

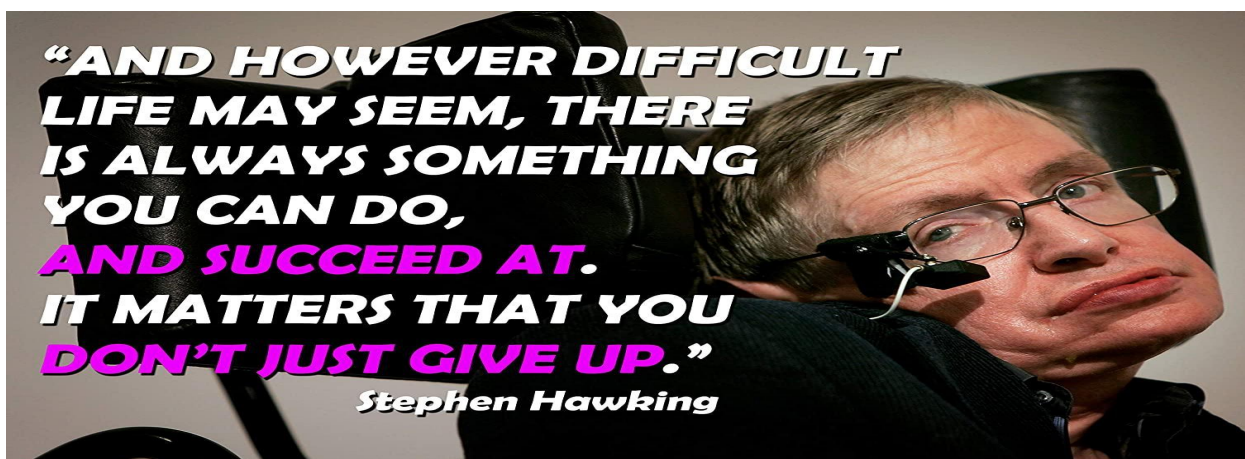
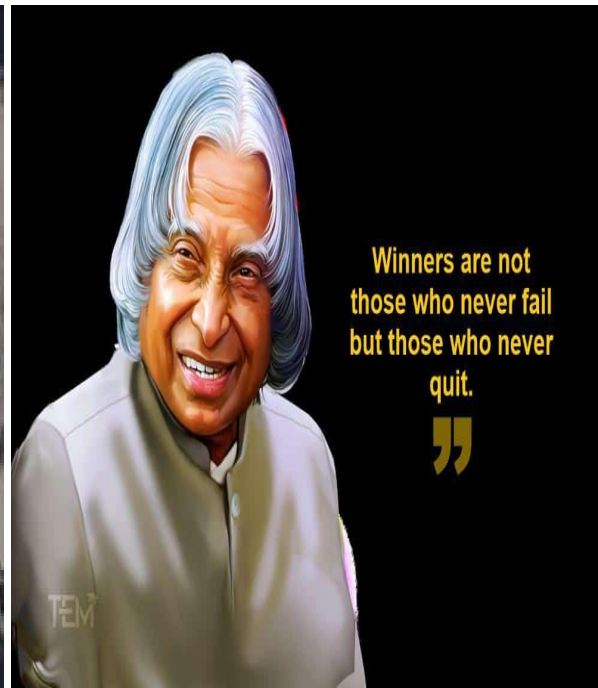
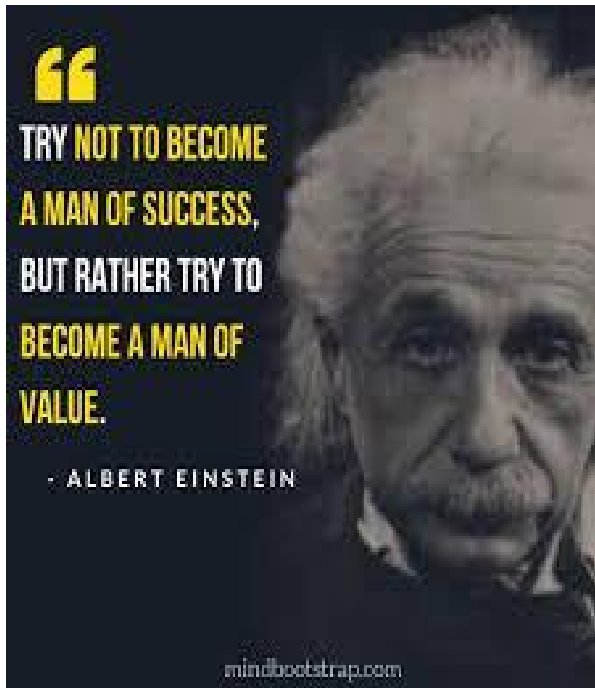


SIR C R REDDY COLLEGE, ELURU

DEPARTMENT OF PHYSICS



## PROFILE



## **Sri D S SUBRAHMANYAM A BIOGRAPHY OF FOUNDER PRINCIPAL**



Sri Desaraju Satya Subrahmanyam was born on 16<sup>th</sup> September 1901 at Manepalli, a village in Razole Taluk. His father Sri Lakshminarayan Sastry devoted to the Veda studies. His mother smt Venkataramanamma is hard worker with good nature.

Sri Desaraju Satya Subrahmanyam had his early education at Taylor high school, Narasapur. He had his high school education at Cuddapah, Rajahmundry and Kakinada. He studied Intermediate and BA during the years 1917 to 1921 at Government Art College, Rajahmundry. Prof. Couldrey was the principal and Sri. Vissa Appa Rao was the lecturer in charge of the college.

Sri.D.S.Subramanyam came under the influence of the writings of swami Vivekananda and Mahatma Gandhi in the formative period of his life. Keeping them as his ideals, he laid the firm foundations of his character-fearlessness to work for a noble cause, resolution, tenacity of purpose, patience and perseverance, clearness of vision and judgement, above all a sense of devotion to duty-all the qualities necessary for a successful career that was to flower forth in future. In January 1921, there was student and participant in the struggle for independence. Along the five or six other students he gave up his studies and took active part in the nationalist movement. In 1921, he worked as a congress member. He participated in the triple constructive programme. He collected funds and started charkas at Manepalli, his native village. He inspired other young man to give up wearing foreign clothing and put on homespun, coarse cloth. He joined the staff at the National School founded by Sri.Bulusu.Samba Murthy at Kakinada. He was on the staff of the school from August 1921 to December 1923 when the school had to be closed for want of funds. He worked as one of the sectional secretaries of the Khadi Exhibition organised at the time of Kakinada congress in 1923. In January 1924, Sri Subrahmanyam opened a Khadi production and training centre at Manepalli and did Yeoman Service in the cause of the swadeshi movement.

He appeared at the B.A examinations of the Madras University in the year 1926, as a private candidate. Sri.Subrahmanyam studied M.A., with Physics at Tiruchirapalli during the academic year 1926 to 1928 in the second batch of the post graduate students. He passed the degree examination in second class, taking the first rank among the successful postgraduate student of the batch. During 1928-1929. He underwent B.Ed. training in the Government training college at Rajahmundry.

In the summer of 1934 he had gone to Bangalore for doing research in the Indian Institute of science. He had a rare opportunity of working under the eminent physicist and Noble Laureate of India, **SIR.C.V.Raman**. He did research work on the Elasticity of Shells. He produced valuable Research papers which were successively published in the Indian Journal of physics, Calcutta

The most prominent of his published papers are:

1. Verification of Stokes theory of a sphere oscillating in a liquid.
2. A new theory of Lapse Rate.
3. Pressure waves and boundary surfaces in the free atmosphere.
4. Friction between a liquid surface film and evaporation through them.

He worked as lecture in physics A.C. College, Guntur, from 1929 to 1945. He was in the later part of this period, the head of the department of physics there. When the Second World War was fought severally and Vizag was threatened with air raids, the

honours class of the Andhra University were, for the time being, shifted to Guntur. They were accommodated in the physics laboratories A.C College which Sir. Subrahmanyam kept so trim and up to the mark that they afforded all the required facilities for postgraduate teaching and laboratory work.

At the end of June 1945 Sri.Subrahmanyam was appointed principal of SIR.C.R.REDDY, COLLEGE, Eluru on the selection made by Dr.C.R.Reddy, vice chancellor of the Andhra University. In 1923 Sri Subrahmanyam published a book in telugu, Mana kee Daaridriyamela, an economic history of India under the British rule. It was adaptation of Lala Lajpat Rai's Englands Debt to India. About the same year he composed a poetic drama in English,"The Mirror in Blank verse," on the lines of the Shakespearean play. In 1929 he wrote a novel in Telugu Jeevanushadham. The theme is based on the first invasion of the fort of Golkonda.

As a principal of SIR.C.R.REDDY, COLLEGE Sri.D.S.Subrahmanyam distinguished himself as an eminent educationist and a good administrator. His relations with the staff of the college were genial and cordial.

Sri D.S.Subrahmanyam was on the syndicate of Andhra University three years from 1957 to 1960. He was the Founder member of the Affiliated College Teachers Association of Andhra, inaugurated by Sir C .R.REDDY in the year 1939. He was the Secretary of the Association during 1944-45 and later he role to be the Kuppuswamy committee appointed by the Government of Andhra Pradesh to go into the question of the basic and elementary education. In 1969, he was the president of the Andhra Pradesh Teachers union session held at Tadepalligudem.

Sri Subrahmanyam was elected to the Legislative council of Andhra Pradesh from the Teachers constituency first in 1958 and was re-elected in 1962. As an M.L.C. elected by the teachers, he tried to ameliorate the condition of lecturers, especially the teachers of elementary schools. His tireless effort has been mainly responsible for implementation of the U.G.C. Scales of pay to the teachers working in the affiliated colleges. Right from the inception of the Sir C.R.R College. Sri Subrahmanyam has been strained every nerve and leaving no stone unturned for the all-round development.

#### **EMINENT STAFF MEMBERS OF THE DEPARTMENT**

- The physics department was started in the year 1951-52 under the principal D.S.SUBRAHAMANYAM.

- D S SUBRAHAMANYAM, K S R BHASKAR SARMA, P V S.MUKTHESWARA RAO, A V KRISHNA RAO wrote Books in the branches like light, heat, properties of matter, electricity. These books were published by the Telugu academy Government of Andhra Pradesh. A.A.RAMA KRISHNA authored for Intermediate Physics Books.
- Dr D VENKATESWARA RAO carried research under international agency Italy funding and published number of papers
- M ACTHUTHA RAO, Dr .A.VEERA BHADRA RAO discharged duties as principal.
- Dr A VEERA BHADRA RAO and Dr P PAUL DIVAKAR were recognized as research guides by the university
- Dr A VEERA BHADRA RAO received state best teacher award
- Staff members served the institution in various capacities like principal, UGC coordinator, Controller of examinations, Deputy warden, Books store incharge, NAAC, IQAC coordinator, RUSA coordinator, Time table, Scholarship committee conveners, IGNOU, AU distance education coordinator..... Many more
- Department has a museum with rare apparatus like 60 inches Astronomical Telescope. Discharge tubes, Ballastic galvanometer, Barometer, .....
- well equipped five laboratories for different courses as per APSHCE norms
- Department library with good number of volumes
- Retired faculty Y V Krishna Rao donated rupees two lakhs for the teaching staff excellence award.
- In the name of M ACTHUTHA RAO & V MADHU SUDHANA RAO endowment scholarships were offered by the family members.

## VISION OF THE DEPARTMENT

**To establish a platform for foundation towards excellence, Creation of knowledge, Understanding research through teaching at under graduate level in Physics.**

## MISION OF THE DEPARTMENT

- ☐ To offer state of the art academic programmes in physics and interdisciplinary areas.
- ☐ To enlighten the students and discover the talent in both theory and practical Physics.
- ☐ To carry out research activities in the department by the faculty and students.
- ☐ To fill the gap between basic and applied sciences.

## **DEPARTMENT PROFILE**

The department of physics was started in 1951-52 with Sri.D.S.Subrahmanyam, the founder principal, sri k.S.R. Bhaskara sarma and sri S.surya Narayana Murthy. Then sri P.V.A.Muktheswaram, sri G.v.Subba Rao , Sri M.Stya narayana, sri A.V. Krishna rao and Sri L.Lakshmana rao joined in the department. Sri A.A.Rama Krishna and sri v.madhusudhana rao joined as demonstrators and later promoted as lecturers and sri M.Atchuta Rao joined as lecturer. Sri P.S.janardhana rao joined the department as demonstrator and sri M.Satya Narataba rao joined as lecturer. All these faculty members retired from their service.

Sri D.S.Subrahmanyam served as MLC for three consecutive terms from Teachers Counstituency. He was also instrumental in initiating the college teachers Movement in the State. Besides Sri D. S. Subrahmanyam, Sri K.S.R.Bhaskara sarma, Sri P.V.S Muktheswaram, Sri A.V.krishna rao and Sri A. A. Ramakrishna authored many text books both for ug and +2levels sri

P.V.S.Muktheswaram was also member of telugu Academy of state Govt.



**Create the facilities and environment to acquire knowledge in physics to understand concepts, principles, theories of Physics**

**To emphasize the discipline of Physics as the important branch of science for Pursuing multi disciplinary in higher education, research**

**To succeed in job opportunities in relevant to their interest as well as aspiration for higher studies**

**To impart fundamental, life skills. Global needs/ skills to cater the needs of society and to be self sufficient as being life long learner to update**

**To improve leadership qualities, human values, ethics, for being a good citizen with scientific approach and rational thinking**



## PROGRAMME OUTCOMES

To enable students with requisite theoretical and practical knowledge and apply them in inter-disciplinary scientific fields

To impart skills and nurture talents of students through various activities, promote passion for research through mini projects and enhance employability

To help learners understand and practice ethical values in all walks of life.

To become aware of environmental concerns, be committed to sustainable development and strive to promote a harmonious society.



### **COURSE OUTCOMES**

#### **COURSE I Mechanics**

|      |                                                                                     |
|------|-------------------------------------------------------------------------------------|
| CO-1 | Understand the knowledge of mechanics of particles, motion of rockets, rigid bodies |
| CO-2 | To evaluate the concept of central forces, keplers laws, satellite motion           |
| CO-3 | Remember and understand the relativity, transformations, einsteins relation         |
| CO-4 | This course provides knowledge on waves & oscillations, bars and strings            |

#### **COURSE II Wave optics**

|      |                                                                                                                                                                   |
|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CO1. | The students should have attained a common level in basics of Light.                                                                                              |
| CO2. | This course would empower the student to acquire practical knowledge, which helps the student in their everyday life.                                             |
| CO3. | This course will provide knowledge on the applications of Lasers and Optical fibres.                                                                              |
| CO4. | This course will provide knowledge on very important and fascinating areas of interference diffraction and polarization with many experiments associated with it. |
| CO5. | This course will provide knowledge on the communicating system using fiber optics.                                                                                |

#### **COURSE III Wave optics**

|      |                                                                                                                                                                   |
|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CO1. | The students should have attained a common level in basics of Light.                                                                                              |
| CO2. | This course would empower the student to acquire practical knowledge, which helps the student in their everyday life.                                             |
| CO3. | This course will provide knowledge on the applications of Lasers and Optical fibres.                                                                              |
| CO4. | This course will provide knowledge on very important and fascinating areas of interference diffraction and polarization with many experiments associated with it. |
| 5.   | This course will provide knowledge on the communicating system using fiber optics.                                                                                |

#### **COURSE IV THERMODYNAMICS & RADIATION PHYSICS**

|                                                                                    |
|------------------------------------------------------------------------------------|
| CO1. The students should have attained a common level in basics of Thermodynamics. |
| CO2. This course will provide knowledge on the Thermometers.                       |
| CO3. This course will provide knowledge on the refrigeration.                      |
| CO4. This course will provide knowledge on the pyrometers.                         |
| CO5. This course will provide Knowledge on Temperature of the sun.                 |
| CO6. This course will provide knowledge on Mechanical Engines.                     |

## **COURSE V ELECTRICITY, MAGNETISM ,ELECTRONICS**

|                                                                                                                                                  |
|--------------------------------------------------------------------------------------------------------------------------------------------------|
| CO 1 The students should have attained a common level in basics of Electronics, Electricity and Magnetism                                        |
| CO2 The Students should familiarize with electrical circuits, electrical connections, and storage devices their working etc.                     |
| CO3 The theoretical and practical knowledge about signal generating circuits enable the students to identify different communication techniques. |
| CO4 The Students will familiarize with logic circuits and their applications which enables them to design logic circuits of their own..          |

## **COURSE VI MODERN PHYSICS**

|                                                                                             |
|---------------------------------------------------------------------------------------------|
| CO1. The students should have attained a common level in basics of properties of particles. |
| CO2 The Students should familiarise with different radioactive devices                      |
| CO3 The student have knowledge about bio medical instruments like X-ray, CT scan, MRI       |
| CO4 The Students get knowledge on pharmacy field by Raman Spectroscopy                      |
| CO5 The Students get knowledge on Crystallography.                                          |

## **COURSES OFFERED**

- 1. B.sc Mathematics physics, chemistry 1951*
- 2. B.sc Mathematics physics, Geology 1979*
- 3. B.sc Mathematics physics, Electronics 1984(discontinued)*
- 4. B.sc Mathematics physics, computer science, 1987*
- 5. B.sc Mathematics physics, instrumentation 1986 (discontinued)*

## COURSES FRAME WORK

| <u>S.No</u> | <u>Name of the programme</u> | <u>Semster</u> | <u>Course(paper) title</u>                   | <u>Course code</u> | <u>Type of the course</u> |
|-------------|------------------------------|----------------|----------------------------------------------|--------------------|---------------------------|
| 1           | B.Sc ( MPC, MPG,MPCs)        | I              | Mechanics,waves&oscillations                 | PHY I              | Theory                    |
| 2           |                              | I              | Mechanics,waves&oscillations                 | PHY I              | practical                 |
| 3           | B.Sc ( MPC, MPG,MPCs)        | II             | wave Optics                                  | PHY II             | Theory                    |
| 4           |                              | II             | wave Optics                                  | PHYII              | Practical                 |
| 5           | B.Sc ( MPC, MPG,MPCs)        | III            | Heat & Thermodynamics                        | PHYIII             | Theory                    |
| 6           |                              | III            | Heat & Thermodynamics                        | PHY III            | Practical                 |
| 7           | B.Sc ( MPC, MPG,MPCs)        | IV             | Electricity & Magnetism ,<br>Electronics     | PHY V              | Theory                    |
| 8           |                              | IV             | Modern Physics                               | PHY VI             | Theory                    |
| 9           | B.Sc ( MPC, MPG,MPCs)        |                | Electricity & Magnetism ,<br>Electronics     | PHY V              | practical                 |
| 10          |                              | IV             | Modern Physics                               | PHY VI             | practical                 |
| 11          | B.Sc ( MPC, MPG,MPCs)        | V              | Electricity & Magnetism                      | PHY V              | Theory                    |
| 12          |                              | V              | Modern Physics                               | PHY VI             | Theory                    |
| 13          |                              | VI             | Electricity & Magnetism                      | PHY V              | practical                 |
| 14          |                              | VI             | Modern Physics                               | PHY VI             | practical                 |
| 15          |                              | VI             | Analog and & Digital electronics             | PHY VII            | Theory                    |
| 16          |                              | VI             | Analog and & Digital electronics             | PHY VII            | Practical                 |
| 17          |                              | VI             | Intro. Microprocessors and Micro Controllers | PHY VIIIA1         | Theory                    |
| 18          |                              | VI             | Intro. Microprocessors and Micro Controllers | PHY VIIIA1         | practical                 |
| 19          |                              | VI             | Computational Methods and Programming        | PHY VIIIA2         | Theory                    |

|    |  |    |                            |            |           |
|----|--|----|----------------------------|------------|-----------|
| 20 |  | VI | C Language programming     | PHY VIIIA2 | practical |
| 21 |  | VI | Electronic instrumentation | PHY VIIIA3 | Theory    |
| 22 |  | VI | Electronic instrumentation | PHY VIIIA3 | Project   |

Post-Graduate course in Physics was started in the year 2003-2004 with an intake of 24 students. The admissions at UG level through by merit basis in accordance with the reservation policy in force. While for PG courses it is through AUCET ranking.

