

6.4.2 Funds / Grants received from non-government bodies, individuals, philanthropers during the year (not covered in Criterion III)					
	Year	Name of the non government funding agencies/ individuals	Purpose of the Grant	Funds/ Grants received (INR in lakhs)	
1	2021-2022	Subiksham Software Solutions Pvt Ltd	Training And Mentoring Technical & Project Management System	1.8	
2	2021-2022	Vei Technologies, Chennai	Consultancy Activity	1	
3	2021-2022	Analysis Toxic Contaminants In Waste Water	Consultancy Activity	1.5	

MEETING MINITUES

PROJECT NAME:			
Training and Mentoring Technical & Project Management System.			
DATE OF MEETING:	02-02-2022	TIME:	2 pm
MINITUES PREPARED BY	Rupa M	LOCATION:	Subiksham Software Solutions Pvt Ltd, Coimbatore.
MEETING OBJECTIVES			
Discussed on develop a software for Training and Mentoring Technical & Project Management System.			
ATTANDANCE AT MEETING			
1. Managing Director, Subiksham Software Solutions Pvt Ltd 2. Dr. S Dhanabal 3. Rupa M			
DISCUSSION			
MD and the employees explained about the importance of training and mentoring in project management system. Also, how it influences a project. How important to recruit a trainer and mentor to his firm. The candidate should have technical skill on recent trends. The requirements for the concern			
<ul style="list-style-type: none">• Application development training.• Data Architecting.• Project management training.• Customized training/Mentoring.			
PREWORK/PREPARATION			
<ul style="list-style-type: none">• Workflow of the project.• Existing Journals related to the project is collected and verified.• Analysis of business mentoring.			
MEETING AGENDA			
<ul style="list-style-type: none">• Application development training.• Data Architecting.• Project management training.• Customized training/Mentoring.			



HOD/CSE



Principal

Ref: Subiksham/2021-22/01

05-01-2022

From

The Managing Director,
Subiksham Software Solutions Pvt Ltd.
#1, Third Street KRG Nagar, Ganapathy,
Coimbatore-641006.

To

Dr.G.Rajiv Suresh Kumar,
Department of Computer Science and engineering.
JCT College of Engineering and Technology.
Coimbatore-641105.

Dear Sir,

Sub:Consultancy Project-**reg.**

Greetings from M/sSubiksham Software Solutions Pvt Ltd, Coimbatore!!

For the consultancy work, We are willing to do projects with your organization. Our requirement is based on Training and Mentoring Technical & Project Management System.

In this regard, we are pleased to inform you there is a formal discussion on 02.02.2022 by 2 pm. I request you to send your faculties to our office.

Looking forward to your response.

Thanking you

Yours Truly,

Subiksham Software Solutions Pvt Ltd Coimbatore.



HOD/CSE



Principal

AGREEMENT

PARTIES

- This project titled **“Training and Mentoring Technical and Project Management System”** Agreement (hereinafter referred to as the **“Agreement”**) is entered into on **30.02.2022** (the **“Effective Date”**), by and between **“JCT College of Engineering and Technology and Subiksham Software Solutions Private Ltd”**, with an address of **#1, Third Street, KRG Nagar, Ganapathy, Coimbatore -641006** (hereinafter referred to as the **“Client”**) and Dr.Dhanabal S, Professor, Department of Computer Science and Engineering, JCT College of (hereinafter referred to as the **“Designer”**) (collectively referred to as the **“Parties”**).

DESCRIPTION OF THE PROJECT

- The Designer agrees to perform the following services for the Client:
- Basic Components
 - Structure
 - ☑ Mentor-mentee pairing
 - ☑ Duration of mentoring
 - ☑ Scheduled communication
 - • Learning Objectives
 - • Technical Support
 - Communication tools
 - Training, Coaching, and Support
 - Training on building expectations
 - Supporting materials for maintaining safety, confidentiality, and nonjudgmental attitude
 - Assessment
 - Formative evaluation on the degree to which the learning objectives are met

REVISIONS ENTITLEMENT

- The Client is entitled to 25 revisions of the work conducted by the Designer. Any revisions exceeding this amount will be chargeable at a rate of **Rs.4750** per revision.

PRICE AND PAYMENT

- The Client agrees to compensate the Designer an amount of **Rs.167**per hour and the Designer agrees to invoice the Client for the total amount of hours worked at the end of each month.
- The Parties agree that in the event that the invoices are not paid within thirty days of receiving them, the Designer will be entitled to charge a late fee of **Rs.500/day**.

