : A sign to make others believe that you know more than you actually do.*
6. *Money: A guest that never stays long.*
7. *Doctor: A person who kills your ills with pills and kills you with his bills.*
8. *Nurse : A person who wakes you up to give you sleeping pills.*
9. *Teenager : A person who stops answering the questions and starts questioning the answers.*
10. *Dictionary : A place where success comes before work,*

## Physical Constants

1. Velocity of light ( $c$ ) =  $2.998 \times 10^8$  m/sec
2. Velocity of Sound = 332 meters/sec at NTP
3. Acceleration due to gravity ( $g$ ) =  $9.81$  m/sec<sup>2</sup>
4. Gravitational constant ( $G$ ) =  $6.6725 \times 10^{-11}$  m<sup>2</sup>·Kg<sup>-1</sup>·s<sup>-2</sup>
5. Electronic charge =  $4.803 \times 10^{-10}$  esu
6. Mass of an electron =  $9.1095 \times 10^{-28}$  gm =  $9.1 \times 10^{-31}$  Kg
7. Mass of a proton =  $1.6726231 \times 10^{-24}$  gm =
8. Faraday's constant =  $9.648 \times 10^3$  emu
9. Avogadro's constant =  $6.0221 \times 10^{23}$  mole<sup>-1</sup>
10. Gas constant 1 mole  $R_m$  =  $8.314 \times 10^7$  erg/deg/mole
11. Volume of one mole at NTP = 22.414 liters.
12. Joule's constant = 4.18 Joule/cal.
13. Ice point  $T$  = 273.16 K
14. 1 Coulomb =  $3 \times 10^9$  esu
15. 1 Faraday =  $2.89 \times 10^{14}$  esu
16. Solar constant =  $1.937$  cal cm<sup>2</sup> min<sup>-1</sup>
17. Boltzmann constant  $k$  =  $1.38 \times 10^{-23}$  J mol<sup>-1</sup> K<sup>-1</sup>
18. charge of electron  $e$  =  $1.6 \times 10^{-19}$  C
19. Lorentz number  $L$  =  $2.45 \times 10^{-8}$   $\omega \Omega$  K<sup>-2</sup>
20. Molar Specific heat  $C$  =  $25$  J mol<sup>-1</sup> K<sup>-1</sup>



21. 1 curie  $Ci = 3.7 \times 10^{10} s^{-1}$
22. Roentgen  $R = 2.58 \times 10^{-4} C/Kg$
23. Standard atmospheric pressure  $atm = 1.013 \times 10^5 Pa$
24. 1 light year  $= 9.46 \times 10^{15} m$
25. Specific heat capacity
  - (a) Water  $= 4180 J Kg^{-1} K^{-1}$
  - (b) Steam  $= 460 J Kg^{-1} K^{-1}$
  - (c) Ice  $= 2200 J Kg^{-1} K^{-1}$
26. Planck's constant  $= 6.6 \times 10^{-34} J s$
27. Permeability  $\mu_0 = 4\pi \times 10^{-7} TmA^{-1}$
28. 1 ampere  $= 6.25 \times 10^{18} \text{ electron/sec}$
29. Speed of photon  $c = 3 \times 10^8 ms^{-1}$
30. Rydberg constant  $R = 1.1 \times 10^7 \text{ per metre}$
31. Speed of light in vacuum  $c_0 = 299792458 ms^{-1}$
32. Magnetic constant  $\mu_0 = 4\pi \times 10^{-7} NA^{-2}$   
(Permeability of free space)
33. Electric constant  $\epsilon_0 = 8.854 \times 10^{-12} Fm^{-1}$   
permittivity of free space
34. Characteristic impedance  $Z_0 = 376.730 \Omega$
35. Newtonian constant of Gravitation  
 $G = 6.6742 \times 10^{-11} m^3 kg^{-1} s^{-2}$
36. Elementary charge  $e = 1.6021 \times 10^{-19} C$