### **CURRICULAR & CO CURRICULAR ASPECTS**

Basically speaking activities encompassing the prescribed courses of study are called curricular or academic activities. In simple words it can be said that activities that are undertaken inside the classroom, in the laboratory, workshop or in library are called “curricular activities.” These activities are an integral part of the over-all instructional programme. Because in the organisation of these activities or programmes there lies active involvement of the teaching staff of the educational institution.

#### **i) Classroom activities:**

These are related to instruction work in different subjects such as classroom experiments, discussions, question-answer sessions, scientific observations, use of audio-visual aids, guidance programmes, examination and evaluation work, follow-up programmes etc.

#### **(ii) Activities in the laboratory:**

These refers to activities which are carried out in science laboratories, laboratories in humanities

#### **(iii) Activities in the Seminars, workshops and conferences:**

These activities refer to the presentations, discussions, performed by delegates and participants on emerging areas of various subjects of study in workshops, seminars and conferences.

## ADDITIONAL CURRICULUM

| ACADEMIC YEAR     | DEVIATION                                                                         | JUSTIFICATION                                                                    |
|-------------------|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| 2018-2019         | Dispersive power of prism                                                         | It is necessary to explain aberrations                                           |
|                   | Fraunhofer diffraction pattern with N slits                                       | In practical diffraction grating is used                                         |
|                   | Babinet's compensator                                                             | As it is compensator to nicol prism and easy to use                              |
|                   | Idea of elliptical and circular polarisation                                      | In regular practice elliptical and circular polarization is very much applicable |
| <u>2019--2020</u> | <i>Differences between single slit and double slit diffractions.</i>              | For better understanding of the subject                                          |
|                   | <i>Fraunhofer diffraction pattern with N slits (diffraction grating)</i>          | And to impart in depth knowledge on the specific topics                          |
|                   | <i>Dispersion through a prism.</i>                                                |                                                                                  |
|                   | <i>Einstein coefficients and relation between different Einstein coefficients</i> |                                                                                  |

**CLASS: I B.Sc., SEMESTER: I**

**COURSE CODE: PHY001**

**TITLE OF THE PAPER: Mechanics, Waves& Oscillations**

| ADDITIONAL TOPICS | JUSTIFICATION |
|-------------------|---------------|
|-------------------|---------------|

|                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                        |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><i>Two dimensional elastic collisions</i></p> <p><i>Motion of satellites, basic ideas of GPS system, weightlessness, physiological effects of Astronauts</i></p> <p><i>Detection of ultrasonics</i></p> <p><i>Longitudinal Vibration of bars, wave equation, bar fixed at both ends, tuning fork</i></p> | <p>It is the basic idea for exchange of velocities</p> <p>To gain knowledge of satellites, Gps system, basic principles required for astronauts</p> <p>For assignment</p> <p>As vibration of strings is in the syllabus, it is relevant to have knowledge of bars.</p> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

| DELETED TOPICS                                                                                                                  | JUSTIFICATION                                                                                                                                                               |
|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><i>Rutherford scattering derivation part</i></p> <p><i>Precession of the equinoxes</i></p> <p><i>Coupled oscillators</i></p> | <p>As the content of the chapter is high with respect to the blue print, derivation is not necessary.</p> <p>Coupled oscillators topic is replaced by vibration of bars</p> |

**CLASS: II B.Sc., SEMESTER: III COURSE CODE: PHY002**  
**TITLE OF THE PAPER: Thermodynamics**

| ADDITIONAL TOPICS                                                                                                                                                                                                                                                                      | JUSTIFICATION                                                                                                                                                                                                                                                       |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><i>first law of thermodynamics</i></p> <p><i>Joule Kelvin coefficient for perfect and vanderwaal's gas</i></p> <p><i>Liquification of helium Kapitza method</i></p> <p><i>Degrees of freedom, principle of equipartition of energy</i></p> <p><i>Principle of refrigeration</i></p> | <p>It is necessary for fundamentals of thermodynamics</p> <p>For assignment</p> <p>Liquefaction of air by linde's method is replaced.</p> <p>Replaced by the Effects of chlorofluro carbons on ozone layer</p> <p>Principle of refrigeration is for assignment.</p> |

**CLASS: III B.Sc., SEMESTER: V COURSE CODE: PHY005**  
**TITLE OF THE PAPER: ELECTRICITY, MAGNETISM & ELECTRONICS**

| ADDITIONAL TOPICS                                                                                                                                                         | JUSTIFICATION                                                                                                 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|
| <i>Deduction of Coulomb's law from Gauss law</i><br><i>Lightening conductor</i><br><i>Comparison of magnetic shell and circular coil</i><br><i>Poynting theorem proof</i> | <p>For better understanding of the subject</p> <p>And to impart in depth knowledge on the specific topics</p> |

**CLASS: III B.Sc., SEMESTER: V COURSE CODE: PHY006**  
**TITLE OF THE PAPER: Modern Physics**

| ADDITIONAL TOPICS                                                                                                    | JUSTIFICATION                                                                                                 |
|----------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|
| <i>Zeeman effect- Experimental arrangement-</i><br><i>Derivation for Zeeman Shift</i><br><i>Gaama ray microscope</i> | <p>For better understanding of the subject</p> <p>And to impart in depth knowledge on the specific topics</p> |

## **VALUE ADDED COURSE / SKILL DEVELOPMENT COURSES 2016 – 2021**

| S.NO. | DATE                                                  | TOPIC                                              | RESOURCE PERSON                                               |
|-------|-------------------------------------------------------|----------------------------------------------------|---------------------------------------------------------------|
| 1.    | 31. 01. 2017                                          | Train your Brain                                   | M. Subhash<br>(9 times world record holder on memory)         |
| 2     | 24 <sup>th</sup> Jul – 10 <sup>th</sup> Sep 2017      | Mobile Phone Trouble Shooting and Service          | Dept of Physics                                               |
| 3     | 16 <sup>th</sup> July to 18 <sup>th</sup> Sept 2018   | Household Electrical wiring                        | Dept of Physics                                               |
| 4     | 28 <sup>th</sup> Jan 2019 to 2 <sup>nd</sup> Mar 2019 | Photo copier & Printer Trouble Shooting and Repair | Dept of Physics                                               |
| 5     | 8 <sup>th</sup> July to 18 <sup>th</sup> Aug 2019     | Repair & Maintenance of Electrical Home Appliances | Dept of Physics                                               |
| 6     | 2 <sup>nd</sup> Dec 2019                              | Remote Sensing & Basic Principles of GIS           | Y.Siva Prasad,<br>Former Scientist,<br>ISRO & Dept of Physics |
| 7     | 25 <sup>th</sup> Jan 2021                             | Electrical circuitry for buildings                 | Dept of Physics                                               |



## INFRA STRUCTURE AND LEARNING RESOURCES

The department has fully equipped 5 laboratories to cater to the needs of the students, 48 students can be accommodated any time in the lab. The lab functions in 3 shifts in a day on most the days. The department library has about 1000 books for the students and faculty use

### **BUILT UP AREA:**

|                          |             |
|--------------------------|-------------|
| □ UG labs                | 750.26sq.m  |
| □ UG Dept & labs         | 110.00sq.m  |
| □ UG Dept of Electronics | 214.00sq.m  |
| □ PG Dept                | 171.48sq.m  |
| □ Total                  | 1245.75sq.m |

- ❖ 5 well equipped labs to cater the needs of 48 students at a time
- ❖ 2 well equipped PG labs
- ❖ Department library with more than 1000 books
- ❖ Separate room for dept. library
- ❖ Dept. museum with rare apparatus

## **BOS & MOM 2016-2017**

1. To review and to make changes if any for the resolution made in the board of studies meeting conducted on 21/02/2015 i.e. modality of conducting the attendance linked 2<sup>nd</sup> internal examination for degree courses.
2. To prepare syllabus and model question papers.
3. To have additional curriculum for all the papers additional inputs.
4. To suggest panel of names to the Academic Council for appointment of examiners and paper setters.
5. To prepare syllabi for Value added courses /add-on programs.
6. To discuss the topics for the students study projects and to introduce the study projects for final year advanced learners.

## DEPARTMENTAL ACTIVITIES: 2016-2017

| S.No | Name of the Programme     | Date(s)                                    | Topic                                           | Name of the Resource Person / Chief Guest (With Designation)                                                                                     |
|------|---------------------------|--------------------------------------------|-------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| 01   | Workshop                  | 20.6.2016                                  | Workshop: Spectro-photometry and Chromatography | S.Sreejith, Manager, Systronics, Ahmadabad<br>Prof. D. Ramachandran, ANU, Guntur                                                                 |
| 02   | Guest Lecture             | 16.7.2016                                  | Nuclear energy - Perceptive                     | Sri K.V.S.B.V.Prasad<br>Senior Commissioning Engineer - Nuclear Power Project, Kudamkulam                                                        |
| 03   | Social Awareness Campaign | 13.8.2016                                  | Electric Power Saving At Ramasingavaram         | Faculty of the Department                                                                                                                        |
| 04   | National Seminar          | 4 <sup>th</sup> & 5 <sup>th</sup> Oct 2016 | Energy & Ecology                                | Prof. M.N.V Prasad<br>Prof.T.V.Ramachandra<br>Prof.SP Udaya Kumar<br>Dr. RVSSN Ravi Kumar<br>Dr R Balaji<br>Prof A Styannarayana<br>Dr. K.Suresh |
| 05   | Guest lecture             | 8 <sup>th</sup> Dec.2016                   | Mathematics in Space Physics                    | Dr. N.V.Vgnesham<br>Former Director, ISRO                                                                                                        |
| 06   | Skill Development         | 31 <sup>st</sup> Jan.2017                  | Train Your Brain                                | M. Subhash<br>(9 times world record holder on memory)                                                                                            |
| 07   | Awareness Talk            | 1 <sup>st</sup> Feb. 2017                  | Cashless Transactions: SBI Buddy                | Mr . M. Durga Prasad<br>SBI Manager (services)                                                                                                   |
| 08   | Guest Lecture             | 15 <sup>th</sup> Feb.2017                  | Nano Materials for energy storage               | Dr. P. Ramesh Kumar<br>Scientist<br>Republic of Korea                                                                                            |

## **BOS & MOM 2020-2021**

1. To prepare syllabus for II, IV and VI semesters with a deviation of 20%
2. To have additional curriculum for II, IV and VI semesters
3. To prepare syllabi for value added course during even semesters, to discuss the topics for the projects for VI semester cluster students
4. To prepare syllabi for Certificate Courses / value-added courses.
5. To discuss the introduction of New Courses/Re-structured courses
6. Preparation of Course outcomes for new courses introduced.
7. Enhancing collaborations/ Linkages with other institutions/ industries/NGOs for academic and co-curricular activities.

## DEPARTMENTAL ACTIVITIES : 2017-2018

| S.No | Name of the Programme     | Tentative date                                | Topic                                             | Name of the Resource Person / Chief Guest (With Designation)            |
|------|---------------------------|-----------------------------------------------|---------------------------------------------------|-------------------------------------------------------------------------|
| 01   | Value added course        | 24 <sup>th</sup> july to 10 <sup>th</sup> sep | Mobile phone trouble shooting and servicing       | Faculty members                                                         |
| 02   | Social Awareness Campaign | 8 <sup>th</sup> Aug                           | Electric Power Saving                             | Faculty of the Department                                               |
| 03   | workshop                  | 21st Aug                                      | Basic principles of physics and electronics       | G.Srinivas student mentor Kovvuru                                       |
| 04   | Guest lecture             | 14 <sup>th</sup> sept                         | communication                                     | MV.Vital Prasad<br>GM,BSNL<br>West Godavari Dist                        |
| 05   | National workshop         | 4,5&6 <sup>th</sup> Oct                       | Space dynamics                                    | ISRO & Department of physics                                            |
| 06   | Field Trip                | 29 <sup>th</sup> Nov                          | Dooradharshan kendhra Vijayawada                  | Engineering and technical staff of DD Kendhra                           |
| 07   | International conference  | 12 <sup>th</sup> ,13 <sup>th</sup> Feb        | Materials for energy and environmental protection | Prof K. Mahendra K.Sunkara<br>Jacek jasinski<br>B.Sridhar<br>S.Jaganadh |
| 08   | Guest lecture             | 28 <sup>th</sup> Feb                          | National science day                              | VSVSSS Rama Murthy<br>NRSA, Hyderabad                                   |
| 09   | Carrier guidance          | 3 <sup>rd</sup> Mar                           | Goal setting                                      | V.Bramhareddy<br>National president<br>Janavignana vedhika              |

## DEPARTMENTAL ACTIVITIES 2018-2019

| S.No. | Date(S)                                              | Name of the Activity          | Title of the Activity                                     | Resource Person                                                                                                    | Department |
|-------|------------------------------------------------------|-------------------------------|-----------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|------------|
| 1.    | 1 <sup>st</sup> week july                            | Board of Studies              |                                                           |                                                                                                                    |            |
| 2.    | 2 <sup>nd</sup> week july                            | Guest Lecture & Demonstration | Multi Frequency Ultrasonic Interferometer                 | Mr.R.K.Mittal, New Delhi.                                                                                          | physics    |
| 3.    | 5 <sup>th</sup> week July                            | Guest Lecture                 | Rare Earth Luminescence At Ambient and Extreme Conditions | Prof.V.V.Ramu, Yogi vemana University, Kadapa.                                                                     | Physics    |
| 4.    | 1 <sup>st</sup> week August                          | Awareness Talk                | Cell phone Safety Presentations                           | Sri.L.S.R.Ch.V.K.Nageswara Rao, HOD of Physics.                                                                    | Physics    |
| 5.    | 16 <sup>th</sup> July to 18 <sup>th</sup> Sept. 2018 | Value Added Course            | House Hold Electrical Wiring                              | Department of Physics.                                                                                             | Physics    |
| 6.    | 4 <sup>th</sup> week December                        | Guest Lecture                 | The Role of Nano Technology in Electronic Devices.        | Prof.D.Pamu, IIT Guwahati, Assam.                                                                                  | Physics    |
| 7.    | 1 <sup>st</sup> week January                         | CARRIER ORIENTATION PROGRAM   | WHAT NEXT???                                              | V.Nandha Kishore Software Release Engineer, California, U.S.A                                                      | Physics    |
| 8.    | 4 <sup>th</sup> week January                         | Field Trip                    | Polavaram                                                 | Department of Physics.                                                                                             | Physics    |
| 9.    | 5 <sup>th</sup> week January 2019 to 02nd March 2019 | Value Added Course            | Photo Copier & Printer Trouble Shooting and Repair        | Department of Physics                                                                                              | Physics    |
| 10.   | 2 <sup>nd</sup> week February                        | Field Trip                    | Doordarshan kendram, Kondapalli, Vijayawada.              | Department of Physics.                                                                                             | physics    |
| 11.   | 3rd week February                                    | Board of Studies              |                                                           |                                                                                                                    |            |
| 12.   | 4 <sup>th</sup> week February                        | Work Shop                     |                                                           | D.Srinivasa Reddy, P.B.Siddartha College of Arts & Sciences, Vijayawada. P.Sasi Kanth, KL University, Vaddeswaram. | Physics    |

|     |                               |                                   |                                                   |                                                                   |         |
|-----|-------------------------------|-----------------------------------|---------------------------------------------------|-------------------------------------------------------------------|---------|
| 13. | 5 <sup>th</sup> week February | National Science Day Celebrations | Science for the People and the People for Science | Dr. P.Ramesh Kumar Scientist, University of Emirates, Dubai, UAE. | physics |
|-----|-------------------------------|-----------------------------------|---------------------------------------------------|-------------------------------------------------------------------|---------|