CONFIDENTIALITY

- All terms and conditions of this Agreement and any confidential information must be kept confidential, unless the disclosure is required pursuant to process of law.
- Disclosing or using this information for any purpose beyond the scope of this Agreement, or beyond the exceptions set forth above, is expressly forbidden without the prior consent of the Parties.
- The Parties agree that the confidentiality clause in this Agreement will remain active and in power even upon the termination of this Agreement.

INTELLECTUAL PROPERTY

- The Designer agrees that any intellectual property provided to him/her by the Client will remain the sole property of the Client, including, but not limited to, copyrights, patents, trade secret rights, and other intellectual property rights associated with any ideas, concepts, techniques, inventions, processes, works of authorship, confidential information or trade secrets.
- The Designer will refrain from using such intellectual property upon the termination of this Agreement.

GOVERNING LAW

- This Agreement shall be governed by and construed in accordance with the laws of India.

ALTERNATIVE DISPUTE RESOLUTION

- Any dispute or difference whatsoever arising out of or in connection with this Agreement shall be submitted to arbitration/mediation/negotiation (circle one) in accordance with, and subject to the laws of India.

AMENDMENTS

- The Parties agree that any amendments made to this Agreement must be in writing, where they must be signed by both Parties to this Agreement.
- Accordingly, any amendments made by the Parties will be applied to this Agreement

ASSIGNMENT

- The Parties hereby agree not to assign any of the responsibilities in this Agreement to a third party, unless consented to by both Parties in writing.

ENTIRE AGREEMENT

- This Agreement contains the entire agreement and understanding among the Parties to it with respect to its subject matter, and supersedes all prior agreements, understandings, inducements and conditions, express or implied, oral or written, of any nature whatsoever with respect to its subject matter. The express terms of the Agreement control and supersede any course of performance and/or usage of the trade inconsistent with any of its terms.

REPRESENTATION AND WARRANTIES

- The Parties agree and disclose that they are fully authorized to enter this Agreement. Both Parties' performances and obligations are not to violate the rights of any third party or else violate other, if any, agreements made between them and/or any other organization, person, business or law/governmental regulation.

DISCLAIMER OF WARRANTIES

- The Designer warrants to complete the Services listed in this Agreement as per the Client's requirements and specifications. However, the Designer does not represent or warrant that such services provided in this Agreement will create additional sales, exposure, brand recognition, profits or other benefits.
- In addition to the above, the Designer holds no responsibility towards the Client in the event that the delivered work does not lead to the Client's desired results.

LIMITATION OF LIABILITY

- Under no circumstances will either party be liable for any indirect, special, consequential, or punitive damages (including lost profits) arising out of or relating to this Agreement or the transactions it contemplates (whether for breach of contract, tort, negligence, or other form of action) in the event that such is not related to the direct result of one of the Parties' negligence or breach.

SEVERABILITY

- In the event that any provision of this Agreement is found to be void and unenforceable by a court of competent jurisdiction, then the remaining provisions will remain in force in accordance with the Parties' intention.

SIGNATURE AND DATE

- The Parties hereby agree to the terms and conditions set forth in this Agreement and such is demonstrated by their signatures below:

DESIGNER

Name:Dr.DHANABAL S

Signature:_____

Date:_____



HOD/CSE

CLIENT

Name:Mr.

Signature:_____

Date:_____



Principal

Ref: Subiksham/2021-22/02

25-02-2022

From

The Managing Director,
Subiksham Software Solutions Pvt Ltd.
#1, Third Street KRG Nagar, Ganapathy,
Coimbatore-641006.

To

Dr.G. Rajiv Suresh Kumar,
Department of Computer Science and engineering.
JCT College of Engineering and Technology.
Coimbatore-641105.

Dear Sir,

Sub:Training and Mentoring Technical & Project Management System- Reg.

Greetings from M/s Subiksham Software Solutions Pvt Ltd!!!

We are ready to accept your proposal and quotations. So Kindly Please ensures that you received all the requirements for the project from our team.

Yours Truly,

For Subiksham Software Solutions Pvt Ltd.



HOD/CSE



Principal

Ref: JCT/CSE/R&D/04/02

14-02-2022

From

Dr.G. Rajiv Suresh Kumar,
Department of Computer Science and engineering.
JCT College of Engineering and Technology.
Coimbatore-641105.

To

The Managing Director,
Subiksham Software Solutions Pvt Ltd.
#1, Third Street KRG Nagar, Ganapathy,
Coimbatore-641006.