37. Josephson constant  $K_J = 483597.879 \times 10^{-42} \text{ V}$
38. Bohr magneton  $\mu_B = 9.27 \cdot 400 \times 10^{-26} \text{ J T}^{-1}$
39. Nuclear magneton  $\mu_N = 5.05078 \times 10^{-27} \text{ J T}^{-1}$
40. fine-structure constant  $\alpha = 7.29735 \times 10^{-3}$
41. Fermi Coupling constant  $\frac{G_F}{(\hbar c)^3} = 1.16639 \times 10^{-5} \text{ GeV}^{-2}$
42. Electron mass  $m_e = 9.10938 \times 10^{-31} \text{ kg}$
43. Electron molar mass  $M_e = 5.4857 \times 10^{-7} \text{ kg mol}^{-1}$
44. Compton wavelength  $\lambda_c = 2.426310 \times 10^{-12} \text{ m}$
45. Thomson Cross section  $\sigma_e = 0.6652 \times 10^{-28} \text{ m}^2$
46. Electron magnetic moment  $\mu_e = -928.476 \times 10^{-26} \text{ J T}^{-1}$
47. proton Compton wavelength  $\lambda_c = 1.32140 \times 10^{-15} \text{ m}$
48. proton magnetic moment  $\mu_p = 1.410606 \times 10^{-26} \text{ J T}^{-1}$
49. proton gyromagnetic ratio  $\gamma_p = 2.6752 \times 10^8 \text{ s}^{-1} \text{ T}^{-1}$
50. Deuteron mass  $m_d = 3.34358 \times 10^{-27} \text{ kg}$
51. Deuteron molar mass  $M_d = 2.01355 \times 10^{-3} \text{ kg mol}^{-1}$
52. Deuteron rms charge radius  $R_d = 2.1394 \times 10^{-15} \text{ m}$
53. Deuteron magnetic moment  $\mu_d = 0.43307 \times 10^{-26} \text{ J T}^{-1}$
54. Loschmidt constant  $n_0 = 2.6867 \times 10^{25} \text{ m}^{-3}$
55. Stefan-Boltzmann constant  $\sigma = 5.6704 \times 10^{-8} \text{ W m}^{-2} \text{ K}^{-4}$

COMPILED BY  
K.H.VIDYA SHREE  
BSC III YEAR

# The Pleasures of Learning



**Dr. Ibrahim B. Syed**  
**Clinical Professor of Medicine**  
**University of Louisville School of Medicine**  
**Kentucky, USA.**

My Lord Enrich me with knowledge Quran 20: 114

One of the secrets of success in any profession is to be the most learned or best-informed person in his/her own profession. Learning is a pleasure. If it is not, then one should cultivate the enjoyment associated with learning. Although the pleasure of learning is universal, there are many dull, incurious people in the world. There are several reasons for this. Some people are made dull by bad teaching, isolation, and following a routine lifestyle. For some people it is the pressure of hard work and poverty. For those who are rich, their ephemeral and trivial delights come in the way of the pleasures of learning. The human mind can survive not only poverty but also even wealth with luck, determination, and guidance.

For example, I come from a poor family and due to poor teaching I lost interest in learning mathematics. As a result I scored only 39% in mathematics (35% required for a pass) in S.S.L.C. (Secondary School Leaving Certificate, Municipal High School Hospet, India); in the Intermediate Science examination I scored 50% in mathematics at Veerasaiva College, Bellary. When I entered the Bachelor of Science degree class at Veerasaiva College, Bellary, I realized there is no way I can escape from mathematics and I resolved to conquer mathematics. With determination I found pleasure in learning mathematics by myself. The pleasure was akin to one derives in falling love with his/her beloved girl/boy friend or would be wife/husband. This pleasure changed my whole life. I started to score 100% in mathematics in all the class tests and mid-term examinations. In the final B.Sc. examination I scored more than 70% in mathematics. Take the example of Archimedes. When he discovered the principle of specific gravity by observing his own displacement of water in a bathtub, he leaped out with great joy, and shouted, "Eureka, Eureka!" ("I have found it. I have found it!") He was overwhelmed with joy and ran naked. All children possess the same instinct that prompted his outburst, and the rapture of its gratification.

