

Revised

TECHNICAL EDUCATION QUALITY IMPROVEMENT PROGRAMME (TEQIP)

PHASE – II

INSTITUTIONAL DEVELOPMENT PROPOSAL
for
Sub Component 1.1: Strengthening Institutions to improve
Learning Outcomes and Employability of Graduates

SUBMITTED BY



Front view of Administrative building



GOVERNMENT ENGINEERING COLLEGE, JAGDALPUR

Dharampura-3, Jagdalpur, Bastar (C.G.) 494005

Phone No.: 07782-229439, Fax: 07782-229401

Web Site: www.gecjd.ac.in, Email: principal@gecjd.ac.in

INSTITUTIONAL BASIC INFORMATION

1.1 Institutional Identity:

- Name of the Institution : Government Engineering College, Jagdalpur ,
District: Bastar, State: Chhattisgarh
Affiliated to Chhattisgarh Swami Vivekanand Technical
University, Bilai.
- Is the institution AICTE approved? : Yes
- Furnish AICTE approval number : F-26-17/ 88-T-5, dated: 26/5/1989
- Type of Institution : Government Funded
- Status of Institution : Non Autonomous

• Name of Head of Institution and Project Nodal Officers:

Head & Nodal Officer	Name	Phone Number	Mobile Number	Fax Number	E-mail Address
Head of the Institution	PROF. G.P. KHARE	07782-229439	9424283091	07782-229401	principal@gecjd.ac.in
Project Nodal Officers for:					
Academic Activities	PROF. R.S.N.SAHAY	07782-229439	9425599144	07782-229401	principal@gecjd.ac.in
Civil Works including Environment Management	PROF. S.K.PRAJAPATI	07782-229439	07782-229439	07782-229401	skprajapati@gecjd.ac.in
Procurement	PROF. T.P.SINGH	07782-229439	9425227002	07782-229401	tpsingh@gecjd.ac.in
Financial Aspects	PROF. P.SHARWA	07782-229439	07782-229439	07782-229401	principal@gecjd.ac.in
Equity Assurance Plan	PROF. T.SHRIVASTAV	07782-229439	9826129379	07782-229401	principal@gecjd.ac.in

1.2 Academic Information:

• Engineering Programmes offered in Academic year 2010-11

S.No.	Title of Programme	Level (UG, PG, PhD)	Duration (Years)	Year of Starting	AICTE Sanctioned Annual Intake	Total Student Strength*
1.	Civil Engineering	UG	4	1983-1984	60	96
2.	Mechanical Engineering	UG	4	1985-1986	30	123
3.	Electrical Engineering	UG	4	2000-2001	30	115
4.	Information Technology Engineering	UG	4	2000-2001	30	113
5.	Electronics and Communication Engineering	UG	4	2005-2006	60	163
6.	Mining Engineering	UG	4	2010-11	60	63
7.	Civil Engineering	PG	2	2010-11	18	03
8.	Mechanical Engineering	PG	2	2010-11	18	15

* 10% extra seats for Tuition Fee Waiver Scheme as per AICTE guideline.

- **Accreditation Status of UG Programmes:**

Title of UG Programmes being offered	Whether eligible for accreditation or not	Whether accredited as on 31 st March 2011	Whether "Applied for" as on 31 st March 2011
B.E.(Civil Engineering)	YES	NO	NO
B.E.(Mechanical Engineering)	YES	NO	NO
B.E.(Electrical Engineering)	YES	NO	NO
B.E.(Information Technology)	YES	NO	NO
B.E.(Electronics and Communication Engineering)	YES	NO	NO
B.E.(Mining Engineering)	YES	NO	NO

- **Accreditation Status of PG Programmes:**

Title of PG Programmes being offered	Whether eligible for accreditation or not	Whether accredited as on 31 st March 2011	Whether "Applied for" as on 31 st March 2011
M.E.(Civil Engineering)	YES	NO	NO
M.E.(Mechanical Engineering)	YES	NO	NO

1.3 Faculty Status (Regular / On-Contract Faculty as on March 31st, 2011)

Faculty Rank	No. of Sanctioned Regular Post	Present Status: Number in Position by Highest Qualification												Total Number of regular faculty in position	Total Vacancies	Total Number of contract faculty in position
		Doctoral Degree				Masters Degree				Bachelor Degree						
		Engg. Disciplines		Other Disciplines		Engg. Disciplines		Other Disciplines		Engg. Disciplines		Other Disciplines				
		R	C	R	C	R	C	R	C	R	C	R	C			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15= (3+5+7+9+11+13)	16= (2-15)	17= (4+6+8+10+12+14)
Prof	6	-	-	-	-	-	-	-	-	-	-	-	-	0	6	-
Asso Prof	14	-	-	-	-	4	-	-	-	-	-	-	-	4	10	-
Asst Prof	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lec	28	-	-	-	1	1	2	-	2	-	5	-	-	1	27	10
Total	48	-	-	-	1	5	2	-	2	-	5	-	-	5	43	10

Abbreviation:

Prof = Professor, **Asso Prof** = Associate Professor, **Asst Prof** = Assistant Professor, **Lec** = Lecturer,

R = Regular, **C** = Contract, **PT** = Part Time

Note: Total Faculty = R+ C+ PT =5+10+30=45

1.4 Baseline Data

S. No.	Parameters	
1.	Total strength of students in all programmes and all years of study in the year 2010-11	691
2	Total women students in all programmes and all years of study in the year 2010-11	213
3.	Total SC students in all programmes and all years of study in the year 2010-11	103
4.	Total ST students in all programmes and all years of study in the year 2010-11	139
5.	Total OBC students in all programmes and all years of study in the year 2010-11	236
6.	Number of fully functional P-4 and above level computers available for students in the year 2010-11	120
7.	Total number of syllabus Text books and Reference books available in library for UG & PG students in the year 2010-11	37020
8.	% of UG students placed through campus interviews in the year 2010-11	4%
9.	% of PG students placed through campus interviews in the year 2010-11	NIL
10.	% of High quality under graduates (>75% marks) passed out in the year 2010-11	15%
11.	% of High quality post graduates (>75% marks) passed out in the year 2010-11	NIL
12.	Number of research publications in Indian refereed Journals in the year 2010-11	NIL
13.	Number of research publications in International refereed Journals in the year 2010-11	NIL
14.	Number of Patents obtained in the year 2010-11	NIL
15.	Number of Patents filed in the year 2010-11	NIL
16.	Number of sponsored research projects completed in the year 2010-11	NIL
17.	The transition rate of students in percentage from 1 st year to 2 nd year in the year 2010-11 for: (i) all students (ii) SC (iii) ST (iv) OBC	100% 100% 100% 100%
18.	IRG from student's fee and other charges in the year 2010-11 (Rs. In lacks)	45.30
19.	IRG from commercialization of R&D products, consultancy & other sources in the year 2010-11 (Rs. In lacks)	9.80
20.	Total IRG in the year 2010-11 (Rs. In lacks)	54.83
21.	Total recurring expenditure in the year 2010-11 (Rs. In lacks)	253.22

2. INSTITUTIONAL DEVELOPMENT PROPOSAL (IDP)

2.1 Give the Executive summary of the IDP.

Govt. Engineering College Jagdalpur has been selected to submit an Institute Development proposal under the Technical Education Quality Improvement program TEQIP-Phase II, Subcomponent 1.1: Strengthening Institutions to improve Learning Outcomes and employability of Graduates of the Govt. of India.

The purpose of TEQIP is to enhance existing capacities of institution to become dynamic demand-driven, quality conscious, efficient and forward looking, respond economic and technological development occurring at the national and international level. The program aims at reinforcing the performance of institution and diffusing their special qualities throughout the technical education system.

One new UG courses & Three PG Courses is likely to be introduced in the institution subject to approval of AICTE, New Delhi. This will fulfill the long awaited need of the capital & institute both.

This project will help to strengthening institute to improve learning outcome and employability of graduate by the following measure.

- Modernization of laboratories
- Modernization of Library
- Modernization of class rooms
- Procurement of furniture
- Curriculum reforms
- Training of faculty and staff
- Establishment of language laboratory
- Active training and placement cell with all needed facilities.
- Training of students
- Better institute-industry linkage
- Internet facility in the campus
- Upgradation of qualification of existing faculty and staff
- Accreditation of UG courses
- Formation of BOG and different supporting councils
- Support to Academically weaker students

This will be achieved by proper implementation of TEQIP-II by a team of Coordinator and five nodal officers in association with Astd. Coordinators and Astd. Nodal officers, faculty and staff members under the leadership of the Principal of the Institute and guidance & co-operation of SPIU and NPIU.

2.2 (a) Provide the details of SWOT analysis (see Annex-V to PIP) carried out (in terms of methodology used, analysis and information and data as collected and inferences derived with respect to strengths, weaknesses, opportunities and threats)

SWOT analysis was performed by expert's team comprising of Professors of NITTTR, Bhopal during 22-26 March 2010 in which Students, faculty members and staff members participated equally. The SWOT format were filled up and ranked individually along with their group works. After thorough discussion with faculty, Technical staff, Administrative staff and students of the institute and their parents, following common statement/data/observations were emerged;

Major Strength :-

S.NO.	Major Strengths
1.	Adequate Building and Infrastructure
2.	Qualified faculty in different discipline with concern for Teaching Learning Process
3.	Library Equipped with branch related books and journals
4.	Modern Laboratory
5.	Testing and consultancy services
6.	Well disciplined students
7.	Passing out rates of the students is high
8.	Young, enthusiastic technical and non-technical staff
9.	Emphasis on practical and project work
10.	Peaceful and conducive environment for academic activities
11.	First Air Force Campus interview for pilot recruitment

S.NO.	Major Weakness
1.	Principal with Dual charge
2.	Insufficient Regular and experience faculty
3.	Unsatisfied faculty with respect to emoluments
4.	Lack of trained laboratory staff
5.	Lack of Hostel facility for boys and girls
6.	Inadequate field and educational visit
7.	Limited basic amenities to students and staff
8.	Up gradation of laboratories needed
9.	Interaction with industries
10.	Lack of proficiency in English language
11.	Unavailability of LAN, Internet and Wi-Fi facility

S.NO.	Major Opportunities
1.	Organization of faculty development programme at national/ International
2.	The only Govt. Engg. College serving in the capital & the state
3.	Better teaching staff can attract good student
4.	Intensive Interaction with industry or skill development of faculty/ staff
5.	Offering part time B.E/M.E programs for technical/ engineers
6.	Need based short term training program working professionals
7.	Only institution to provide Testing & consultancy services in the Capital

S.NO.	Major Threats
1.	Saturation in Computer Science and IT field
2.	Competitive self financed engineering colleges
3.	Reluctance of students to offer core branches of engineering
4.	Lack of interpersonal relation among the students
5.	Unstability of teaching staff

(b) Based on SWOT analysis, provide the “strategic plan” developed for institutional development.

To achieve the desired results and implement the institutional project, an action plan for each objective as listed above and their related major activities will be as follows:

1. All the vacant positions and other required positions would be filled on priority basis through PSC.
2. Institute will initiate and start many other need based bachelor and post graduation programmes.
3. Institution will make effort for internal revenue generation which can be utilized for developmental activity.
4. In the World Bank project TEQIP-II, faculty and staff would be trained in pedagogy and other relevant areas so that they become more competent so teaching learning process can be improved and employability of students can be enhanced.
5. The benefit of the career growth and higher qualifications would be provided to contact faculty also as envisioned in PIP project document.
6. Wherever process and mechanism for performance and efficiency improvement are not in existence or not clear policy and process would be formulated and implemented for enhancing efficiency and effectiveness of the institutions.
7. Library modernization and space for library would be take-up on priority basis under the project.
8. The teaching faculty expertise would be used mostly for teaching –learning process, academic work and other work like court cases would be entrusted to administrative staff.
9. Industry institute interaction cell would be strengthen and make functional for effective working, networking and partnership with industry, so that involvement of industry can be ensured in curriculum development its implementation and certification of students and policy making.
10. Adequate administrative and account staff would be recruited so that principal and faculty involvement in administrative and accounts matter could be minimized.
11. Faculty and student would be motivated to make initiatives for challenging work like:
 - Organizing conferences and workshops for generating new knowledge and information.
 - Organize tech festivals/competitions for personality developments etc.
12. Clean and green engineering college would be establishing to motivate student and faculty.

13. The instructional resources developed by resource institute like NITTTR's and other would be procured and used to make teaching learning effective.
14. Language laboratory would be established and students would be encouraged to use it, so that benefits can be accrued.
15. Training and placement cell would be made functional and strengthened so that all the students are given relevant to industrial training and placement opportunity for all students would be facilitated.
16. The teachers would be encouraged to take up research, undertake P.G., Ph. D. and Post Doctoral programmes and undertake action research in niche areas.
17. We will undertake survey and action research for need of assessment of industry for the programmes being implemented in the institute.
18. Campus would be Wi-Fi so that students will have easy access to internet and other informations, easy access to online journals, learning materials, etc. and Faculty, staff and students will be encouraged to take in house/ other institutes for content updating programmes.
19. Rewards, promotions and Encouragement would be provided to the faculty so that they remain in the teaching field in the government structure and status.

(c) How the key activities proposed in the Institutional Development Proposal are linked With the results of SWOT Analysis.

Training to staff & faculty member as per TNA will enhance their capabilities. Management of various activities at Institute level will result in improvisation in the system. Procurement of equipment in various departments as per requirement of curriculum will improve laboratory conditions. Similarly procurement of books and journals will update library which will be beneficial to students.

Training of students in nearby industries, education tours and curriculum reforms as per the requirement of industry will improve Industry-Institute relationship.

Minor civil work like sanitary and water supply will improve basic requirement of the institute. Establishment of language laboratory will help students to improve their communication skill.

Training and placement cell will help to cater the needs of students, and thus will improve the campus placement.

2.3 State the specific objectives and expected results of your proposal in terms of institutional strengthening and improvements in employability and learning outcomes of graduates. These objective and results should be linked to the SWOT analysis.

This institution i.e. Government Engineering College, Jagdalpur has keen interest towards the development of the Infrastructure and Laboratories with all curriculum reforms as a whole. The general objectives of our proposal are as follows:

1. Filling up all existing and future required teaching and staff vacancies.
2. Improvement in teaching, learning and training facilities and resources like:
 - Modernization and strengthening of laboratories and establishing new laboratories.
 - Modernization of library and procurement/upgradation of library to improve access and utilization.
 - Modernization of class rooms, departments, computer centre and procurement of appropriate furniture.
3. To improve quality of learning outcomes and employability of students by increasing competence of all faculty and staff by ensuing provision of need based training and education activities through proper implementation of AICTE norms.
4. Enhance the current status of generation, retention and utilization of the revenue through appropriate policy, norms, and plans, by undertaking various activities.
5. Ensure steps and measures for getting accreditation of all the UG and PG programmes being offered.
6. Enhance and improve industry-institute linkage and networking for benefits of students, faculty and staff.
7. Outsourcing for electrical and civil work, computer maintenance, computer networking, cleaning and security of the institute.
8. Exercise for Curriculum reforms.
9. To provide academic support to weak students and special attention towards ST/SC/OBC students.
10. Sanction of faculty and staff posts as per AICTE norms.

Hereby, we are intended to have the following specific objectives to ensure institutional strengthening and improvements in employability and learning outcomes of graduates.

1. Modernization and strengthening of laboratories and establishing new laboratories.
2. Modernization of library and procurement/upgradation of library to improve access and utilization.
3. Well equipped computer centers in various Departments.
4. To improve quality of learning outcomes and employability of students by increasing competence of all faculty and staff by ensuing provision of need based training and education activities through proper implementation of AICTE norms.
5. Exercise for Curriculum reforms.
6. Enhance and improve industry-institute linkage and networking for benefits of students, faculty and staff.
7. To provide academic support to weak students and special attention towards ST/SC/OBC students.

By achieving above stated objectives, we will be able to achieve the following results that will help to ensure institutional strengthening and improvements in employability and learning outcomes of graduates.

- New laboratories will be established & existing labs will be upgraded.
- Will have well equipped department computer Centers.
- Infrastructure will be procured.

- Library facilities will be strengthened & journals etc. may be available.
- Faculty & other staff members will be trained to impart sound knowledge towards students.
- Weak Students will be benefited.
- Curriculum reforms, Industry-Institute Interaction and Continuing Education Program will benefit students towards better employability and learning outcomes of graduates.

2.4 Provide an action plan for

(a) Improving employability of graduates.

The major purpose here is promoting the need for curriculum reform directed at improving employability of graduates. Unemployment of graduates or underemployment of university graduates is a gross waste that no nation can afford. Past studies have focused in identifying the reasons for the large unemployment of graduates. A survey of human resource personnel reported that the major reasons for unemployment were: -

- Weak English
- Weak Interpersonal Skills
- Weak Soft Skills
- Poor lifelong learning
- Degrees not relevant
- Students are unaware of Industrial Practices.

To improve the above shortcomings of students, following measures will be taken,

1. Establishment of Language Lab.
2. Conduction of Group Discussion
3. Mock PI will be conducted by senior teachers.
4. Problem based learning will be included in the curriculum to improve lifelong learning habit in the students.
5. More of curricular activities will be brought in to improve Weak Interpersonal Skills.
6. Proper stress will be given on industry institute interaction to improve employability of students.

(b) Increased learning outcomes of the students

Various definitions of learning outcome exists as below,

- A statement of what a learner is expected to know, understand and/or be able to demonstrate at the end of a period of learning.
- Learning outcomes are statements that specify what a learner will know or be able to do as a result of a learning activity. Outcomes are usually expressed as knowledge, skills, or attitudes.

- Learning outcomes (are) specific measurable achievements.
- A learning outcome is a statement of what competences a student is expected to possess as a result of the learning process.
- Learning outcome statements are content standards for the education system.
- Learning outcomes are statements of what students are expected to know and to do. We shall try to improve the learning outcome by using

1. An interactive white board in class rooms, an interactive whiteboard is a touch-sensitive screen that works in conjunction with a computer and a projector. Interactive whiteboard's potential as a tool for improving student learning outcomes and streamlining less on planning. Educators continue to comprise the largest user base for this technology. Interactive whiteboards affect learning in several ways, including raising the level of student engagement in a classroom, motivating students and promoting enthusiasm for learning. Interactive whiteboards support many different learning styles may be used in a variety of learning environments, including those catering to students with hearing and visual impairments.
2. Introducing Problem-based Learning: PBL is a learning environment in which the problem drives the learning. The problem is posed so that the students discover that they need to learn some new knowledge before they can solve the problem. PBL students transfer the reasoning strategies that they are taught and are more likely to use science concepts in their explanations.

(c) Achieving the targets of 60% of the eligible UG & PG programmes accredited within 2 years of joining the project and 100% accreditation obtained and applied for by the end of the Project of the eligible UG & PG programmes.

The National Board of Accreditation, established in Sep 1994 is entrusted with the task of evolving a procedure for quality assessment and accreditation process for Engineering Education Programs to international standards. This institution is fully acquainted with identifying the parameters to quantitatively assess the several criteria and it is on trial to generate the Self Assessment Report. The major challenges are given below:-

- Establishment of New labs and upgradation of existing labs
- Regular Faculty and Student Ratio.
- Campus Infrastructure Facility.
- Computer Center and Networking.
- Placement & Professional Activities.

We shall also improve in following areas and get accreditation for UG, PG and proposed UG and PG programmes,

- Financial resources management, Information Resources (including Library, Computer systems, Internet Connectivity) management. Buildings, equipment and other assets such as Labs, workshops etc. management. Technology and intellectual property management
- We shall also improve in how well the Institute: Identifies Processes. Manages Processes. Reviews Processes, and Improves Processes
- The institute will make sure that, Faculty & support staff as resources are planned and improved. Faculty & support staff capabilities are sustained and developed. Peoples are involved, empowered and recognized. People and the institute have an effective dialogue. Peoples are cared for aligns the human resources plan with policy and strategy which will develops and uses people surveys and ensures fairness in terms of employment. Aligns its remuneration, redeployment, redundancy and other terms of employment with policy and strategy. Uses innovative work organization strategies and methods to improve the way of working.
- The Results will also be improved on the following points that they cover all stakeholders. Measure all relevant Approaches & Deployment, using perception & performance indicators. Show positive trends or sustained good performance. Show achievement of Targets. Compare well with others. Measure a balanced set of factors & Give a holistic picture
- Institute will also do the needful in the areas of Research & Development with due emphasis on, quality of research, Depth of research, Uniqueness of research area, Quality of publication journal, Number of Research publications, Number of papers per year, Coverage across the academic spread of the institute's involvement, International recognition, Standing of the publication journal, Use of the research by others for further research, Extent of faculty involvement, Percentage of staff involved in research, Amount of time spent by faculty on research.
- The due care will be taken for Industry-Institute Interaction. Quality of consultancy projects, Relevance of project to industry vis-à-vis growth / quality / value engineering etc., Number of Consultancy projects , Number of projects per year, Coverage across the academic spread of the institute's involvement , Value of the consultancy projects , Value of the projects & Trend over the years, Extent of faculty involvement in consultancy projects , Percentage of staff involved , Proportion of time spent on this , Relevance of consultancy to Institute's Policies & strategies, Extent of fit with the strategies , Extent of Importance to strategic objectives .