Sir,

Sub: Training and Mentoring Technical & Project Management System - Reg.

Ref:.

With reference to the above, based on your requirements, we have to send the Quotation. We included our proposal for the performance analysis as well.

Please find the attachments and make sure that all your requirements are met. We are waiting for a quick reply. Thanking you,

Yours truly,

Encl:1. Proposal for performance analysis.

PROJECT WORK SCHEDULE

Schedule- 240 days

Sl.No	Work Schedule	Total Man hour
1	Investigation □ Process □ Controller	30days
2	System design	100 days
3	Testing and Implementation	80 days
4	Document preparation and submission	30days

QUOTATION FOR PROPOSED WORK

Sl.NO	ITEM	AMOUNT IN (RS.)
1	Primary Investigation	Rs.10,000.00
2	Company Visit and Travelling Expenses	Rs.15,000.00
3	System design	Rs.85,000.00
4.	Testing and Implementation	Rs.60,000.00
5.	Other Expenses (AMC etc.)	Rs.10000.00
	TOTAL CHARGES	Rs.1,80,000.00

Thanking you

Yours truly,



HOD/CSE



Principal

Ref: JCT/CSE/R&D/04

10-12-2021

From

Dr.G.Rajiv Suresh Kumar,
Department of Computer Science and Engineering,
JCT College of Engineering and Technology,
Coimbatore-641105.

To

The Managing Director,
Subiksham Software Solutions Pvt Ltd.
#1, Third Street KRG Nagar, Ganapathy,
Coimbatore-641006.

Dear Sir,

Sub: Expert availability in state of art technology of our college for Consultancy Work-**reg**

Greetings from JCT College of Engineering and Technology!!

We have expert Faculty Members with state of art technology in the following areas to carry out projects efficiently. Kindly utilize our facilities to fulfil your technology requirements. We assure you that we will do our level best with entire satisfaction.

Expecting your reply at the earliest possible.

Thanking You,

Yours Truly,

Encl:List of Expert Membership and area of expert,

Sl.No	Name Of The Faculty	Expert Area
1.	Dr.RAJIV SURESH KUMAR G(HoD/CSE)	PHP, Mysql, Oracle, python
2.	Dr.DHANABAL.S(Prof./CSE)	PHP, Networking, Java , .Net, python, Web Services
3.	Dr. KARTHHIKEYANI (AP/CSE)	Python, DBMS, Networking
4.	CHANDRAGANDHI S(AP/CSE)	Machine Learning, python
5.	RAVIKUMAR M(AP/CSE)	Dream viewer,VB,Php,MySql, Android
6.	RUPA M.(AP/CSE)	PHP, .Net, Python, Wen Services
7.	ATHIRA.S (AP/CSE)	Python, Java, Web Services, Android
8.	DIVYA R (AP/CSE)	Java, Android

HOD/CSE

Principal

Ref: JCT/CSE/R&D/04/01

24-01-2022

From

Dr.G. Rajiv Suresh Kumar,
Department of Computer Science and engineering.
JCT College of Engineering and Technology.
Coimbatore-641105.

To

The Managing Director,
Subiksham Software Solutions Pvt Ltd.
#1, Third Street KRG Nagar, Ganapathy,
Coimbatore-641006.

Dear Sir,

Sub: Consultancy Project Confirmation reg.

Greetings!

Thank you for accepting our request and providing the opportunity to do the project on "Training and Mentoring Technical & Project Management System". The following faculty members will come for the formal discussion to your firm on 02.02.2022 by 2 pm.

1. Dr.S. Dhanabal Professor / CSE
2. Ms.Rupa M Assistant Professor / CSE

We assure that, will do our level best to fulfil all your requirements.

Thank You.

Yours Truly,

For



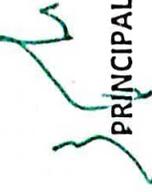
HOD/CSE

Principal

6.4.2 Funds / Grants received from non-government bodies, individuals, philanthropers during the last five years (not covered in Criterion III)

2021 -2022			
Year	Name of the non government funding agencies/ individuals	Funds/ Grants received in Rs.	Initiative
2021-22	VEI Technologies, Chennai	50,000	Consultancy Activity


HOD/EEE


PRINCIPAL



Ref: JCT/EEE/R&D/01/01

03.08.2021

To

Managing Director,
No 244, First Floor,
Trunkroad, PSB Complex,
Poonamallee,
Chennai – 6000 56.

Dear Sir,

Sub:-Requisition for research project in the field of App Development and Web Designing- Reg.