Learning is a natural pleasure. This pleasure is inborn and instinctive. The pleasure of learning is one of the essential pleasures of the human race. Without learning, survival itself is threatened. It is said that the propagation of the human race might be endangered if the knowledge of sex through seeing, reading, or hearing is withheld from everyone.



The process of learning starts right after birth. It is true that babies who can barely talk investigate problems with all the zeal and excitement of explorers, make discoveries with the passion and absorption of dedicated scientists. At the end of each successful investigation, one can see on the tiny face an expression of innocent and pure heartfelt pleasure. The process of physical growth stops when a boy or girl reaches puberty, that is with the onset of menarche in the girls and with the change in the voice and growth of moustache and beard in boys. After puberty it is impossible to increase the height both in boys and girls. It is only possible to increase their widths by fattening.

On the other hand, the mental faculties grow from birth until death. At some point in our lifetime, the physical body becomes sick or ill and gradually dies; even the emotions become duller. But the mind continues to live, and even grows more lively and active, enjoys itself more, works and plays with more expansion and delight. I have seen grandparents obtaining B.A., M.A., and Ph. D. degrees at the ages of 70, 80, or 90. There are many examples in the history of Art, Music, and Science of both men and women who significantly contributed and lead mentally productive lives at their ripe old ages.

My own grandmother at 90 has vivid memories and narrates events, which occurred 70 or 80 years ago in her young age, very clearly. Learning extends our lives into new dimensions. It is cumulative. Instead of diminishing in time, like health and strength, its dividends go on increasing, provided one continues to learn throughout life and integrate the thoughts and make learning harmonious. One should make it a point to learn at least one new piece of information each day. Now one can learn even during sleep. This is accomplished with headphones attached to the ears and repeats playing of phonographs or taped cassettes. This method of sleep-learning is found most useful in linguistics, learning new languages.

The pleasure of learning is not confined to learning from textbooks, which are too often tedious. But it does include learning from book magazines (periodicals), newspapers, and movies. When you stand in a big library in front of thousands of books do not think they are lumps of lifeless paper, but minds alive on the shelves. Each has its own voice, which is as inaudible as the radiobroadcast waves falling directly on ears. Just as one switches on the radio to hear, so does one just need to open a book to hear the voice far distant in time and space. One can hear the voice speaking, mind to mind and heart to heart. Reading of books gives you two different delights. One is the pleasure of understanding the unknown and the unexpected. The other pleasure is of deepening one's knowledge of a specified field. Apart from books, learning means keeping the mind open and active to receive all kinds of experience. The Mahabharata says, "Learn from the Environment and absorb the good things." As pointed out earlier there is great emphasis on learning and seeking knowledge in Islam. The Prophet Mohammed ordered Muslims to be active in their search for learning, crossing oceans and continents if necessary. "Seek knowledge even in China," he said. Learning also means learning to practice one's own professional skills -- whether that of a surgeon, musician, or craftsman.

One can at least develop the ability to appreciate an art. Crafts and hobbies lead you into fresh fields of enjoyment and give you relaxation and activity without tension. You should know that tension is the prime cause of heart attacks, ulcers, hypertension, and most of the human diseases. Travel is an important part of the pleasures of learning. There are many examples of best-informed people who never read books and newspapers, but acquired excellent knowledge through travelling. One should travel with an open mind, all-alert eye, and a wish to understand other people and other places.

Everybody knows "Knowledge is Power" but now I can say "Knowledge is Wealth." For the more learned you are, the more money you can earn. It is fitting here to tell you the story of Diogenes, the great Greek philosopher who lived during the time of Alexander the Great. Diogenes was a very learned man and he shunned both power and wealth. Hence he was called a cynic. He was known to have wandered searching for an honest man carrying a lantern during day and night. He gave up everything he possessed, except a coconut shell for drinking water. One day he saw a man drinking water forming a cup with his hand. After seeing this Diogenes threw away his last possession, the coconut shell.