The student's satisfaction will be the main criterion. Customer's perception of Institute's services & customer relationships, Employee's perception of the Institute, Additional measurements relating to the satisfaction of the Institute's customers, Additional measurements relating to the satisfaction of the Institute's people, Proportion of students obtaining pass marks, Proportion of students obtaining distinction

marks, Proportion of Internal assessment vis-à-vis external assessment, Examination Results, Placements, Performance in Competitive Exam.

(e) Implementation of academic and non academic reforms (details given in Annex-I to PIP)

IMPLEMENTATION OF REFORMS

1. The institution will obtain autonomy as per guideline given in PIP and exercise full academic autonomy except for the award of degrees, which will continue to be conferred by the CSVT University. GEC Jagdalpur will have a Board of Governors. All powers for institutional management through exercise of the 4 autonomies is to be vested in the BOG and will be exercised as per the Memorandum of Association (MoA)/Government Orders/Government Regulations. The BOG will in turn suitably delegate functional powers to various institutional functionaries and committees.

Various Autonomies will be as given below,

- (i) Managerial Autonomy:
- (ii) Administrative Autonomy:
- (iii) Financial Autonomy:
- (iv) Academic Autonomy:

2. Governance system with participation of stakeholders:

Stakeholders of GEC Jagdalpur are: students and their parents, faculty, staff, employers, community leaders, Government, quality assurance bodies, University, Industry etc. It may not be possible to include all stakeholders in the governance of an institution but mechanism should be evolved for interacting with those who find no direct representation in the governance system. Following Committees may be formed for governance of institutions:

Board of Governors (BOG): The BOG is to be constituted with the relevant structure according to guidelines as given in Annex-II. It will

- Fix the fees and other charges payable by the students on the recommendations of the Finance Committee;
- Institute scholarships, fellowships, studentships, medals, prizes and certificates on the recommendations of the Academic Council;
- Approve starting of new programmes of study leading to degrees and diplomas;
- Determine pay packages to attract and retain quality faculty and staff;
- Assess justification / necessity of foreign travel by faculty; and

- Perform such other functions and form such committees, as may be necessary and deemed fit for the proper development, and fulfillment of the objectives for which the institution has been declared as autonomous.

The BOG may constitute following Committees for taking decisions on its behalf:

- Academic Council/Committee: As per Act / MOA
- Academic Quality Assurance Committee
- Finance Committee: As per Act / MOA
(These two Committees will have representatives of faculty as their members)
- Building and Works Committee
- Purchase Committee
- Disciplinary Committee
- Institution Development Committee
- Students Affairs Committee
- Library Committee
- Grievance Committee
- Anti Sexual Harassment Committee (ASH)
- Any other Advisory Committees (as per need)

Proper formulation and functioning of these Committees would lead to transparent, congenial, fair and participative management based on mutual trust.

3. Use of Block Grant: Block Grant will be used for development purpose. Salary pay and perks for Government employees/ officers will be provided by Government via treasury as before.

4. Establishment of four Funds:

Following funds will be created,

- Corpus Fund
- Faculty Development Fund
- Equipment Replacement Fund
- Maintenance Fund

5. Revenue Generation:

Revenue generation activities could include:

- Consultancy projects sponsored by private or public sector industry,
- Sponsored research projects,
- Offering specially tailored continuing education programmes,
- Offering specially designed Degree programmes for candidates from public sector undertakings,
- Industry- Institute interactive programmes ensuring mutual benefits including revenue generation for the institution, and
- Commercial activities [commercial use of facilities, earning from Incubation

6. Filling up Faculty and Staff Vacancies:

Vacancies will be filled subject to any rationalization of cadre necessitated by student increase/decrease, and curricula compulsions as per AICTE norms. Till such time regular appointments are made by the concerned Government. BOGs need to be empowered to appoint faculty and staff with the required qualifications and experience on contract basis for 12 months.

7. Student Performance Evaluation:

- Student performance up gradation is the basic goal
- The Quality emphasis will inspire a marked improvement- focused approach.
- Thus, a new process will be evolved with this focus in mind. This may be adapted to bring about improvement- focused reform.
- Students and faculty will benefit largely from this reformation of student evaluation process. It must be re- designed to improve formative inputs as well. The faculty may decide to lead by example by giving examples of how to answer some mock tests.
- The Formative evaluation must be used to help the students to improve their performance by pointing out the areas of potential improvement, related to various deficiencies and weaknesses identified by the faculty in various forms of tests/assessments.

8. Performance appraisal of faculty by students and faculty counseling, Faculty Incentives for Continuing Education, Consultancy, Research and Development, etc.: It will be done as per guidelines

(f) Improving interaction with industry

In order to improve interaction with industry following activities will be undertaken.

1. Seminars/Presentation/Guest lectures by eminent industry personnel will be arranged in the institute. Eminent persons from nearby industries NMDC, DRDO, BSNL, ESSAR Jagdalpur, etc. will be called.
2. Final/Pre final year student will be sent to the industries to complete their project work as per their disciplines.
3. Student will be sent to the industries as per their disciplines, so that they become acquainted with the recent equipments and practices undertaken in the industries.
4. Every faculty member will be sent for half to one month orientation in relevant industry preferably during the vacation or low teaching load duration. sabbatical leave proposal will be sent to Govt.

All the above mentioned things will be achieved in collaboration /MOU with respective institute/firm/industry

(g) Enhancement of research and consultancy activities

- Teachers will be encouraged to present papers and participate in conference with 100% financial support at National and International level.
- All the Departments will be asked to get recognized as research centre by CSVTU. Necessary equipments will be purchased.
- A research committee shall be constituted recently to facilitate and monitor research activities.
- The college is yet to develop networking, collaborative arrangements and provide adequate funds for promoting research.
- Teachers of the college shall be asked to get recognized as research guides
- Some departments will participate in the out-reach activities.
- The college has to collaborate with the local bodies and community to undertake community development programmes.

- Satisfactory collaboration with industries exists; but collaboration with local and national level institutions are to be strengthened.
- Formal collaborative arrangements with international organizations for teaching, research and training may be undertaken.
- Institute may adopt some of rural colleges/schools for imparting computer training. Testing facilities in various Departments will be created. Neighboring industries like NMDC, DRDO, BSNL, ESSAR Jagdalpur etc will be asked to carry out research work in collaboration with this institute.

2.5 Provide an action plan for organising a Finishing School and for improving the academic performance of SC/ST/OBC/academically weak students through innovative methods, such as remedial and skill development classes for increasing the transition rate and pass rate with the objective of improving their employability.

For improving the academic performance of SC/ST/OBC/academically weak students following measures will be taken.

- Conducting remedial teaching throughout academic sessions.
- Conducting specialized soft skills and professional skills development training during semester breaks & vocations
- Conducting high intensity training (of at least 4 weeks duration) for development of soft & professional skills.
- Organizing campus interviews and making other effort to secure employment for graduate engineers.

2.6 Provide an Action Plan for strengthening of PG programmes, if any and starting of new PG Programmes.

Presently the institution have two Postgraduate Programmes in Mechanical[Thermal], and Civil[Structural] streams. Under this project it is under consideration to start new UG programme in Metallurgy and PG Programmes in Electrical, Electronics & Communication and Information Technology streams.

2.7 Attach a summary of Training Need Analysis carried out. Also, Provide Faculty Development Plan for the first 18 months for improving their teaching, subject area and research competence based on Training Needs Analysis (TNA) in the following areas.

- Basic and advanced pedagogy
- Subject / domain knowledge enhancement
- Attendance in activities such as workshops, seminars

- Improvement in faculty qualifications
- Improving research capabilities

The Training Need Analysis carried out in March 2010. Based on this analysis the summary of TNA is as follows:

Support and Technical Staff

In general Academic departments do not have administrative / financial support except few technical support staff. Two of the available technical supporting staff have undergone training in last two years. None of our administrative / office assistant has attended long term program in areas like Computer Training and Hindi Typing.

Teacher

Six number of faculty members have attended short term training program of 1-3 days duration. Two HODs have undergone training in their content areas of 7 to 15 days duration. One (1) out of five regular faculty acquired PhD.

Class IV Staff

Twenty nine (10) out of 50 no. of class IV staff in general have indicated short term training of one week to 3 months in areas like – Attitudinal & Mind set change, Personality Development, Computer training, MS Office & advance learning in their relevant occupational areas. Most of them have specified as training from reputed institute like NITTTR Bhopal, Chandigarh etc.

Technical Support Staff

Sixteen (15) technical support staff members from different departments have expressed their training needs. Staff from Information Technology & Engineering, Electrical Engg, Mechanical and Electronics & Communication Engg. has indicated their willingness who undergo training in areas like – Communication skills, Computer training – MS Office, Computer

hardware and networking, Maintenance of lab equipment. Staff from Mechanical Engg., Workshop, Civil Engineering has indicated their training needs in areas like-Personality Development, Testing & Calibration, Computer Training and CNC Machine, Surveying, Operation & Maintenance of Laboratory Equipment in their respective disciplines etc. The period desired for training is mostly 3 to 6 months duration. Some of them have specified the name of institute as NIT Jagdalpur, NITTTR Bhopal and some have also mentioned as training from reputed institute. The support staff has also indicated certain kind of long terms programmes (6 to 12 months duration) for their professional development. These include Computer training, Computer hardware maintenance, Diploma in their respective field from local institute on part time basis.

Administrative Staff

Two out of Five administrative staff personnel have expressed their training requirements. Most of administrative staff has indicated their willingness to undergo training in areas like-Accounting through computer, computer hardware & networking, Maintaining & Processing of service record and office management etc.

Faculty (Ad-hoc and Contractual)

Nine nos. of teachers from the college have expressed their need to get develop through training and development activities apart from qualification up gradation. The nature of short term training programme mainly relate to following broad areas.

Broad Area	Nature of Short Term Training Programme
Pedagogical and Teaching Learning Process	Effective Teaching Methods, Curriculum Development, Student Assessment, Design of Question papers, Lab assessment, Modernization of lab, Industrial Training
Discipline Based Content updating Programme	Most of the faculty members have indicated need of advance Training programme in their respective discipline. The title of Training programme indicated in proforma.
Management Development Programme	Budgeting, Financial Management, NBA Accreditation, Institutional Building, Managerial & Administrative Skills Development, Attitude & Motivation Development.

The I/c Principal has also specified training in area like – Leadership, Management of institution, Financial and administrative autonomy, NBA Accreditation and attitude & Motivation development. As regards long term training programmes teachers have expressed their willingness to undergo six months industrial training in industries like NMDC Bachel, NTPC Bilaspur, Bhilai Steel Plant, and Cement Plants etc. Most of the contract teacher have expressed their need to upgrade their qualification by pursuing M.Tech./M.E./Advance Research in respective areas from reputed National/International Institute like – IIT's, NIT's, NITTTR's etc.

The following table shows the plan for the first 18 months for improving their teaching, Subject area and research competence based on Training Need Analysis

S.No.	Activities	Project Months															
		1-3	4-6	7-9	10-12	13-15	16-18	19-21	22-24	25-27	28-30	31-33	34-36	37-39	40-42	43-45	46-48
1	Purchase of Equipments /Furniture & Books	√	√	√	√												
2	Accreditation Work			√	√	√	√										
3	Academic Improvement of weak student	√	√	√	√	√	√										
4	Training Programs			√	√	√	√										
5	III/CE Program		√	√	√	√	√										
6	Obtaining Autonomy	√	√	√	√	√	√										
7	Curriculum Reforms			√	√												

2.8 Provide an Action Plan for training technical and other staff in functional areas.

Training of Technical & Non Technical staff

- Principal of Institution will nominate a training and placement Officer from faculty members to ensure the activities of training towards technical & nontechnical staff.
- TPO may organize the training program depending upon the resources by two ways:
 - (a) Internal campus training Program me
 - (b) Training program by certain external expert group.
- For Both the training program it will be required to short-list the various types of training to be undergone.
- Pedagogical training program should be fix-up for training providers
- Training provider must adopt conceptual methodology for development of Technical/Non-technical staff.
- For Internal campus training program, the headers from the faculty members should be nominated departmentwise for conduction of training programs further staff.

2.9 Describe the relevance and coherence of Institutional Development Proposal with State's/National (in case of CFIs) Industrial/Economic Development Plan.

- 1) State of C.G is under developing state and student from backward area comes in this institute. Their employability will be increase by proper training, language laboratory, modern labs, special coaching for weak student etc.
- 2) C.G state is very rich in minerals and natural resources so with the development of institute the state and nation will automatically develop.
- 3) The mental ability of C.G students will be increased technically therefore their employment problem may be solved.

2.10 Describe briefly the participation of departments/faculty in the proposal preparation and implementation.

To prepare the Institutional Development Proposal Principal Govt. Engg. College, Jagdalpur has constituted Planning and Execution committee. All the department and concerned members have participated actively to accomplish the work.

2.11 Describe the Institutional project implementation arrangements with participation of faculty and staff.

S.No.	Name of Officer	TEQIP Coordinator and Nodal Officer
01	Prof. G.P.Khare	Incharge Principal
02	Prof. S.K.Prajapati Mr. T.P.Singh Mr.A.K.Bose Mr.P.Mishra Mr. R.K.Bhardwaj	TEQIP Coordinator Asst. Coordinator Asst. Coordinator Asst. Coordinator Asst. Coordinator
03	Prof. P.K.Sarva Mr T. P.Singh	Nodal Officer Financial Aspects Asst. Nodal Officer Financial Aspects
04	Prof. S.K.Prajapati Dr. S.K.Parihar	Nodal Officer Civil Works including Environment Management Asst. Nodal Officer CW & EM.

05	Prof. G.P.Khare Mr.T.P. Singh	Nodal Officer Procurement Asst. Nodal Officer Procurement
06	Dr. R. S. Parihar Prof. R.S.N. Sahay	Nodal Officer Academic Activities Asst. Nodal Officer Academic Activities
07	Dr. R. S. Parihar Prof. P.K. Sarva	Nodal Officer Equity Assurance Plan Implementation Asst. Nodal Officer EAPI.

2.12 Provide an Institutional project budget in Table-29.

Institutional Project Budget for Sub- Components 1.1
Table – 29.1

(Rs. In Crore)

S No.	Activities	Project Life Allocation	Project Financial Year			
			2011-12	2012-13	2013-14	2014-15
1	Faculty and staff Development	4 years	0.1	0.2	0.3	0.4
2	Institutional management capacity enhancement	4 years	0.04	0.06	0.08	0.12
3	Academic support for weak student	4 years	0.04	0.08	0.12	0.16
4	Modernization and strengthening of laboratories	4 years	0.25	0.3	0.35	0.4
5	Establishment of new laboratories for existing programmes	4 years	0.15	0.25	0.35	0.45
6	Modernization of classroom	4 years	0.05	0.1	0.15	0.2
7	Update of learning Resources	4 years	0.05	0.1	0.15	0.2
8	Establishment/Up gradation of central and departmental computer centers	4 years	0.05	0.1	0.15	0.2
9	Modernization and strengthening of libraries and / or access to knowledge source	4 years	0.05	0.1	0.15	0.2
10	Providing assistance ship for Master & Doctoral Student	4 years	0.12	0.12	0.16	0.2
11	Establishing laboratory for new programmes	4 years	0.05	0.1	0.15	0.2
12	Enhancement of research activities	4 years	0.1	0.12	0.16	0.22
13	Refurbishment of Infrastructure	4 years	0.05	0.1	0.15	0.2
14	Enhanced Interaction with Industries	4 years	0.04	0.08	0.12	0.16
15	Implementation of Institutional reform	4 years	0.02	0.04	0.06	0.08
16	Incremental Operating Cost	4 years	0.1	0.2	0.3	0.4
TOTAL			1.26	2.05	2.9	3.79

Table-29.2 : CATEGORY WISE EXPENDITURE DETAIL**(Rs. In Crore)**

S No.	Component	Project life Allocation	Project Financial year			
			2011-12	2012-13	2013-14	2014-15
1	Equipment	4 years	0.3	0.4	0.5	0.6
2	Furniture	4 years	0.1	0.2	0.3	0.4
3	Books & LRs & Software	4 years	0.2	0.4	0.6	0.8
4	Civil Works	4 years	0.05	0.1	0.15	0.2
5	Assistance Ship	4 years	0.12	0.12	0.16	0.2
6	Training/workshop to be conducted	4 years	0.15	0.25	0.35	0.45
7	Faculty Development	4 years	0.1	0.2	0.3	0.4
8	Institution management capacity enhancement	4 years	0.04	0.06	0.08	0.12
9	Consultancies secured	4 years	0.1	0.12	0.16	0.22
10	Incremental Operating Cost	4 years	0.1	0.2	0.3	0.4
	TOTAL		1.26	2.05	2.9	3.79

Note: Total cost per year in Table 1 & 2 should match with each other
Provide the targets against the deliverables listed in Table-3

2.13 Provide the target against the deliverables listed in Table- 30

Project Targets for Institutions under sub-Component 1.1

Table -30 INSTITUTION PROJECT TARGETS

S No.	DELIVERABLES	Baseline	Targets to be achieved	
			At the end of 2 years	By Project closing
1	Number of student registered for <ul style="list-style-type: none"> Master in Engineering programme Doctoral programme in engineering 	-	36	90
		NIL	NIL	NIL
2	Revenue from externally funded R&D projects and consultancies in total revenue (Rs. In lacs)	65	77	88
3	Number of publication in refereed journals <ul style="list-style-type: none"> National International 	NIL	2	4
		NIL	1	2
4	Number of co-authored publication in refereed journals <ul style="list-style-type: none"> National International 	NIL	1	2
		NIL	1	2
5	Student credentials			
	A) campus placement rate of <ul style="list-style-type: none"> UG student PG student 	9%	15%	25%
		NIL	30%	60%
	B) Average salary of placement package for (Rs. In lacs) <ul style="list-style-type: none"> UG student PG student 	4.5	6	8
		NIL	8	10
6	Number of collaborative programmes with industry	NIL	2	5
7	Accreditation status	In Process	UG-75% PG-60%	UG-100% PG-100%
8	Vacancy position for faculty and staff	25%	10%	5%
9	Number of regular faculty having a Master degree or a doctorate degree in engineering disciplines	4	PG-100% Phd-01	PG-100% Phd-20%
10	Transit rate from 1 st to 2 nd year for the following <ul style="list-style-type: none"> All students SC & ST Students OBC Students Women students 	100%	100%	100%
		100%	100%	100%
		100%	100%	100%
		100%	100%	100%
11	Autonomy status	NIL	Required to be obtained	Yes, If amendment of act.

12	Enrollment of faculty with only Bachelor degree for qualification up gradation	Phd-1 PG-2 20%	50%	100%
13	Any other academic deliverables(maximum 3)			
(i)	NA	NA	NA	NA
(ii)	NA	NA	NA	NA
(iii)	NA	NA	NA	NA

Plan (GOS/WKS)

2.14 Give an action plan for ensuring that the project activities would be sustained after the end of the Project.

After end of this project, project activities will be sustained by

- Government financial support and IRC generated by institute.
- By regular modernization of the laboratory as per curriculum reform as required
- Enhancing project consultancies testing sponsor project etc.

2.15 Provide a Procurement Plan for the first 18 months for Goods and Civil Works in Table-31 and Consultant Services in Table-32 with budget and timeframe.

Table-31: 18 MONTHS PROCUREMENT PLAN FOR WORKS/ GOODS* FOR SUB- COMPONENTS 1.1

Name of the institution with location: Govt. Engg. College, Jagdalpur (C.G.)