Warm Greetings from JCT College of Engineering and Technology!

JCT College of Engineering and Technology heralds the renaissance of Engineering Education and marches ahead towards excellence in the field of Technical Education. It is functioning with an aim to make students industry ready. Perhaps apart from regular academic activities each department has extended their support with Research and Development cell. From Department of Electrical and Electronics Engineering, we generate resources through research and consultancy projects for pursuing research and developmental activities in emerging areas.

We look forward your cooperation and contribution in this regard is very much appreciated.

Thanking you

Yours truly,


Dr.K.GEETHA, M.E., Ph.D.,
Head of the Department
Department of Electrical & Electronics Engg
JCT College of Engineering and Technology
Coimbatore - 641 105.

JCT College of Engineering and Technology

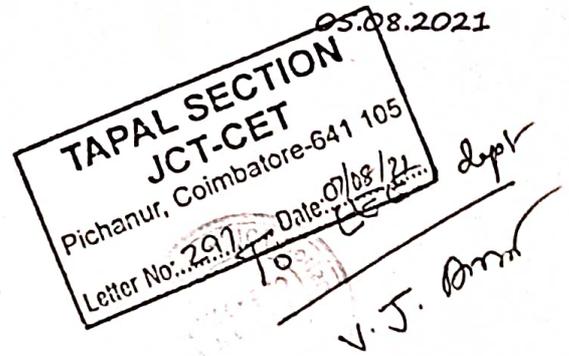
(Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai)

Pichanur, Coimbatore - 641 105 Tamil Nadu INDIA Phone: +91 422 2636900 Fax: +91 422 2636901 Email: info@jct.ac.in www.jct.ac.in

VEI Technologies
We Design for future Technologies

To

The Principal,
JCT College of Engineering and Technology
Coimbatore - 641105.



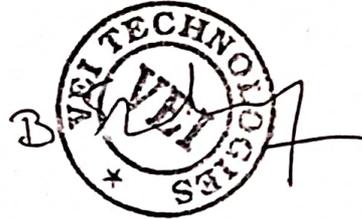
Dear Sir,

Sub:- Requisition for consultancy work-Reg.

Ref: Your letter no. JCT/EEE/R&D/01/01 dt. 03.08.2021

As regard to the cited above, our organization is recognizing your request regarding consultation. We are in the need of Devolving a Mobile app and Web based app for the Department of Human Resources . We have noticed that it was important to maintain the Employee Attendance. So, we need a solution to the problem described above.

Thanking you



Web: <http://www.veitechnologies.com>

Telephone: (044) - 22650124, Mobile: +91 9003785766/ 9790197080

No. 244, First Floor, Trunkroad, PSB Complex, Poonamallee
Chennai - 600 056



JCT
College of Engineering and Technology

Ref: JCT/EEE/R&D/01/02

09.08.2021

To

Managing Director,
No 244, First Floor,
Trunkroad, PSB Complex,
Poonamallee,
Chennai – 6000 56.

Dear Sir,

Sub: Proposal Acceptance Letter–reg.

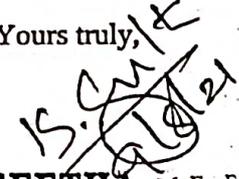
Ref : Your letter dated on 05.08.2021.

With due respect, we are pleased to inform you that we have accepted the proposal sent by you and we looking forward to work with the best of our knowledge and potentials. We would like to take the esteem moment to thank you for an opportunity to work with you.

We will depute the faculty members regarding this process and would like to interact with your Engineer in this regard during our consultancy work.

Thanking you

Yours truly,


Dr. K. GEETHA, M.E., Ph.D.,
Head of the Department
Department of Electrical & Electronics Engg
JCT College of Engineering and Technology
Colombatore - 641 105.

JCT College of Engineering and Technology

(Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai)

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JCT
College of Engineering and Technology

Ref: JCT/EEE/R&D/01/03

16.08.2021

To

Managing Director,
No 244, First Floor,
Trunkroad, PSB Complex,
Poonamallee,
Chennai – 6000 56.

Dear Sir,

Sub: App Development for Employee Attendance –reg.

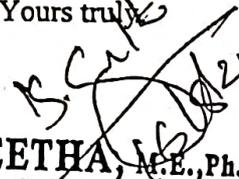
As a follow-up letter, we have organized the faculty members from the department of Electrical and Electronics Engineering, who may support you in the consultancy work.