The name of Diogenes spread throughout Greece. Alexander the Great heard about Diogenes and one day decided to see him. Mounted on horseback, Alexander the Great went to Diogenes who was sitting on the ground. Alexander said, "Oh Diogenes, I have heard a great deal about you and your life. I am very much impressed by your life and it is my earnest desire to help you in whatever way I can. Please let me know your desires so that I can fulfill them." To which Diogenes replied, "Your Excellency, my only request is that you get aside and allow the sun's rays to fall on my body." Alexander the Great was deeply moved by Diogenes' reply and said, "If I were not Alexander the Great, I would be Diogenes." Now the point I want to make here is that Diogenes never went to Alexander the Great, but that Alexander the Great came to Diogenes for he was such a learned philosopher.

There are many people in this world who have played themselves to death, or eaten and drunk themselves to death. Nobody ever died because of thinking or learning. People who avoid learning, or abandon it, find no joy in life, find that life is drained dry. No learner has ever run short of subjects to explore. The pleasures of learning lead to happiness. One can live longest and best and most rewardingly by attaining and preserving the happiness of learning. Learning is everyone's birthright. Everyone, young or old, rich or poor, male or female, has access to learning. Exercise your birthright. Remember what you have learned cannot be stolen by others.



Dr. Ibrahim B. Syed, is a Clinical Professor of Medicine (Nuclear Cardiology and Director of Nuclear Medicine Sciences) at the University Of Louisville School Of Medicine, Louisville, Kentucky, USA

As an undergraduate at Veerasaiva College in Bellary (1955-1960), he received the Proficiency Prizes in Physics, Chemistry and Mathematics. He received the First Prize for English Essay Writing Competition and also the First Prize in Public Debating. He stood First Class First in the B.Sc. examination. He earned his M.Sc. in Nuclear Physics from Central College, Bangalore. From 1962-63 he worked as an Instructor/Lecturer at Veerasaiva College, Bellary in the Physics Department.

Received Government of India and WHO (World Health Organization) scholarships to study DRP at the Bhabha Atomic Research Center in Trombay, Bombay. USPHS (United States Public Health Service) Scholarship to pursue Doctoral Studies at the Johns Hopkins University in Baltimore, Maryland. He became the First Indian Ever to earn the Doctor of Science degree in Nuclear Medicine from the Johns Hopkins University. Received a Ph.D.(Honoris Causa) in Malta.

He is a Fellow of the American College of Radiology, a Fellow of the British Institute of Physics, London, UK, a Fellow of the American Institute of Chemists, a Fellow of the Royal Society of Health, and a Fellow of the International Organization of Medical Physicists.

He is an External Ph.D. Thesis Examiner for the Universities of Delhi and Allahabad in India and Clayton Institute for Advanced Studies in Missouri.

He is recipient of the Distinguished Community Service Award conferred by India Community Foundation. He also received "Hind Rattan" award for his outstanding contributions to India. In 2008 he received "Distinguished Service Award" from the American Board of Radiology for his 30 years of service as an Oral Examiner. In December 2010 he received the Islamic Civilization Advancement Award. On November 11, 2013 he personally came and received an Honorary Doctor of Science Degree (Honoris Causa) from the Vijayanagara Sri Krishnadevaraya University, Bellary, India. He served as a Technical Expert in Nuclear Medicine to IAEA (International Atomic Energy Agency) and visited India's Premiere Medical Institutions in 1992 under UNDP (United Nations Development Program) and CSIR (Council of Scientific and Industrial Research) of Govt. of India, including Kidwai Cancer Institute, Bengaluru.

Dr. Ibrahim B. Syed was conferred with the Robert A. Miller Diversity Award for the year 2002 for 'OUTSTANDING CONTRIBUTION TO DIVERSITY IN EDUCATION WHILE PROVIDING A POSITIVE ROLE MODEL FOR STUDENTS.'