Package No.	Sr No	Activities	Description of works/ goods	Estimated Cost in crore	Method of Procurement	Deign /Investigation Completed/ Specification Finalization (date)	Estimate Sanction (date &value)	Preparation of Bid document (date)	Banks no objection Bidding document (date)	Bids		Contract award (date and value)	Date of Completion of Contract
										Invitation (Date)	Opening (Date)		
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	1	Lab Equipment	List Enclosed as per Annexure –1	5.26	Tender (NCB)	2 Months	2 Months	2 Months	---	May 2012	June 2012	July 2012	Sept. 2012
2	2	Library	List Enclosed as per Annexure –2	1.70	Tender (NCB)	2 Months	2 Months	2 Months	---	May 2012	June 2012	July 2012	Sept. 2012
3	3	Furniture	List Enclosed as per Annexure –3	0.58	Tender (NCB)	2 Months	2 Months	2 Months	---	May 2012	June 2012	July 2012	Sept. 2012

* Goods covers Equipment, Furniture and Books & Learning Resources

** Applicable in case of 'Prior Review' by Bank.

Note: For Column 5, state ICB/NCB/Direct Contracting/Shopping as appropriate

Table- 32

Table-5 : 18 MONTHS PROCUREMENT PLAN FOR CONSULTANT SERVICES FOR Sub –Component 1.1
Name of the institution with location: Govt. Engg. College, Jagdalpur (C.G.)

SL No.	Activities	Description of Services	Estimated Cost (Rs)	Methods of Selection @	TOR Finalization (Date)	Advertisement (Date)	◆RFP Final Draft to be forwarded the Bank (Date)**	No Objection from Bank for RFP (Date)**	RFP Issued (Date)	Proposals Received (Date)	Evaluation (Date)	No Objection by the Bank (Date)**	Contract Value & Date of award	Contract Completion (Date)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	Civil Work	List Enclosed as per Annexure-X	30	NCB	2 Months	2 Months	----	----	1 Months	2 Months	2 Months	----	1 Months	8 Months

◆RFP (Request for Proposal): Same as ‘Bid Document’ #Technical and Financial

** Applicable in case of ‘Prior Review’ by Bank

@ State whether (i) Single firm or individual; or (ii) Competitive. If Competitive, then state whether Quality and Cost Based Selection (QCBS) or Quality Based Selection (QBS) procedure

2.16. Provide any other information related to special academic achievements as given in Eligibility proposal of the institution.

Government Engineering College Jagdalpur is a reputed college of Chhattisgarh since 1983 and institute always prepared to develop the academic infrastructure. Institute has Infrastructure related with Buildings for every Branch. The Institution is trying its best for the availability of grants under TEQIP-II program for the requisite and development.

Annexure 1-Proposed Amount-in Rs. 5,26,56,600.00

FOR LAB EQUIPMENT

Name of the College:

Government Engineering College,Jagdapur,Bastar,Chhattisgarh

Summary of the department proposal:-

Annex.	Name of Department	Amount Rs.
1.1	Civil Engineering	78,55,000
1.2	Mechanical Engineering	26,83,000
1.3	Electrical Engineering	3,80,46000
1.4	Electronics and Communication Engineering	30,04,600
1.5	Information Technology	9,68,000
	Total	5,25,56,600

In words- Five Crore Twenty Five Lac Fifty Six Thousand six Hundred only

Annexure 1.1-Proposed Amount-in Rs. 78,55,000.00

laboratory wise proposal

Name of the College: Govt. Engg. College, Jagdalpur Bastar (Chhattisgarh)

Name of the Department/Course: **Civil Engineering**

Title of the proposal: - Survey Laboratory(I/II (Semester)

Amount: - Rs. 40,000.00

S. No.	Name of item	Estimated Rate in	Quantity	Amount
1	Prismatic Compass	Rs. 1000/-	10	Rs. 10,000.00
2	Surveyor Compass	Rs. 1000/-	10	Rs. 10,000.00
3	Metric Chain 30 meter	Rs. 1000/-	10	Rs. 10,000.00
4	Metric Chain 20 meter	Rs. 1000/-	10	Rs. 10,000.00
	Total			Rs. 40,000.00

Technical specification of the item:

S. No.	Name of the item	Specification
1	Prismatic Compass	100 mm diameter made of gunmetal or brass as per IS specification and in leather/ FRP case with fine finish wooden tripod stand
2	Surveyor Compass	100 mm diameter made of gunmetal or brass as per IS specification and in leather/ FRP case with fine finish wooden tripod stand
3	Metric Chain 30 meter	As per IS specification having 100 or 150 links
4	Metric Chain 20 meter	As per IS specification having 100 links

Title of the proposal: - Survey Laboratory(IV (Semester)

Amount: - Rs. 6,00,000.00

S. No.	Name of item	Estimated Rate in Rs.	Quantity	Amount
1	Electronic Digital Theodolite	Rs. 6,00,000/-	1	Rs. 6,00,000.00

Technical specification of the item:

S. No.	Name of the item	Specification
1	Electronic Digital Theodolite	Image-Freak, Magnification-30x, Clear-Objective, Aperture-45 mm, Field of view-1 ^o 30", Shortest Focusing distance- 1.35 m, Stadia multiplying constant -100, Resolution power- 3", Method of measuring angle-Incremental mode reading of photo-electricity, Minimum reading – 5", method of detecting- H : One side and V : One side, Accuracy of measuring angle-2", Display – LCD two faced LCD, Range of compensator - +/-3", Accuracy of plate bubble-30"/2mm, Accuracy of circular bubble-8"/2mm, Battery-Chargeable (6V), Dimension-(164x154x340)mm, Supply with fine finish wooden stand, all accessories and cover.

A. Title of the proposal: - Concrete Laboratory (VII (Semester)

Amount: - Rs. 9,65,000.00

S. No.	Name of item	Estimated Rate	Quantity	Amount
1.	Vee-Bee Consistometer	Rs. 50,000/-	01	Rs. 50,000.00
2.	Flow Table Motorized	Rs. 1,00,000/-	01	Rs. 1,00,000.00
3.	Flexure Strength Testing Machine	Rs. 3.0010,000/-	01	Rs. 3,00,000.00
4.	Vicat App.	Rs. 5,000/-	05	Rs. 25,000.00
5.	Sieve Sts	Rs. 20,000/-	02	Rs. 40,000.00
6.	Rebound Hammer:- a. Original Schimdt Hammer Type-N b. Silver Schimdt Hammer Type-BN	Rs. 50,000/- Rs. 1,00,000/-	01 01	Rs.50,000.00 Rs.1,00,000.00
7.	Ultrasonic Pulse Velocity Test App.	Rs.3,00,000/-	01	Rs.3,00,000.00
	Total			Rs. 9,65,000.00

Technical specification of the item:

S. No.	Name of the item	Specification
1.	Vee-Bee Consistometer	A Slump cone 100 mm inside diameter at top and 200 mm inside diameter at base and 300 mm height.
2.	Flow Table Motorized	Machine Table top 250 mm diameter made of Gunmetal fitted with a vertical shaft, conical mould 100 mm inside diameter at bottom and 90 mm inside diameter at top and 50 mm height.
3.	Flexure Strength Testing Machine	Flexure Strength Testing Machine computerized 1000 KN capacity, suitable for testing of 0.25 m to 1.00 m length test specimen.
4.	Vicat Apparatus	A frame with a vertically moving bearing rod, 3 numbers of brass cone 70 mm diameter at bottom and 60 mm diameter at the top and 40 height with separate base plate, 3 numbers different size needle, standard weight.
5.	Sieve Sets	200 mm diameter made of brass as per IS standard.
6.	Rebound Hammer:- a. Original Schimdt Hammer Type-N b. Silver Schimdt Hammer Type-BN	Compressive Strength = 10 to 70 N/mm ² , basic unit includes:- Carrying case, Grinding stone, Operating instruction manual and calibration certificate, Impact device. Impact Energy-2.207Nm, Hammer mass- 115g, Spring constant-0.79N/mm, Spring extension-75 mm, Housing dimension-55x55x250mm, Plunger= 105xØ15mm/radius of spherical tip 25mm, Display-17x71 pixels, power

		consumption 13mA to 0.02 mA, Charge connection- USB Type B (5V,100mA), Compressive Strength =10 to 170 N/mm ²
7.	Ultrasonic Pulse Velocity Test App.	Display unit with non volatile memory for 250 measured value, 2nos. Transducers 54KHz, 2 nos. Cables BNCL1.5m, Calibration rod, Coupling paste150ml, Carrying case 325x295x105 mm, Display- 128x128 graphic LCD, Interface- RS232or with adopter to USB, Integrated software for data transfer to PC, Measuring range-15 to 6550 μ s, Resolution-0.1 μ s, Voltage pulse-1KV, Pulse rate-3/s. Impedance at input – 1M Ω , Battery 6LR6,1.5V.

. Title of the proposal: - Environmental Engineering Laboratory (VI (Semester)

Amount: - Rs. 4,70,000.00

S. No.	Name of item	Estimated Rate in	Quantity	Amount
1.	BOD Incubator	Rs. 1,50,000/-	01	Rs. 1,50,000.00
2.	Turbidity meter	Rs. 50,000/-	01	Rs. 50,000.00
3.	Digital Ph meter	Rs. 10,000/-	05	Rs. 50,000.00
4.	Muffle Furnace	Rs. 1,00,000/-	01	Rs. 1,00,000.00
5.	Jar test App.	Rs. 50,000/-	01	Rs. 50,000.00
6.	Autoclave Pressure Cooker	Rs. 70,000/-	01	Rs. 70,000.00
	Total			Rs. 4,70,000.00

Technical specification of the item:

S. No.	Name of the item	Specification
1	BOD Incubator	BOD Incubator Chamber size 10 cubic feet (650x 580x900)mm capacity 336 liters double walled inside anodized aluminum and out side mild steel sheet painted, with 200-240V auto, Switching Power Supply, Temperature controller 5 ⁰ C to50 ⁰ C, Accuracy- +/- 1 ⁰ C, 6 Amber Glass BOD butler, 6 seal Cup, 6Stir bars, Spatula Scoop, 50 buffer solution pillions, 25g bottle Potassium hydroxide pellets and printed English Manual.
2	Turbidity meter	Range-0 to 1000 HPU, Selectable signal averaging mode compensates for fluctuations in reading caused by movement of large particles in the light path, Pre – Programmable calibration procedure with microprocessor controlled adjustment calibration curve, Electronic zeroing, Direct reading out in HPU, Curves with 6 samples, 4 sealed vials (< 0.1,20,100 and 600 HPU
3	Digital pH meter	Dimension (21.2x8.70x4.20) cm, Range-pH -2.00 to 19.99, mV +/- 2000, Temperature -10 to 110 ⁰ C,

		Resolution pH 0.1, 0.01,0.001 (Selectable), Accuracy-pH +/- 0.002, temp. +/- 1 °C, Buffer recognition- Auto 4.01, 6.86, 7.00, 10.01, Battery life - 6 th month.
4	Muffle Furnace	Standard
	Jar test App.	Standard
	Autoclave Pressure Cooker	Size – 30 cm diameter and 30 cm height made of aluminum or stainless steel, Power 1.5 to 6 Kw

Title of the proposal: - Environmental Engineering Laboratory (VII (Semester)

Amount: - Rs. 4,50,000.00

S. No.	Name of item	Estimated Rate in	Quantity	Amount
1.	Digital Spectrophotometer	Rs. 3,50,000/-	01	Rs. 3,50,000.00
2.	Hot Air oven	Rs. 50,000/-	01	Rs. 50,000.00
3.	Microscope	Rs. 50,000/-	01	Rs. 50,000.00
	Total			Rs. 4,50,000.00

Technical specification of the item:

S. No.	Name of the item	Specification
1	Digital Spectrophotometer	Range-340 to 960 nm, Resolution- 0.1% and Abs-0.001, Monochromer 600 nm, Wave length accuracy –1 nm, Operating Temperature -05 to 45 °C,
2	Hot Air oven	Dimension (910x605x605) mm, Temperature Range – Range of 250°C, Ambient.
3	Microscope	Magnification-100 x to 675 x, Plano Concave mirror illuminator .

Title of the proposal: - Engineering Geology Laboratory (IV (Semester))**Amount: - Rs. 5,70,000.00**

S. No.	Name of item	Estimated Rate	Quantity	Amount
1.	Crystallographic Model	Rs. 50,000/-	01	Rs. 50,000.00
2.	Wooden Cabinet	Rs. 10,000/-	05	Rs. 50,000.00
3.	Hardness Testing kit	Rs. 500/-	10	Rs. 10,000.00
4.	Rock Specimen 100 nos.	Rs. 10,000/-	01	Rs. 10,000.00
5.	Ore Microscope	Rs. 25,000/-	01	Rs. 25,000.00
6.	Micro logical Microscope	Rs. 25,000/-	01	Rs. 25,000.00
7.	Resistivity Meter	Rs. 3,00,000/-	01	Rs. 3,00,000.00
8.	Structural Geology Model (Wooden- Fold, Fault)	Rs. 50,000/-	01 Set	Rs. 50,000.00
9.	Engineering geology Model (Wooden- Tunnel, Dame)	Rs. 25,000/-	01 Set	Rs. 50,000.00
	Total			Rs. 5,70,000.00

Technical specification of the item:

S. No.	Name of the item	Specification
1.	Crystallographic Model	Wooden/ Plastic model multy colour having consist of deep, strike, true deep, apparent deep, crystal class having equal and un equal group consist of cubic, tetragonal, hexagonal, monoclinic, triclinic and orthombic system group. Crystal also shows different character like face, plain ,solid angle, edges, also showing exes and center of symmetry, model of structural geology multy colour set of characteristic feature of fold, fault and unconformity and joints (size 6"x4")
2.	Wooden /Aluminum Tray	20 cm x 25 cm in size and 6.0 cm depth for showing rock /mineral models
3.	Hardness test kit	It includes Streak plate, Knife, pocket magnifying lens, glass plate, mohr'S Scale,
4.	Rock Specimen 100 nos.	Size 5.0 cmx7.00 cm showing characteristic physical properties.
5.	Ore Microscope	Readability up to 0.002 mm, Circulars rotate able stage with clip, graduated 0 to 360 degree in step of 5 degree analyzer, provided in pullout slide along with Bertrand lens, ¼ wave length , retarding plate etc. Plano concave mirror for illumination, objectives- P ₅ xP ₁₀ xP ₄₅ xSL, Eye piece- hay 10 x with cross and =15x packed sock proof sytro fome case in side plywood box.
6.	Micro logical Microscope	Readability up to 0.002 mm, Circulars rotate able stage with clip, graduated 0 to 360 degree in step of 5 degree analyzer, provided in pullout slide along with Bertrand lens, ¼ wave length , retarding plate etc. Plano concave mirror for illumination, objectives- P ₅ xP ₁₀ xP ₄₅ xSL, Eye piece- hay 10 x with cross and =15x packed sock proof sytro fome

		case in side plywood box.
7.	Resistivity Meter Computerized	As per Standard National Institute of Hydrology, Readability 0.001Ω, P-V Computer with Colour printer and latest software
8.	Structural Geology Model (Wooden- Fold, Fault)	As per IS Standard
9.	Engineering geology Model (Wooden- Tunnel, Dame)	As per IS Standard

Title of the proposal: - Structural Engineering laboratory (VI Semester)

Amount: - Rs. 15,00,000.00

Brief detail of the proposal (in the tabular format):-

S. no.	Name of item	Estimated Rate	Quantity	Amount
1	STAAD PRO Soft ware with workstation	Rs. 15,00,000/-	01	Rs.15,00,000.00
	Total			Rs.15,00,000.00

Technical specification of the item:

S.no.	Name of the item	Specification
1	STAAD PRO Soft ware	1. Supported for Window XP, Vista and Server 2003. 2. Work with Server based work Station 3. It should be terminal based as Thin Clint

Title of the proposal: - Geotechnical engineering Laboratory (V (Semester)

Amount: - Rs. 7,50,000.00

Brief detail of the proposal (in the tabular format):-

S. No.	Name of item	Estimated Rate	Quantity	Amount
1.	Static Cone Penetration machine	Rs. 7,00,000/-	01	Rs. 7,00,000.00
2.	Skempton's Core Pressure App.	Rs. 50,000/-	01	Rs. 50,000.00
	Total			Rs. 7,50,000.00

Technical specification of the item:

S. No.	Name of the item	Specification

1.	Static Cone Penetration machine	Maximum Pushing force-200 KN, Maximum Pulling force-220 KN, Drive- 12.5 Hp Diesel Engine, Pressure Gauge- Low 0-160 Kg/cm ² and High 0-600 Kg/cm ² , Penetration Speed 10-15 mm/s as per IS 4968 (Part III) Standard Accessories- Driving head consisting of hydraulic piston and cylinder 1 No., Pressure Gauge- 0-160 Kg/cm ² 1 No., Pressure Gauge- 0-600 Kg/cm ² 1No., Automatic cut off switch 1 No., Mantle tubes of uniform diameter 45 Nos., Sounding Rods of 1.0 m length 45 Nos., Sounding cone with friction jacket 10 cm ² base area 2 Nos., Sounding cone with friction jacket 2 Nos., Screw anchors-45 cm blades 8 Nos., 30 cm blades 8 Nos. and 20 cm blades 8 Nos., Handle for screw anchors 1 no., Tool Kit 1 No., and Tarpaulin Cover 1 No.
2.	Skempton's Pore Pr. App.	Capacity 10 Kg/cm ² , As per IS Standard

Title of the proposal: - Geotechnical engineering Laboratory (VI (Semester)

Amount: - Rs.13,25,000.00

S. No.	Name of item	Estimated Rate	Quantity	Amount
1.	C. B. R. Apparatus	Rs. 1,00,000/-	01	Rs. 1,00,000.00
2.	North Dakota Cone Apparatus	Rs. 50,000/-	01	Rs. 50,000.00
3.	Direct Shear Test Apparatus	Rs. 1,50,000/-	01	Rs. 1,50,000.00
4.	Tri axial Compression Test App.	Rs. 2,25,000/-	01	Rs. 2,25,000.00
5.	Consolidation Test Apparatus	Rs. 50,000/-	01	Rs. 50,000.00
6.	Standard Penetration Test App.	Rs. 2,50,000/-	01	Rs. 2,50,000.00
7.	Un Confined Compression Test App.	Rs. 3,00,000/-	01	Rs. 3,00,000.00
8.	Swell Pressure Test App.	Rs. 2,00,000/-	01	Rs. 2,00,000.00
	Total			Rs. 13,25,000.00

Technical specification of the item:

S. No.	Name of the item	Specification
1.	C. B. R. Apparatus	Capacity- 50 KN, Motorized load frame having single rate of strain of 1.25 mm/minute and Power supply – 220 V 50 Hz Single phase, Mould 3 sets = 150mm inner dia and 175 mm height with base plate and collar, perforated swell plate 3 nos., Proving ring-50 ka capacity, Surcharge weight – 2.5 & 5.0Kg annular, Surcharge weight – 2.5 & 5.0 Kg slotted, Compaction Rammer- 2.6Kg and 4.8 Kg, Dial Gauge 0.01- 25 mm, etc
2.	North Dakota Cone Apparatus	A shaft with a sharp steel cone of angle 15°30' attached to one end and sliding vertically in a frame, a set of weight up to 5 Kg

		(7 nos.) .
3.	Direct Shear Test Apparatus	Shear box assembly 60 mm square complete with U bracket, guide pins and spacing screws made of brass, Gripper assembly consisting of 2 plain grid plates, 2 perforated grid plates, base and loading pad all made of brass, 2 porous stuns 6 mm thick fitted in shear box, Shear box housing complete with 2 rollers strips, loading unit with normal loading capacity of 8 Kg/cm ² on 60 mm square specimen with motor driven 12 speed gear drive providing 12 rate of strains 1.25,0.65,0.25,0.125,0.05,0.025,0.01,0.005,0.002,0.001,0.0004 and 0.0002 mm/minute, Specimen cutter for specimen size of 60x60x25 mm, Power supply 220 V and 50 Hz single phase, Proving ring 2 Kn capacity, Dial gage- 0.01-25 mm 2 nos.,
4.	Tri axial Compression Test App.	Load Frame- Motorized 50 KN capacity with single speed 1.25 mm/minute suitable of r 100 mm dia. Specimen and 220 V, 50 Hz power supply single phase. Tri axial Cell- Suitable for 38/50 mm diameter and 76/100 high specimen, Suitable for lateral pressure up to 1000 Kpa, the cell has 4 takeoff positions drilled in the base for cell pressure, pore water pressure and for top and bottom drainage, fitted with 3 nos. volume change valves and one dead end plug, one loading pad, 2 porous stones, sheath stretcher, split sand former, 10 latex rubber sheaths, and 4 sealing rings for 38/50 mm dia samples.
5.	Consolidation Test Apparatus	Bench Type Consolidometer front loading single unit, as per IS 2720(part XV), Comprises – Loading unit 20 Kg/cm ² , Consolidation Cell 60 mm dia. And 20 mm height, Dial gauge 10x0.002 mm, Seat of weight.
6.	Standard Penetration Test App.	Drop hammer 65 Kg, Drive pipe Assembly of 75 cm fall, Tripod stand 5m length, Split barrel 35 mm I. D. 50.8 mm O.D. and 500 mm long,
7.	Un Confined Compression Test App.	Screw jack with frame and dial gauge holder, Set of upper and lower platens 150 mm diameter, Cone seating 2 nos., Proving ring suitable capacity and adopter, and all other accessories.
8.	Swell Pressure Test App.	Load frame 50 KN capacity, Mould 100 ID and 107.3 mm and 1000 cm ³ volume, proving ring 2.5 KN capacity, Soaking tank 25 cm diameter and 20 cm high.