1. Mr. S.Manikandan, AP/EEE,
2. Mr.M.D.Saravanan, AP/EEE

So, we have planned to arrange the date of visit to your company for further discussion about your mentioned issue. Wherein, our competent faculty members will have a meeting with your experts to develop the mobile app and web app for Employee Attendance.

Thanking you

Yours truly


Dr.K.GEETHA, M.E., Ph.D.,
Head of the Department
Department of Electrical & Electronics Engg
JCT College of Engineering and Technology
Coimbatore - 641 105.



JCT | College of Engineering
and Technology

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Pichanur, Coimbatore - 641105 | info@jet.ac.in | www.jet.ac.in | 0422 2636900



DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

24.08.2021

Submitted to the Principal for kind approval:-

Sub : Requesting permission to proceed consultancy work - VEI Technologies, Chennai - Reg

As a part of consultancy work, we have applied to companies in and around Tamilnadu and Kerala. A company named " VEI Technologies" from Chennai accepted to do consultancy project to create Web and Mobile applications for their Employee management. In this regard, the company wishes to discuss with our faculty members related to the project on 07.09.2021.

I kindly request you to give permission to accept the project and to proceed further. I also request you to debut the following two faculty members as coordinators for this project.

1. Mr.S.Manikandan Assistant Professor / EEE ✓
2. Mr.M.D.Saravanan Assosiate Professor / EEE ✓

Thanking You

B. Geetha
V. J. Saravanan

Yours truly,

B. Geetha
(Dr.K.Geetha)

HOD/EEE



JCT
College of Engineering and Technology

Ref: JCT/EEE/R&D/01/04

24.08.2021

To

Managing Director,
No 244, First Floor,
Trunkroad, PSB Complex,
Poonamallee,
Chennai – 6000 56.

Dear Sir,

Sub: Confirmation of meet venue and date – reg.

Ref: As per the telephonic conversation on 18.08.2021

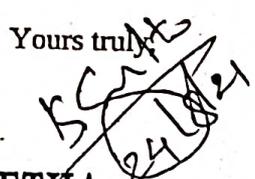
As the extension of faculty visit and conversation with your experts through telecommunications, we have arranged to schedule a meeting to discuss the problem that you mentioned in Employee Attendance. The members of the faculty will meet with your experts to identify the Requirements of data for App Development

Meet venue - JCT college of Engineering and Technology

Date/time –07.09.2021/2.30pm

Thanking you

Yours truly,


Dr.K.GEETHA, M.E., Ph.D.,
Head of the Department
Department of Electrical & Electronics Engg
JCT College of Engineering and Technology
Colmbatore - 641 105.



JCT
College of Engineering and Technology

Ref: JCT/EEE/R&D/01/05

08.09.2021

To

Managing Director,
No 244, First Floor,
Trunkroad, PSB Complex,
Poonamallee,
Chennai – 6000 56.

Sir,

Sub: Minutes of meeting held on 07.09.2021 – reg.

This letter brings to your knowledge the minutes of meeting conducted on 07.09.2021. It illustrates the discussion made about Mobile App and Web App Development for maintaining Employee Attendance. Herewith, we have enclosed the copy of minutes of meeting and the schedule with quotation. We Kindly request you to send the acknowledgement for this letter and confirmation for further processing.

Thanking you

Encl: 1. Minutes of the Meeting

2. Copy of proposal and quotation

Yours truly


Dr. K. GEETHA, M.E., Ph.D.,
Head of the Department
Department of Electrical & Electronics Engg
JCT College of Engineering and Technology
Colbatore - 641 105.

JCT College of Engineering and Technology

(Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai)

Pichanur, Colbatore - 641 105 Tamil Nadu INDIA Phone: +91 422 2636900 Fax: +91 422 2636901 Email: info@jct.ac.in www.jct.ac.in



MINUTES OF THE MEETING

Venue, Date&Time – EEE department and 07.09.2021 /2.30pm

Members in the meeting

1. Dr.V.J.Arul Karthik, Principal,JCT
2. Dr.K.Geetha, HOD/EEE
3. Mr. S.Manikandan, AP/EEE,
4. Mr.M.D.Saravanan, AP/EEE
5. Mr.K.Sasikumar / Project Lead / VEI Technologies

Points discussed

- The industrial expert explained about the problem faced in Employee attendance maintenance and also conversed about the limitation of current trends in technology.
- Mr.S.Manikandan, AP/EEE, explained about the various models of Web based applications and Mobile applications
- The expert suggested slow processing of data in current model and difficulties they faced in server side data management .
- Mr.M.D.Saravanan, elaborated the designing procedures of proposed model and use of Flutter which will increase the speed in server side processing
- Finally, the department faculty members collected all the requirements needed for Flutter based Mobile and Web app Development
- The duration of the project was also discussed to be completed before 90 days.