**DEPARTMENTAL ACTIVITIES 2019-2020**

| S.No. | Date(S)                                              | Name of the Activity                    | Title of the Activity                                       | Resource Person                                                                    | Department                                |
|-------|------------------------------------------------------|-----------------------------------------|-------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------|
| 1.    | 2 <sup>nd</sup> week July to 18 <sup>th</sup> August | Value Added Course                      | Repair & Maintenance of Electrical Home Appliances          | Department of Physics.                                                             | Physics                                   |
| 2.    | 3 <sup>rd</sup> week September                       | Guest Lecture                           | Ozone Layer Protection – Need of the Hour                   | Dr.B.V.Tirupanyam, Lecturer in Physics, S.A.S Govt. Degree College, Narayanapuram. | Physics                                   |
| 3.    | 3 <sup>rd</sup> week November                        | Board of Studies                        |                                                             |                                                                                    |                                           |
| 4.    | 5 <sup>th</sup> week November                        | Guest Lecture                           | Indian Space Mission                                        | Y.Siva Prasad, Former Scientist, ISRO.                                             | Physics                                   |
| 5.    | 1 <sup>st</sup> week December                        | Add on Course Inaugural                 | Remote Sensing                                              | Y.Siva Prasad, Former Scientist, ISRO.                                             | Physics                                   |
| 6.    | 4 <sup>th</sup> week December                        | Work Shop                               | Basic Principles of Physics                                 | Sri.S.G.Srinivas, (Scientific Srinivas) Mentor, Scientific Knowledge, Kovvuru.     | Physics<br>135 + 350 high school students |
| 7.    | 1 <sup>st</sup> week January                         | Career Orientation                      | WHAT NEXT??? After Graduation                               | V.Nandha Kishore, Software Release Engineer, California, U.S.A.                    | Physics                                   |
| 8.    | 1 <sup>st</sup> week January                         | Community Service/ Awareness Programme  | Health Checkup for Walkers                                  | B.Sc., Pharmaceutical Students                                                     | Physics                                   |
| 9.    | 4 <sup>th</sup> week February                        | Field Trip                              |                                                             | Good Samaritan Cancer Hospital, Vangayagudem, Eluru.                               | Physics                                   |
| 10.   | 5 <sup>th</sup> week February                        | International Conference                | Advances in Physics, Electronics and Chemical Sciences-2020 |                                                                                    | Physics                                   |
| 11.   | 5 <sup>th</sup> week February                        | National Science Day -2020 Celebrations | Molecular Spectroscopic analysis of Materials               | Capt.Dr.A.Veeraiah, Dept.of .Physics, D.N.R College, Bhimavaram.                   | Physics                                   |

|     |                   |                        |                  |                                                                                         |         |
|-----|-------------------|------------------------|------------------|-----------------------------------------------------------------------------------------|---------|
| 12. | 2nd week<br>march | Workshop &<br>Training | Arduino Projects | Mr.Srinivasa Reddy<br>Lecturer in Electronics,<br>P.B Siddhartha<br>College.Vijayawada. | Physics |
|-----|-------------------|------------------------|------------------|-----------------------------------------------------------------------------------------|---------|

## DEPARTMENTAL ACTIVITIES: 2020 – 2021

| S.No. | Date(S)                                          | Name of the Activity                                      | Title of the Activity                                           | Resource Person                                                                                                                                                               | No. of Participants |
|-------|--------------------------------------------------|-----------------------------------------------------------|-----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| 1.    | 12 <sup>th</sup> & 13 <sup>th</sup><br>June 2020 | International Webinar                                     | Materials and Environmental Sciences                            | 1. Prof.Karunakar Kothapalli, USA.<br>2. Prof.Farzana Nasreen, USA.<br>3. Prof.D.Pamu, IIT, Guwahati.<br>4. Dr.Tharun Dolla,IIT, Guwahati.<br>5. Dr.M.Jaya Prakash, Rourkela. | Online              |
| 2.    | 24 <sup>th</sup> July 2020                       | Academic activity                                         | Board of Studies                                                | Members of Board of Studies                                                                                                                                                   |                     |
| 3.    | 5 <sup>th</sup> Sept 2020                        | Teacher's Day Celebrations                                | Plantation of Sapplings                                         | Faculty of Department of Physics                                                                                                                                              |                     |
| 4.    | 21 <sup>st</sup> October 2020                    | Webinar                                                   | Semiconductor Industries in India                               | Prof.M.Ravi, Scientist, DRDO                                                                                                                                                  | Online              |
| 5.    | 2 <sup>nd</sup> December 2020                    | National Pollution Control Day Celebrations               | National Pollution Control Day                                  | Smt.R.Yesoda BaiDistrict Forest Officer, West Godavari, Eluru.                                                                                                                | 125                 |
| 6.    | 2 <sup>nd</sup> December 2020                    | International Webinar in Association with IETE Vijayawada | Optics & New Display Technologies for better Reading Experience | Dr.G.Tulasi Sridhar Reddy, Netherland.<br>Sri.P.Kalee Prasad, Assistant Engineer, DDK, Vijayawada.                                                                            | Online              |
| 7.    | 12 <sup>th</sup> January 2021                    | Student Exchange Program                                  | Student Exchange Program                                        | DNR College, Bheemavaram                                                                                                                                                      | 90                  |
| 8.    | 23 <sup>rd</sup> January 2021                    | Social Responsibility                                     | Lab to School,<br>Z.P.H.S Vatuluru.                             | Faculty of Department of Physics                                                                                                                                              | 70                  |
| 9.    | 25 <sup>th</sup> January 2021                    | Inauguration of Value Added Course                        | Electrical Circuitry for Buildings                              | Faculty of Department of Physics                                                                                                                                              | 30                  |

|     |                                                    |                                   |                                            |                                  |     |
|-----|----------------------------------------------------|-----------------------------------|--------------------------------------------|----------------------------------|-----|
| 10. | 28 <sup>th</sup> January 2021                      | Social Responsibility             | Lab to School, CSI Alexander School, Eluru | Faculty of Department of Physics | 30  |
| 11. | 23 <sup>rd</sup> to 28 <sup>th</sup> February 2021 | National Science Day Celebrations | Intercollegiate Science Fest               | Faculty of Department of Physics | 300 |

## **MEMORANDUM OF UNDERSTANDING**

**MEMORANDUM OF UNDERSTANDING (MoU) FOR SKILL DEVELOPMENT,  
OUTCOME BASED TRAINING, PLACEMENT, R&D SERVICES AND RELATED SERVICES**

**BETWEEN**

**Sir C R REDDY COLLEGE**  
(Aided and Autonomous)

College with Potential for Excellence: Thrice Accredited with 'A' Grade by NAAC with CGPA – 3.21

An ISO 9001: 2015 Certified Institution

Near RTC New Bus Station, G N T Road, Eluru, West Godavari District, Andhra Pradesh – 534004

**And**

**BRAND MARS SOLUTIONS PVT.LTD**



*For*

***Bachelor of Vocational Course in***

**ELECTRONIC EQUIPMENT REPAIR AND MAINTENANCE**

***SKILL DEVELOPMENT, OUTCOME BASED TRAININGS, PLACEMENT,  
R&D SERVICES AND RELATED SERVICES***

# **Memorandum of Collaboration**

**Between  
Sir CR Reddy College, ELURU, W.G.Dt.  
A.P  
And**

**IETE, Vijayawada Chapter, Vijaywada**

This Memorandum of Collaboration is entered into on this 24<sup>th</sup> day of January 2021 by and between Department of Physics, Sir CR Reddy College (First party) and IETE Vijayawada Chapter Vijayawada (Second party) . Sir CR Reddy College and IETE Vijayawada Chapter Vijayawada agree that cooperation in collaboration to conduct National Scieday-2021 by organizing STUDENT FEST-2021. The areas of cooperation may include, subject to mutual consent, any desirable and feasible activity that would benefit the students of the institution. Such interaction may include cooperation in a variety of joint academic and educational activities.

This Collaboration shall be identified as the parent document of any program agreement executed between the parties. Further agreements concerning any program shall provide details concerning the specific commitments made by each party and shall not become effective until they have been reduced to writing, executed by the duly authorized representatives of the parties.

The primary contacts for this MOU are Dr. P Paul Divakar, Vice-Principal and HOD of Physics of the institution Sir CR Reddy College. As previously noted, the parties shall enter into specific written agreements whenever appropriate to clarify and define the nature, extent, and terms of operation for the proposed collaborations, including intellectual property ownership and funding issues. Any agreement entered into by these two institutions will require the approval of appropriate officers from each institution.

This Collaboration will take effect on and will be valid for three (3) months from the date noted in the first line of this document unless terminated by one of the parties. Either party may withdraw from this collaboration provided written notification of the withdrawal is given to the other party at least one 1 month prior to the desired withdrawal date. Each institution will have copies of this agreement.

The following authorized individuals have signed the present MOU on behalf of their respective institutions:

**P KALEE PRASAD**  
Hon. Secretary,  
IETE, Vijayawada Chapter

**Dr. P PAUL DIVAKAR**  
Vice - Principal & HoD, Physics  
Sir C R Reddy College, Eluru

DATE 24.01.2021

SEAL

DATE 24.01.2021

SEAL

## TEACHING, LEARNING AND EVALUATION

### CURRICULAR ASPECTS:

University curriculum is followed prescribed by APSHCE being an affiliated college. Following the newly introduced syllabus as prescribed by the UGC and approved by the APSHCE. Additional information provided to the students to face competitive tests such AUCET, ICET etc

### TEACHING LEARNING AND EVALUATION:

Students at the time of admission are separated according to their academic qualifications and graded into advanced and slow learners. The advanced learners are given assignments and study projects. The slow learners are given periodical coaching by providing remedial coaching wherever needed, beside bridge courses. Ward counseling method is followed to have continuous interaction with the students.

Teachers are encouraged to participate in academic seminars to update their subject further they are also permitted to attend refresher courses conducted by the academic staff colleges of various universities.

Mentors monitor the student performance in academic as well as extracurricular activities. Their performance is considered and award relevant marks in CIA.

Two internals will be conducted within a semester by preparing the students for semester end examinations.

Practical examination will be conducted at the end of semester.

No of Teaching Staff: 10

No of posts Sanctioned: 10

No of Posts Vacant: Nil

No of Non -Teaching: 04.

## TEACHING STAFF

| Name of the Teacher   | Qualification | Designation | Specialization      | Service in Year |
|-----------------------|---------------|-------------|---------------------|-----------------|
| K. B. S Gopal         | M.Sc.,DCP     | Asst. Prof, | Geo Physics         | 27              |
| K.Ananda Rao          | M.Sc.,        | Asst. Prof, | Material Science    | 27              |
| K.S.Ch. Srinivasa Rao | M.Sc.,        | Asst. Prof, | Electronics         | 26              |
| K.Ravi Kumar          | M.Sc.,        | Asst. Prof, | Electronics         | 21              |
| T.Suneetha            | M.Sc.,        | Asst. Prof, | Solid State Physics | 13              |
| Ch.Mahita             | M.Sc.,B.Ed    | Asst. Prof, | Physics             | 09              |
| G.V.R.P.Parameswarar  | M.Sc.,B.Ed    | Asst. Prof, | Physics             | 03              |
| G. Lalitha Devi       | M.Sc.,        | Asst. Prof, | Physics             | 01              |
| Ch. Kalyani           | M.Sc.,        | Asst. Prof, | Physics             | 01              |
| P.Indira              | M.Sc.,        | Asst. Prof, |                     | 01              |

## ON TRANSFER

|                           |             |                 |             |  |
|---------------------------|-------------|-----------------|-------------|--|
| Dr.P.Paul Diwakar         | M.Sc.,PhD., | Professor       | Electronics |  |
| Dr. L.Venkata Krishna Rao | M.Sc.,PhD., | Assoc.Professor | Electronics |  |
| Dr. N.Srinivasa Rao       | M.Sc.,PhD., | Professor       | Geo Physics |  |

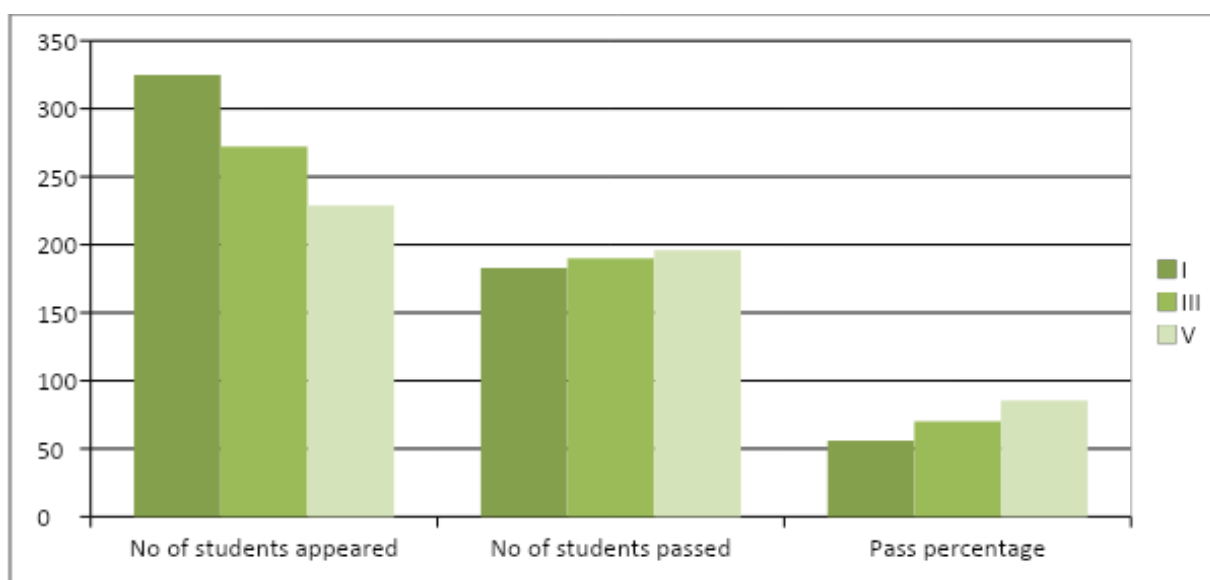
## NON TEACHING STAFF

|                  |        |  |  |    |
|------------------|--------|--|--|----|
| M Seetha ramaiha | INTER  |  |  | 32 |
| B surya narayana | X      |  |  | 16 |
| R srinvas        | degree |  |  | 12 |
| G Gopala krishna |        |  |  | 33 |