Title of the proposal: - Transportation Engineering Laboratory (V (Semester))**Amount: - Rs.5,35,000.00**

Brief detail of the proposal (in the tabular format):-

S. No.	Name of item	Estimated Rate	Quantity	Amount
1.	Standard Penetrometer	Rs. 20,000/-	02	Rs. 40,000.00
2.	Ring Ball Apparatus Electrically operated	Rs. 25,000/-	02	Rs. 50,000.00
3.	Ductility testing Machine	Rs. 1,00,000/-	01	Rs. 1,00,000.00
4.	Tar Viscometer Electrically Opp.	Rs. 25,000/-	02	Rs. 50,000.00
5.	Flash and Fire point Apparatus	Rs. 10,000/-	02	Rs. 20,000.00
6.	Benkelman Beam	Rs. 75,000/-	01	Rs. 75,000.00
7.	Marshal Stability machine with digital display	Rs. 2,00,000/-	01	Rs. 2,00,000.00
	Total			Rs. 5,35,000.00

Technical specification of the item:

S. No.	Name of the item	Specification
1.	Standard Penetrometer	Supply complete set with suitable dial gauge and 50 g and 100 g weights
2.	Ring Ball Apparatus Electrically operated	Complete set with 2 steel ball 95. mm diameter, 2 tapered ring made of brass, 2 ball centering guides, A ring holder and bath tub 8.5 cm dia . and 12 cm high approximately.
3.	Ductility testing Machine	Housing water bath 10 liters capacity with perforated shelf and thermostat controller for heater, The machine has to two standard rates of travel 1 cm/minute and 5 cm/minute, The movable bracket can be arrested or released without switching of motor by the clutch arrangement. Suitable for operation of 220 V and 50 Hz single phase supply and all accessories as ductility mould etc.
4.	Tar Viscometer Electrically operated	For determining the viscosity of cut back bitumen and road Tor. It has a 10 mm cylindrical bras cup with a dished bottom. An orifice is provided at the centre of the base which can be closed with a ball valve. A cylindrical copper bath 160 mm dia and 105 mm with a immersion heating element and an auto transformer for controlling temperature is provided with leveling feet. A stirrer with a curved shield and 4 vertical vanes with the insulating handle and a thermometer support is provided. Power supply 220 V and 50 Hz single phase.
5.	Flash and Fire point Apparatus	It has Cleveland flash cup in brass with an insulated handle, a metal heating plate with circulars opening covered by asbestos board, an electric heater with energy regulator and gas test assembly. Suitable for operation on 220 V and 50 Hz single phase supply.
6.	Digital Benkelman Beam	It is used to determine the deflection of flexible pavements under the action of moving loads. The apparatus consist of

		a 365 cm long aluminum beam in two halves arranged to give the lever arm ratio of 2:1. Provision is made for leveling the apparatus. A buzzer is provided for removing friction on the bearings with spring loaded clamp. The fine and coarse adjustment must be provided.
7.	Marshal Stability machine with digital display	The unit comprises of:- Load frame – 25 KN capacity, Rammers-2 nos., Moulds-3nos., Breaking head assembly, Digital display, Load cell 50 KN, Displacement sensor along with flow meter +/- 20 mm

Title of the proposal: - Fluid Mechanics Laboratory (III Semester)
Amount: - Rs. 6,50,000.00

S. No.	Name of item	Estimated Rate	Quantity	Amount
1.	Ship Model for Meta centric Height	Rs. 25,000/-	04	Rs. 1,00,000.00
2.	Bernoulli's Apparatus	Rs. 2,00,000/-	01	Rs. 2,00,000.00
3.	Venturi meter	Rs.50,000/-	01	Rs. 50,000.00
4.	Orifice meter	Rs. 50,000/-	01	Rs. 50,000.00
5.	Orifice Apparatus	Rs. 1,00,000/-	01	Rs. 1,00,000.00
6.	Mouth Piece & orifice Apparatus	Rs. 1,00,000/-	01	Rs. 1,00,000.00
7.	Notch Apparatus	Rs. 50,000/-	01	Rs. 50,000.00
	Total			Rs. 6,50,000.00

Technical specification of the item:

S. No.	Name of the item	Specification
1.	Ship Model for Meta centric Height	Pontoon made of copper/brass plate with adjustable moving water and plastic are least count 0.5 degree, Steel tank of size 40x04040 cm one side glass fitted with scale

		and drain cock.
2.	Bernoulli's Apparatus	Rectangular transparent channel 1.5"x1.5" entrance and 3.5"x3.5" at exit of 3' long flow section, Piezometer @ each 5 cm interval, Collecting tank of 30x30x60 cm with supporting stand.
3.	Venturi meter	Venturimeter made of gun metal standard tested for 200 lbs/mm ² , It has a converging cone of 6.5 degree Than a straight through out of diverging cone 3.5 dgree, d/D = 1/2., Size 25 mm, 40 mm, 50mm, 75mm.
4.	Orifice meter	Standard size design of brass plate with standard flange dimension 6.2' pipe and flange fitted with standard peacock valve fitted on v/s on 3' length pipe d/D -1/2, Size- 10mm,20mm,25mm,40mm,50mm,75mm.
5.	Orifice Apparatus	It has Cleveland flash cup in brass with an insulated handle, a metal heating plate with circulars opening covered by asbestos board, an electric heater with energy regulator and gas test assembly. Suitable for operation on 220 V and 50 Hz single phase supply.
6.	Mouth Piece and Orifice Apparatus	It is housing M.S., Constant head supply tank 45x45x90 cm made of M.S. angle frame 1" with 3mm thick sheet provided with gauge glass, scale, drain cock. M.S. supporting angle, measuring tank 90x90x90 cm, Orifice- Circulars 20 mm, Rectangular 10x20 mm, Square 20x20 mm, Triangular 25 mm, Mouth Piece- Cylindrical 30 mm, Convergent 30 mm size, Divergent 30 mm and bore dia 30 mm size, Micrometer compaction gauge made of brass, Scale and sliding arrangements (accuracy 0.01mm both x & y co-ordinates.
7.	Notch Apparatus	M.S. supply tank 180x40x30 cm provided with baffles and fitted with pointed gauge with supporting stand, Measuring tank 45x45x60 cm provided with fitting hopper and partition, gauge glass, scale and drain valve, collecting tank section 45x30x60 cm, Set of 3 brass notches 90 degree, Rectangular and trapezoidal.

Annexure 1.2-Proposed Amount-in Rs. 26,83,000.00

Laboratory wise proposal

Name of College : Government Engineering College , Jagdalpur

Name of department/Course: Mechanical engg. Deptt.

Title of the proposal :- DYNAMICS OF MACHINES semester V

Amount: - NINTY FIVE THOUSAND RUPEES ONLY.

Brief details of the proposal :

S.No.	Name of item	Estimated Rate (In Rs.)	Quantity	Amount(In Rs.)
1	EPICYCLIC GEAR TRAIN & HOLDING TORQUE APPARATUS	60,000.00	1	60,000.00
2	UNIVERSAL GOVERNOR APPARATUS WITH 4 DIFFERENT MECHANISM	35000.00	1	35000.00
Total Amount- NINTY FIVE THOUSAND RUPEES ONLY.				95,000.00

Technical specification of the items:

S.No.	Name of item	Specification
1	INTERNAL EPICYCLIC GEAR TRAIN & HOLDING TORQUE APPARATUS	1. A compact gear train. 2. Variable speed D.C. motor. 3. Rope brake arrangement to measure output 4. Torque and Holding Torque.
2	GOVERNOR APPARATUS WITH DIFFERENTIAL ATTACHMENT	1. System to give spindle speed 100 to 500 rpm. 2. Drive Unit: D.C. motor, 1/4 H.P., 1500 rpm. 3. Speed control unit working on 230 V. A.C. supply with 0-200V.D.C. output 4. Scale and pointer to measure governor lift 5. Digital rpm indicator to measure spindle speed

Title of the proposal :- I.C. ENGINE LAB semester- V

Amount: - ONE LACS FOUR THOUSAND RUPEES ONLY.

Brief details of the proposal :

S.No	Name of item	Estimated Rate (In Rs.)	Quantity	Amount (In Rs.)
1	EXPERIMENTAL SETUP FOR DRAWING VALVE TIMING DIAGRAM OF 4 STROKE S.I. & C.I. ENGINE	40,000.00	1	40,000.00
2	Variable Compression Ratio Engine Test Rig	10,000.00	1	10,000.00
3	Model Of Two Stroke Diesel Engine	3,500.00	1	3,500.00
4	Model Of Two Stroke Petrol Engine	3,500.00	1	3,500.00
5	Model Of 4 Stroke Diesel Engine	3,500.00	1	3,500.00
6	Model Of 4 Stroke Petrol Engine	3,500.00	1	3,500.00
Total Amount- ONE LACS FOUR THOUSAND RUPEES ONLY.				1,04,000.00

Technical specification of the items:

S.No.	Name of item	Specification
1	EXPERIMENTAL SETUP FOR DRAWING VALVE TIMING DIAGRAM OF 4 STROKE S.I. & C.I. ENGINE	EXPERIMENTAL SETUP FOR DRAWING VALVE TIMING DIAGRAM OF 4 STROKE S.I. & C.I. ENGINE
2	Variable Compression Ratio Engine Test Rig	Variable Compression Ratio Engine Test Rig
3	Model Of Two Stroke Diesel Engine	Model Made from Aluminum material which demonstrates all engine parts
4	Model Of Two Stroke Petrol Engine	Model Made from Aluminum material which demonstrates all engine parts
5	Model Of 4 Stroke Diesel Engine	Model Made from Aluminum material which demonstrates all engine parts
6	Model Of 4 Stroke Petrol Engine	Model Made from Aluminum material which demonstrates all engine parts

Name of department/Course: Mechanical engg. Deptt. /B.E.

Title of the proposal :- THERMODYNAMICS LAB semester IV

Amount: - TWO LACS NINTY SEVEN THOUSAND TWO HUNDRED rupees only.

Brief details of the proposal :

S.No.	Name of item	Estimated Rate(In Rs.)	Quantity	Amount (In Rs.)
1	Surface Steam Condenser experimental setup	1,30,000	1	1,30,000
2	Jet Condenser experimental setup	1,30,000	1	1,30,000
3	Dead Weight Safety Valve	3000.00	1	3000.00
4	High Steam Low Water Safety Valve	4500.00	1	4500.00
5	Lancashire Boiler or its model with mountings and accessories	5000.00	1	5000.00
6	Steam Engine With D-Slide Valve	2500.00	1	2500.00
7	Model of Compound Steam Engine	5,000.00	1	5,000.00
8	Green Economizer	8000.00	1	8000.00
9	Model of Locomotive Boiler	9200.00	1	9200.00
Total Amount :Two lacs ninty seven thousand two hundred rupees only.				2,97,200.00

Technical specification of the items:

S.No.	Name of item	Specification
1	Surface Steam Condenser experimental setup	Surface Condenser of having shell of size 150 mm dia and 800 mm long of M.S. having 16 Copper tubes of 12 mm dia and length of 700 mm arranged in triangular pitch and single pass tube plates of M.S. feed tank of capacity 200 lits., Condensate collector, M.S. structure for support.
2	Jet Condenser experimental setup	Condenser of having shell of size 150 mm dia and 800 mm long of M.S. feed tank of capacity 200 lits., Condensate collector, M.S. structure for support
3	Dead Weight Safety Valve	The valve resting on the seat the top of an outlet pipe are covered by a case carrying weights hanging freely from the valve.
4	High Steam Low Water Safety Valve	Combined High Steam Low Water Safety Valve
5	Lancashire Boiler or its model with mountings and accessories	The model is approx. one meter in length 37 cm in breadth & 45 cm high. It is specially made dissectible for demonstration.
6	Steam Engine With D-Slide Valve	An all metallic properly constructed model, piston, cylinder & steam chest are shown in half section. Two connecting rods, one connecting to sliding valve & the other to the piston

		are provided. The whole assembly is fitted on a teak wood base of 60 x 25 cm. size approx.
7	Model of Compound Steam Engine	A large size section cut demonstration model H.P cylinder is provided with a piston valve & D. P. with a valve complete with jacketed receiver mounted on a teak wood BOARD 65 X 50 cm. in size approx.
8	Green Economizer	it is an all metallic demonstration model to understand the working of a feed water heater. Complete with safety valve, scrapers, chains and pulleys. Flue passage i. e. all brick work is shown in wood work and the model is so dissectible that the inner construction can be seen clearly. Approximately 45x30x25 cm in size.
9	Model of Locomotive Boiler	The steel shell is of 20 cm dia. & 60 cm in length. The fire box is provided with a door & gate. The dissected barrel shows its inside view. Hot gasses after passing through the fire tubes enter the smoke box with a door, nozzle & the blast pipe. The model is approx. 100 cm. in length, 45 cm high & 35 cm in breadth & is complete with whistle steam bome, safety valve, check valve, steam regulator, water & steam gauges.

Title of the proposal :- Material Testing Lab semester III

Amount: Three lacs sixty six thousand rupees only.

Justification:- The machines available in the lab are old and obsolete. Hence new and modern machines are proposed as per syllabus of CSVTU for the benefit of students and for modernization of the lab.

Brief details of the proposal :

S.No.	Name of item	Estimated Rate(In Rs.)	Quantity	Amount (In Rs.)
1	Spring Testing Machine	96,000.00	1	96,000.00

2	Brinell Hardness Machine	90,000.00	1	90,000.00
3	Vickers Hardness Machine	90,000.00	1	90,000.00
4	Column Testing Machine	90,000.00	1	90,000.00
Total Amount:- Three lacs sixty six thousand rupees only.				3,66,000.00

Technical specification of the items:

S.No.	Name of item	Specification
1	Spring Testing Machine	Microprocessor based unit Quick and accurate measurement Modulus data for load & displacement Dot-Matrix printer interface RS- 232 computer interface with window based software Maximum capacity : 20 Kg Width between columns : 160 mm Maximum cross head travel : 160 mm Force measuring resolution 0.01 Kg. Force measuring accuracy + 1 %
2	Brinell Hardness Machine	According to c.s.v.t.u syllabus.
3	Vickers Hardness Machine	According to c.s.v.t.u syllabus.
4	Column Testing Machine	According to c.s.v.t.u syllabus.

Title of the proposal :- Energy conversion system Lab semester VI

Amount: - Ten lacs seventy three thousand two hundred rupees only.

Brief details of the proposal :

S.No.	Name of item	Estimated Rate(In Rs.)	Quantity	Amount (In Rs.)
1	La-Mont boiler model..	7000.00	1	7000.00
2	Benson boiler model.	7000.00	1	7000.00
3	Velox boiler model.	9200.00	1	9200.00
4	Experimental setup of Simple Impulse Turbine.	1,80,000.00	1	1,80,000.00
5	Axial flow compressor with flow discharge tunnel.	8,70,000.00	1	8,70,000.00
Total Amount:- Ten lacs seventy three thousand two hundred rupees only.				10,73,200.00

Technical specification of the items:

S.No.	Name of item	Specification
1	La-Mont boiler model..	This is typical high pressure boiler. It is constructed so that to demonstrate the steam & water circulate. The fuel gas circulates by the feed pump economiser, the steam outlet.
2	Benson boiler model.	This is a typical high pressure boiler. It is constructed to demonstrate economiser, radiant evaporator, residual evaporator & initial super heater radain super heater, & connection super heater.
3	Velox boiler model.	This typical high pressure boiler. It is constructed so that to demonstrate the economer feed pump steam separating section, water circulating pump, & connection super heater. It is also demonstrate the gas turbine & air compressor.
4	Experimental setup of Simple Impulse Turbine.	Instruction Impluse steam Turbine of 2.5 HP capacity. Speed : 1000 - 1600 RPM. Steam Rates : 178 LBS/BHP/Hr. Inlet Pressure : 70 PSIG (4.92 Kg/Cm2). Temperature : 310 oF (157.8 oC). Exhaust Pressure : 0 PSIG. Loading Arrangement by DC. Generator.Rating : 3 Kw, 220 V DC. WATER SOFTENER :Model : AQUASOFT - 005. Rated Steam Output : 300 Kg/hr. Steam Pressure : 15 Kg/Cm2. (Max).
5	Axial flow compressor with flow discharge tunnel.	1.Axial Flow Air Compressor suitable for pressure of 5 Kg/Cm2 & driven by 5 H.P squirrel cage induction motor. 2. An orifice type air intake measuring device with orifice plate & U - Tube Manometer, M.S. Air intake Reservoir of size 0.4m x 0.4m x 0.7m mounted on sturdy iron stand. 3. A good thickness M.S constructed air storage tank of 160 lit capacity. 4. Compressor Accessories

Title of the proposal :- Automobile Lab semester VII

Amount: One lacs sixty thousand six hundred rupees only.

Justification:- The machines available in the lab are old and obsolete. Hence new and modern machines are proposed as per syllabus of CSVTU for the benefit of students and for modernization of the lab.

Brief details of the proposal :

S.No.	Name of item	Estimated Rate(In Rs.)	Quantity	Amount (In Rs.)
1	Working model of Single plate clutch	2600.00	1	2600.00
2	Working model of multi plate clutch	4000.00	1	4000.00
3	Working model of Centrifugal Clutch	3000.00	1	3000.00
4	Working model of Actual Differential System	29000.00	1	29000.00

5	Educational Car Model	1,22,000.00	1	1,22,000.00
Total Amount :-One lacs sixty thousand six hundred rupees only.				1,60,600.00

Technical specification of the items:

S.No.	Name of item	Specification
1	Working model of Single plate clutch	Properly constructed, complete on base with operating lever.
2	Working model of multi plate clutch	Properly constructed, complete on base with operating lever.
3	Working model of Centrifugal Clutch	This model consist of a drum pulley mounted on the output shaft. The input shaft carrying spring controlled by flyweight. The worming can be demonstrated by rotating input shaft provided with crank handle. The output shaft rotates with clutch action.
4	Working model of Actual Differential System	Model Of Differential System (Actual working Model)
5	Educational Car Model	Educational Car Model with gear shifting arrangement.

Title of the proposal :- Heat & Mass Transfer Lab semester VII

Amount: - One lacs twenty seven thousand rupees only.

justification:- The machines available in the lab are old and obsolete. Hence new and modern machines are proposed as per syllabus of CSVTU for the benefit of students and for modernization of the lab.

Brief details of the proposal :

S.No.	Name of item	Estimated Rate(In Rs.)	Quantity	Amount (In Rs.)
1	Transfer Rate And Temperature Distribution For A Pin Fin Apparatus	41,000.00	1	41,000.00
2	Thermal Conductivity Of Insulating Powder Apparatus	43,000.00	1	43,000.00
3	Thermal Conductivity Of Liquid Apparatus	43,000.00	1	43,000.00
Total Amount :- One lacs twenty seven thousand rupees only.				1,27,000.00

Technical specification of the items:

S.No.	Name of item	Specification
1	Transfer Rate And Temperature Distribution For A Pin Fin Apparatus	According to c.s.v.t.u syllabus.
2	Thermal Conductivity Of Insulating Powder Apparatus	1. Mica insulated Nichrome Heater. 2. Inner Sphere of Copper.

		3. Outer Sphere of Copper. 4. Clamp Plates 2 Nos. 5. Set of thermocouples.
3	Thermal Conductivity Of Liquid Apparatus	According to c.s.v.t.u syllabus.

Title of the proposal :- Refrigeration & Air Conditioning Lab semester VIII

Amount: - Three lacs forty thousand rupees only.