JCT College of Engineering and Technology

(Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai)

Pichanur, Colmbatore - 641 105 Tamil Nadu INDIA Phone: +91 422 2636900 Fax: +91 422 2636901 Email: info@jct.ac.in www.jct.ac.in



S.No	Name of the members	Designation	Signature
1	Dr.V.J.Arul Karthik	Principal, JCT	
2	Dr.K.Geetha	Professor and Head, EEE	
3	Mr.M.D.Saravanan	Assistant Professor, EEE	
4	Mr.S.Manikandan	Assistant Professor, EEE	
5	Mr.K.Sasikumar	VEI Technologies	

Thanking you

Yours truly,

Dr.K.GEETHA, M.E.,Ph.D.,
Head of the Department
Department of Electrical & Electronics Engg
JCT College of Engineering and Technology
Colombatore - 641 105.



PROJECT WORK SCHEDULE

Schedule- 90 days

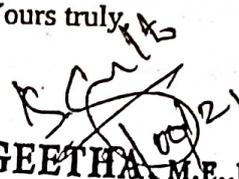
S.No	Work Schedule	Duration
1	Algorithms and Flowchart Development	10 days
2	Development of Web Application	35 days
3	Development of Mobile Application	35 days
4	Document preparation and submission	10 days

QUOTATION FOR PROPOSED WORK

S.NO	ITEM	AMOUNT IN (RS.)
1	Primary Investigation	Rs.2,000.00
2	Factory Visit and Travelling Expenses	Rs.5,000.00
3	Development of Web Application	Rs.20,000.00
4.	Development of Mobile Application	Rs.20,000.00
5.	Other Expenses	Rs.3,000.00
	TOTAL CHARGES	Rs.50,000.00

Thanking you

Yours truly,


Dr. K. GEETHA, M.E., Ph.D.,
Head of the Department
Department of Electrical & Electronics Engg
JCT College of Engineering and Technology
Colombatore - 641 105.

VEI Technologies
We Design for future Technologies

15.09.2021

To

The Principal,
JCT College of Engineering and Technology
Coimbatore - 641105.

Respected Sir,

Sub: Panel discussion - Reg

Ref: JCT/EEE/R&D/01/05 dated: 08.09.2021

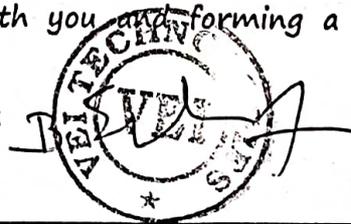
On behalf of VEI Technologies, I am pleased to inform you that through your proposed project, our technical team has studied "The Documentation of Web App and Mobile App Developmental Process".

We assure that your proposal has perfectly suited to our requirements and exceeds our expectations. This suggestion would do justice to what we expect. Hence, we wish therefore to accept your proposal. We comply with to the terms and conditions set out in the proposal.

The commencement date of the project will be in October 2021. As per the recommendation, the project must also be done in October 2021. The payments would start and progress according to the project execution, also we seek the same level of services as ascertained in your proposal and we expect adherence to deadlines from your side.

We are looking forward to working with you and forming a long-term relationship for future projects as well.

Thanking you



Web: <http://www.veitechnologies.com>

Telephone: (044) - 22650124, Mobile: +91 9003785766/ 9790197080

No. 244, First Floor, Trunkroad, PSB Complex, Poonamallee

Chennai - 600 056



JCT
College of Engineering and Technology

Ref: JCT/EEE/R&D/01/06

20.10.2021

To

Managing Director,
No 244, First Floor,
Trunkroad, PSB Complex,
Poonamallee,
Chennai – 6000 56.

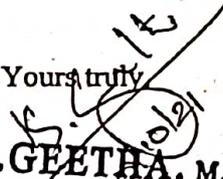
Dear Sir,

Sub: Submission of Mobile and Web application for Employee Management – Reg.

On behalf of our department, we are glad to inform you that the diligence work of our staff member has completed the Apps “Web application and Mobile Application for Employee Mngement”. While we very much appreciate the comprehensiveness of the work taken by our staff members. We take this opportunity for the wonderful co-operation you have done for us in the course of our execution. Finally, We request you to give your valuable comments for our better service in future and we certainly like to consider you again. We also request to sanction the design charges as it was discussed.