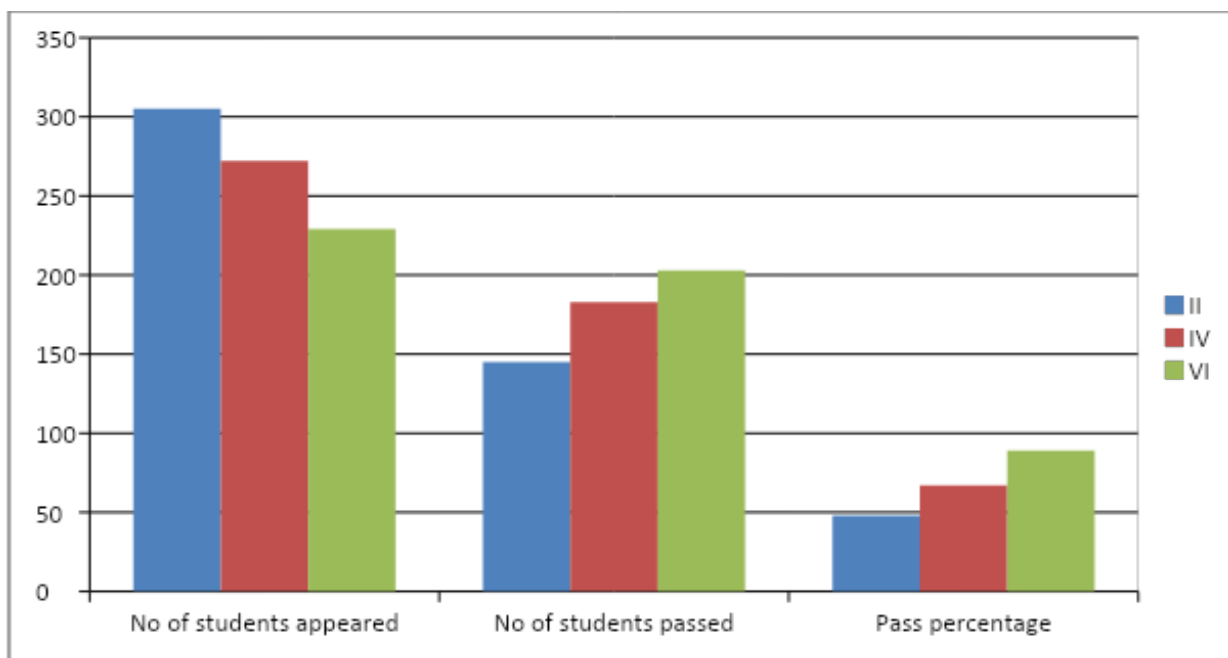
# RESULT ANALYSIS 2016-2021

2016-2017

2016 NOVEMBER

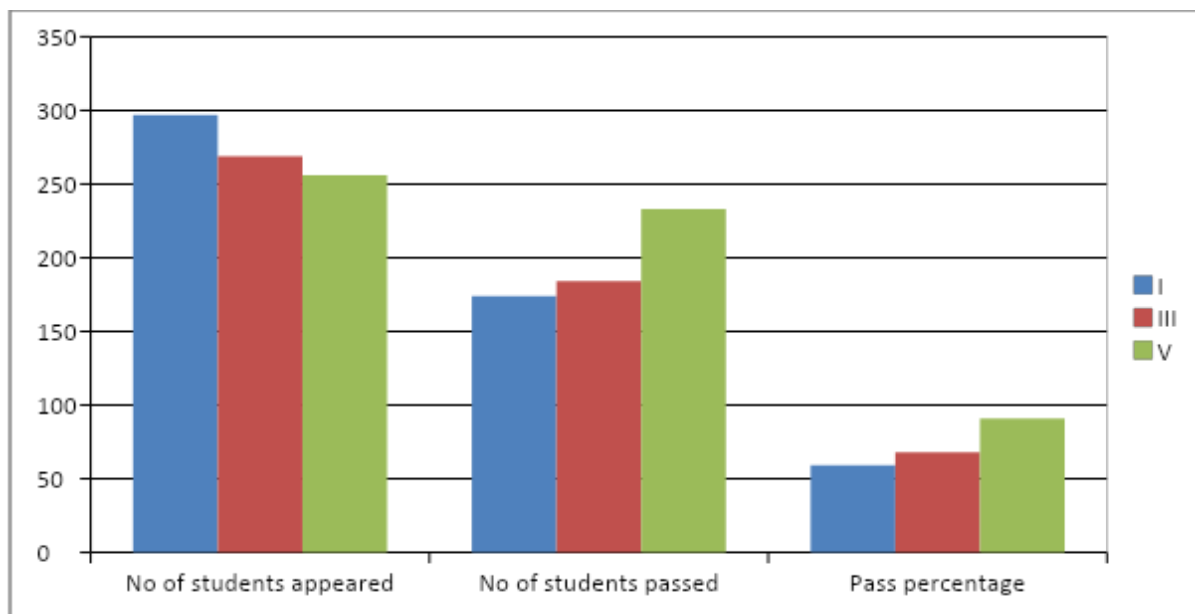


2017 APRIL

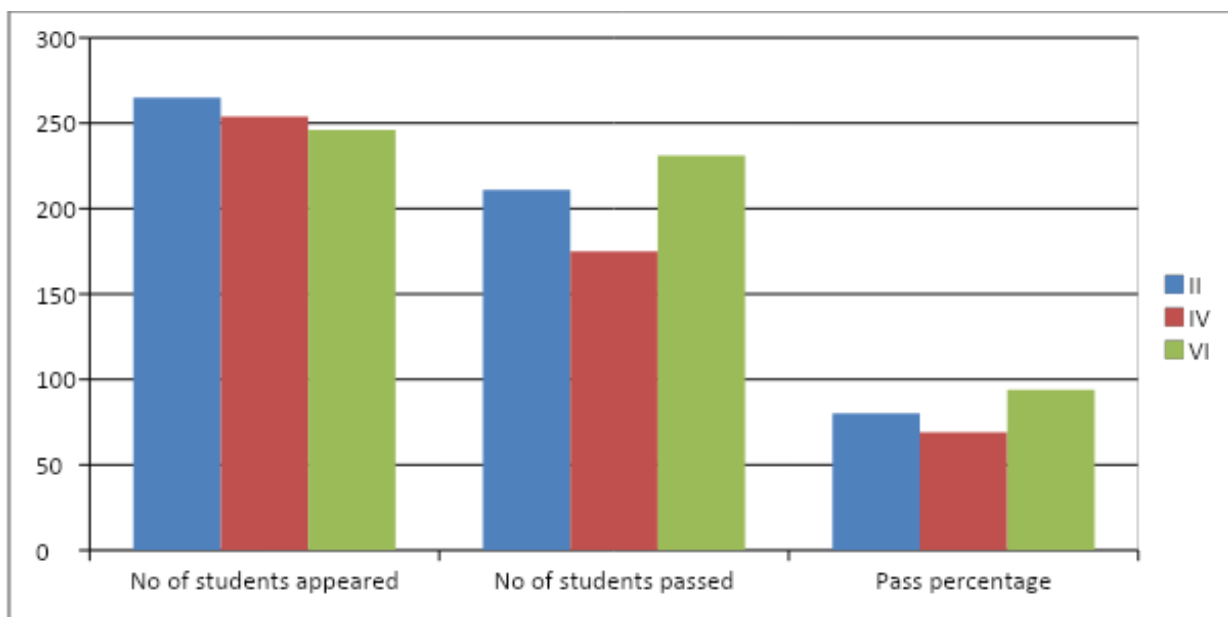


**2017-2018**

**2017 NOVEMBER**

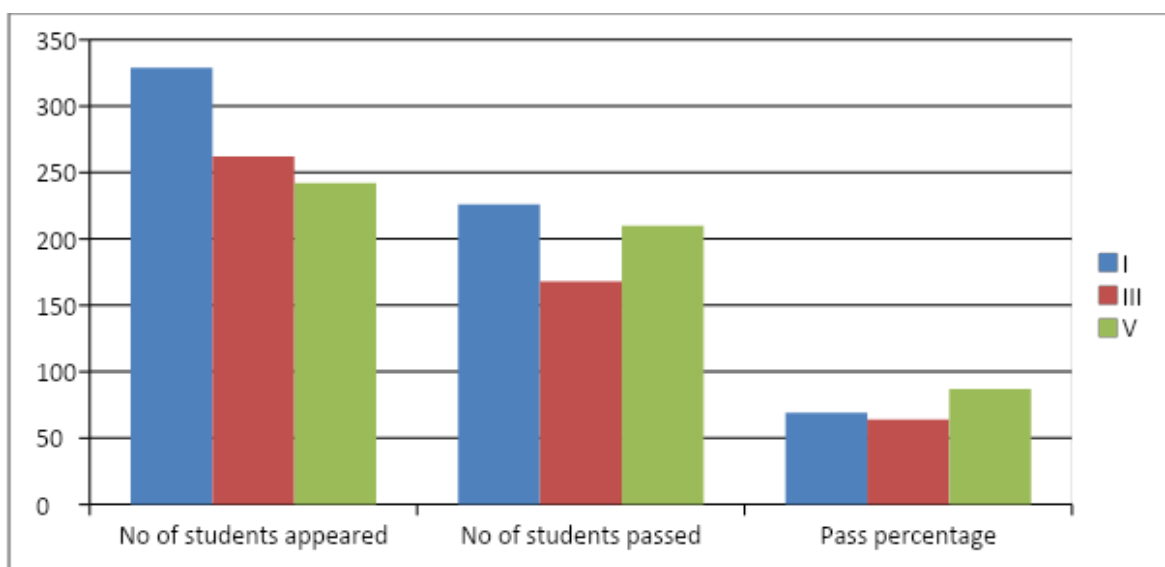


**2018 APRIL**

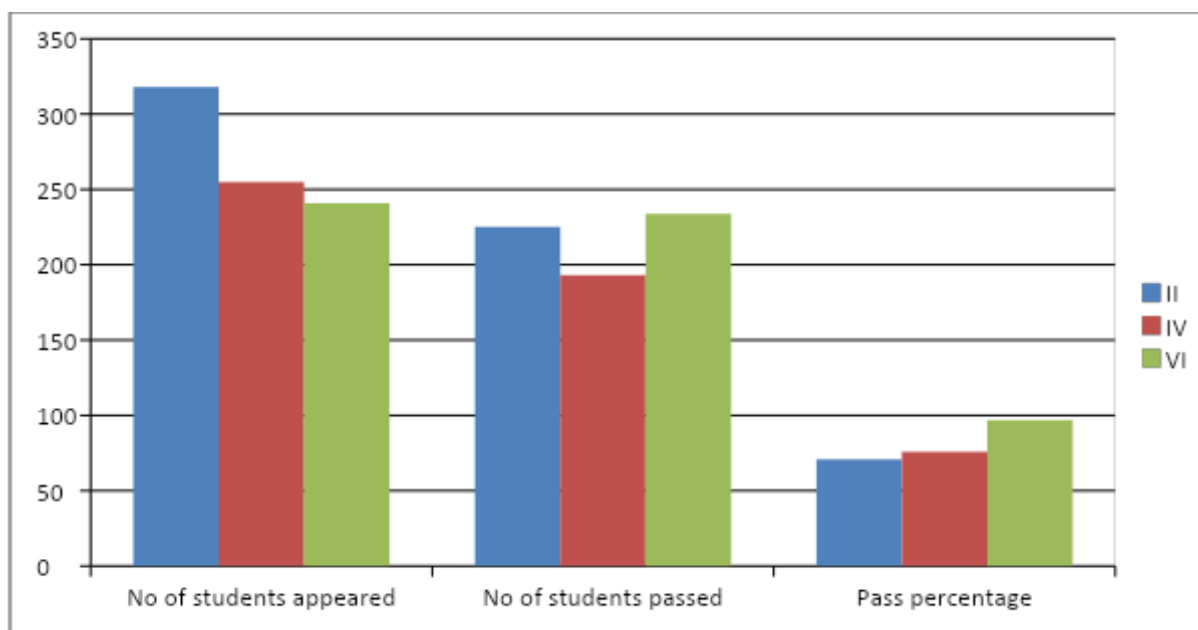


**2018-2019**

**2018 NOVEMBER**

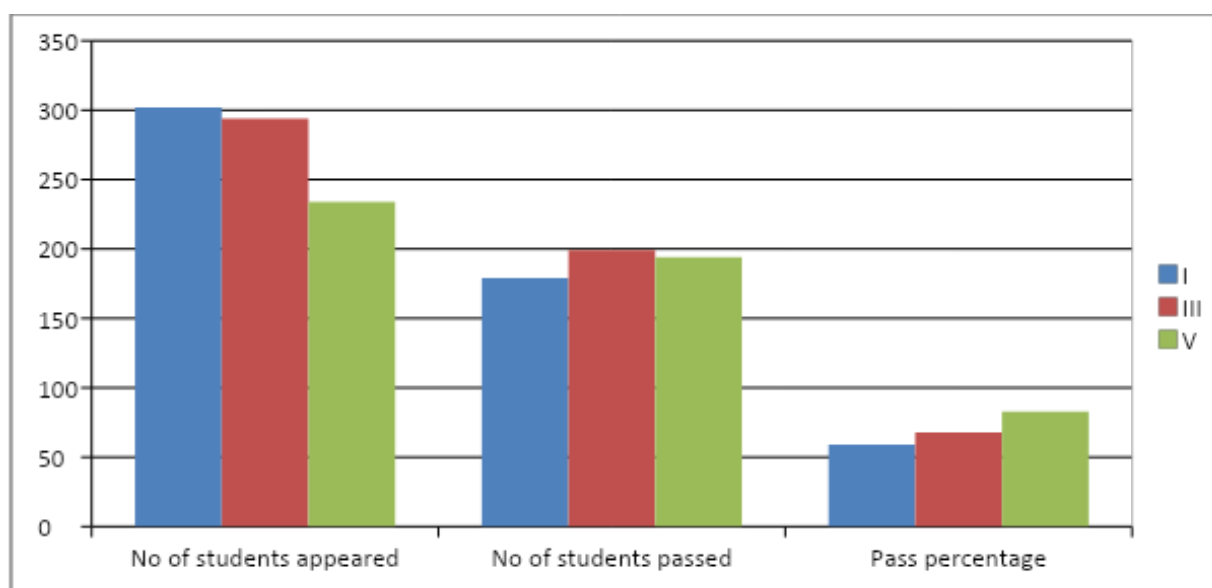


## 2019 APRIL

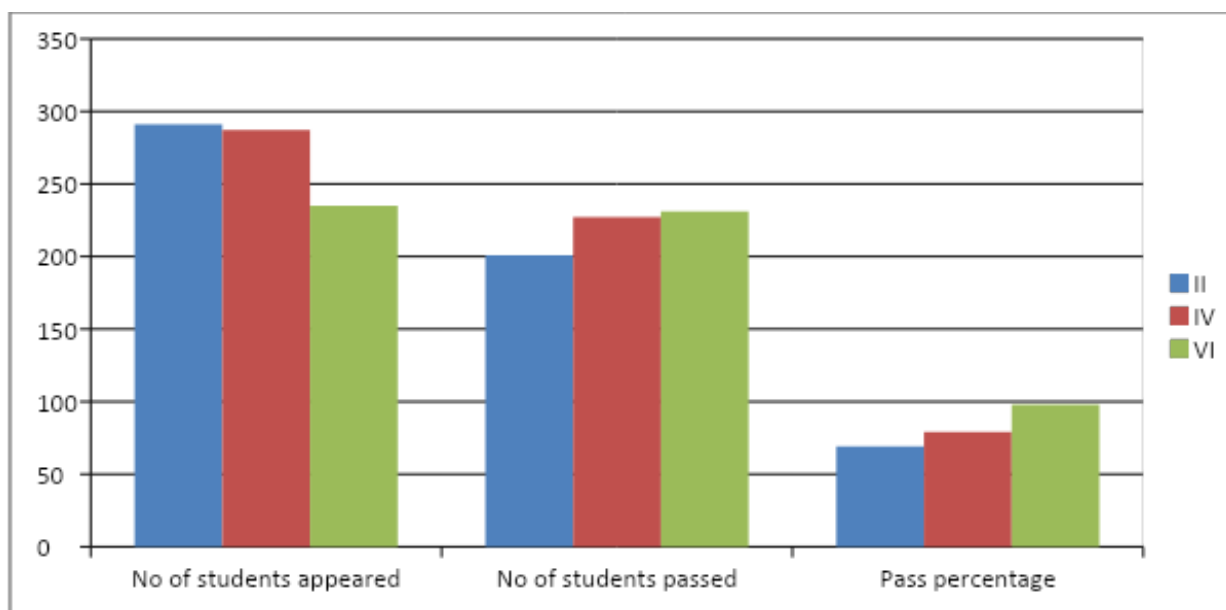


## 2019-2020

## 2019 OCTOBER

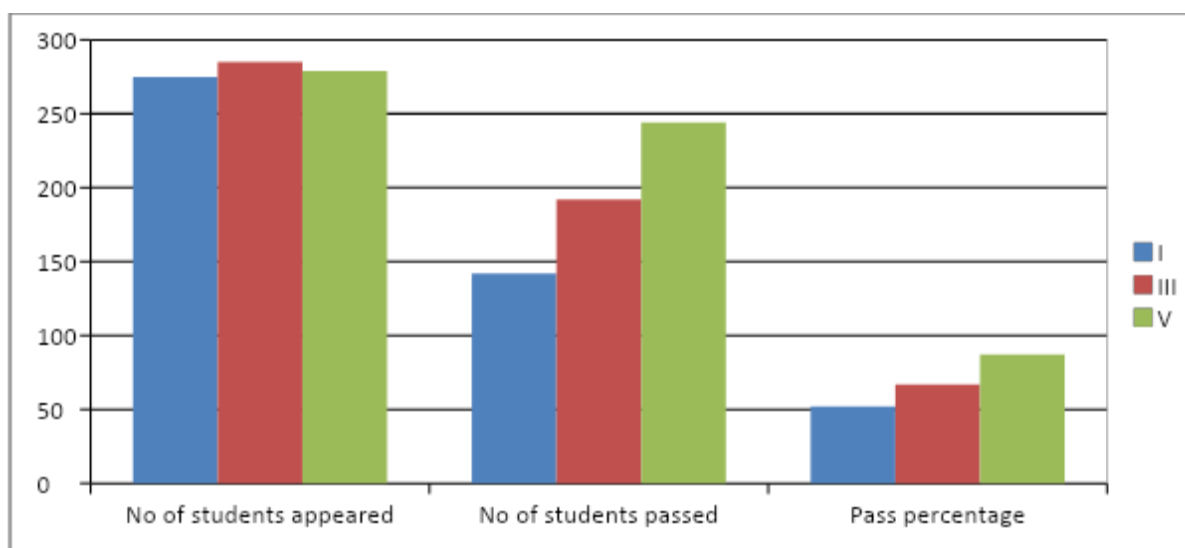


## 2020 SEPTEMBER



## 2020-2021

## 2021 NOVEMBER



# COURSE ATTAINMENT ANALYSIS

COURSE & CODE: B.Sc., PHYSICS

CLASS &

SECTION: MPC

IVSEM

| CIE Attainment |     |       |       |     |     |     |
|----------------|-----|-------|-------|-----|-----|-----|
|                |     | CO1   | CO2   | CO3 | CO4 | CO5 |
| MI<br>D-I      | Q1a | 75.31 |       |     |     |     |
|                |     |       |       |     |     |     |
|                |     |       |       |     |     |     |
|                | Q2a |       | 71.69 |     |     |     |
|                |     |       |       |     |     |     |
|                |     |       |       |     |     |     |
|                | Q3a | 79.52 |       |     |     |     |
|                |     |       |       |     |     |     |
| MI<br>D-II     | Q1a |       |       | 10  |     |     |
|                |     |       |       |     |     |     |
|                |     |       |       |     |     |     |
|                | Q2a |       |       |     | 10  |     |
|                |     |       |       |     |     |     |
|                |     |       |       |     |     |     |
|                | Q3a |       |       |     |     | 5   |
|                |     |       |       |     |     |     |

|                       |             |             |             |             |             |  |
|-----------------------|-------------|-------------|-------------|-------------|-------------|--|
|                       |             |             |             |             |             |  |
| <b>MID Attainment</b> | <b>77.5</b> | <b>71.7</b> | <b>10</b>   | <b>10</b>   | <b>5</b>    |  |
| <b>SEE Attainment</b> |             |             |             |             |             |  |
|                       | CO1         | CO2         | CO3         | CO4         | CO5         |  |
| Q1a                   | 88.98       |             |             |             |             |  |
| Q1b                   | 99.28       |             |             |             |             |  |
| Q1c                   | 98.58       |             |             |             |             |  |
| Q2a                   |             | 93.03       |             |             |             |  |
| Q2b                   |             | 98.58       |             |             |             |  |
| Q2c                   |             | 87.77       |             |             |             |  |
| Q3a                   |             |             | 85.82       |             |             |  |
| Q3b                   |             |             | 93.39       |             |             |  |
| Q3c                   |             |             | 93.39       |             |             |  |
| Q4a                   |             |             |             | 100         |             |  |
| Q4b                   |             |             |             | 80.89       |             |  |
| Q4c                   |             |             |             | 100         |             |  |
| Q5a                   |             |             |             |             | 30          |  |
| Q5b                   |             |             |             |             | 91.05       |  |
| Q5c                   |             |             |             |             | 100         |  |
| <b>SEE Attainment</b> | <b>95.7</b> | <b>93.2</b> | <b>90.9</b> | <b>93.7</b> | <b>73.7</b> |  |