Brief details of the proposal :

S.No.	Name of item	Estimated Rate(In Rs.)	Quantity	Amount (In Rs.)
1	Air & Water Heat Pump Test Rig	1,50,000.00	1	1,50,000.00
2	Mechanical Heat Pump Test Rig	1,90,000.00	1	1,90,000.00
Total Amount:-Three lacs forty thousand rupees only				3,40,000.00

Technical specification of the items:

S.No.	Name of item	Specification
1	Air & Water Heat Pump Test Rig	1. Compressor : ½ Tone, Hermetically sealed compressor, Make Emmelsion – Coplend/equivalent. 2. Condenser : Coiled Tube Heat Exchanger acts as a condenser. Copper coil is merged in water tank to cool down the gas temp. Continuous water flow circulation is required to extract the heat of gases. 3. Expansion device : Thermostatic expansion valve. 4. Evaporator coil : Air Cooled evaporator made out of Copper pipe & Aluminum fins of matching capacity with fan. 5. Rotameter : For measuring liquid flow of Refrigerant .6. Energy Meter : For power measurement of compressor. 7. Pressure Gauge : 2 Nos. for H.P., L.P. measurement 8. HP/LP cutout : 1 No. to suit compressor, Ranko/Equiv. 9. Service valve needle type : 1 No. 10. Thermostat : 1 No. 11. Suitable filter/drier .
2	Mechanical Heat Pump Test Rig	1. Compressor : ½ Tone, Hermetically sealed compressor, Make Emmelsion – Coplend/equivalent. 2. Condenser : Coiled Tube Heat Exchanger acts asacondenser. Copper coil is merged in water tank to cool down the gas temp. Continuous water flow circulation is required to extract the heat of gases. 3. Expansion device : Thermostatic expansion valve.

		<p>4. Evaporator coil : Coiled Tube Heat Exchanger copper coil is merged in water tank to extract the heat from water tank. Same can be mentioned by electric heater.</p> <p>5. Electric Heater : For Balancing refrigerating effect produced.</p> <p>6. Rotameter : For measuring liquid flow of Refrigerant (Eureka Make).</p> <p>7. Energy Meter : One each for power measurement of compressor & heater.</p> <p>8. Pressure Gauge : 2 Nos. for H.P., L.P. measurement</p> <p>9. HP/LP cutout : 1 No. to suit compressor, Ranko/Equiv.</p> <p>10. Service valve needle type : 1 No.</p> <p>11. Thermostat : 1 No.</p> <p>12. Suitable filter/drier Make Indfoss.</p>
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Title of the proposal :- Robotics Lab semester- VIII

Amount: - One lacs twenty thousand rupees only.

Brief details of the proposal :

S.No.	Name of item	Estimated Rate(In Rs.)	Quantity	Amount(In Rs.)
1	Various Wooden Models to study Robotic Arm Configuration	20,000.00	1	20,000.00
2	5 Axis Robotic Arm System	1,00,000.00	1	1,00,000.00
Total Amount:- One lacs twenty thousand rupees only.				1,20,000.00

Annexure 1.3-Proposed Amount-in Rs. 3,80,46,000.00

Name of the College: Government Engineering College, Jagdalpur, C.G.

Name of the Department/Course: **Electrical Engineering**

Summary of the department proposal:-

S. No.	Name of Laboratory	Amount
1.	Basic Electrical & Electrical M/C Lab	52,07,500=00
2.	High Voltage Lab.	12,72,000=00
3.	Power System Lab.	27,05,500=00
4.	Power Electronics Lab.	13,65,000=00
5.	Control System Lab.	12,30,500=00
6.	Power System Protection Lab.	38,75,000=00
7.	Computer Lab.	70,25,000=00
8.	Network Lab.	6,55,500=00
9.	Measurement Lab.	7,37,500=00
10.	Circuit Lab.	6,28,000=00
11.	Installation & Maintenance Lab.	4,42,000=00
12.	Digital Electrical & Logic Design Lab.	7,50,500=00
13.	Utilization of Electrical Lab.	9,31,500=00
14.	Microprocessor Lab.	5,20,000=00
15.	Solid State Device Lab.	13,85,000=00
16.	Analog Electronics Lab.	20,10,000=00
17.	Furniture for Staff (Class-I to Class-IV)	21,52,000=00
18.	Departmental Library with furniture	51,53,500=00
Total for the department Rs: Three Crores Eighty Lacs Forty Six Thousand Only.		3,80,46,000=00

HOD, I/C
Electrical Engineering Deptt.
Govt. Engg. College,
Jagdalpur, C.G.

Title of the proposal: - Basic Electrical Engg. & Machine Laboratory (1st, 3rd, & 5th Semester)

Amount: Rs: 52, 07,500=00 (in Rs):- **Rs.** – Fifty Two Lacs Seven Thousand Five Hundred Only.

A: Brief details of the proposal (1st Semester):-

Amount: Rs: 8, 09,000=00 (in Rs):- **Rs.** – Eight Lakh Nine Thousand Only.

S. No.	Name of item	Estimated Rate	Quantity	Amount
1.	Rheostat (290 Ω , 1.9 Amp)	1,500=00	8 Nos.	12,000=00
2.	Voltmeters AC / DC (0-150/300/600 V)	6,000=00	6+6+8 Nos.	1,20,000=00
3.	Ammeters AC / DC (0-1/2 A, 0-5/10 A)	6,000=00	6+6+8 Nos.	1,20,000=00
4.	1 ϕ Watt meter (5-16A)	5,000=00	10 Nos.	50,000=00
5.	3 ϕ Watt meter, (150/300/600 V)	7,000=00	6+6+6 Nos.	1,26,000=00
6.	Energy meter (Digital)	5,000=00	6 Nos.	30,000=00
7.	Multi meter (Digital)	5,500=00	8 Nos.	44,000=00
8.	1 ϕ Auto Transformer 230 V, 8Amp. 50 Hz.	5,000=00	10 No.	50,000=00
9.	3 ϕ Transformer 415 / 230 V, 4.2 / 7.5 Amp. 50 Hz.	1,20,000=00	1 No.	1,20,000=00
10.	Digital Electronic Board	1,25,000=00	1 No.	1,25,000=00
11.	Single ϕ Induction motor (Squirrel cage)	6,000=00	1 No.	12,000=00

B: Brief details of the proposal (3rd Semester):-

Amount: Rs: 32, 70,000=00 (in Rs):- **Rs.** – Thirty Two Lacs Seventy Thousand Only.

S. No.	Name of item	Estimated Rate	Quantity	Amount
1.	3 ϕ Transformer 415 / 230 V, 4.2 / 7.5 Amp. 50 Hz.	1,20,000=00	1 No.	1,20,000=00
2.	DC shunt motor, 5 HP, 220 V, 18.75 Amp. with complete Control Panel	55,000=00	1 No.	55,000=00
3.	DC Series motor, 3 HP, 220 V, 12 Amp. With 3 point starter	35,000=00	1 No.	35,000=00
4.	Variable speed DC motor with Control Panel	30,000=00	2 Nos.	60,000=00
5.	Generator 11 KVA	15,00,000=00	2 Nos.	30,00,000=00

C: Brief details of the proposal (5th Semester):-

Amount: Rs: 11, 28,500=00 (in Rs):- Rs. – Eleven Lacs Twenty Eight Thousand Five Hundred Only.

S. No.	Name of item	Estimated Rate	Quantity	Amount
1.	3 ϕ Auto transformer, 415 V, 21 Amp. 50 Hz.	60,000=00	4 Nos.	2,40,000=00
2.	3 ϕ Squirrel cage Induction motor, 5 HP, 415 V, 50 Hz.	27,000=00	1 No.	27,000=00
3.	3 ϕ Squirrel cage Induction motor, 10 HP, 415 V, 50 Hz.	30,000=00	1 No.	30,000=00
4.	3 ϕ Squirrel cage Induction motor, 15 HP, 415 V, 50 Hz.	85,000=00	1 No.	85,000=00
5.	3 ϕ Synchronous motor, 10 HP, 415 V, 50 Hz.	75,000=00	1 No.	75,000=00
6.	3 ϕ Slip ring Induction motor, 5 HP, 415 V, 50 Hz.	30,000=00	1 No.	30,000=00
7.	3 ϕ Star Delta Starter 415 V, 50 Hz. With OLR of 14 Amps.	1,25,000=00	1 No.	15,000=00
8.	3 ϕ Transformer 415 / 230 V, 4.2 / 7.5 Amp. 50 Hz.	1,20,000=00	1 No.	1,20,000=00
9.	Digital Electronic Board	1,25,000=00	1 No.	1,25,000=00
10.	Steel Almirah (SA-I)	8,000=00	10 Nos.	80,000=00
11.	Steel Almirah (SA-II)	7,500=00	10 Nos.	75,000=00
12.	Office Chair	4,500=00	10 Nos.	45,000=00
13.	Office Table, with Sun mica Top	1,500=00	2 Nos.	3,000=00
14.	Office Stool with Sun mica Top	4,500=00	2 Nos.	9,000=00
15.	Lab Table with Sun mica Top	12,000=00	6 Nos.	72,000=00
16.	Lab Stool with Sun mica Top	1,100=00	30 Nos.	33,000=00
17.	Computer	55,000=00	1 No.	55,000=00
18.	Computer Table	55,000=00	1 No.	6,000=00
19.	UPS	6,000=00	1 No.	3,500=00
Total Amount: Rs. – Fifty Two Lacs Seven Thousand Five Hundred Only.				52,07,500=00

Technical specifications of the items (A, B & C):-

S. No.	Name of item	Specifications
1.	Auto transformer	3 ϕ , 415 V, 21 Amp. 50 Hz.
2.	Squirrel cage Induction motor	3 ϕ , 5 HP, 415 V, 50 Hz.
3.	Squirrel cage Induction motor	3 ϕ , 10 HP, 415 V, 50 Hz.
4.	Squirrel cage Induction motor	3 ϕ , 15 HP, 415 V, 50 Hz.
5.	Synchronous motor	3 ϕ , 10 HP, 415 V, 50 Hz.
6.	Slip ring Induction motor	3 ϕ , 5 HP, 415 V, 50 Hz.
7.	Star Delta Starter	3 ϕ , 415 V, 50 Hz. With OLR of 14 Amps.
8.	Transformer	3 ϕ , 415 / 230 V, 4.2 / 7.5 Amp. 50 Hz.
9.	Synchronous Machine (Alternator)	3 ϕ , AC, 415 Volts.
10.	Restive Loading equipment	3 ϕ , AC, 415 Volts
11.	Capacitive Loading equipment	3 ϕ , AC, 415 Volts
12.	Inductive Loading equipment	3 ϕ , AC, 415 Volts
13.	Induction motor (Squirrel cage)	Single ϕ , 230 Volts
14.	Stepper Motor,	3 ϕ , 3 HP, 415 V, 50 Hz.
15.	Rheostat	(290 Ω 1.9 Amp)

16.	DC shunt motor,	5 HP, 220 V, 18.75 Amp. with complete Control
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		Panel
17.	DC Series motor,	3 HP, 220 V, 12 Amp. With 3 point starter
18.	Variable speed DC motor with Control Panel	3 HP, 220 V, 12 Amp.
19.	Voltmeters	AC / DC (0-150/300/600 V)
20.	Ammeters	AC / DC (0-1/2 A, 0-5/10 A)
21.	Potential Transformer	220/110 6-14Amp.
22.	Current Transformer	2 / 10 Amp., 110/220
23.	Watt meter	(5-16A)
24.	3 ϕ Watt meter,	(150/300/600 V)
25.	Energy meter	Single Phase (Digital)
26.	Multi meter	(Digital)
27.	Generator	11 KVA
28.	Digital Electronic Board	Interactive Board (Smart Board) Standard size 50-60
29.	Steel Almirah (SA-I)	78"x36"x18"
30.	Steel Almirah (SA-II)	66"x36"x18"
31.	Office Chair	Cushion Back & Seat with Soft arm
32.	Office Table, with Sun mica Top	Cain seat & back with round arm
33.	Office Stool	46"x30"x30" with Sun mica Top
34.	Lab Table	24"x18"x18"
35.	Lab Stool	1800x900x990 (mm)
36.	Computer	78"x36"x18"
37.	Computer Table	3.2 GHz, 526GB RAM with loaded Software
38.	UPS	Standard Size, including Printer & UPS Space

Title of the proposal: - For the High Voltage Laboratory (7th Semester)

Amount: Rs: 12, 72,000=00 (in Rs):- **Rs.** – Twelve Lacs Seventy Two Thousand Only.

Brief details of the proposal (in the tabular format):-

S. No.	Name of item	Estimated Rate	Quantity	Amount
1.	100 MV Transformer with Control Panel	1,50,000=00	1	1,50,000=00
2.	Impulse Generator with accessories	1,80,000=00	1	1,80,000=00
3.	Induction Motor	10,000=00	1	10,000=00
4.	Surge Potentiometer	1,20,000=00	1	1,20,000=00
5.	Oscilloscope with accessories	30,000=00	1	30,000=00
6.	Sphere Gap Assembly	40,000=00	1	40,000=00
7.	High Voltage Loading Capacitor	1,20,000=00	1	1,20,000=00
8.	DC High Voltage test set	1,00,000=00	1	1,00,000=00
9.	Artificial Rain Making Equipment	40,000=00	1	40,000=00
10.	Resistance Divider	60,000=00	1	60,000=00
11.	Oil Testing Kit	70,000=00	1	70,000=00
12.	Digital Electronic Board	1,25,000=00	1	1,25,000=00
13.	Steel Almirah (SA-I)	8,000=00	4 Nos.	32,000=00
14.	Steel Almirah (SA-II)	7,500=00	3 Nos.	22,500=00
15.	Lab. In-charge Chair	4,500=00	2 Nos.	9,000=00
16.	Office Chair	1,500=00	6 Nos.	9,000=00
17.	Office Table,	4,500=00	2 Nos.	9,000=00
18.	Office Stool	6,000=00	2 Nos.	12,000=00

19.	Lab Table	12,000=00	3Nos.	36,000=00
20.	Lab Stool	1,100=00	30 Nos.	33,000=00
21.	Computer	55,000=00	1 No.	55,000=00
22.	Computer Table	6,000=00	1 No.	6,000=00
23.	UPS	3,500=00	1 No.	3,500=00
Total Amount: Rs. – Twelve Lacs Seventy Two Thousand Only.				12,72,000=00

Technical specifications of the items:-

S. No.	Name of item	Specifications
1.	100 MV Transformer with Control Panel	100 MV
2.	Impulse Generator with accessories	550 KV
3.	Induction Motor	1 ϕ , ¼ HP, 1425 RPM
4.	Surge Potentiometer	400p F, 550 KV
5.	Oscilloscope with accessories	54600B, 2 Channel, 100 MHz
6.	Sphere Gap Assembly with Current limiting Resister & Ground Rod	15 c.m.
7.	High Voltage Loading Capacitor	400p F, 600 KV
8.	High Voltage test set with Control Panel, Transformer, Rectifier, Filter, Resistance Divider	30 KV, AC, / 40 KV, DC

9.	Artificial Rain Making Equipment with pressure distribution Chamber, Rain Gauge, Pressure Gauge, Monoblock Pump	12 Nozzle system. ½ HP
10.	Resistance Divider	140 KV
11.	Oil Testing Kit	0-60 KV, 240Volts \pm 10% AC, 1 ϕ , 50/60Hz
12.	Digital Electronic Board	Interactive Board (Smart Board) Standard size 50-60
13.	Steel Almirah (SA-I)	78"x36"x18"
14.	Steel Almirah (SA-II)	66"x36"x18"
15.	Lab. In-charge Chair	Cushion Back & Seat with Soft arm
16.	Office Chair	Cain seat & back with round arm
17.	Office Table,	46"x30"x30" with Sun mica Top
18.	Office Stool	24"x18"x18"
19.	Lab Table	1800x900x990 (mm)
20.	Lab Stool	78"x36"x18"
21.	Computer	3.2 GHz, 526GB RAM with loaded Software
22.	Computer Table	Standard Size, including Printer & UPS Space
23.	UPS	230 VAC, 600mva, 30 min. backup

Title of the proposal: - Power system Laboratory (6th Semester)

Amount: Rs: 27, 05,500=00 (in Rs):- **Rs.** – Twenty Seven Lacs Five Thousand Five Hundred Only.

Brief details of the proposal (in the tabular format):-

S. No.	Name of item	Estimated Rate	Quantity	Amount
1.	DC Network Analyzer	70,000=00	6 Nos.	4,20,000=00
2.	Generalized Constants of Power Transmission line KIT	23,000=00	6 Nos.	1,38,000=00
3.	A.C. Transmission line Simulator	53,500=00	6 Nos.	3,21,000=00
4.	Cable Tester	55,000=00	5 Nos.	2,75,000=00
5.	Insulators: <ul style="list-style-type: none"> • Pin Type • Suspension type • Shackle type • Strain 	20,000=00	4 of each	80,000=00
6.	Phase shifting transformer study unit	1,25,000=00	6 Nos.	7,50,000=00
7.	Load flow study unit	75,000=00	4 Nos.	3,00,000=00
8.	Digital Electronic Board	1,25,000=00	1 Nos.	1,25,000=00
9.	Steel Almirah (SA-I)	8,000=00	8 Nos.	64,000=00
10.	Steel Almirah (SA-II)	7,500=00	6 Nos.	60,000=00
11.	Lab. In-charge Chair	4,500=00	2 Nos.	9,000=00
12.	Office Chair	1,500=00	6 Nos.	9,000=00
13.	Office Table,	4,500=00	2 Nos.	9,000=00
14.	Office Stool	6,000=00	2 Nos.	12,000=00
15.	Lab Table	12,000=00	3 Nos.	36,000=00
16.	Lab Stool	1,100=00	30 Nos.	33,000=00
17.	Computer	55,000=00	10 Nos.	55,000=00
18.	Computer Table	6,000=00	10 Nos.	6,000=00
19.	UPS	3,500=00	1 No.	3,500=00
Total Amount: Rs. – Twenty Seven Lacs Five Thousand Five Hundred Only.				27,05,500=00

Technical specifications of the items:-

S. No.	Name of item	Specifications
1.	DC Network Analyzer	30 Volts
2.	Generalized Constants of Power Transmission line KIT	3.3 KV
3.	A.C. Transmission line Simulator	
4.	Cable Tester	
5.	Insulators: <ul style="list-style-type: none"> • Pin Type • Suspension type • Shackle type • Strain 	11 KV ,22 KV 33 KV 11 KV 33 KV

6.	Phase shifting transformer study unit	220 / 110 Volts
7.	Load flow study unit	
8.	Digital Electronic Board	Interactive Board(Smart Board)Standard size 50-60
9.	Steel Almirah (SA-I)	78"x36"x18"
10.	Steel Almirah (SA-II)	66"x36"x18"
11.	Lab. In-charge Chair	Cushion Back & Seat with Soft arm
12.	Office Chair	Cain seat & back with round arm
13.	Office Table,	46"x30"x30" with Sun mica Top
14.	Office Stool	24"x18"x18" with Sun mica Top
15.	Lab Table	1800x900x990 (mm)
16.	Lab Stool	78"x36"x18" with Sun mica Top
17.	Computer	3.2 GHz, 526GB RAM with loaded Software
18.	Computer Table	Standard Size, including Printer & UPS Space
19.	UPS	230 VAC, 600mva, 30 min. backup

Title of the proposal: - Power Electronics Laboratory (6th Semester)

Amount: Rs: 13, 65,000=00 (in Rs):- **Rs.** – Thirteen Lacs Sixty Five Thousand Only.