He is listed in WHO'S WHO IN AMERICA, WHO'S WHO IN THE WORLD, AMERICAN MEN AND WOMEN OF SCIENCE, WHO'S WHO IN THE FRONTIERS OF SCIENCE AND TECHNOLOGY, WHO'S WHO IN SCIENCE AND ENGINEERING, WHO'S WHO IN MEDICINE AND HEALTHCARE, WHO'S WHO IN AMERICAN EDUCATION, WHO'S WHO IN RELIGION, and in more than a dozen national and international Biographical Works of Reference. Also Listed in Muslim Scientists of All Time in Wikipedia



## HONEY BEES – APIS

Honey bees are social insects known for producing honey and beeswax. Honey bee lives in vertically hanging nest called Bee hive or Honey comb. The hive is thirty to ninety centimeters in diameter. The hive contains a number of hexagonal chambers. Beehives are found upon tree branches, or hanging from ceilings of houses and buildings. At the peak of activity in the flowering season, a bee colony may contain as many as 80,000 bees. Honey bee is a colonial insect with three types of castes namely a single Queen, hundreds of Drones and 50,000 to 60,000 Workers.

Queen is fertile female, larger than the drone and worker bee. Its only function is that of laying eggs. In the 4-5 years of its life span, it can produce nearly two million eggs. Normally one to three thousand eggs are laid per day. Egg laying is a

seasonal activity occurring during winters and spring. The drones are male bees which develop from unfertilized eggs. They have only one role to play that of mating with the queen. Drones have a very short span of life. They die soon after mating. Worker bees are female working members of the bee family. Being sterile, they do not lay eggs. They are further differentiated into-

- i) Scavenger bees- They act as a scavenger, cleaning chambers of beehive.
- ii) Nurse bees- They feed the larvae and queen.
- iii) Builder bees- They produce bee wax, build and repair the hives.
- iv) Foraging bees- They search for new sources of nectar and pollen and collecting these and water.

The foraging worker bees that have found the source of food, returns to the hive and transmit information to fellow workers of the colony regarding the location of source of food by two types of dances. If the food source is close to the hive within about 75 meters, it performs a Round dance. In this case, worker bee circles first in one direction and then in the other in a round dance. On seeing this kind of dance, workers fly out and search for the food near the hive. If the food source is away at a distance of more than 75 meters, the worker performs another type of dance called the Tail-wagging dance.

In this kind of dance, the worker bee goes through a half circle then moves in a straight line wagging its abdomen from side to side and complete the other half of the circle in the other direction. If the tail-wagging straight run is directed vertically upwards, food is located straight towards the sun. If the run vertically downwards, the food source is located straight in opposite direction to the sun.

Rearing of honey bees to obtain honey and bee wax in commercial scale is called Apiculture. Bee wax and honey are the products for apiculture. Bee wax is used in making candles, cream, polish, cosmetics, ointments etc. A large bee colony may collect as much as 150 kg of honey in a single season. Besides honey and bee wax, bees play an important role in pollination of flowers.

**VEDAVYASA SAGAR & G. MALLANA GOUD**  
**Assistant Professors of Zoology.**



## BIOTECHNOLOGY

*I am a student of science  
By seeing my field many criticize  
If you can't support just keep quiet, don't act too wise  
For the P.U students I have great advice  
The branch I have chosen is very nice  
In this world of technology  
I suggest you to take BIOTECHNOLOGY.*

*Engineering and medical are even fine  
Take BIOTECHNOLOGY you will also shine  
In the field of science BIO-TECH is divine  
If you can understand the words of mine  
Then don't be late just come and join  
You can be a scientist  
Or work among dentist  
If you prefer to be hi-tech  
Then please choose BIO-TECH.*

*Trust yourself and have a hope  
I will let you know BIO-TECH'S scope  
If you are talented here you can reign  
Also you can move to gulf or foreign  
You are having time don't miss the train  
You should take BIO-TECH fix it in brain  
If you earn 5 digit in M-tech  
You can earn much more in BIO-TECH  
Apart from the subjects, botany & zoology  
You will also be having BIOTECHNOLOGY...*