## RESEARCH, INNOVATION AND EXTENSION

Research, Consultancy and Extension Research Mandate One of the major functions of the SIR C R REDDY College is to “participate in the research, transmission and preservation and enhancement of knowledge and to stimulate the intellectual participation of students in the economic, social, cultural, scientific and technological development of the nation”. SIR C R REDDY College Physics Department undertakes

Motivate researchers at the College to seek additional external funding, Make efforts to submit project proposal to DST for its Fund for Infrastructure in Science and Technology (FIST) scheme for improving research and teaching infrastructure in all the science departments.. Research, Consultancy and Extension policy objectives (i) To establish a framework for quality research (ii) To develop and sustain research and publication culture (iii) To develop mechanism for research funds mobilization and budgeting (vii) To develop mechanisms to undertake consultancy activities and extensions services STRATEGIES FOR RESEARCH .These are purposeful activities that shall ensure physics department to realize the objectives of research, consultancy and extension activities.

| S.NO | NAME   | CONFERENCE /WORK<br>SHOP/SEMINOR/GUEST<br>LECTURER | BOOKS<br>PUBLISHED | RESEARCH<br>GUIDED | RESEARCH<br>PAPERS |
|------|--------|----------------------------------------------------|--------------------|--------------------|--------------------|
| 1.   | Dr.PPD | International -21+11<br>National -63               | 11                 |                    | 12                 |
| 2.   | Dr.LVK | 04                                                 | 01                 |                    | 05                 |
| 3.   | Dr.SRN | 07                                                 | 01                 |                    |                    |
| 4.   | KBS    | 40                                                 | 02                 |                    | 06                 |
| 5.   | KAR    | 16                                                 | 04                 |                    |                    |
| 9.   | CHM    | 16                                                 | 04                 |                    |                    |
| 10.  | GVP    | 12                                                 | 01                 |                    |                    |

| S.No. | Title of the Paper                                                                                 | Name of the<br>Journal/Book                                                                                                                | Year,<br>Volume and   | Impact<br>Factor |
|-------|----------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|------------------|
| 01    | Theoretical Estimation of Internal Pressure and Excess Internal Pressure in Binary Liquid Mixtures | Indian Streams Research Journal<br>ISSN, 2230-7850                                                                                         | 2011,1(8):Phys , 1-4. | <b>4.162</b>     |
| 02    | Study of Molecular Interactions in Binary Liquid Mixtures by Acoustical Method                     | E-Journal of Chemistry<br>ISSN 2090-9071                                                                                                   | 2012, 9(3), 1332-1335 | <b>0.996</b>     |
| 03    | E-learning in the context of Rural India                                                           | Scholarly communication and Knowledge Management in Higher Educational Institutions<br>(Allied Publishers Book)<br>ISBN: 978-81-8424-956-9 | 2014, 430-434pp       | =                |
| 04    | Aqua Culture – Kolleru Lake Eco system                                                             | STC Scholars Vision<br>ISSN 2321-6425                                                                                                      | 2014,(3),321-53-55pp  | <b>2.14</b>      |
| 05    | Clinical Waste- A threat to Environment- It's Management                                           | Climate Change and the Developing World<br>ISBN: 978-81-9259-991-68                                                                        | 2015, 400-405pp       | =                |

|    |                                                                                                                                                             |                                                                                     |                              |                      |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------------------------------|----------------------|
| 06 | Comparative Study of Experimental and Theoretical Ultrasonic Velocities in Binary Mixtures of Cyclohexanone with Aliphatic Esters at Different Temperatures | International Letters of Chemistry, Physics and Astronomy<br>ISSN 2299-3843(online) | 2015, (3),<br>13-24pp        | <b>ICV<br/>73.19</b> |
| 07 | Factors influencing the removal of fluoride from aqueous solution by Pithacelobium dulce Carbon                                                             | Der Pharma Chemica ISSN<br>0975-413X                                                | 2015, (2):<br>225-236        | <b>0.48</b>          |
| 08 | Theoretical Prediction of Ultrasonic Velocities in Liquid Mixtures of Cyclohexanone with Di-hydroxy Glycols at Various Temperatures                         | International Journal of Research in Advent Technology<br>ISSN, 2321–963            | 2015,(3), No.5,<br>153-160pp | <b>2.865</b>         |
| 09 | Preparation of Mesoporous Activated Carbon from Jack Fruit PPI-1 Waste and Development of Different Surface Functional Groups                               | International Letters of Chemistry, Physics and Astronomy<br>ISSN 2299-3843(online) | 2015,(54),<br>189-200pp      | <b>ICV<br/>73.19</b> |
| 10 | Impact of Globalisation on Dalith Women                                                                                                                     | <b>STC Scholars Vision</b><br>ISSN 2321-6425                                        | 2015,(4),321-3<br>25pp       | <b>2.14</b>          |
| 11 | Study of Internal Pressure and Related Parameters in Ternary Liquid Mixtures Using Ultrasonic Velocity Measurement                                          | International Journal of Advanced Science and Technology<br>ISSN 2348-5426          | 2016, (93),<br>55-70         | <b>1.016</b>         |
| 12 | Prediction of Ultrasonic Velocities in Binary Liquid Mixtures of N,N, Dimethyl Acetamide With Certain Amines                                                | International Journal of New Technology and Research<br>ISSN:2454-4116              | 2016, Vol.2(9)<br>16-22      | <b>1.09</b>          |
| 13 | Green Marketing – A Significance of Eco-Friendly Marketing                                                                                                  | International Journal of Engineering Research<br>ISSN:2319-6890                     | 2016, (4),<br>179-182        | <b>5.49</b>          |
| 14 | Globalisation- Its effect on Biodiversity, Environment and Society                                                                                          | Energy & Ecology<br>ISBN: 978-93-86251-20-6                                         | 2016                         | <b>=</b>             |

| <b>S.No.</b> | <b>Title of the Paper</b>                                                                                         | <b>Name of the Journal/Book</b>                                     | <b>Year, Volume and Page numbers</b>                      | <b>Impact Factor/ h-index</b> |
|--------------|-------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|-----------------------------------------------------------|-------------------------------|
| 01           | Yoga - Balancing Emotions                                                                                         | Int. J of Health, Physical Education and Computer Science in Sports | ISSN<br>2231-3265<br>July 2017, Vol<br>26(4)pp<br>156-159 | <b>3.565</b>                  |
| 02           | Ultrasonic study on Binary Liquid Mixture of Toluene with 1,2 Dichloroethane at 308.15K                           | IOSR Journal of Applied Chemistry                                   | e-ISSN<br>2278-5736,<br>Sept 2017vol<br>10(9) pp 61-64    | <b>3.149</b>                  |
| 03           | Morphological Effect on Magnetic Properties of Mo <sup>+6</sup> and Sb <sup>5+</sup> Substituted Lithium Ferrites | Int. J of Engg. Sci. Invention                                      | ISSN<br>2319-6726<br>March 2018,<br>Vol 26(1)pp<br>07-13. | <b>5.91</b>                   |

|    |                                                                                                                                    |                                  |                                                        |             |
|----|------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|--------------------------------------------------------|-------------|
| 04 | Role of Renewable Energy Sources in Environmental Protection                                                                       | Int. J of Engg. Sci. Invention   | ISSN 2319-6726<br>March 2018,<br>Vol 26(2)pp<br>12-17. | <b>5.91</b> |
| 05 | Nano Phosphors                                                                                                                     | Int. J of Engg. Sci. Invention   | ISSN 2319-6726<br>March 2018,<br>Vol 26(3)pp<br>04-06. | <b>5.91</b> |
| 06 | Materials for Microwave Devices                                                                                                    | Int. J of Engg. Sci. Invention   | ISSN 2319-6726<br>March 2018,<br>Vol 26(2)pp<br>07-10  | <b>5.91</b> |
| 07 | Environmental Protection -Need of the Hour                                                                                         | Int. J of Engg. Sci. Invention   | ISSN 2319-6726<br>March 2018,<br>Vol 26(2)pp<br>32-36. | <b>5.91</b> |
| 08 | Characterisation, NBO, NLO and Molecular Structural Analysis of a Metirial-2-Hydroxyquinoline-4Carboxylic acid by using DFT Method | Int. J of Engg. Sci. Invention   | ISSN 2319-6726<br>March 2018,<br>Vol 26(2)pp<br>43-51. | <b>5.91</b> |
| 09 | Volumetric Microwave Heating of Mullite Ceramic Usage a 28 GHz Gyrotron                                                            | Int. J of Materials Engg         | ISSN 2315-4527<br>March 2018,<br>Vol 6(1) pp<br>32-38. | <b>0.29</b> |
| 10 | Role of a Teacher in e-Learning process                                                                                            | Innovations in Teacher Education | ISBN: 978-93-85991-02-8                                | =           |

### **Sri.L N R Ch V K NAGESWARA RAO**

| <b>S. No.</b> | <b>Title of the Paper</b>                  | <b>Name of the Journal/Book</b> | <b>Year, Volume and Page Numbers</b> | <b>Impact factor</b> | <b>ISSN/ISBN No.</b> |
|---------------|--------------------------------------------|---------------------------------|--------------------------------------|----------------------|----------------------|
| 01            | Environmental Protection -Need of the Hour | Int. J of Engg. Sci. Invention  | March 2018,<br>Vol 26(2)pp<br>32-36. | <b>5.91</b>          | ISSN 2319-6726       |

**Dr. A. Veerabhadra Rao**

| S. No. | Title of the Paper                         | Name of the Journal/Book       | Year, Volume and Page Numbers  | Impact factor | ISSN/ISBN No.  |
|--------|--------------------------------------------|--------------------------------|--------------------------------|---------------|----------------|
| 01     | Environmental Protection -Need of the Hour | Int. J of Engg. Sci. Invention | March 2018, Vol 26(2)pp 32-36. | <b>5.91</b>   | ISSN 2319-6726 |

**Dr. L.V.KrishnaRao**

| S. No. | Title of the Paper                                                        | Name of the Journal/Book     | Year, Volume and Page Numbers | Impact factor | ISSN/ISBN No.  |
|--------|---------------------------------------------------------------------------|------------------------------|-------------------------------|---------------|----------------|
| 01     | Cu <sup>2+</sup> doped PV-A capped clase polymer applications to blue LED | Int. J of Science & Research | Aug. 2017, Vol. 6 pp 11-17    | <b>6.391</b>  | ISSN 2319-7064 |

**Dr. N.Srinivasa Rao**

| S. No. | Title of the Paper                                                                                                              | Name of the Journal/Book    | Year, Volume and Page Numbers  | Impact factor | ISSN/ISBN No.    |
|--------|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------|--------------------------------|---------------|------------------|
| 01     | Enhancement of photocatlytic activity of r-Bi <sub>2</sub> MoO <sub>6</sub> with Graphite flake under visible light irradiation | Int. J of Applied Chemistry | July 2017, Vol. 10(7) pp 11-17 | <b>3.149</b>  | e-ISSN 2278-5736 |

**K.B.S. GOPAL**

| S. No | Title of the Paper                                  | Journals Name Vol.No. PP | ISBN/ ISSN NO. | Impact Factor/ Citation Index | National/ International |
|-------|-----------------------------------------------------|--------------------------|----------------|-------------------------------|-------------------------|
| 1.    | Detection of adulteration in edible oils using FTIR | IJARTET                  | 2394- 3777     | 5.338                         | INTERNATIONAL           |

|    |                                                                                                 |                                                      |            |       |               |
|----|-------------------------------------------------------------------------------------------------|------------------------------------------------------|------------|-------|---------------|
| 2. | Water quality studies and physico chemical analysis of potable water from rural areas of w g dt | IJAMTES                                              | 2249- 7455 | 6.3   | INTERNATIONAL |
| 3. | Climate change impact on agriculture and crop yielding                                          | Engineering sciences, International research journal | 2320- 4338 | 2.54  | INTERNATIONAL |
| 4. | A review of INDIA'S water resources utilization, pollution and conservation                     | IJESI                                                | 2319- 6726 | 5.962 | INTERNATIONAL |

#### CH. MAHITA

| S. No | Title of the Paper                                                           | Journals Name<br>Vol.No. PP                                 | ISBN/<br>ISSN NO.       | Impact Factor/<br>Citation Index | National/<br>International |
|-------|------------------------------------------------------------------------------|-------------------------------------------------------------|-------------------------|----------------------------------|----------------------------|
| 1.    | Women Empowerment in Rural Areas of Andhra Pradesh: State Government schemes | Journals of Emerging Technologies and Innovative Research   | ISSN:2349-5162          | 5.87                             | National Seminar           |
| 2.    | Applications of Nano Technology                                              | Industrial Applications in Physical & Mathematical Sciences | ISBN 978-81-944 859-6-4 |                                  | International Conference   |

### INSTITUTIONAL RESEARCH FUND:

SIR C R R Educational institutions committed to encourage the research culture by providing financial assistance for talented faculty and students to carry research in the relevant fields

K B S Gopal as principal investigator Rs 30000 is sanctioned for the minor project entitled “**IMPACT ON AQI INDEX DURING LOCKDOWN PERIOD- A CASE STUDY OF ELURU**”

Investigation and observations were completed and the same is submitted to the Research cell. Publication in the referred journal is under consideration.

## List of Publications

### Dr P P Divakar

1. Leadership Education
2. One of the Editors of the Book Energy & Ecology
3. Editor of Empowerment of women – Recent Trends and Challenges
4. One of the Editors of Materials for Energy and Environmental Protection.
5. One of the editors of industrial applications in Physical & Mathematical Sciences
- One of the editors of impact of language Literature and education
6. One of the editors of Global trends in social and business sciences
7. One of the editors for engineering sciences, international research journal Vol.VIII(1), 2020
8. Editor for Basic Principles of Remote Sensing with ISBN Number.
9. Chief Editor for Intellectual Property Rights - Technological Development with ISBN Number.
10. Editor for the Text Book Electrical appliances with ISBN Number
11. Editor for the Text Book Solar Energy with ISBN Number

### Professional bodies/Editorial Board Member/ Reviewer for Research Journals

- \* American Chemical Sciences (USA)
- \* Chemical Engineering Communications (UK)
- \* International Journal of Physical Science (UK & USA)
- \* Advances in Research (UK & USA)
- \* Journal of Applied Chemical Science International (UK)
- \* Journal of Basic and Applied Research international (UK & USA)
- \* Physical Science International Journal (UK & USA)

### K B S GOPAL

Reviewer for Academia online education journal

## IAPT : Department faculty are members of IAPT association

| S.No. | Title                                   | Author                                      | ISBN/ others                |
|-------|-----------------------------------------|---------------------------------------------|-----------------------------|
| 1     | Basic principles of Remote sensing /GIS | K B S Gopal<br>K Ananda Rao<br>K Ravi Kumar | ISBN                        |
| 2     | Electrical appliances                   | D Vijya Sree,<br>T.Suneetha<br>Ch.Mahitha   |                             |
| 3     | Solar energy                            | M Raju,<br>K S CH Srinivas Rao              |                             |
| 4     | Environmental science                   | K B S Gopal & Others                        | Certificate course material |
| 5     | Practical manual I                      | Department faculty                          |                             |
| 6     | Practical manual II                     | Department faculty                          |                             |
| 7     | Practical manual III                    | Department faculty                          |                             |

### CAREER OPPORTUNITIES:

- ☐ The students after graduation may pursue their higher education in physics related subjects, which have good job potential.
- ☐ students can also pursue professional degree in teacher education (eg. B.Ed, B.P.Ed)
- ☐ Research avenues are a plenty for post graduate students in traditional physics and specialization like X-ray physics, material science, non-crystalline materials, nano particles, communications, electronics etc.

### JOB OPPORTUNITIES:

1. After graduation students may appear for any competitive examinations in banking sector, public sector undertakings, service commission examinations etc.
2. Uniform services after technical posts in all three wings of service for Physics graduates.
3. Post graduates besides these may opt for services in CSIR, ISRO, Semi Conductor complex, IDRDO, BARC, NFCX, ECIL, GAIL ONGC, Nuclear Reactors, Metrology and Legal Metrology etc offer challenging careers. They

can also appear for NET and JRF examinations to pursue teaching in institutions of Higher and advanced learning.

- ☐ Students are given adequate support during their stay in the labs
- ☐ Remedial coaching classes kept up periodically
- ☐ Ward counseling taken up for continuous student teacher interaction
- ☐ Extension of consultancy services when required
- ☐ Endowment scholarships
- ☐ Alumni of the dept. are in constant touch with the dept
- ☐ Most of the aluminies well settled and encourages the present students
- ☐ Grievances of the students taken in the Suggestion box placed in the dept., discussed in the dept. meeting and remedies suggested.

### **HEALTHY PRACTICES:**

The dept. offers free consultancy for all the students in general and to the slow learners in particular. The staffs are engaged in various social organizations to undertake various social activities.

- Remedial coaching offered to the students
- Tie-ups with various Govt. and NGO's for taking up social activity under students society interaction
- Class room career counseling services provided
- Guidance to face Services Selection Board interviews
- Ward counseling for continuous interaction with the students
- Teacher orientation programmes to high school learners.