Brief details of the proposal (in the tabular format):-

S. No.	Name of item	Estimated Rate	Quantity	Amount
1.	VI Characteristics of SCR	10,000=00	6 Nos.	60,000=00
2.	VI Characteristics of Diac	10,000=00	6 Nos.	60,000=00
3.	VI Characteristics of Triac	10,000=00	6 Nos.	60,000=00
4.	VI Characteristics of UJT	10,000=00	6 Nos.	60,000=00
5.	UJT relaxation of Oscillator	10,000=00	6 Nos.	60,000=00
6.	Voltage Commutation	15,000=00	6 Nos.	90,000=00
7.	Current Commutation	15,000=00	6 Nos.	90,000=00
8.	RC triggering Scheme of SCR	10,000=00	6 Nos.	60,000=00
9.	Speed control KIT of DC shunt motor with SCR	1,00,000=00	1 No.	1,00,000=00
10.	KIT of single Φ , half controlled, full wave rectifier with TWO SCRS & TWO Diodes	10,000=00	6 Nos.	60,000=00
11.	KIT of three Φ rectifier with power diode	15,000=00	6 Nos.	90,000=00
12.	KIT of Triac power control Circuit	10,000=00	6 Nos.	60,000=00
13.	KIT of half wave gate controlled rectifier with SCR	10,000=00	6 Nos.	60,000=00
14.	3 Phase full wave half controlled rectifier	15,000=00	6 Nos.	90,000=00
15.	Digital Electronic Board	1,25,000=00	1 No.	1,25,000=00
16.	Steel Almirah (SA-I)	8,000=00	6 Nos.	48,000=00
17.	Steel Almirah (SA-II)	7,500=00	3 Nos.	22,500=00
18.	Lab. In-charge Chair	4,500=00	2 Nos.	9,000=00
19.	Office Chair	1,500=00	4 Nos.	6,000=00
20.	Office Table,	4,500=00	2 Nos.	9,000=00
21.	Office Stool	6,000=00	2 Nos.	12,000=00
22.	Lab Table	12,000=00	3 Nos.	36,000=00
23.	Lab Stool	1,100=00	30 Nos.	33,000=00
24.	Computer	55,000=00	1 No.	55,000=00

25.	Computer Table	6,000=00	1 No.	6,000=00
26.	UPS	3,500=00	1 No.	3,500=00
Total Amount: Rs. – Thirteen Lacs Sixty Five Thousand Only.				13,65,000=00

Technical specifications of the items:-

S. No.	Name of item	Specifications
1.	VI Characteristics of SCR	12 Volts, 200m Amp.
2.	VI Characteristics of Diac	12 Volts, 200m Amp.
3.	VI Characteristics of Triac	AC, 230 Volt, 5 Amp.
4.	VI Characteristics of UJT	12 Volt, 200m Amp.
5.	UJT relaxation of Oscillator	12 Volt, 200m Amp.
6.	Voltage Commutation	12 Volt, 200m Amp.
7.	Current Commutation	12 Volt, 200m Amp.
8.	RC triggering Scheme of SCR	12 Volt, 200m Amp.
9.	Speed control KIT of DC shunt motor with SCR	230 Volt 10 Amp.
10.	KIT of single Φ , half controlled, full wave rectifier with TWO SCRS & TWO Diodes	12 Volts, 200m Amp.
11.	KIT of three Φ rectifier with power diode	440Volt, 1 Amp.
12.	KIT of Triac power control Circuit	AC, 230 Volt, 5 Amp.
13.	KIT of half wave gate controlled rectifier with SCR	12 Volt, 200m Amp.
14.	3 Phase full wave half controlled rectifier	440Volt, 1 Amp.
15.	Digital Electronic Board	Interactive Board(Smart Board)Standard size 50-60
16.	Steel Almirah (SA-I)	78"x36"x18"
17.	Steel Almirah (SA-II)	66"x36"x18"
18.	Lab. In-charge Chair	Cushion Back & Seat with Soft arm
19.	Office Chair	Cain seat & back with round arm
20.	Office Table,	46"x30"x30" with Sun mica Top
21.	Office Stool	24"x18"x18" with Sun mica Top
22.	Lab Table	1800x900x990 (mm)
23.	Lab Stool	78"x36"x18" with Sun mica Top
24.	Computer	3.2 GHz, 526GB RAM with loaded Software
25.	Computer Table	Standard Size, including Printer & UPS Space
26.	UPS	230 VAC, 600mva, 30 min. backup

Title of the proposal: - Control System Laboratory (5th Semester)

Amount: Rs: 12, 30,500=00 (in Rs) Rs. - Twelve Lacs Thirty Thousand Five Hundred Only.

Brief details of the proposal (in the tabular format):-

S. No.	Name of item	Estimated Rate	Quantity	Amount
1.	KIT of open loop control system	15,000=00	4 Nos.	60,000=00
2.	KIT of close loop control system	15,000=00	4 Nos.	60,000=00
3.	Lag compensator	15,000=00	4 Nos.	60,000=00

4.	Lead compensator	15,000=00	4 Nos.	60,000=00
5.	DC servo motor	1,00000=00	1 No.	1,00,000=00
6.	Characteristic of stepper motor	90,000=00	2 Nos.	1,80,000=00
7.	AC servo motor	1,00000=00	1 No.	1,00,000=00
8.	Proportional Derivative (PD) control system	25,000=00	4 Nos.	1,00,000=00
9.	PI control system	25,000=00	4 Nos.	1,00,000=00
10.	PID control system	25,000=00	4 Nos.	1,00,000=00
11.	Time response of type 'O', type 'I' & type 2 control system	25,000=00	4 Nos.	1,00,000=00
12.	Steel Almirah (SA-I)	8,000=00	4 Nos.	32,000=00
13.	Steel Almirah (SA-II)	7,500=00	4 Nos.	30,000=00
14.	Lab. In-charge Chair	4,500=00	2 Nos.	4,500=00
15.	Office Chair	1,500=00	4 Nos.	6,000=00
16.	Office Table,	4,500=00	1 No.	4,500=00
17.	Office Stool	6,000=00	2 Nos.	12,000=00
18.	Lab Table	12,000=00	2 Nos.	24,000=00
19.	Lab Stool	1,100=00	30 Nos.	33,000=00
20.	Computer	55,000=00	1 No.	55,000=00
21.	Computer Table	6,000=00	1 No.	6,000=00
22.	UPS	3,500=00	1 No.	3,500=00
Total Amount: Rs. - Twelve Lacs Thirty Thousand Five Hundred Only.				12,30,500=00

Technical specifications of the items:-

S. No.	Name of item	Specifications
1.	KIT of open loop control system	12V,200mA
2.	KIT of close loop control system	12V,200mA
3.	Lag compensator	12V,200mA
4.	Lead compensator	12V,200mA
5.	DC servo motor	3V,1Amp
6.	Characteristic of stepper motor	9-12V,1Amp
7.	AC servo motor Trainer Kit	230V,50HZ,1Amp
8.	Proportional Derivative (PD) control system	12V,200mA
9.	PI control system	12V,200mA
10.	PID control system	12V,200mA
11.	Time response of type 'O', type 'I' & type 2 control system	12V,200mA

12.	Steel Almirah (SA-I)	78"x36"x18"
13.	Steel Almirah (SA-II)	66"x36"x18"
14.	Lab. In-charge Chair	Cushion Back & Seat with Soft arm
15.	Office Chair	Cain seat & back with round arm
16.	Office Table,	46"x30"x30" with Sun mica Top
17.	Office Stool	24"x18"x18" with Sun mica Top
18.	Lab Table	1800x900x990 (mm)
19.	Lab Stool	78"x36"x18" with Sun mica Top
20.	Computer	3.2 GHz, 526GB RAM with loaded Software
21.	Computer Table	Standard Size Sun Chrooming Printer & HPS Space
22.	UPS	230 VAC, 600mva, 30 min. backup

Title of the proposal: - Power System Protection Laboratory (8th Semester)

Amount: Rs: 38, 75,000=00 (in Rs)-: **Rs.** – Thirty Eight Lacs Seventy Five Thousand Only.

Brief details of the proposal (in the tabular format):-

S. No.	Name of item	Estimated Rate	Quantity	Amount
1.	IDMT over current Relay with Testing KIT	90,000=00	6 Nos.	5,40,000=00
2.	Differential Relay (Percentage Based) with testing KIT	90,000=00	6 Nos.	5,40,000=00
3.	Under Voltage / Over voltage relay with Testing KIT	90,000=00	6 Nos.	5,40,000=00
4.	Bucholz Relay	60,000=00	6 Nos.	3,60,000=00
5.	Negative Sequence Relay	80,000=00	6 Nos.	4,82,000=00
6.	Time Grading protection & feeder (Simulation Model)	30,000=00	6 Nos.	1,80,000=00
7.	Time current grading protection & feeder (Simulation Model)	30,000=00	6 Nos.	1,80,000=00
8.	Current Grading protection of feeder (Simulation Model)	30,000=00	6 Nos.	1,80,000=00
9.	Generator protection ,Simulation study unit	30,000=00	6 Nos.	1,80,000=00
10.	Electromechanical type IDMT over current relay with current injection source device trainer	90,000=00	6 Nos.	5,40,000=00
11.	Steel Almirah (SA-I)	8,000=00	4 Nos.	32,000=00
12.	Steel Almirah (SA-II)	7,500=00	4 Nos.	30,000=00
13.	Lab. In-charge Chair	4,500=00	2 Nos.	9,000=00
14.	Office Chair	1,500=00	8 Nos.	12,000=00
15.	Office Table,	4,500=00	2 Nos.	4,500=00
16.	Office Stool	6,000=00	2 Nos.	12,000=00
17.	Lab Table	12,000=00	3 Nos.	36,000=00
18.	Lab Stool	1,100=00	30 Nos.	33,000=00
19.	Computer	55,000=00	1 No.	55,000=00
20.	Computer Table	6,000=00	1 No.	6,000=00
21.	UPS	3,500=00	1 No.	3,500=00
Total Amount: Rs. – Thirty Eight Lacs Seventy Five Thousand Only.				38,75,000=00

Technical specifications of the items:-

S. No.	Name of item	Specifications
1.	IDMT over current Relay with Testing KIT	440 Volt,10 Amp
2.	Differential Relay (Percentage Based) with testing KIT	440 Volt,10 Amp
3.	Under Voltage / Over voltage relay with Testing KIT	440 Volt,10 Amp
4.	Bucholz Relay	440 Volt,10 Amp
5.	Negative Sequence Relay	440 Volt,10 Amp

6.	Time Grading protection & feeder (Simulation Model)	Using MATLAB.
7.	Time current grading protection & feeder (Simulation Model)	Using MATLAB.
8.	Current Grading protection of feeder (Simulation Model)	Using MATLAB.
9.	Generator protection ,Simulation study unit	Using MATLAB.
10.	Electromechanical type IDMT over current relay with current injection source device trainer	440 Volt,10 Amp
11.	Steel Almirah (SA-I)	78"x36"x18"
12.	Steel Almirah (SA-II)	66"x36"x18"
13.	Lab. In-charge Chair	Cushion Back & Seat with Soft arm
14.	Office Chair	Cain seat & back with round arm
15.	Office Table,	46"x30"x30" with Sun mica Top
16.	Office Stool	24"x18"x18"
17.	Lab Table	1800x900x990 (mm)
18.	Lab Stool	78"x36"x18"
19.	Computer	3.2 GHz, 526GB RAM with loaded Software
20.	Computer Table	Standard Size, including Printer & UPS Space
21.	UPS	230 VAC, 600mva, 30 min. backup

Title of the proposal: - Computer Laboratory (1st to 8th Semester.)

Amount: Rs: 70, 25,000=00 (in Rs):- Rs. – Seventy Lacs Twenty Five Thousand Only.

Brief details of the proposal (in the tabular format):-

S. No.	Name of item	Estimated Rate	Quantity	Amount
1.	MATLAB version 7.2	32,00,000=00	1 No.	32,00,000=00
2.	Overhead Projector	90,000=00	2 Nos.	1,80,000=00
3.	Computer	55,000=00	40 Nos.	22,00,000=00
4.	Computer Table	6,000=00	40 Nos.	2,40,000=00
5.	Computer Chair	1,200=00	40 Nos.	84,000=00
6.	Color Printer	36,000=00	1 No.	36,000=00
7.	Master UPS for 60 Computers Power supply capacity	2,70,000=00	2 Nos.	5,40,000=00
8.	A.C.	45,000=00	8 Nos.	3,60,000=00
9.	Steel Almirah (SA-I)	8,000=00	10 Nos.	80,000=00
10.	Steel Almirah (SA-II)	7,500=00	8 Nos.	60,000=00
11.	Lab. In-charge Chair	4,500=00	2 Nos.	9,000=00
12.	Office Chair	1,500=00	10 Nos.	15,000=00
13.	Office Table,	4,500=00	2 Nos.	9,000=00
14.	Office Stool	6,000=00	2 Nos.	12,000=00
Total Amount: Rs. – Seventy Lacs Twenty Five Thousand Only.				70,25,000=00

Technical specifications of the items:-

S. No.	Name of item	Specifications
1.	MATLAB version 7.2	Release 14, Version 7.2 & Advance version
2.	Overhead Projector	With 2.0x1.5 meter Screen.
3.	Computer	3.2 GHz, 526GB RAM with loaded Software

4.	Computer Table	Standard Size
5.	Computer Chair	By norms of Computer Lab.
6.	Color Printer	Multi Functional, 18 ppm
7.	Master UPS.	Continuous 60 Computers Power supply capacity, up to 10 hrs,
8.	A.C.	2 Ton.
9.	Steel Almirah (SA-I)	78"x36"x18"
10.	Steel Almirah (SA-II)	66"x36"x18"
11.	Lab. In-charge Chair	Cushion Back & Seat with Soft arm
12.	Office Chair	Cain seat & back with round arm
13.	Office Table,	46"x30"x30" with Sun mica Top
14.	Office Stool	24"x18"x18" with Sun mica Top

Title of the proposal: - Network Laboratory (4th Semester)

Amount: Rs: 6, 55,500=00 (in Rs)-: **Rs.** – Six Lacs Fifty Five Thousand Five Hundred Only.

Brief details of the proposal (in the tabular format):-

S. No.	Name of item	Estimated Rate	Quantity	Amount
1.	Thevenin's theorem KIT (AC Circuit)	5,000=00	5 Nos.	25,000=00
2.	Norton's theorem KIT (AC Circuit)	5,000=00	5 Nos.	25,000=00
3.	Superposition theorem KIT (AC Circuit)	5,000=00	5 Nos.	25,000=00
4.	Transient and Frequency response of R-L-C server circuit	5,000=00	4 Nos.	20,000=00
5.	Two port Network (series & parallel)	5,000=00	5 Nos.	25,000=00
6.	Steady state Response of RC & RL network (step input)	4,000=00	4 Nos.	16,000=00
7.	T & π Network	5,000=00	5 Nos.	25,000=00
8.	Low Pass & High Pass filters	6,000=00	5 Nos.	30,000=00
9.	Digital Electronic Board	1,25,000=00	1 No.	1,25,000=00
10.	Steel Almirah (SA-I)	8,000=00	6 Nos.	48,000=00
11.	Steel Almirah (SA-II)	7,500=00	8 Nos.	60,000=00
12.	Lab. In-charge Chair	4,500=00	2 Nos.	9,000=00
13.	Office Chair	1,500=00	10 Nos.	15,000=00
14.	Office Table,	4,500=00	2 Nos.	9,000=00
15.	Office Stool	6,000=00	2 Nos.	12,000=00
16.	Lab Table	12,000=00	4 Nos.	48,000=00
17.	Lab Stool	1,100=00	30 Nos.	33,000=00
18.	Computer	55,000=00	1 No.	55,000=00
19.	Computer Table	6,000=00	1 No.	6,000=00
20.	UPS	2,70,000=00	1 No.	3,500=00
Total Amount: Rs. – Six Lacs Fifty Five Thousand Five Hundred Only.				6,55,500=00

Technical specifications of the items:-

S. No.	Name of item	Specifications
1.	Thevenin's theorem KIT (AC Circuit)	12 Volts, 200m Amp.
2.	Norton's theorem KIT (AC Circuit)	12 Volts, 200m Amp.
3.	Superposition theorem KIT (AC Circuit)	12 Volts, 200m Amp.
4.	Transient and Frequency response of R-L-C server circuit	12 Volts, 200m Amp.
5.	Two port Network (series & parallel)	12 Volts, 200m Amp.

6.	Steady state Response of RC & RL network (step input)	12 Volts, 200m Amp.
7.	T & π Network	12 Volts, 200m Amp.
8.	Low Pass & High Pass filters	12 Volts, 200m Amp.
9.	Digital Electronic Board	Interactive Board(Smart Board)Standard size 50-60

10.	Steel Almirah (SA-I)	78"x36"x18"
11.	Steel Almirah (SA-II)	66"x36"x18"
12.	Lab. In-charge Chair	Cushion Back & Seat with Soft arm
13.	Office Chair	Cain seat & back with round arm
14.	Office Table,	46"x30"x30" with Sun mica Top
15.	Office Stool	24"x18"x18" with Sun mica Top
16.	Lab Table	1800x900x990 (mm)
17.	Lab Stool	78"x36"x18" with Sun mica Top
18.	Computer	3.2 GHz, 526GB RAM with loaded Software
19.	Computer Table	Standard Size, including Printer & UPS Space
20.	UPS	230 VAC, 600mva, 30 min. backup

Title of the proposal: - Measurement Laboratory (4th Semester)

Amount: Rs: 7, 37,500=00 (in Rs):- **Rs.** – Seven Lacs Thirty Seven Thousand Five Hundred Only.

Brief details of the proposal (in the tabular format):-

S. No.	Name of item	Estimated Rate	Quantity	Amount
1.	Kelvin's Bridge	8,000=00	6	48,000=00
2.	Wheat stone Bridge	8,000=00	6	48,000=00
3.	Maxwell's Bridge	8,000=00	6	48,000=00
4.	Anderson's Bridge	8,000=00	6	48,000=00
5.	Desauty's Bridge	8,000=00	6	48,000=00
6.	Schering Bridge	8,000=00	6	48,000=00
7.	Owne's Bridge	8,000=00	6	48,000=00
8.	Hay's	6,000=00	6	30,000=00
9.	Digital Electronic Board	1,25,000=00	1	1,25,000=00
10.	Steel Almirah (SA-I)	8,000=00	4 Nos.	32,000=00
11.	Steel Almirah (SA-II)	7,500=00	4 Nos.	30,000=00
12.	Lab. In-charge Chair	4,500=00	2 Nos.	9,000=00
13.	Office Chair	1,500=00	6 Nos.	9,000=00
14.	Office Table,	4,500=00	2 Nos.	9,000=00
15.	Office Stool	6,000=00	2 Nos.	12,000=00
16.	Lab Table	12,000=00	4 Nos.	48,000=00
17.	Lab Stool	1,100=00	30 Nos.	33,000=00
18.	Computer	55,000=00	1 No.	55,000=00
19.	Computer Table	6,000=00	1 No.	6,000=00
20.	UPS	3,500=00	1 No.	3,500=00
Total Amount: Rs. – Seven Lacs Thirty Seven Thousand Five Hundred				7,37,500=00

Only.

Technical specifications of the items:-

S. No.	Name of item	Specifications
1.	Kelvin's Bridge	12 Volts, 200m Amp.
2.	Wheat stone Bridge	12 Volts, 200m Amp.
3.	Maxwell's Bridge	12 Volts, 200m Amp.
4.	Anderson's Bridge	12 Volts, 200m Amp.
5.	Desauty's Bridge	12 Volts, 200m Amp.
6.	Schering Bridge	12 Volts, 200m Amp.
7.	Owne's Bridge	12 Volts, 200m Amp.
8.	Hay's	12 Volts, 200m Amp.
9.	Digital Electronic Board	Interactive Board(Smart Board)Standard size 50-60
10.	Steel Almirah (SA-I)	78"x36"x18"
11.	Steel Almirah (SA-II)	66"x36"x18"
12.	Lab. In-charge Chair	Cushion Back & Seat with Soft arm
13.	Office Chair	Cain seat & back with round arm
14.	Office Table,	46"x30"x30" with Sun mica Top
15.	Office Stool	24"x18"x18"
16.	Lab Table	1800x900x990 (mm)
17.	Lab Stool	78"x36"x18"
18.	Computer	3.2 GHz, 526GB RAM with loaded Software
19.	Computer Table	Standard Size, including Printer & UPS Space
20.	UPS	230 VAC, 600mva, 30 min. backup

Title of the proposal: - For the Circuit Laboratory (3rd Semester)

Amount: Rs: 6, 28,000=00 (in Rs):- **Rs.** – Six Lacs Twenty Eight Thousand Only.

Brief details of the proposal (in the tabular format):-

S. No.	Name of item	Estimated Rate	Quantity	Amount
1.	Reciprocity theorem KIT	8,000=00	6	48,000=00
2.	Superposition theorem KIT (DC)	8,000=00	6	48,000=00
3.	Thevenin's theorem KIT (DC)	8,000=00	6	48,000=00
4.	Norton's theorem KIT (DC)	8,000=00	6	48,000=00
5.	Kirchhoff's law (KIT)	8,000=00	6	48,000=00
6.	Parallel Resonance	6,000=00	6	36,000=00
7.	Digital Electronic Board	1,25,000=00	1	1,25,000=00
8.	Steel Almirah (SA-I)	8,000=00	4 Nos.	32,000=00
9.	Steel Almirah (SA-II)	7,500=00	3 Nos.	22,500=00
10.	Lab. In-charge Chair	4,500=00	2 Nos.	9,000=00
11.	Office Chair	1,500=00	6 Nos.	9,000=00
12.	Office Table,	4,500=00	2 Nos.	9,000=00
13.	Office Stool	6,000=00	2 Nos.	12,000=00
14.	Lab Table	12,000=00	3Nos.	36,000=00
15.	Lab Stool	1,100=00	30 Nos.	33,000=00
16.	Computer	55,000=00	1 No.	55,000=00
17.	Computer Table	6,000=00	1 No.	6,000=00
18.	UPS	3,500=00	1 No.	3,500=00
Total Amount: Rs. – Six Lacs Twenty Eight Thousand Only				6,28,000=00

Technical specifications of the items:-

S. No.	Name of item	Specifications
1.	Reciprocity theorem KIT	12 Volts, 200m Amp.
2.	Superposition theorem KIT (DC)	12 Volts, 200m Amp.
3.	Thevenin's theorem KIT (DC)	12 Volts, 200m Amp.
4.	Norton's theorem KIT (DC)	12 Volts, 200m Amp.
5.	Kirchhoff's law (KIT)	12 Volts, 200m Amp.
6.	Parallel Resonance	12 Volts, 200m Amp.
7.	Digital Electronic Board	Interactive Board (Smart Board) Standard size 50-60
8.	Steel Almirah (SA-I)	78"x36"x18"
9.	Steel Almirah (SA-II)	66"x36"x18"
10.	Lab. In-charge Chair	Cushion Back & Seat with Soft arm
11.	Office Chair	Cain seat & back with round arm
12.	Office Table,	46"x30"x30" with Sun mica Top
13.	Office Stool	24"x18"x18" with Sun mica Top
14.	Lab Table	1800x900x990 (mm)
15.	Lab Stool	78"x36"x18" with Sun mica Top
16.	Computer	3.2 GHz, 526GB RAM with loaded Software
17.	Computer Table	Standard Size, including Printer & UPS Space
18.	UPS	230 VAC, 600mva, 30 min. backup

Title of the proposal: - For the Installation & Maintenance Laboratory (8th Semester)

Amount: Rs: 4, 42,000=00 (in Rs):- **Rs.** – Four Lacs Forty Two Thousand Only.