## The Nightmare girl.

*Last night she was in my dream  
Seeing her I couldn't scream  
She wore a dress which was parrot green  
In her hand a cone of ice cream  
I asked her 'who are you'?  
"You can guess I will give a clue  
I would have been dear to you"  
I couldn't guess even by her.  
She was very pretty with her eyes blue.  
"Wait till the end you will come to know  
Don't be in a rush, have patience, be slow  
Come lets play in the cloudy snow"  
Her words like honey & face had a glow  
Both had fun on the sliding rainbow  
I felt a terrific wind blow  
She looked at me & said, "I have to go."  
I will not let you go please no no...  
"I have to go," she said in grief  
Who are you tell me in brief.  
She came near, whispered in my ear  
"I am your sis, killed before entering the globe."  
Weeping in dark, she disappeared in the mob.  
Then I woke up, she had gone,  
Sun was risen with heavy storm  
I sat in a corner, pondered alone  
I was whelmed & my heart swirled  
She would have been my precious pearl  
Alas! That was my sis, the NIGHTMARE GIRL ....*

**-MOHAMMED ZAID [SULTHAN]  
BIO-TECH 1ST YEAR.**

## STUDY OF SOLAR POWER USAGE IN BALLARI DISTRICT

The clean green renewable Solar Power is harnessed all over India in residences, hospitals, hostels, agriculture fields and industries in various forms. Ballari District has the potential to evolve as a Solar Power generation hub in Karnataka. Ballari sees more than six months of summer in a year and is technically appropriate with a Solar yield of 5.4 to 6.2 kwh/m<sup>2</sup>/Day, stable weather, light wind speed and with much barren land is very ideal to construct silent, eco-friendly Solar Power generating plant or Solar Park.

The risk of energy crisis made the thinkers to work on renewable sources of energy and harnessing Solar Power existed long before. But lack of use of sophisticated tools to improve concentrating Solar Power, manufacturing of tools in local area and the cost of installation crippled the growth of development of using the clean green energy and establishing the Solar Park in Ballari District. However the findings of the survey evokes interesting points to note. The essentials to find DNI readings are to produce Solar Power map of Ballari, India and to analyze them. It is very much essential to popularize use of Solar Power in all forms both in domestic and in agriculture sector.

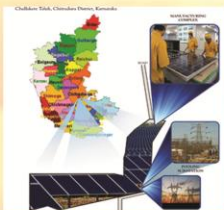
A group of 20 students and I (Bsc 2nd year and final year) have under taken, the usage of Solar Power in Ballari District in which 62.48% of population lives in rural area and 37% of population in urban area. But according to survey the following findings were found.

1. Urban people use only Solar water heaters. For a family of four members on average, the electric bill per month with Solar water heater usage is less than Rs1000/- out of 10 houses (upper middle class family) 3 houses used Solar water heaters.
2. Hospitals don't use Solar water heaters but few clinics use them. 3 out of 15 hostels visited, use Solar water heaters. 10 out of 20 hotels (both ordinary and star hotels) installed Solar water heaters.
3. In rural area and villages Solar Power is used only for lighting and fans.
4. There is no grid connected roof top generation of electric power.
5. There are no concentrated Solar Power projects.
6. In the 3 villages Kollagallu, Korlagundhi and in Siruguppa thaluk, only one farmer used Solar Power pump system for irrigation.
7. The Surya Raitha scheme for farmers to install 50MW Solar Power pumps introduced by the government of Karnataka is yet to be implemented. The prominent reasons for non-usage of Solar Power in the district are lack of accurate, Direct Normal Irradiance (DNI) data at a place and need for local survey and manufacturing. Solar radiation map which is satellite based which is not yet released. In 2014 SRRA(solar radiation resource assessment) is aiming to install 61 stations in India in which Ballari has to be figured to enable the developers have better design and prize of future plans.

Challakere in Chitradurga District, near to Ballari has a small Solar park. To implement the maximum usage of Solar Power in Ballari the need for popularization of production of electric power on the roof tops of established houses by an individual and as a project is the need of the hour. It's a challenge to scientific thinkers, manufacturers and investors to establish a Solar park in Ballari. This is a small attempt to connect to science and technology of this eco-friendly free Solar Power with the people of Ballari.



Ms.A.SHIRLY JONES  
WITH BSC STUDENTS INVOLVED IN THE SURVEY



SOLAR PARK AT CHALLEKERE



SOLAR WATER HEATER AT POLA PARADISE



SOLAR MAP OF INDIA

**Ms. A. SHIRLY JONES**  
**Associate Professor of Physics**