## **POST GRADUATION WITH PHYSICS & ALLIED BRANCHES**

- ❖ M.Sc in Pure Physics
- ❖ Nuclear Physics
- ❖ Applied Physics
- ❖ Electronics

- ❖ Geo-Physics
- ❖ Meteorology
- ❖ Marine Sciences
- ❖ Material Science
- ❖ Space Physics
- ❖ Astrophysics
- ❖ Oceanography
- ❖ Plasma Physics
- ❖ Fiber Optics
- ❖ X-Ray Physics
- ❖ Bio-Medical Physics
- ❖ **MULTI DISCIPLINARY PROGRAMMES**
- ❖ MBA
- ❖ MCA
- ❖ B.Ed
- ❖ Certificate courses
- ❖ Diploma courses

### **List of institutes funded by the government of India**

National institutes or central institutes are institutes established by the Government of India and supported by national agencies such as **CSIR, ESIC, ICAR, MoHFW, DBT, DST, ICMR, DAE, MHRD, MHA** etc. including the **Institutes of National Importance**. Listed below are some of the centrally-funded institutes along with their location. Number of Institutes increased in each category of CFTI, NIT, IIIT and IIT institutes.

| S.NO. | NAME OF INSTITUTE                     | HEAD QUARTER |
|-------|---------------------------------------|--------------|
| 1.    | Indian Agriculture Research Institute | New delhi    |
| 2.    | Central Rice Research Institute       | Cuttack      |

|     |                                                       |                        |
|-----|-------------------------------------------------------|------------------------|
| 3.  | Central Sugarcane Research Institute                  | Coimbatore             |
| 4.  | Central Potato Research Institute                     | Shimla                 |
| 5.  | Central Tobacco Research Institute                    | Rajamundry             |
| 6.  | Central Road Research Institute                       | New delhi              |
| 7.  | National sugar Research Institute                     | Kanpur                 |
| 8.  | Indian Lac Research Institute                         | Ranchi                 |
| 9.  | National Dairy Research Institute                     | Karnal (Haryana)       |
| 10. | Central Fuel Research Institute                       | Dhanbad                |
| 11. | Central Leather Research Institute                    | Chennai                |
| 12. | Central Mining Research Institute                     | Dhanbad                |
| 13. | Central Drug Research Institute                       | Lucknow                |
| 14. | Indian Meteorological Observatory                     | Pune & Delhi           |
| 15. | Raman Research Institute                              | Bangalore              |
| 16. | Central Scientific Industrial Organsation             | Chandigarh             |
| 17. | Central Salt and Marine Chemical Research Institute   | Bhavnagar              |
| 18. | Archeological Survey of India                         | Kolkata                |
| 19. | Central Jute Technological Research Institute         | Kolkata                |
| 20. | Central Coconut Research Institute                    | Kasergod, Kerala       |
| 21. | Textile Research Institute                            | Ahmadabad              |
| 22. | All Indian Institute of Medical Science               | New Delhi              |
| 23. | National Aeronautical Laboratory                      | Bangalore              |
| 24. | National Institute of Oceanography                    | Panaji                 |
| 25. | National Geophysics Research Institute                | Hyderabad              |
| 26. | Indian Institute of Petroleum                         | Dehradun               |
| 27. | Central Building Research Institute                   | Roorkee                |
| 28. | Tata Institute of Fundamental Research                | Mumbai                 |
| 29. | High Altitude Research Laboratory                     | Gulmarg                |
| 30. | National Botanical Research Institute                 | Lucknow                |
| 31. | Central Food Technological Research Institute         | Mysore                 |
| 32. | Central Glass and Ceramic Research Institute          | Kolkata                |
| 33. | National environmental engineering research institute | Nagpur                 |
| 34. | Central Electro –Chemical Research Institute          | Karaikudi (Tamil Nadu) |
| 35. | Indian Institute of Chemical Biology                  | Kolkata                |
| 36. | Industrial Toxicology Research Centre                 | Lucknow                |

|     |                                                   |                    |
|-----|---------------------------------------------------|--------------------|
| 37. | Central Mechanical Engineering Research Institute | Durgapur           |
| 38. | Centre for Cellular and Molecular Biology         | Hyderabad          |
| 39. | Vikram Sarabhai Space Centre                      | Thiruvananthapuram |
| 40. | Uranium Corporation of India                      | Jadugoda           |

### POTENTIAL JOB AVENUES:

As Scientific Officers / Asst/ Scientists etc in

- ❖ BHABHA Atomic Research Centre (BARC)
  - ❖ Indian Space Research Organization (ISRO)
  - ❖ Council for Scientific and Industrial Research (CSIR)
  - ❖ Nuclear Fuel Complex (NFC)
  - ❖ Electronics Corporation of India Ltd., (ECIL)
  - ❖ National Physical Laboratory (NPL)
  - ❖ Nuclear Power Station (NPS)
  - ❖ Space Application Research Center (SARC)
  - ❖ Tata Institute of Fundamental Research (TIFR)
  - ❖ Semi Conductor Complex, DRDL, DRDO, NRCA, GAIL, ONGC etc.,
- A. UPSC offers direct recruitment to students of Physics at both UG and PG level for commissioned rank service in the Armed Forces through (CDS) Combined Defence Service examination.
  - B. IAF offers direct entry into non-technical branches as officers  
IFS Indian Forest Service in open for only science and technology graduates
  - C. Physics graduates or post-graduates with B.Ed are recruited directly as officers in AEC (Army Educational Corps) and Indian Air Force State Service Commission offers challenging careers.
  - D. Science graduates with B.Ed may opt for teaching profession;  
Post-Graduates after qualifying JRF/NET/SLET are eligible to teach at college level.
  - E. Besides many private other public sector organizations and non govt organizations offer employment avenues for the Physics graduates and post-graduates (LIC, GIC, Banks etc)
  - F.

## **IV. INFRA STRUCTURE AND LEARNING RESOURCES**

- b) Internet facilities for staff and students : Internet facility is available for both Staff & Students
- c) Total number of class rooms : 60 Rooms (Common Facility)
- d) Class rooms with ICT facility : 09
- e) Students' laboratories : 05 Labs
- ❖ Mechanics Lab-1 : 139.35sq.m
  - ❖ Light lab : 61.34 sq.m
  - ❖ Modern physics lab : 111sq.m
  - ❖ Electricity & Magnetism Lab : 111.48sq.m
- Research laboratories : Central Research Laboratory

#### Learning resources

- ❖ Power point presentations
- ❖ Study material
- ❖ Lab manuals
- ❖ Low cost teaching kits
- ❖ Student projects
- ❖ Previous question papers
- ❖ Question banks

## LEARNING RESOURCES

*Information and Communications Technology (ICT) can impact student learning when teachers are digitally literate and understand how to integrate it into curriculum.*

Colleges use a diverse set of ICT tools to communicate, create, disseminate, store, and manage information, ICT has also become integral to the teaching-learning interaction, through such approaches as replacing chalkboards with interactive digital whiteboards, using students' own smartphones or other devices for learning during class time, and the “flipped classroom” model where students watch lectures at home on the computer and use classroom time for more interactive exercises. When teachers are digitally literate and trained to use ICT, these approaches can lead to higher order

thinking skills, provide creative and individualized options for students to express their understandings, and leave students better prepared to deal with ongoing technological change in society and the workplace.

A PowerPoint presentation is similar to a poster presentation, only the information is on computer slides rather than actual posters. They are usually used to accompany an oral presentation; they should enhance the oral presentation instead of serving as speaking notes. You can incorporate audio and visual media. Every presentation has to be MINIMUM 5 points. They are introduction.Objective.Overview.Presentation. Summary/Conclusion

Power point presentations topic wise

| COURSE | TOPIC / CHAPTER        | CONTENT PREPARED BY |
|--------|------------------------|---------------------|
| 1      | Mechanics              | 14                  |
| 2      | Wave optics            | 34                  |
| 3      | Thermodynamics         | 13                  |
| 4      | Electricity, magnetism | 32                  |
| 5      | Modern physics         | 16                  |

## BLUE PRINT OF MODEL QUESTION PAPER

Sir C R Reddy College, Eluru

(Affiliated to Adi Kavi Nanayya University: Rajamahendravam)

I B.Sc. Physics Semester-II

Paper –II: WAVE OPTICS

w.e.f: 2020-2021

Time: 3hrs

Max marks: 60

Model Question Paper

Part-- A

Answer any four questions from the following

4x10=40 M

| S NO | CO | LEVEL | QUESTION |
|------|----|-------|----------|
|------|----|-------|----------|

1. **CO1 U** Can you explain achromatism? Derive the conditions for achromatism when two lenses are  
a) In contact b) Separated by a distance
2. **CO2 App** How does 'coherence' happen, and write method to produce coherent sources. Derive the expression for fringe width in biprism experiment.
3. **CO2 Ana** what do you think about Newton's rings formation? Describe Newton's rings experiment to determine the wavelength of monochromatic light with necessary theory.
4. **CO3 Ana** Distinguish between Fresnel and Fraunhofer diffraction. Discuss the Fraunhofer diffraction at a single slit.
5. **CO3 App** which factors are similar to zone plate in compare with a convex lens. Explain the construction and working of zone plate.
6. **CO4 U** writes about double refraction in your own words? Describe the construction and working of Nicol prism. How it is used as polariser and analyser.
7. **CO4 R** Explain optical activity, how it is used to find the specific rotation of the given sugar solution with the help of an experiment.
8. **CO5 APP** what is the main idea of a LASER. Apply it for the construction and working of Ruby Laser.

#### Part – B

Answer any four questions from the following

4 X5=20 M

- | S NO | CO  | LEVEL | QUESTION                                                                                                                                                                                     |
|------|-----|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 9.   | CO1 | App   | which factors are responsible for coma aberration of a lens                                                                                                                                  |
| 10.  | CO2 | U     | Can you clarify the formation colours in thin films.                                                                                                                                         |
| 11.  | CO1 | App   | Find the focal length of two lenses of crown and flint glasses with dispersive powers of 0.018 and 0.028 respectively. In order to make an achromatic converging lens of focal length 30 cm. |
| 12.  | CO3 | Ana   | Distinguish between interference and diffraction                                                                                                                                             |
| 13.  | CO3 | U     | what is meant by Brewster's law?                                                                                                                                                             |
| 14.  | CO4 | E     | Evaluate the thickness of a quarter wave plate made of quartz to be used with sodium light of wave length $6000 \text{ \AA}$ such that $\mu_o = 1.544$ and $\mu_e = 1.553$                   |
| 15.  | CO5 | Ana   | Can you identify the application of Lasers in day to day life                                                                                                                                |
| 16.  | CO5 | R     | Write about Gabor hologram.                                                                                                                                                                  |

## MUSEUM

From the introduction of physics course in the college to till date apparatus used is placed in the Museum for the benefit of students as well as society. It has having rare apparatus like astronomical telescope, X ray tubes, canal ray tubes, ballistic galvanometer, heat engine model, projector, constant deviation spectrometer, manometer, ...



**Museum**



60" ASTRONOMICAL TELESCOPE

## **LABORATORIES**

The department is having four fully furnished laboratories to cater the needs of the student as per syllabus. Each lab can accommodate three batches at a time.

## **MODERN PHYSICS LAB**





## ELECTRICITY LAB



## LIGHT LAB



## Socio economic profile of students

Socioeconomic status reflects and is measured by the social and economic status of family members. People generally believe that there is a strong and stable correlation between SES and children's academic achievement and cognitive development. Many researchers have found that family background factors can explain most of the variance in students' academic achievement and play a more important role than schools or colleges. The following data represents the student progression from 2016-2017 academic years to 2020-2021 with respect to the Physics department.

The students in the department are given periodical counseling for their career and job opportunities. Ward counseling and remedial coaching practices are adopted..

### 2016 – 2017

| YEAR OF STUDYING | OC |   | SC |   | ST |   | BC  |   | TOTAL |
|------------------|----|---|----|---|----|---|-----|---|-------|
|                  | M  | W | M  | W | M  | W | M   | W |       |
| FIRST YEAR       | 54 | 0 | 48 | 0 | 1  | 0 | 244 | 1 | 348   |
| SECOND YEAR      | 56 | 0 | 51 | 0 | 1  | 0 | 184 | 1 | 293   |
| THIRD YEAR       | 46 | 0 | 38 | 0 | 2  | 1 | 157 | 3 | 247   |

### 2017 – 2018

| YEAR OF STUDYING | OC |   | SC |   | ST |   | BC  |   | TOTAL |
|------------------|----|---|----|---|----|---|-----|---|-------|
|                  | M  | W | M  | W | M  | W | M   | W |       |
| FIRST YEAR       | 64 | 1 | 39 | 0 | 4  | 0 | 217 | 1 | 326   |
| SECOND YEAR      | 45 | 0 | 44 | 0 | 1  | 0 | 210 | 1 | 301   |
| THIRD YEAR       | 51 | 0 | 47 | 0 | 1  | 0 | 177 | 1 | 277   |

## 2018 – 2019

| YEAR OF STUDYING | OC |   | SC |   | ST |   | BC  |   | TOTAL |
|------------------|----|---|----|---|----|---|-----|---|-------|
|                  | M  | W | M  | W | M  | W | M   | W |       |
| FIRST YEAR       | 60 | 0 | 58 | 0 | 5  | 0 | 231 | 0 | 354   |
| SECOND YEAR      | 54 | 1 | 34 | 0 | 1  | 0 | 195 | 1 | 286   |
| THIRD YEAR       | 38 | 0 | 35 | 0 | 1  | 0 | 182 | 1 | 257   |

## 2019 - 2020

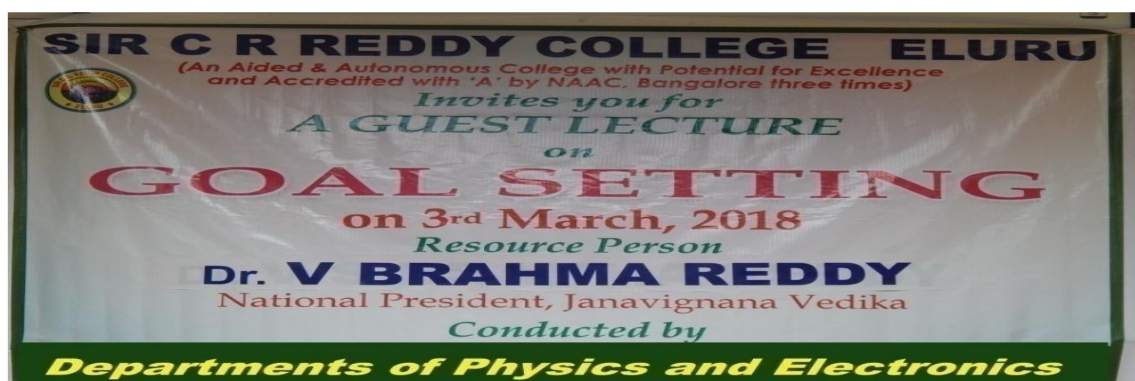
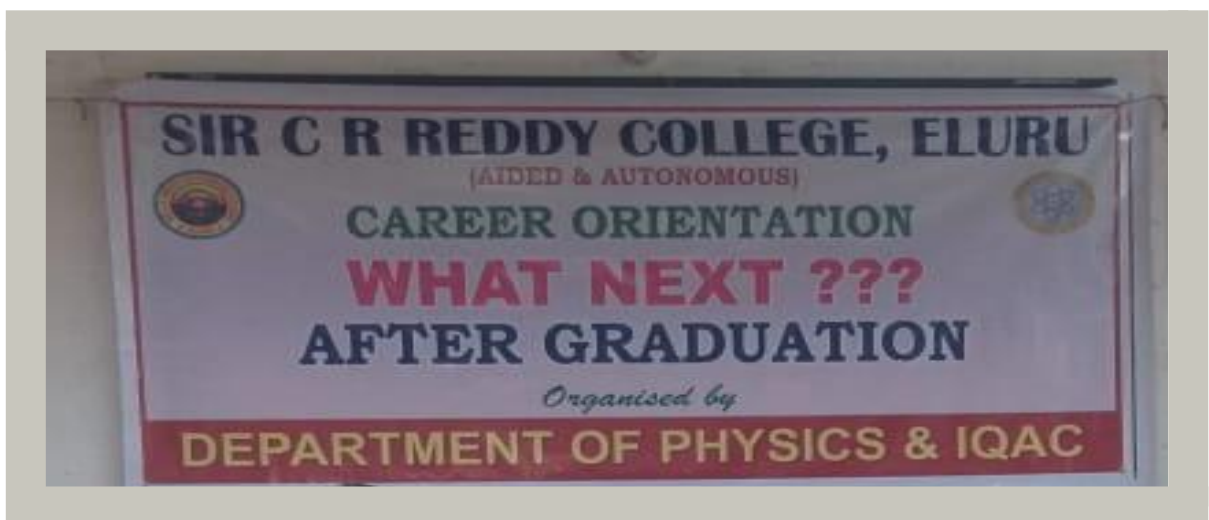
| YEAR OF STUDYING | OC |   | SC |   | ST |   | BC  |   | TOTAL |
|------------------|----|---|----|---|----|---|-----|---|-------|
|                  | M  | W | M  | W | M  | W | M   | W |       |
| FIRST YEAR       | 48 | 0 | 56 | 2 | 6  | 0 | 218 | 2 | 332   |
| SECOND YEAR      | 56 | 0 | 54 | 0 | 5  | 0 | 220 | 0 | 335   |
| THIRD YEAR       | 46 | 1 | 33 | 0 | 1  | 0 | 184 | 1 | 266   |

## 2020 – 2021

| YEAR OF STUDYING | OC |   | SC |   | ST |   | BC  |   | TOTAL |
|------------------|----|---|----|---|----|---|-----|---|-------|
|                  | M  | W | M  | W | M  | W | M   | W |       |
| FIRST YEAR       | 41 | 4 | 54 | 1 | 7  | 0 | 190 | 0 | 297   |
| SECOND YEAR      | 45 | 0 | 53 | 1 | 5  | 0 | 200 | 1 | 305   |
| THIRD YEAR       | 50 | 0 | 48 | 0 | 4  | 0 | 192 | 0 | 294   |

# CAREER GUIDANCE PROGRAMMES

- A Committee has been constituted to undertake all training and placement activities along with career guidance programmes, to develop effective interface with industries of interest so as to facilitate training of students.
- To inspire the faculty to update so as to include in their teaching the requirements of industry and produce industry ready graduates.
- To create placement avenues in different industries for all the eligible students.
- To train the students to upgrade their skill sets in tune with the requirements of the industry.
- To arrange guest lectures of Eminent Personalities from Industry for career counselling..
- To arrange interactive sessions with people concerned in entrepreneurship and offer all the necessary guidance to encourage young entrepreneurs.