Brief details of the proposal (in the tabular format):-

S. No.	Name of item	Estimated Rate	Quantity	Amount
1.	Current Transformer Testing Unit	10,000=00	2 Nos.	20,000=00
2.	Potential Transformer Testing Unit	15,000=00	2 Nos.	30,000=00
3.	Circuit Breaker Testing Unit	20,000=00	2 Nos.	40,000=00
4.	Oil Test Kit	50,000=00	2 Nos.	1,00,000=00
5.	Megger	10,000=00	4 Nos.	40,000=00
6.	Steel Almirah (SA-I)	8,000=00	4 Nos.	32,000=00
7.	Steel Almirah (SA-II)	7,500=00	2 Nos.	15,000=00
8.	Lab. In-charge Chair	4,500=00	2 Nos.	9,000=00
9.	Office Chair	1,500=00	4 Nos.	6,000=00
10.	Office Table,	4,500=00	1 No.	4,500=00
11.	Office Stool	6,000=00	2 Nos.	12,000=00
12.	Lab Table	12,000=00	3 Nos.	36,000=00
13.	Lab Stool	1,100=00	30 Nos.	33,000=00
14.	Computer	55,000=00	1 No.	55,000=00
15.	Computer Table	6,000=00	1 No.	6,000=00
16.	UPS	3,500=00	1 No.	3,500=00
Total Amount: Rs. – Four Lacs Forty Two Thousand Only.				4,42,000=00

Technical specifications of the items:-

S. No.	Name of item	Specifications
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1.	Current Transformer Testing Unit	100/25 Amp
2.	Potential Transformer Testing Unit	230/110V, 2Amp
3.	Circuit Breaker Testing Unit	440 Volt, 100 Amp.
4.	Oil Test Kit	33 KV, 100 Liters..
5.	Megger	500 Volt / 100 Volt, 230 RPM
6.	Steel Almirah (SA-I)	78"x36"x18"
7.	Steel Almirah (SA-II)	66"x36"x18"
8.	Lab. In-charge Chair	Cushion Back & Seat with Soft arm
9.	Office Chair	Cain seat & back with round arm
10.	Office Table,	46"x30"x30" with Sun mica Top
11.	Office Stool	24"x18"x18" with Sun mica Top
12.	Lab Table	1800x900x990 (mm)
13.	Lab Stool	78"x36"x18" with Sun mica Top
14.	Computer	3.2 GHz, 526GB RAM with loaded Software
15.	Computer Table	Standard Size, including Printer & UPS Space
16.	UPS	230 VAC, 600mva, 30 min. backup

Title of the proposal: - For the Digital Electronics & Logic Design Laboratory (4th Semester)

Amount: Rs: 7, 50,500=00 (in Rs):- Seven Lacs fifty Thousand Five Hundred Only.

Brief details of the proposal (in the tabular format):-

S. No.	Name of item	Estimated Rate	Quantity	Amount
1.	Logic gates, OR, NOR & NAND	7,000=00	6 Nos.	42,000=00
2.	KIT of R-S Flip Flop	7,000=00	6 Nos.	42,000=00
3.	KIT of D- Flip Flop	7,000=00	6 Nos.	42,000=00
4.	KIT of J- Flip Flop	7,000=00	6 Nos.	42,000=00
5.	8-bit adder / Sub tractor Kit	7,000=00	6 Nos.	42,000=00
6.	Half Sub tractor Kit	13,000=00	6 Nos.	78,000=00
7.	Full Sub tractor Kit	13,000=00	6 Nos.	78,000=00
8.	Full adder Kit	13,000=00	6 Nos.	78,000=00
9.	Half adder Kit	13,000=00	1 No.	78,000=00
10.	Steel Almirah (SA-I)	8,000=00	4 Nos.	32,000=00
11.	Steel Almirah (SA-II)	7,500=00	2Nos.	15,000=00
12.	Lab. In-charge Chair	4,500=00	1 Nos.	9,000=00
13.	Office Chair	1,500=00	4 Nos.	6,000=00
14.	Office Table, with Sun mica Top	4,500=00	2 Nos.	9,000=00
15.	Office Stool	6,000=00	2 Nos.	12,000=00
16.	Lab Table	12,000=00	4 Nos.	48,000=00
17.	Lab Stool	1,100=00	30 Nos.	33,000=00
18.	Computer	55,000=00	1 No.	55,000=00
19.	Computer Table	6,000=00	1 No.	6,000=00
20.	UPS	3,500=00	1 No.	3,500=00
Total Amount: Rs. - Seven Lacs fifty Thousand Five Hundred Only.				7,50,500=00

Technical specifications of the items:-

S. No.	Name of item	Specifications
1.	Logic gates, OR, NOR & NAND	5 Volts, 1 Amp.
2.	KIT of R-S Flip Flop	5 Volts, 1 Amp.
3.	KIT of D- Flip Flop	5 Volts, 1 Amp.
4.	KIT of J- Flip Flop	5 Volts, 1 Amp.
5.	8-bit adder / Sub tractor Kit	5 Volts, 1 Amp.
6.	Half Sub tractor Kit	5 Volts, 1 Amp.
7.	Full Sub tractor Kit	5 Volts, 1 Amp.

8.	Full adder Kit	5 Volts, 1 Amp.
9.	Half adder Kit	5 Volts, 1 Amp.
10.	Steel Almirah (SA-I)	78"x36"x18"
11.	Steel Almirah (SA-II)	66"x36"x18"
12.	Lab. In-charge Chair	Cushion Back & Seat with Soft arm
13.	Office Chair	Cain seat & back with round arm
14.	Office Table,	46"x30"x30" with Sun mica Top
15.	Office Stool	24"x18"x18" with Sun mica Top

16.	Lab Table	1800x900x990 (mm)
17.	Lab Stool	78"x36"x18"
18.	Computer	3.2 GHz, 526GB RAM with loaded Software
19.	Computer Table	Standard Size, including Printer & UPS Space
20.	UPS	230 VAC, 600mva, 30 min. backup

Title of the proposal: - For the Utilization of Electrical Laboratory (6th Semester)

Amount: Rs: 9, 31,500=00 (in Rs)-: **Rs.** – Nine Lacs Thirty One Thousand Five Hundred Only.

Brief details of the proposal (in the tabular format):-

S. No.	Name of item	Estimated Rate	Quantity	Amount
1.	Type of DC Motor breaking.	70,000=00	1 No.	70,000=00
2.	Heating time control for a Short time Duty motor.	65,000=00	1 No.	65,000=00
3.	Heating time control for a Control Duty motor.	65,000=00	1 No.	65,000=00
4.	Cooling time Control for an intermittent duty motor.	65,000=00	1 No.	65,000=00
5.	Cooling time Control for a Short time duty motor.	65,000=00	1 No.	65,000=00
6.	Performance of Voltage Source Inverter (VSI) fed 3 Φ Induction motor with SPWH.	1,25,000=00	1 No.	1,25,000=00
7.	Frequency control of Synchronous motor drive.	80,000=00	1 No.	80,000=00
8.	Speed control of Separately excited DC motor with PI Controller.	80,000=00	1 No.	80,000=00
9.	Digital Electronic Board	1,25,000=00	1 Nos.	1,25,000=00
10.	Steel Almirah (SA-I)	8,000=00	2 Nos.	16,000=00
11.	Steel Almirah (SA-II)	7,500=00	2 Nos.	15,000=00
12.	Lab. In-charge Chair	4,500=00	2 Nos.	9,000=00
13.	Office Chair	1,500=00	6 Nos.	9,000=00
14.	Office Table,	4,500=00	2 Nos.	9,000=00
15.	Office Stool	6,000=00	2 Nos.	12,000=00
16.	Lab Table	12,000=00	2 Nos.	24,000=00
17.	Lab Stool	1,100=00	30 Nos.	33,000=00
18.	Computer	55,000=00	1 No.	55,000=00
19.	Computer Table	6,000=00	1 No.	6,000=00
20.	UPS	3,500=00	1 No.	3,500=00
Total Amount: Rs. – Nine Lacs Thirty One Thousand Five Hundred Only.				9,31,500=00

S. No.	Name of item	Specifications
1.	Type of DC Motor breaking.	5 HP
2.	Heating time control for a Short time Duty motor.	5 HP
3.	Heating time control for a Control Duty motor.	5 HP
4.	Cooling time Control for an intermittent duty motor.	5 HP
5.	Cooling time Control for a Short time duty motor.	5 HP
6.	Performance of Voltage Source Inverter (VSI) fed 3 Φ Induction motor with SPWH.	3 HP, 3 Φ

7.	Frequency control of Synchronous motor drive.	3 HP, AC, 3 Φ
8.	Speed control of Separately excited DC motor with PI Controller.	5 HP
9.	Digital Electronic Board	Interactive Board(Smart Board)Standard size 50-60
10.	Steel Almirah (SA-I)	78"x36"x18"
11.	Steel Almirah (SA-II)	66"x36"x18"
12.	Lab. In-charge Chair	Cushion Back & Seat with Soft arm
13.	Office Chair	Cain seat & back with round arm
14.	Office Table,	46"x30"x30" with Sun mica Top
15.	Office Stool	24"x18"x18" with Sun mica Top
16.	Lab Table	1800x900x990 (mm)
17.	Lab Stool	78"x36"x18" with Sun mica Top
18.	Computer	3.2 GHz, 526GB RAM with loaded Software
19.	Computer Table	Standard Size, including Printer & UPS Space
20.	UPS	230 VAC, 600mva, 30 min. backup

Title of the proposal: For the Microprocessor Laboratory (6th Semester)

Amount: Rs: 5, 20,000=00 (in Rs) **Rs.** - Five Lacs Twenty Thousand Only.

Brief details of the proposal (in the tabular format):-

S. No.	Name of item	Estimated Rate	Quantity	Amount
1.	KIT dyna 8085 microcontroller	40,000=00	4 Nos.	1,60,000=00
2.	KIT SMPS	40,000=00	4 Nos.	1,60,000=00
3.	Steel Almirah (SA-I)	8,000=00	4 Nos.	32,000=00
4.	Steel Almirah (SA-II)	7,500=00	2 Nos.	15,000=00
5.	Lab. In-charge Chair	4,500=00	2 Nos.	9,000=00
6.	Office Chair	1,500=00	4 Nos.	6,000=00
7.	Office Table,	4,500=00	1 Nos.	4,500=00
8.	Office Stool	6,000=00	2 Nos.	12,000=00
9.	Lab Table	12,000=00	2 Nos.	24,000=00
10.	Lab Stool	1,100=00	30 Nos.	33,000=00
11.	Computer	55,000=00	1 No.	55,000=00
12.	Computer Table	6,000=00	1 No.	6,000=00
13.	UPS	3,500=00	1 No.	3,500=00

Total Amount: Rs. - Five Lacs Twenty Thousand Only.	5,20,000=00
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Technical specifications of the items:-

S. No.	Name of item	Specifications
1.	KIT dyna 8085 microcontroller	5 Volts, 200m Amp.
2.	KIT SMPS	230 Volts AC, in put, ± 12 Volt, 6Amp.out put
3.	Steel Almirah (SA-I)	78"x36"x18"
4.	Steel Almirah (SA-II)	66"x36"x18"
5.	Lab. In-charge Chair	Cushion Back & Seat with Soft arm
6.	Office Chair	Cain seat & back with round arm
7.	Office Table,	46"x30"x30" with Sun mica Top
8.	Office Stool	24"x18"x18" with Sun mica Top
9.	Lab Table	1800x900x990 (mm)
10.	Lab Stool	78"x36"x18" with Sun mica Top
11.	Computer	3.2 GHz, 526GB RAM with loaded Software
12.	Computer Table	Standard Size, including Printer & UPS Space
13.	UPS	230 VAC, 600mva, 30 min. backup

Title of the proposal: - For the Solid State Device Laboratory (3rd Semester)

Amount: Rs: 13, 85,000=00 (in Rs):- **Rs.** – Thirteen Lacs Eighty Five Thousand Only.

Brief details of the proposal (in the tabular format):-

S. No.	Name of item	Estimated Rate	Quantity	Amount
1.	Characteristics of Zener Diode	15,000=00	6 Nos.	90,000=00
2.	Characteristics of power MOSFET	15,000=00	6 Nos.	90,000=00
3.	Clipper KIT	15,000=00	6 Nos.	90,000=00
4.	Clamper KIT	15,000=00	6 Nos.	90,000=00
5.	Bread Board	100=00	10 Nos.	1,000=00
6.	1 Φ Half controlled rectifier KIT	15,000=00	6 Nos.	90,000=00
7.	1 Φ Full wave center tapped re KIT	15,000=00	6 Nos.	90,000=00
8.	1 Φ Full wave Bridge rectifier KIT	15,000=00	6 Nos.	90,000=00
9.	R-C Filter	10,000=00	6 Nos.	60,000=00
10.	L-C Filter		6 Nos.	60,000=00
11.	Characteristics if BJT in CC, CB, CE Configuration	10,000=00	6 Nos.	60,000=00
12.	Characteristics of FET	10,000=00	6 Nos.	60,000=00
13.	Wein Bridge Oscillator Kit	10,000=00	6 Nos.	60,000=00
14.	Characteristics of PN junction Diode	15,000=00	6 Nos.	90,000=00
15.	Digital Electronic Board	1,25,000=00	1 No.	1,25,000=00
16.	Steel Almirah (SA-I)	8,000=00	4 Nos.	32,000=00
17.	Steel Almirah (SA-II)	7,500=00	2 Nos.	14,000=00
18.	Lab. In-charge Chair	4,500=00	2 Nos.	12,000=00
19.	Office Chair	1,500=00	4 Nos.	9,000=00
20.	Office Table,	4,500=00	1 No.	12,000=00
21.	Office Stool	6,000=00	3 Nos.	36,000=00
22.	Lab Table	12,000=00	25 Nos.	27,500=00
23.	Lab Stool	1,100=00	4 Nos.	32,000=00
24.	Computer	55,000=00	1 No.	55,000=00
25.	Computer Table	6,000=00	1 No.	6,000=00
26.	UPS	3,500=00	1 No.	3,500=00
Total Amount: Rs. – Thirteen Lacs Eighty Five Thousand Only.				13,85,000=00

Technical specifications of the items:-

S. No.	Name of item	Specifications
1.	Characteristics of Zener Diode	5 Volts, 200m Amp.
2.	Characteristics of power MOSFET	230 Volts, 1 Amp.
3.	Clipper KIT	12 Volt, 200m Amp.
4.	Clamper KIT	12 Volt, 200m Amp.
5.	Bread Board	6"x3" , 30 connecting points
6.	1 Φ Half controlled rectifier KIT	35 Volts, 200m Amp.
7.	1 Φ Full wave center tapped re KIT	35 Volts, 200m Amp.
8.	1 Φ Full wave Bridge rectifier KIT	35 Volts, 200m Amp.
9.	R-C Filter	25 MHz function Generator, 0-10 K Ω , 0.25 μ F
10.	L-C Filter	25 MHz function Generator, 0-500mH, 0.25 μ F

11.	Characteristics of BJT in CC, CB, CE Configuration	12 Volt, 200m Amp.
12.	Characteristics of FET	12 Volt, 200m Amp.
13.	Wein Bridge Oscillator Kit	12 Volt, 200m Amp.
14.	Characteristics of PN junction Diode	5 Volt, 200m Amp.
15.	Digital Electronic Board	Interactive Board(Smart Board)Standard size 50-60
16.	Steel Almirah (SA-I)	78"x36"x18"
17.	Steel Almirah (SA-II)	66"x36"x18"
18.	Lab. In-charge Chair	Cushion Back & Seat with Soft arm
19.	Office Chair	Cain seat & back with round arm
20.	Office Table,	46"x30"x30" with Sun mica Top
21.	Office Stool	24"x18"x18" with Sun mica Top
22.	Lab Table	1800x900x990 (mm)
23.	Lab Stool	78"x36"x18" with Sun mica Top
24.	Computer	3.2 GHz, 526GB RAM with loaded Software
25.	Computer Table	Standard Size, including Printer & UPS Space
26.	UPS	230 VAC, 600mva, 30 min. backup

Title of the proposal: - For the Analog Electronics Laboratory (5th Semester)

Amount: Rs: 20, 10,000=00 (in Rs)-: Twenty Lacs Ten Thousand Only.

Brief details of the proposal (in the tabular format):-

S. No.	Name of item	Estimated Rate	Quantity	Amount
1.	Measurement of parameters of an OP- AMP, KIT	15,000=00	4 Nos.	60,000=00
2.	Squire wave Generator with OP-Amp. IC 741 KIT	15,000=00	4 Nos.	60,000=00
3.	Cascaded amplifier KIT	15,000=00	4 Nos.	60,000=00
4.	Kit of Integrator Operation using OP-Amp	15,000=00	4 Nos.	60,000=00
5.	Class A amplifier KIT	20,000=00	4 Nos.	80,000=00
6.	Class B amplifier KIT	20,000=00	4 Nos.	80,000=00
7.	Class C amplifier KIT	20,000=00	4 Nos.	80,000=00
8.	Class AB amplifier KIT	25,000=00	4 Nos.	1,00,000=00
9.	KIT of Non-inverting & inverting operation	20,000=00	4 Nos.	80,000=00

	of OP-Amp			
10.	KIT of Cascade amplifier	20,000=00	4 Nos.	80,000=00
11.	KIT of adder operation with OP-Amp	20,000=00	4 Nos.	80,000=00
12.	KIT of sub tractor operation with OP-Amp	15,000=00	4 Nos.	60,000=00
13.	KIT of Differentiator operation with OP-Amp	20,000=00	4 Nos.	80,000=00
14.	CRO	50,000=00	8 Nos.	4,00,000=00
15.	Signal Generator	20,000=00	6 Nos.	1,20,000=00
16.	Digital Electronic Board	1,25,000=00	1 No.	1,25,000=00
17.	LCD Projector	85,000=00	2 Nos.	1,70,000=00
18.	Steel Almirah (SA-I)	8,000=00	5 Nos.	40,000=00
19.	Steel Almirah (SA-II)	7,500=00	4 Nos.	30,000=00
20.	Lab. In-charge Chair	4,500=00	2 Nos.	9,000=00
21.	Office Chair	1,500=00	4 Nos.	6,000=00
22.	Office Table,	4,500=00	1 No.	4,500=00
23.	Office Stool	6,000=00	2 Nos.	12,000=00
24.	Lab Table	12,000=00	3 Nos.	36,000=00
25.	Lab Stool	1,100=00	30 Nos.	33,000=00
20.	Computer	55,000=00	1 No.	55,000=00
21.	Computer Table	6,000=00	1 No.	6,000=00
22.	UPS	3,500=00	1 No.	3,500=00
Total Amount: Rs. – Twenty Lacs Ten Thousand Only.				20,10,000=00

Technical specifications of the items:-

S. No.	Name of item	Specifications
1.	Measurement of parameters of an OP-AMP, KIT	741,5V,200mA
2.	Squire wave Generator with OP-Amp. IC 741 KIT	741,5V,200mA
3.	Cascaded amplifier KIT	12V,200mA
4.	Kit of Integrator Operation using OP-Amp	741,5V,200mA
5.	Class A amplifier KIT	230V,200mA
6.	Class B amplifier KIT	230V,200mA
7.	Class C amplifier KIT	230V,200mA
8.	Class AB amplifier KIT	230V,200mA
9.	KIT of Non-inverting & inverting operation of OP-Amp	741,5V,200mA
10.	KIT of Cascade amplifier	230V,200mA
11.	KIT of adder operation with OP-Amp	741,5V,200mA
12.	KIT of sub tractor operation with OP-Amp	741,5V,200mA
13.	KIT of Differentiator operation with OP-Amp	741,5V,200mA
14.	CRO	230V,50Hz,42W,0.35A
15.	Signal Generator	741,5V,200mA
16.	Digital Electronic Board	Interactive Board(Smart Board)Standard size 50-60
17.	LCD Projector	With 1.5x1.5 meter Screen.
18.	Steel Almirah (SA-I)	78"x36"x18"
19.	Steel Almirah (SA-II)	66"x36"x18"
20.	Lab. In-charge Chair	Cushion Back & Seat with Soft arm
21.	Office Chair	Cain seat & back with round arm
22.	Office Table,	46"x30"x30" with Sun mica Top
23.	Office Stool	24"x18"x18" with Sun mica Top

24.	Lab Table	1800x900x990 (mm)
25.	Lab Stool	78"x36"x18"
26.	Computer	3.2 GHz, 526GB RAM with loaded Software
27.	Computer Table	Standard Size, including Printer & UPS Space
28.	UPS	230 VAC, 600mva, 30 min. backup

Title of the proposal: - Furniture is including Computers, Printers, Photocopiers and UPS. of Staff (Cl. - I to Cl.- IV).