Thanking you

Yours truly


Dr. K. GEETHA, M.E., Ph.D.,
Head of the Department
Department of Electrical & Electronics Engg
JCT College of Engineering and Technology
Colombatore - 641 105.

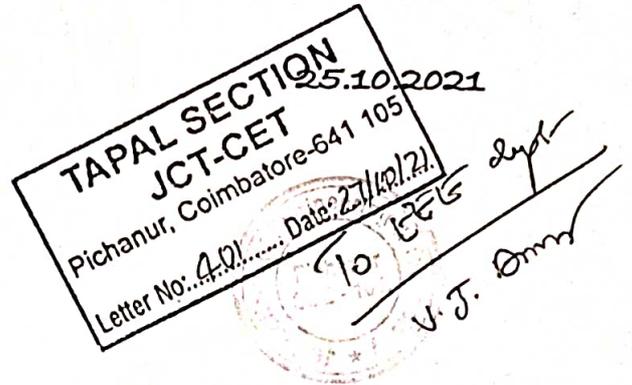
JCT College of Engineering and Technology

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VEI Technologies
We Design for future Technologies

To
The Principal,
JCT College of Engineering and Technology
Coimbatore - 641105.

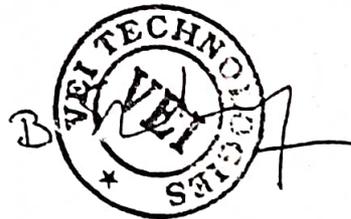


Dear Sir,

Sub: Consultancy Completion - Sanction of the final amount
settlement - Reg.

We would like to thank the organization for completing the consulting work on "Mobile App and Web App Development for maintaining Employee Attendance". We are very happy with the consulting work carried out by members of the Electrical and Electronics Engineering Department of your faculty. In this regard, we have sent the final amount settlement of Rs. 50,000 (Fifty thousand Only) using online payment through Canara Bank. (Transaction ID : 6106592144). Kindly check and acknowledge through phone call. our team is interested to work with you in future.

Thanking you

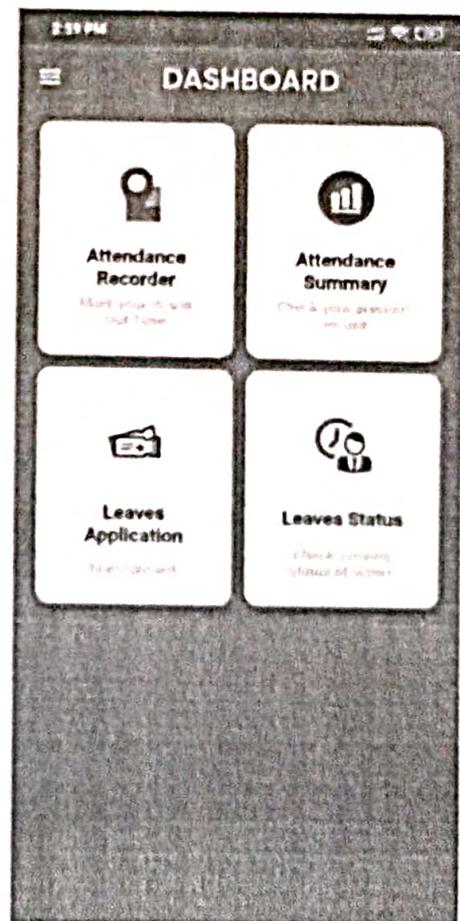
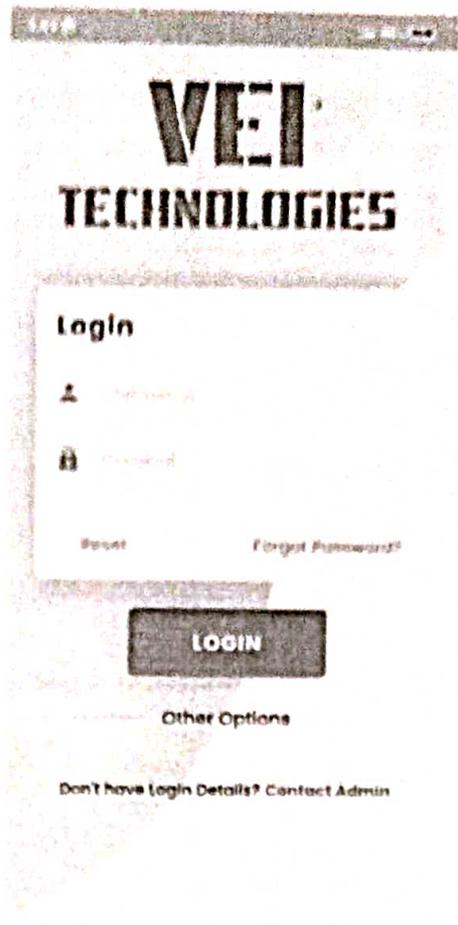
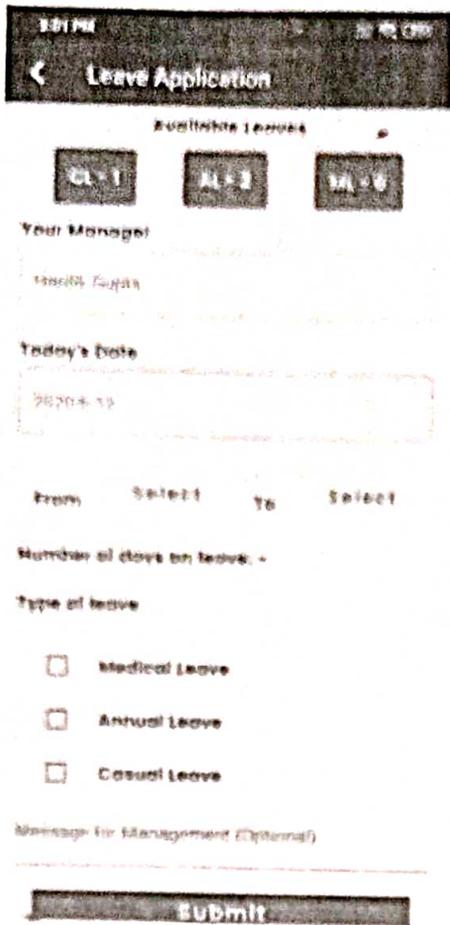