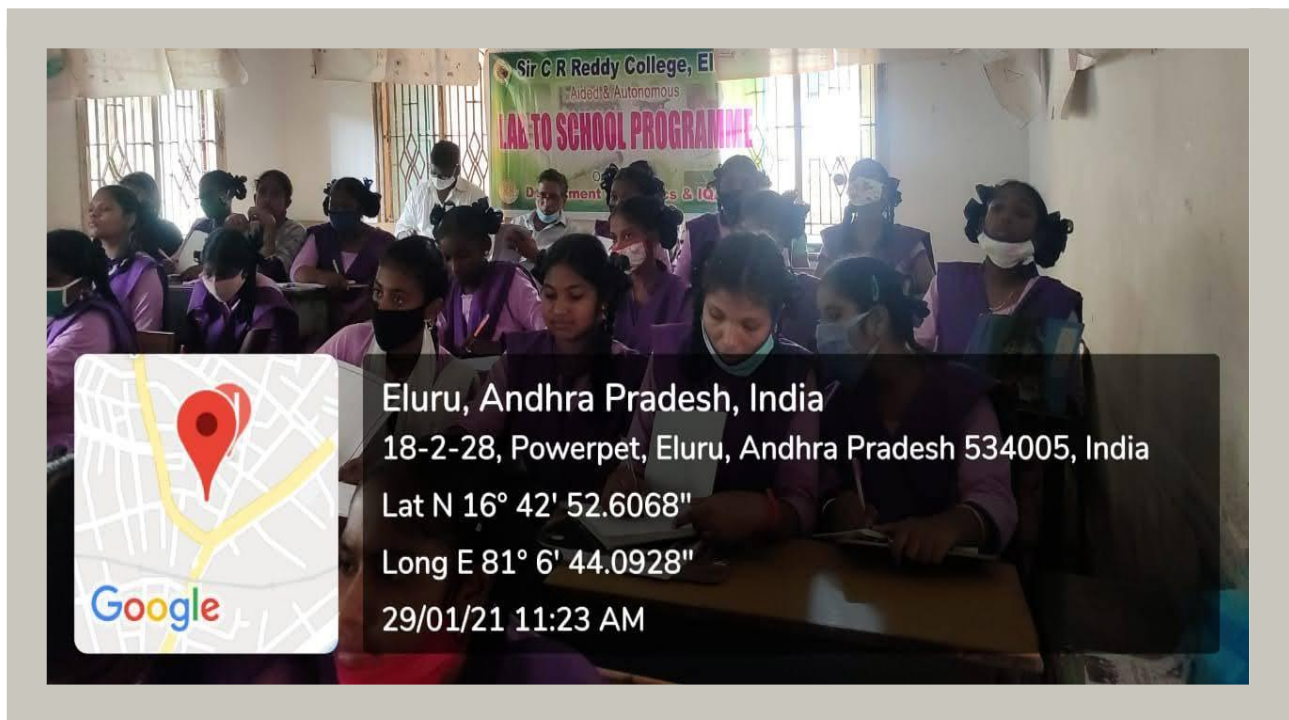
## Institutional Social Responsibility

Sir C R Reddy college, department of Physics is committed to social responsibility and accordingly, the department is increasingly responsive to community-based development initiatives. Being active agents of social change is not only considered a strategic priority at Sir C R Reddy College but is also seen as a much needed responsibility. Sensitization of students and staff is the key agenda behind any of our social initiatives and we are committed to being a socially responsible group of educational institutions. Our commitment towards social responsibility is being achieved through the following means:

- Adoption of Schools
- Health check up
- Power saving campaign

### **SOCIAL RESPONSIBILITY/ AWARENES** **PROGRAMME-2016-2021**

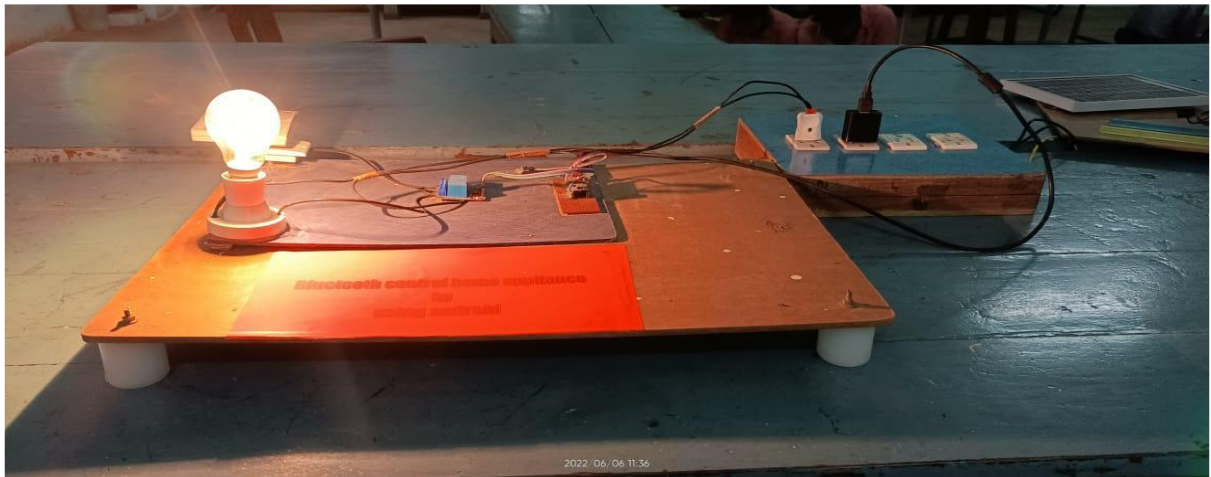
| <b>S.NO.</b> | <b>DATE</b>                  | <b>TOPIC</b>                            | <b>RESOURCE PERSON</b>                             |
|--------------|------------------------------|-----------------------------------------|----------------------------------------------------|
| 1.           | 13 <sup>th</sup> Aug 2016    | Electric power saving At Ramasingavaram | Faculty of the Department                          |
| 2.           | 1 <sup>st</sup> Feb 2017     | Cashless Transactions: SBI Buddy        | Mr.M.Durga Prasad<br>SBI Manager (services)        |
| 3.           | 8 <sup>th</sup> Aug 2017     | Electric Power Saving                   | Dept of Physics                                    |
| 4.           | 4 <sup>th</sup> Aug 2018     | Cell phone Safety Presentations         | Sri.L.S.R.Ch.V.K.Nageswara Rao,<br>HOD of Physics. |
| 5.           | 4 <sup>th</sup> January 2020 | Health Checkup for Walkers              | B.Sc., Pharmaceutical Students                     |
| 6.           | 5 <sup>th</sup> Sept 2020    | Plantation of Saplings                  | Dept of Physics                                    |
| 7.           | 23 <sup>rd</sup> Jan 2021    | Lab to School,<br>Z.P.H.S Vatluru.      | Dept of Physics                                    |



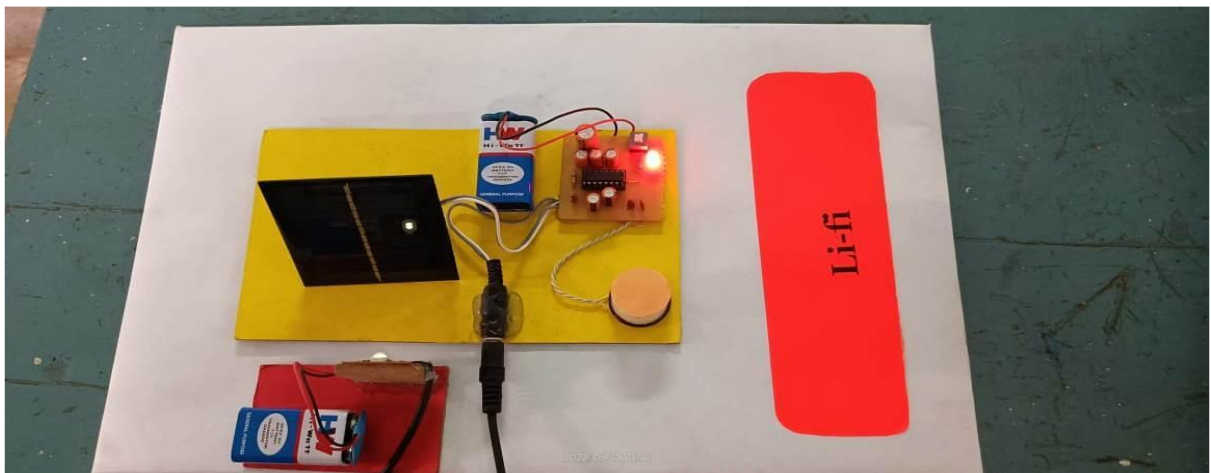
## STUDENT PROJECTS

Projects are common in university teaching, but they are different from the types of study that students experience regularly. Most of us are more used to learning about a particular subject or skill, with teaching that is designed to help you understand this subject in a very guided way. However, a project encourages you to make decisions about the direction to take, and to work independently. By putting some of the control in your hands, Dept of Physics encourages to create a different study experience and a different way to learn some very valuable skills. But it can take some getting used to.

Projects take different forms. You will probably do some small projects as an assignment in a module, either on your own, or working together with your fellow students. In between these, there is often a project module taken in the final stages of an undergraduate degree. This might be referred to in some places as a 'Final Year Project'; Department staff members interact with the students to identify their technical and scientific approach. The students who were identified is given tasks and guidance to prepare projects. The projects are displayed in the department laboratories.



LI FI



WIRELESS POWER TRANSMISSION



AUTOMATIC STREET LIGHTS



## LASER SECURITY ALARM



## FIELD TRIP PROGRAM 2016-2021

A **field trip** is a visit to an area outside of the normal classroom where students can try new things, have different experiences, and learn valuable life lessons. A field trip can be to countless locations where students can see new sights and have hands-on opportunities in a wide variety of experiences. A field trip may be to a location right around the corner or may require a bus ride to a different town. Regardless, the objective of a field trip is to learn, be exposed to a different environment, and be able to try new things.

While a day in the classroom has its benefits, there are many advantages of getting students out of their typical settings and experiencing new environments. The field trip may be a place that supports the current curriculum. Other trips may be to unrelated, yet relevant locations.

| S.NO. | DATE                           | PLACE OF THE TRIP                                    | No. of. STUDENTS PARTICIPATED |
|-------|--------------------------------|------------------------------------------------------|-------------------------------|
| 1.    | 29 <sup>th</sup> Nov 2017      | Dooradharshan kendhra Vijayawada                     | 35                            |
| 2.    | 26 <sup>th</sup> Jan 2019      | Polavaram                                            | 30                            |
| 3.    | 6 <sup>th</sup> Feb 2019       | Doordarshan kendram, Kondapalli, Vijayawada.         | 30                            |
| 4.    | 20 <sup>th</sup> February 2020 | Good Samaritan Cancer Hospital, Vangayagudem, Eluru. | 25                            |



## ENDOWMENT SCHOLARSHIPS (2016-2021)

| Academic year | No of students got scholarships for Physics Academic performance | Amount received as scholarship |
|---------------|------------------------------------------------------------------|--------------------------------|
| 2016 - 2017   | 38                                                               | 58,000/-                       |
| 2017 - 2018   | 38                                                               | 60,000/-                       |
| 2018 - 2019   | 41                                                               | 60,600/-                       |
| 2019 - 2020   | 43                                                               | 68,000/-                       |
| 2020 – 2021   | 47                                                               | 74,000/-                       |

## ALUMINI OF THE DEPARTMENT

| S NO | NAME                       | CADRE                | ORGANISATION              |
|------|----------------------------|----------------------|---------------------------|
| 1    | M RAVI (87-90)             | Scientist F          | DRDO BANGALORE            |
| 2    | M RAVI SHANKAR (86-89)     | Branch manager       | General Insurance         |
| 3    | K V B S KIRAN KUMAR(89-92) | IIT Coaching faculty | Bangalore                 |
| 4    | A LAKSHMI NARAYANA(88-91)  | Software             | USA                       |
| 5    | A SRINIVAS (88-91)         | Software             | USA                       |
| 6    | B SURENDRA (88-91)         | Software             | USA                       |
| 7    | B V TIRUPANYAM             | Principal            | PR Govt Degree college    |
| 8    | D SRIDHAR (84-87)          | R &D manager         | Divis labarotaries        |
| 9    | Y SOMA SHEKHAR (84-87)     | Manager              | KNOAH solutions           |
| 10   | G CHANDRA SHEKHAR (84-87)  | ENGINEER             | APSEB                     |
| 11   | B SATYANARAYANA (84-87)    | Branch manager       | Chaitanya institutions    |
| 12   | B SURYANARAYANA (84-87)    | Principal            | S V K P & P N R college   |
| 13   | P KRISHNA                  | Head Master          | S E S D M H school, Eluru |
| 14   | K JAGADEESH                | Software             | Infosys                   |
| 15   | P KASI VISHVANADH          | Software             | Infosys                   |
| 16   | D NAVEEN SAI               | Software             | Infosys                   |
| 17   | R SATISH                   | Software             | Infosys                   |
| 18   | K LOKESH                   | Software             | Coginigent                |
| 19   | M SRINIVAS                 | Scientist            | DRDO, Vizag               |
| 20   | D V APPARAO                | Advocate             | Eluru                     |
| 21   | M SRINIVAS                 | Development Officer  | LIC                       |
| 22   | E SRINIVAS                 | CORRESPONDENT        | Sri Surya, JRG            |
| 23   | N V S S PATANJALI          | Superintendent       | GDC, Nagari               |
| 24   | G SRIDHAR                  | Manager              | Doordarshan, VJA          |
| 25   | V PRASAD                   | Software             | USA                       |
| 26   | P V R R BHOGENDRARAO       | Scientist G          | DRDL                      |
| 27   | K LAKSHAMIAH CHOWDARY      | Software             | Infosys                   |
| 28   | M.RAVI KIRAN               | Software             | Tech Mahindra             |
| 29   | B.VIJAYAI BHASKAR RAO      | Software             | Accenture                 |
| 30   | D.SRINIVAS                 | Software             | Cyient                    |
| 31   | G.GOUTHAM                  | Geologist            | KAGEM                     |

|    |                                     |                             |                                             |
|----|-------------------------------------|-----------------------------|---------------------------------------------|
| 33 | M.CHAITHANYA                        | Software                    | TCS                                         |
| 34 | J.JAGADEESH                         | Software                    | TCS                                         |
| 35 | T.RAM                               | Software                    | WIPRO                                       |
| 36 | CH.RAMA KRISHNA                     | Software                    | Accenture                                   |
| 37 | B.JAYA PRAKASH                      | Software                    | TCS                                         |
| 38 | K.KISHORE                           | Software                    | TCS                                         |
| 39 | B.PHANI                             | Software                    | Accenture                                   |
| 40 | K.SRIKANTH                          | Software                    | TCS                                         |
| 41 | S.SURYABHAGAVAN                     | Software                    | Infosys                                     |
| 42 | G.SRIDHAR                           | Software                    | WIPRO                                       |
| 43 | A.YATHISH                           | Software                    | WIPRO                                       |
| 44 | K.CHANDRAMOHAN                      | Software                    | USA                                         |
| 45 | A.KANAKARAJU                        | POLICE                      | ELURU                                       |
| 46 | B.NAGARAJU                          | TRAFFIC POLICE              | ELURU                                       |
| 47 | S.SRINU                             | VIGILENS                    | ELURU                                       |
| 48 | K.SATISH                            | SUBINSPECTER                | VIJAYAWADA                                  |
| 49 | D.PRADEEP KUMAR                     | BANK MANAGER                | SBI                                         |
| 50 | R.NAREESH                           | DEPUTY MANAGER              | SBI                                         |
| 51 | B.HEMACHAND                         | Software                    | Accenture                                   |
| 52 | G.SURYA KUMAR                       | DEPUTY DIRECTOR             | LIC                                         |
| 53 | G.MARIYA RAJU                       | HEADMASTER                  | RCM<br>SCHOOL,NIDADHAVOLE                   |
| 54 | B.MANIKYAM                          | QUALITY<br>CONTROLLER       | Dr.REDDY'S LABORATORY                       |
| 55 | R.RAJINIKANTH                       | SOFTWARE                    | WIPRO                                       |
| 56 | SK.RAHEEM                           | CHEMIST                     | DIVIS LAB                                   |
| 57 | H.VAMSI KRISHNA                     | QUALITY ANALYST             | Dr.REDDY'S LABORATORY                       |
| 58 | S.SATHISH                           | SOFTWARE                    | WIPRO                                       |
| 59 | K.JAGADEESH                         | SOFTWARE                    | LNT(CHENNAI)                                |
| 60 | V.RAVI VARMA                        | SOFTWARE                    | IBM                                         |
| 61 | G. GANGADHARAO (86-89)              | SCIENTIST D                 | NIC FROM AP SECRETARIAT                     |
| 62 | K. NAGESWARAO (86-89)               | GOVT TEACHER                | PULLA                                       |
| 63 | P. V. ANIL KUMAR (86-89)            | GOVT TEACHER                | VISANNAPETA                                 |
| 64 | K. E. S. N. MURTHY (86-89)          | GOVT TEACHER                | GUDIWADA                                    |
| 65 | Y. V. SATYANARAYANA RAO<br>(86-89)  | GOVT TEACHER                | ELURU                                       |
| 66 | P. KRISHNA (86-89)                  | GOVT TEACHER                | ELURU                                       |
| 67 | DR. V. SURYANARAYANA<br>(86-89)     | PROF & HOD OF CSE           | RAMACHANDRA<br>ENGINEERING COLLEGE<br>ELURU |
| 68 | S RAMARAO (86-89)                   | PRINCIPAL                   | GOVT POLYTECTIC<br>COLLEGE JRG              |
| 69 | U. V. RAJA KUMAR (86-89)            | CHIEF MANAGR                | SBI, MYSORE                                 |
| 70 | T. PRABHAKAR (86-89)                | GOVT TEACHER                | ELURU                                       |
| 71 | K.V. SATYNARAYANA<br>MURTHY (86-89) | DEPUTY STATE TAX<br>OFFICER | HYDERABAD                                   |
| 72 | K. ESWAR                            | SOFTWARE                    | ACCNTURE                                    |
| 73 | P. HEMANTH                          | SOFTWARE                    | WIPRO, BANGLORE                             |
| 74 | J. BALAKRISHNA                      | SOFTWARE                    | TCS, HYDERABAD                              |
| 75 | B. J. PRAKASH                       | SOFTWARE                    | TCS, HYDERABAD                              |
| 76 | K. ARUN                             | SOFTWARE                    | TCS, HYDERABAD                              |
| 76 | K. SATISH                           | SOFTWARE                    | WIPRO, BANGLORE                             |
| 77 | M. NARESH                           | SOFTWARE                    | WIPRO, BANGLORE                             |
| 78 | B. SATISH                           | SOFTWARE                    | GAP GEMINI, BANGLORE                        |
| 79 | K. SUBHARAO                         | SOFTWARE                    | USA                                         |
| 80 | R. SRIKANTH                         | SOFTWARE                    | TCS, PUNE                                   |
| 81 | V.SRINIVAS RAO                      | ADVOCATE                    | TS,HIGHCOURT                                |
| 82 | GOPALAREDDY                         | GOBAL TEACHER<br>AWARD      | KVS ZONAL<br>EDUCATIONAL&TRAINING           |