Amount: Rs: 21, 52,000=00 (in Rs):- **Rs.** – Twenty One Lacs Fifty Two Thousand Only.

Brief details of the proposal (in the tabular format):-

S. No.	Name of item	Estimated Rate	Quantity	Amount
1.	Steel Almirah (SA-I)	8,000=00	15	1,20,000=00
2.	Steel Almirah (SA-II)	7,500=00	10	75,000=00
3.	Chair (Executive)	12,000=00	1	12,000=00
4.	Chair (with Cution)	4,500=00	20	1,50,000=00
5.	Office Chair	1,500=00	30	90,000=00
6.	Office Table (Executive, with Glass top)	18,000=00	1	18,000=00
7.	Office Stool	6,000=00	6	36,000=00
8.	Students Chair	3,000=00	200	6,00,000=00
9.	Computer	55,000=00	10	5,50,000=00
10.	Computer Table	6,000=00	10	60,000=00
11.	UPS	3,500=00	10	35,000=00
12.	Laser Printer	24,000=00	2	48,000=00
13.	Photocopier Machine, Heavy Duty	1,15,000=00	2	2,30,000=00
14.	Photocopier Machine, For Office Use	85,000=00	2	1,70,000=00
Grand Total Rs: Fifteen Lacs Forty Nine Thousand Only.				21,52,000=00

Technical specifications of the items:-

S. No.	Name of item	Specifications
1.	Steel Almirah (SA-I)	78"x36"x18"
2.	Steel Almirah (SA-II)	66"x36"x18"
3.	Chair (Executive)	Executive, with Cution and soft round arm
4.	Chair	with Cution and soft round arm
5.	Office Chair	Cain seat & back with round arm
6.	Office Table	46"x30"x30" with Sun mica Top
7.	Office Stool	with Sun mica Top
8.	Students Chair	With wooden writing Pad.
9.	Computer	3.2 GHz, 526GB RAM with loaded Software
10.	Computer Table	Standard Size, including Printer & UPS Space
11.	UPS	230 VAC, 600mva, 30 min. backup
12.	Laser Printer	32 PPM, 230 Volt mains.
13.	Photocopier Machine, Heavy Duty	Attachable with Computer, with USB port.
14.	Photocopier Machine, For Office Use	Attachable with Computer, with USB port.

Title of the proposal: - For the Books, Furniture including Computers, Printers, Photocopiers and UPS. of Departmental Library.

Amount: Rs: 51, 53,500=00 (in Rs):- **Rs.** – Fifty One Lacs Fifty Three Thousand Five Hundred Only.

Brief details of the proposal (in the tabular format):-

S. No.	Name of item	Estimated Rate	Quantity	Amount
1.	Books	8,00,000=00		8,00,000=00
2.	Steel Almirah (SA-I) Book Case	7,500=00	50	37,50,000=00
3.	Steel Almirah (SA-I)	12,000=00	15	1,80,000=00
4.	Chair (with Cution)	4,500=00	4	18,000=00
5.	Office Chair	1,500=00	15	22,500=00
6.	Office Table, with Sun mica Top	4,500=00	10	45,000=00
7.	Office Stool	6,000=00	4	24,000=00
8.	Computer	55,000=00	4	2,20,000=00
9.	Computer Table	6,000=00	4	24,000=00
10.	UPS	3,500=00	4	14,000=00
11.	Laser Printer	14,000=00	4	56,000=00
Grand Total Rs: Fifty One Lacs Fifty Three Thousand Five Hundred Only.				51,53,500=00

Technical specifications of the items:-

S. No.	Name of item	Specifications
1.	Steel Almirah (SA-I) Book Case	78"x36"x18" with four glass shelf facility.
2.	Steel Almirah (SA-I)	78"x36"x18"
3.	Chair (Executive)	Executive, with Cution and soft round arm
4.	Chair	with Cution and soft round arm
5.	Office Chair	Cain seat & back with round arm
6.	Office Table	46"x30"x30" with Sun mica Top
7.	Office Stool	With Sun mica Top
8.	Computer	3.2 GHz, 526GB RAM with loaded Software
9.	Computer Table	Standard Size, including Printer & UPS Space
10.	UPS	230 VAC, 600mva, 30 min. backup
11.	Laser Printer	32 PPM, 230 Volt mains.

Annexure 1.4-Proposed Amount-in Rs. 30,04,600.00

Name of the College:

Government Engineering College, Jagdalpur, Bastar, Chhattisgarh

Name of the Department/Course: Electronics Telecommunication Engineering

Summary of the department proposal:-

S.No.	Name of Laboratory	Amount
1	Fabrication Workshop lab-III Semester	23,000,00.00
2	Industrial Transducer lab-IV Semester	22,600.00
3	Communication System lab-V Semester	9,000.00
4	Microprocessor 8085 lab-V Semester	95,000.00
5	Simulation lab-V Semester	1,20,000.00
6	Advanced electronics circuit lab-VI Semester	2,68,000.00
7	Advanced Microprocessor & Interfacing lab-VI Semester	1,90,000.00
		30,04,600.00

Title of the proposal: - For the Fabrication workshop III (Semester)

Amount: - 23.60 lac (In Rs.)

Brief detail of the proposal (in the tabular format):-

S. no.	Name of item	Estimated Rate (Lac)	Quantity	Amount
1	PRPOTO-CONTACT - PCB Artwork Film maker	5.00	01	5.00
2	PROTO – CURE PCB Curing machine (oven)	5.00	01	5.00
3	PHOTO RESIST DIP COATING MACHINE	7.00	01	7.00
4	DOUBLE SIDED U. V. EXPOSURE UNIT (PROTO-UV)	2.00	01	2.00
5	PROTO-ETCH ETCHING MACHINE	0.50	01	0.50
6	PCB DRILLING MACHINE (PROTODRILL-2000)	0.50	01	0.50
7	PCB SHEARING MACHINE –	0.50	01	0.50
8	ROLLER TINNING MACHINE – RTM 10	1.00	01	1.00
9	PROTO- DEVELOPER/STRIPPER (2 in Unit)	1.00	01	1.00
10	PCB Drafting aids kit consist	0.50	01	0.50
11	PCB design software	0.50	01	0.50
12	Chemicals and accessories (To develop PCB)	0.01	01	0.01
	Total	23.60 lac		23.60 lac

Technical specification of the item:

S. No.	Name of the item	Specification
1	PRPOTO-CONTACT - PCB Artwork Film	ETA – NMU-T
2	PROTO – CURE PCB Curing machine (oven)	ETA-PCBCM-T
3	PHOTO RESIST DIP COATING MACHINE	ETA-PCBDCM-T
4	DOUBLE SIDED U. V. EXPOSURE UNIT (PROTO-UV)	ETA-UVE-T
5	PROTO-ETCH ETCHING MACHINE	ETA-PCBEM-T

6	PCB DRILLING MACHINE (PROTODRILL-2000)	ETA-PCBDM-T
7	PCB SHEARING MACHINE –Slash – 300	ETA-PCBSM-T
8	ROLLER TINNING MACHINE – RTM 10	ETA-RTM-T
9	PROTO- DEVELOPER/STRIPPER (2 in Unit)	ETA-PDS-T
10	PCB Drafting aids kit consist	-
11	PCB design software	Circuit Maker-2000

Title of the proposal: - For the Industrial Transducer IV (Semester)

Amount: - 22,600(In Rs.)

Brief detail of the proposal (in the tabular format):-

S. no.	Name of item	Estimated Rate	Quantity	Amount
1	LVDT Trainer	1300	02	2600
2	Measurement of displacement using light dependent resistor (LDR)	1500	02	3000
3	Measurement of speed	1500	02	3000
4	Characteristics of photo voltaic cell	2000	01	4000
5	Characteristics of photoconductive cell	2000	01	2000
6	Characteristics of phototransistor	2000	01	2000
7	Measurement & control of temperature using IC sensor	2000	01	2000
8	Characteristics of NTC bridge circuit	2000	01	2000
9	LDR light/dark activated relay switch	2000	01	2000
	Total			22,600

Technical specification of the item:

S.no.	Name of the item	Specification
1	LVDT Trainer	SG 2303
2	Measurement of displacement using light dependent resistor (LDR)	TR 08A
3	Measurement of speed	TR 16/17/18

4	Characteristics of photo voltaic cell	-
5	Characteristics of photoconductive cell	-
6	Characteristics of phototransistor	-
7	Measurement & control of temperature using IC sensor	-
8	Characteristics of NTC bridge circuit	-
9	LDR light/dark activated relay switch	CK1602

Title of the proposal: - For the Communication System I V (Semester)

Amount: - 9000(In Rs.)

Brief detail of the proposal (in the tabular format):-

S. no.	Name of item	Estimated Rate	Quantity	Amount
1	COMMSIM software.	7000	01	7000
2	Design Patterns in Communication Software by Linda Rising, Donald G. Fire smith	2000	01	2000
	Total			9000

Technical specification of the item:

S. No.	Name of the item	Specification
1	COMMSIM software.	COMMSIM-7
2	Design Patterns in Communication Software by Linda Rising, Donald G. Fire smith	Cambridge University Press

Title of the proposal: - For the Microprocessor (8085) V (Semester)

Amount: - 95000(In Rs.)

Brief detail of the proposal (in the tabular format):-

S. no.	Name of item	Estimated Rate	Quantity	Amount
1	MASM assembler	5000	01	5000
2	8085 simulator	65000/-	01	65000
3	8085 based microprocessor based kit	5000/-	05	25000
	Total			95,000

Technical specification of the item:

S. No.	Name of the item	Specification
1	MASM assembler	-
2	8085 simulator	Software development kit to integrate software patching into your own app
3	8085 based microprocessor based kit	Intel

Title of the proposal: - For the **Simulation Lab V** (Semester)

Amount: 1,20,000(In Rs.)

Brief detail of the proposal (in the tabular format):-

S. no.	Name of item	Estimated Rate	Quantity	Amount
1	Simulation Software for Analog Circuits like MULTISIM	70,000	01	70,000
2	Simulation Software for Analog Circuits like PSPICE	50,000	01	50,000
	Total			1,20,000

Technical specification of the item:

S. No.	Name of the item	Specification
1	Simulation Software for Analog Circuits like MULTISIM	Multisim 11.0
2	Simulation Software for Analog Circuits like PSPICE	Student Version 9.1

Title of the proposal: - For the **Advanced Electronic Circuits Lab VI** (Semester)

Amount: - 2,68,000(In Rs.)

Brief detail of the proposal (in the tabular format):-

S. no.	Name of item	Estimate d Rate	Qua n tity	Amount
1	Digital IC Tester	6000	03	18,000
2	Electronic Integrated circuit Trainer	10,000	03	30,000
3	Study/Design of Active filter	5000	03	15000
4	Sample & Hold circuit	200000	01	200000
5	Study/Design of passive filter	5000	03	5000
	Total			2,68,000

Technical specification of the item:

S. No.		Specification
1	Digital IC Tester	Electronic Integrated Circuit Tester, MME DIT 2040
2	Electronic Integrated circuit Trainer	DIC – IC
3	Study/Design of Active filter	-
4	Sample & Hold circuit	14-SOIC (3.9mm Width), 14-SOL
5	Study/Design of passive filter	-

Title of the proposal: - For the **Advanced Microprocessor & Interfacing Lab VI** (Semester)

Amount: -1,90,000(In Rs.)

Brief detail of the proposal (in the tabular format):-

S. no.	Name of item	Estimated Rate	Quant ity	Amonut
1	8086/8088 Microprocessor Trainer kit with LCD display& 101 ASCII keyboard	6000	15	90,000
2	Various interfacing module for 8086/8088 microprocessor	2000	15	30,000
3	8086 simulator IDE	70,000	01	70,000
	Total			1,90,000

Technical specification of the item:

S. No.	Name of the item	Specification
1	8086/8088 Microprocessor Trainer kit with LCD display& 101 ASCII keyboard	-
2	Various interfacing module for 8086/8088 microprocessor	-
3	8086 simulator IDE	Topview or cross assambler

Title of the proposal: - For the **Digital Signal Processing Lab** (name of Lab) VI (Semester)

Amount: -1,40,000 (In rs.)

Brief detail of the proposal (in the tabular format):-

S. no.	Name of item	Estimated Rate	Quantity	Amount
1	DSP Starter Kits + Code Composer Studio(Digital Communication)	40000/-	01	40000/-
2	DSP Starter Kits + Code Composer Studio(Audio & Speech)	40000/-	01	40000/-
3	DSP Starter Kits + Code Composer Studio (Image Processing)	60000/-	01	60000/-
	Total		03	140000/-

Technical specification of the item:

S. No.	Name of the item	Specification
1	DSP Starter Kits + Code Composer Studio(Digital Communication)	TMS320C5416 Starter Kit
2	DSP Starter Kits + Code Composer Studio(Audio & Speech)	TMS320C6713Starter Kit
3	DSP Starter Kits + Code Composer Studio (Image Processing)	Black Fin EZ Kit (Analog Device)

Title of the proposal: - For the **Advanced Signal Processing Lab** (name of Lab) VII (Semester)

Brief detail of the proposal (in the tabular format):-

S. no.	Name of item	Estimated	Quant	Amount
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		Rate	ity	
1	DSP Starter Kits + Code Composer Studio(Audio & Speech)	40000/-	01	40000/-
2	DSP Starter Kits + Code Composer Studio (Image Processing)	60000/-	01	60000/-
	Total		02	100000/-

Technical specification of the item:

S. No.	Name of the item	Specification
1	DSP Starter Kits + Code Composer Studio(Audio & Speech)	TMS320C6713Starter Kit
2	DSP Starter Kits + Code Composer Studio (Image Processing)	Black Fin EZ Kit (Analog Device)

Annexure 1.5-Proposed Amount-in Rs. 9,68,000.00

Name of the College: Government Engineering College, Jagdalpur, Bastar, Chhattisgarh

Name of the Department/Course: Information Technology

Summary of the department proposal:-

S.No.	Name of Laboratory	Amount
1	Software Technology Lab – IV, VII th (Semester)	93,000
2	Software Technology Lab – V, VIII th (Semester)	75,000
3	Telecom Switching & Computer Network Lab, V th (Semester)	50,000
4	Artificial Intelligence & Expert System Lab, VII th (Semester)	5,40,000
5	Simulation Lab, VIII th (Semester)	2,10,000
	Total Amount	9,68,000

Title of the proposal :-Software Technology Lab - IV ,VIIth (Semester)

Amount:- 93,000 (In Rs)

Justification:- To execute the Software Technology Lab – IV semester for an application J2EE
The item's given below are required.

Brief details of the proposal (in the tabular format):-

S.No.	Name of item	Estimate Rate	Quantity	Amount
1.	J2EE Applications and BEA WebLogic Server	1800	30	54,000
2.	Pro Apache Tomcat 6	1300	30	39,000
	Total Amount			93,000

Technical Specifications of the items:-

S.No.	Name of item	Specifications
1.	J2EE Applications and BEA Web Logic Server	1. Version 8.1 or Latest 2. Supports Client Server Environment.
2.	Pro Apache Tomcat 6	1. Version 5.1 or Latest 2. Supports Client Server Environment.

Title of the proposal :- For the Software Technology Lab - V , VIIIth (Semester)

Amount:- 75,000 (In Rs)

Justification:- To fulfill the Objective of Software Technology Lab - V the following two items are required to execute lab.

Brief details of the proposal (in the tabular format):-

S.No.	Name of item	Estimate Rate	Quantity	Amount
1.	Oracle Jdeveloper 10g	1500	30	45,000
2.	iSQL*Plus,	1000	30	30,000
	Total Amount			75,000

Technical Specifications of the items:

S.No.	Name of item	Specifications
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1.	Oracle Jdeveloper 10g	1.For Forms & Pl/Sql Developers 2.Supports Client Server Environment.
2.	iSQL*Plus	1.The browser-based version of SQL*Plus. 2.Supports Client Server Environment.

Title of the proposal :- Telecom Switching & Computer Network Lab Vth (Semester)

Amount :- 50,000(In Rs)

Justification:- According to syllabus list of hardware required are LAN Trainer Kit LAN Card Cable, Connectors, HUB, Switch, Crimping Tools, which were presently not available in IT Lab.

Brief details of the proposal (in the tabular format):-

S.No.	Name of item	Estimate Rate	Quantity	Amount
1.	LAN Trainer Kit	5000	10	50,000

Technical Specifications of the items:-

S.No.	Name of item	Specifications
1.	LAN Trainer Kit	1. Fullfill various aspects of LAN's such as hardware & cabling, software configuration & protocols. i.e. LAN Card Cable, Connectors, HUB, Switch, Crimping Tools 2. Onboard Hub & Cabling setup via jumpers

Title of the proposal :-Artificial Intelligence & Expert System Lab VIIth (Semester)

Amount:- 5,40,000 (In Rs)

Justification:- According to syllabus list of equipments/machine required for the Artificial Intelligence & Expert System Lab are: PC with Windows xp and Visual prolog compiler, So out of which Visual prolog compiler is currently out of dated.

Brief details of the proposal (in the tabular format):-

S.No.	Name of item	Estimate Rate	Quantity	Amount
1.	Visual Prolog Compiler	18,000	30	5,40,000

Technical Specifications of the items:

S.No.	Name of item	Specifications
1.	Visual Prolog Compiler	1. Version 7.2 2. Commercial Edition 3. Supports Client Server Environment.

Title of the proposal :-Simulation Lab ,VIIIth (Semester)

Amount:- 2,10,000 (In Rs)

Justification:- As per Syllabus Simulation Lab can be performed using MATLAB, COMMSIM, MULTISIM or in any other tool / language. So to execute Simulation Lab we need at least one item among above all mentioned items. So the Simulation Lab we preferred MATLAB.

Brief details of the proposal (in the tabular format):-

S.No.	Name of item	Estimate Rate	Quantity	Amount
1.	MATLAB	7000	30	2,10,000

Technical Specifications of the items:

S.No.	Name of item	Specifications
1.	MATLAB	1. Version 7.1 or latest 2. Supports Client Server Environment.

Annexure 3-Proposed Amount-in Rs. 1,70,00,000.00

FOR LIBRARY

Name of the College:

Government Engineering College,Jagdalpur,Bastar,Chhattisgarh

Modernization of Library

S.no.	Name of Department	Amount Rs.
1	Books	1,20,00,000
2	Journals	10,00,000
3	E-journals	10,00,000
4	E-Library (modernization of library)	10,00,000
5	Library furniture and maintenance	20,00,000
	Total	1,70,00,000

In words- One Crore Seventy Lac only

Annexure 2-Proposed Amount-in Rs. 58,92,000.00

FOR FURNITURE

Brief details of the proposal (in the tabular format):-

S. No.	Name of item	Estimated Rate	Quantity	Amount
1.	Steel Almirah (SA-I)	8,000=00	60	4,80,000
2.	Steel Almirah (SA-II)	7,500=00	60	4,50,000
3.	Chair (Executive)	12,000=00	6	72,000
4.	Chair (with Cushion)	4,500=00	80	3,60,000
5.	Office Chair	1,500=00	100	1,50,000
6.	Office Table (Executive, with Glass top)	18,000=00	60	10,80,000
7.	Office Stool	6,000=00	50	3,00,000
8.	Students Chair	1,000=00	900	9,00,000
8.	Students Table	1,000=00	900	9,00,000
10.	Computer Table	3,000=00	200	6,00,000
10.	Green Board	12,000=00	50	6,00,000
Grand Total Rs: Fifty Eight Lacs Ninty Two Thousand Only.				58,92,000