## SEMINARS/CONFERENCES/WEBINARS 2016 – 2021

Nowadays, the market is very much demanding and we often come across the issue regarding the level of higher education not meeting the industry expectation. To bridge this gap and equip the students of current generation with new-age technologies, seminars and workshops play an imperative role. Ensuring a proper flow of knowledge Seminars and Workshops assist in passionate interaction and active participation boosting the skills and expertise of students. ***Importance of seminars and workshops for students*** is often acknowledged as a prime concern. Keeping in mind the ***importance of seminars for students*** and the ***benefits of workshops for students***, seminars and workshops are an innovative and welcomed step towards modern education. Nowadays ***seminars in colleges*** are encouraged recognizing the ***importance of seminars for students*** at an early age.

Generally organized for either a single day or couple of days, the prime objective of seminars and workshops is to assemble the like-minded intellectuals and professionals to trade ideas, thoughts, and views related to a specific topic. ***workshops are important for students***, By helping in understanding more about the advantages, feature, and characteristics of seminars and workshops, the below-mentioned points depict the ***importance of seminars and workshops for students*** in higher education.

| S.NO. | DATE                                          | SEMINAR/<br>CONFERENCE   | TOPIC                                                   | RESOURCE PERSON                                                                                                                          |
|-------|-----------------------------------------------|--------------------------|---------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| 1.    | 4 <sup>th</sup> &5 <sup>th</sup> Oct 2016     | National Seminar         | Energy & Ecology                                        | Prof.M.N.V Prasad<br>Prof.T.V.Ramachandra,<br>Prof.SP Udaya Kumar,<br>Dr.RVSSN Ravi, Kumar<br>Dr R Balaji, Satyanmarayana<br>Dr.K.Suresh |
| 2.    | 12 <sup>th</sup> &13 <sup>th</sup> Feb 2018   | International conference | Materials for Energy and Environmental protection       | Prof.Mahendra,K.Sunkara,Director,UOFL,U SA.<br>Dr. Jagannath Sathyavolu,UOFL,USA<br>DR.Jacek Jasinski UOFL,USA                           |
| 3.    | 27 <sup>th</sup> &28 <sup>th</sup> Feb 2020   | International Conference | Advances in physics, Electronics and Chemical sSciences | Dr.Zaira Zaman Choudary,<br>Dr. S. Ravi<br>Dr.A.Veeraih<br>Dr.G.Pamu                                                                     |
| 4.    | 12 <sup>th</sup> & 13 <sup>th</sup> June 2020 | International Webinar    | Materials and Environmental Sciences                    | Prof.Karunakar Kothapalli,USA.,Farzana Nasreen,USA.,<br>D.Pamu,IIT Guwahati.,<br>Tarun Dolla,IIT Guwahati.,<br>M.Jaya Prakash, Rourkela. |
| 5.    | 21 <sup>st</sup> October 2020                 | Webinar                  | Semiconductor Industries in India                       | Prof.M.Ravi, Scientist, DRDO                                                                                                             |



## LIST OF WORK SHOPS CONDUCTED- 2016-2021

| S.NO. | DATE                                          | TOPIC                                                          | RESOURCE PERSON                                                                                                        |
|-------|-----------------------------------------------|----------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| 1.    | 20 <sup>th</sup> June 2016                    | Spectro-photometry and chromatography                          | S.Sreejith, Manager, Systronics, Ahmadabad<br>Prof.D.Rama chandran, ANU, Guntur                                        |
| 2.    | 21 <sup>st</sup> Aug 2017                     | Basic principles of physics and Electronics with Demonstration | Sri.N.Vittal Durga Prasad, GM, BSNL.<br>Sri.S.G.Srinivas, (Scientific Srinivas) Mentor, Scientific Knowledge, Kovvuru. |
| 3.    | 4 <sup>th</sup> to 6 <sup>th</sup> Oct 2017   | Space Dynamics                                                 | R.Tatayya Babu, SG Scientist, SDSC, SHAR.                                                                              |
| 4.    | 08 <sup>th</sup> July 2018                    | Multi Frequency Ultrasonic Interferometer                      | Mr.R.K.Mittal, New Delhi.                                                                                              |
| 5.    | 18 <sup>th</sup> & 19 <sup>th</sup> Feb 2019  | Arduino Projects                                               | D.Srinivasa Reddy, P.B. Siddhartha College of Arts & Sciences, Vijayawada.                                             |
| 6.    | 26 <sup>th</sup> to 28 <sup>th</sup> Dec 2019 | Basic principles of physics                                    | Sri S. G. Srinivasa, (scientific srinivasa) mentor, Scientific knowledge, kovvuru.                                     |
| 7.    | 9 <sup>th</sup> to 14 <sup>th</sup> Mar 2020  | Arduino projects                                               | Mr. Srinivasa Reddy, lecturer in electronics<br>P. B. Siddhartha college, Vijayawada.                                  |





STUDENT EXCHANGE PROGRAMME between SIR C R REDDY College and D N R College Bhimavaram.

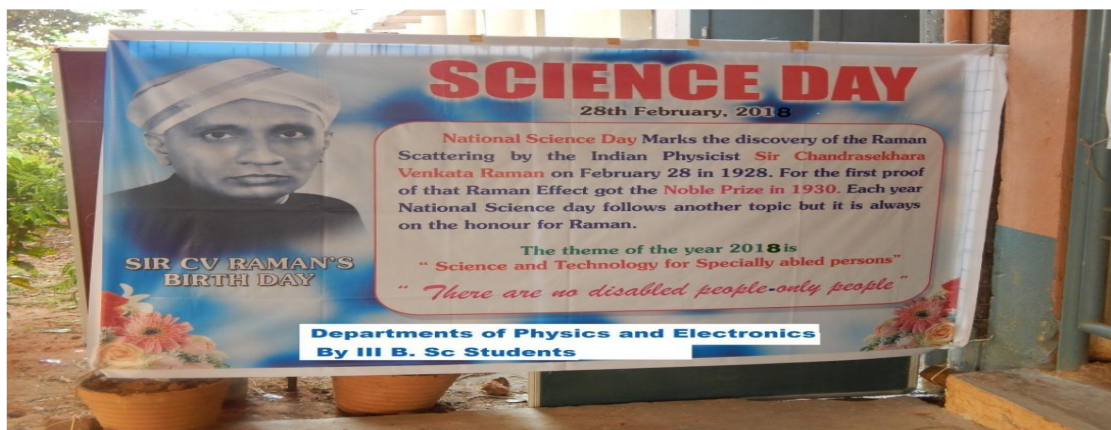
## IMPORTANT DAY'S CELEBRATION

### NATIONAL SCIENCE DAY

Science and technology play an important role in the development of a nation. Over decades, India has had many scientists who children look up to as role models. These scientists, with their discoveries, have made India a renowned nation. Sir Chandrasekhara Venkata Raman, also known as CV Raman, is one such prominent figure in science and technology. National Science Day, observed on February 28, marks the discovery of the Raman Effect, in the year 1928.

#### ***NATIONAL SCIENCE DAY: HISTORY AND SIGNIFICANCE***

In the year 1928, CV Raman discovered the Raman Effect or Raman Scattering which defines the inelastic scattering of photons by the matter which means there is an exchange of energy and change in light's direction. In 1930, the scientist won a Noble Prize for his discovery. To celebrate the victory, in 1986, the National Council for Science and Technology Communication (NCSTC) asked the Central Government to mark February 28 as the National Science Day (NSD). Since then, National Science Day is celebrated on February 28. Department of physics celebrating national science day every year with the suitable theme by inviting professionals.



### NATIONAL POLLUTION CONTROL DAY

December 2 is observed as National Pollution Control Day every year. The day is observed in the memory of those who have lost their lives in the Bhopal Gas tragedy on the night of December 2nd and 3rd, 1984. Many people died due to the poisonous gas Methyl Isocyanine, also known as MIC. The Bhopal Gas Tragedy is considered one of the biggest industrial pollution disasters.

Environmental pollution, directly and indirectly, affects the quality of life more than one can imagine. All this is mainly caused by human activities which harm the environment in more than one way. Nowadays, pollution prevention is a major global concern because everyone on the earth is entitled to clean air to breathe, water to drink, and to enjoy public lands.



### Industrial visit

Industrial visits are an essential part of the academic curriculum in most of the Graduate and Post-graduate courses. Being a part of interactive learning, such educational visits give students a major exposure to real working environments along with a practical perspective of a theoretical concept relevant to their domain. In addition to that, industrial visits bridge the widening gap between

theoretical learning and practical exposure by giving students the first-hand exposure to identify the inputs and outputs for different business operations and processes performed at the workplace. Intending to go beyond classroom learning, the industrial tours contribute a lot in holistic student development by letting students learn about the current trends in the market, the future scenario of the industry and the new technologies that are being applied in the industry.



## INSTITUTIONAL GOVERNANCE

Higher education is the key to economic development and is an important input for achieving higher and sustainable rates of economic growth. However, the character of higher education institutions has been changing over the last decades. Traditionally, higher education was identified with universities which were considered to be scholar-centred institutions. They then transformed into teaching and training institutions during the industrialisation period due to the demand for skilled labour. Globalisation has also contributed to the increasing demand for skilled workforce and improving the quality of the workforce with higher educational qualifications. The shift in employment prospects from the manufacturing to the services sector also reflects the higher qualification levels of employees. Thus, the increase in intensity of knowledge use in production has led to a growth in the demand for higher education graduates in the labour market, which, in turn, has increased the demand for higher education.

| Name                  | Institutional governance                                                           |
|-----------------------|------------------------------------------------------------------------------------|
| Dr A Veera Bhadra Rao | Principal, Naac SSR preparation.                                                   |
| Dr P Paul Divakar     | IQAC. Vice principal.                                                              |
| Dr L V Krishna Rao    | RUSA                                                                               |
| Dr N S rinivas Rao    | Cultural cell                                                                      |
| K B S Gopal           | Deputy warden, UGC Coordinator, AU CDE Coordinator, Endowment scholarship convenor |
| K Ananda Rao          | Asst controller of exams, time table                                               |
| K S Ch Srinivas       | IGNOU Coordinator                                                                  |
| K Ravi kumar          | Deputy warden, Book stores                                                         |

## FEED BACK from stake holders & Action taken report

2016-2017

| Stake Holder | Suggestions                                                                          | Action taken                                                                                         |
|--------------|--------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|
| Alumni       | Student has to acquire good knowledge in the scientific instruments                  | Students were allowed to visit physics museum to know the rare and valuable instruments              |
| Employer     | Arrange guest lecturers relevant to present society for better exposure of students. | Guest lectures arranged with eminent speakers to create awareness and impression among the students. |
| Faculty      | Introduce common CBCS, skill development programs are to be introduced.              | All programs are designed with respect to choice based credit system.                                |
| Parents      | Students should be exposed with technical or practical orientation                   | Near by industrial visits were carried..                                                             |
| Students     | Students to be exposed with Bridge course, value added course, Certificate courses.  | House hold electrical wiring value added course completed                                            |

2017-2018

| Stake Holder | Suggestions                                                     | Action taken                                                                          |
|--------------|-----------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Alumni       | To bring eminent resource having expertise in various fields.   | Seminars, Workshops, Guest lectures arranged.                                         |
| Employer     | Practical knowledge regarding basic instruments to be imparted. | Value added courses were conducted to enhance the basic knowledge.                    |
| Faculty      | To conduct more classroom activities for student improvement    | Debates and Seminars in the class room, Written assignments are also arranged.        |
| Parents      | To enhance the communication skills for the students.           | Assignments , articles were encouraged in the lab hours to enhance the writing skills |
| Students     | ICT enabled technology must be used in classrooms.              | Classes were handled with the help of PowerPoint presentations.                       |

Action taken Report

2018-19

| Stake Holder | Suggestions                                                                          | Action taken                                                                                                                              |
|--------------|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| Alumni       | Increase the number of value added courses to enhance the knowledge of the students. | Increased the number of value added courses (photo copier, printer trouble shooting), to impart the knowledge in the interested students. |
| Employer     | Introduce practical oriented courses to the students.                                | Introduced day to day useful practical's in the regular curriculum                                                                        |
| Faculty      | To conduct more classroom activities for student improvement                         | Debates, Classroom seminars, Quiz on general topics, Quiz on subject are conducted.                                                       |
| Parents      | Enhance the industrial exposure to students                                          | Arranged field visit with the help of senior engineer, DDK Vijayawada.                                                                    |
| Students     | Coaching for higher / competitive exams                                              | Training arranged for PGSET and competitive Exams.                                                                                        |

2019-20

| Stake Holder | Suggestions                                                                      | Action taken                                                                           |
|--------------|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| Alumni       | Student has to be given skills training to meet the present day corporate world. | Seminars and Guest lectures are arranged.                                              |
| Employer     | To enhance employability skills by offering recent technologies.                 | Basic principles of remote sensing are offered as value added course for the students. |
| Faculty      | Additional care required due to rural background of the students                 | Study material prepared by the faculty members is supplied to students.                |
| Parents      | Provide information to meet the career after graduation                          | Career orientation is arranged.                                                        |
| Students     | Technology aided classes for the students                                        | ICT enabled Virtual class rooms are arranged.                                          |

2020-2021

| <b>Stake Holder</b> | <b>Suggestions</b>                                                    | <b>Action taken</b>                                               |
|---------------------|-----------------------------------------------------------------------|-------------------------------------------------------------------|
| Alumni              | Conduct online examinations in view of Pandemic                       | Online internal examinations conducted.                           |
| Employer            | Renewable energy related papers is to be offered                      | For final year students the course is offered as cluster          |
| Faculty             | Needs to be familiar with cos pos and pso of the course               | Faculties were given orientation regarding course outcomes.       |
| Parents             | Students should know the latest developments in the relevant subject. | Guest lectures are conducted by the senior faculty                |
| Students            | Online classes is to be conducted                                     | During pandemic period staff members took classes through online. |

## BEST PRACTICES

Best practices are those which **add value to human life and support main cause of an institution**. It helps in development of an institution-a source/ means to perform social responsibility. It can change the life of whole institution as well as individual stake holders

Our college is known for transforming and empowering students who come from diverse backgrounds ranging from underprivileged sections to affluent ones.

- ☐ Nurturing the potential of students,
- ☐ Experiential learning,
- ☐ Constructive feedback,
- ☐ Open communication
- ☐ Mentoring and counselling
- ☐ Responsibility towards environment
- ☐ Class room seminars/ assignments
- ☐ Remedial coaching.
- ☐ Study material/ packages

## FUTURE ACTION PLAN

The department of Physics is pioneer in organising various activities in addition to academic curriculum. The department is intended to the following activities in coming years

- ☐ National seminar
- ☐ FDP Programme
- ☐ Workshops
- ☐ Demonstration of basic principles in physics for high school students
- ☐ Lab to school programme
- ☐ Guest lectures
- ☐ Science fest
- ☐ Field visits
- ☐ Industrial trips
- ☐ ISRO visit
- ☐ Student exchange programme
- ☐ Low cost teaching aids demo

# SWOT Analysis

## for Students

| STRENGTHS                                                                                                                                        | WEAKNESSES                                                                                                                                              |
|--------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"><li>• Oral Communication</li><li>• Creativity</li><li>• Leadership</li><li>• Reliability</li></ul>             | <ul style="list-style-type: none"><li>• Mental Toughness</li><li>• Procrastination</li><li>• Written Communication</li><li>• Listening Skills</li></ul> |
| OPPORTUNITIES                                                                                                                                    | THREATS                                                                                                                                                 |
| <ul style="list-style-type: none"><li>• Networking</li><li>• Recruitment Drives</li><li>• Internships</li><li>• Feedback From Teachers</li></ul> | <ul style="list-style-type: none"><li>• Economy</li><li>• Increased Job Market Competition</li><li>• Industry Level Competition</li></ul>               |



Sir C R Reddy College, Eluru  
Action taken Report