Web: <http://www.veitechnologies.com>

Telephone: (044) - 22650124, Mobile: +91 9003785766/ 9790197080

No. 244, First Floor, Trunkroad, PSB Complex, Poonamallee

Chennai - 600 056





**TRANSACTION
SUCCESSFUL**

AMOUNT TRANSFERRED

₹ 50000.00

TRANSACTION ID

6106592144



FROM SAVINGS

CANARA BANK

XXXXXXXXXX9098



TO THE PRINCIPAL JCT COLLEGE

CANARA BANK

XXXXXXXXXX7372



REMARKS

Consultancy Work VEI



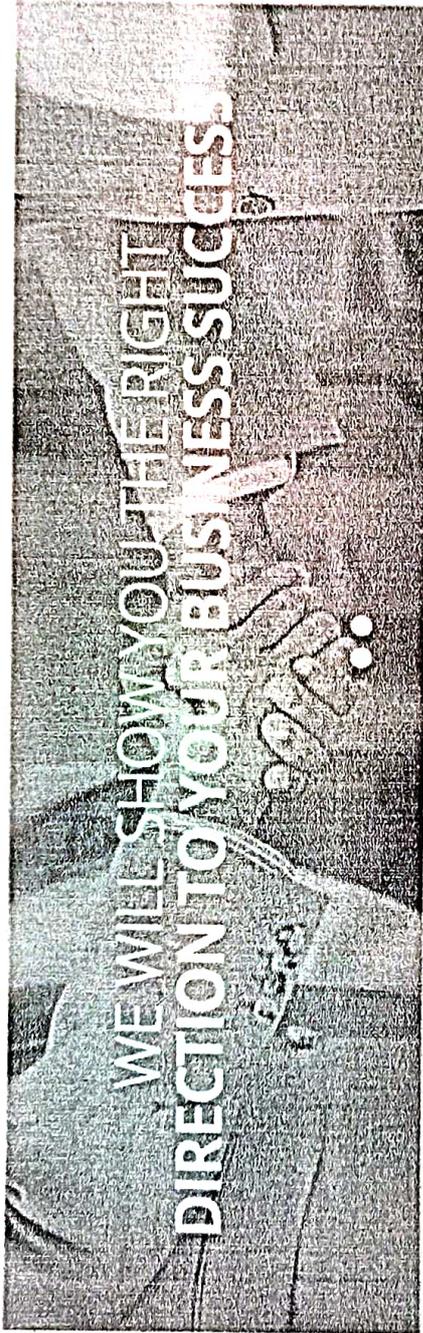
TRANSACTION DATE AND TIME

25 Oct 2021, 12.25 PM

IMPS CHARGES

₹ 0.0

Canara Bank



VET TECHNOLOGIES

Login

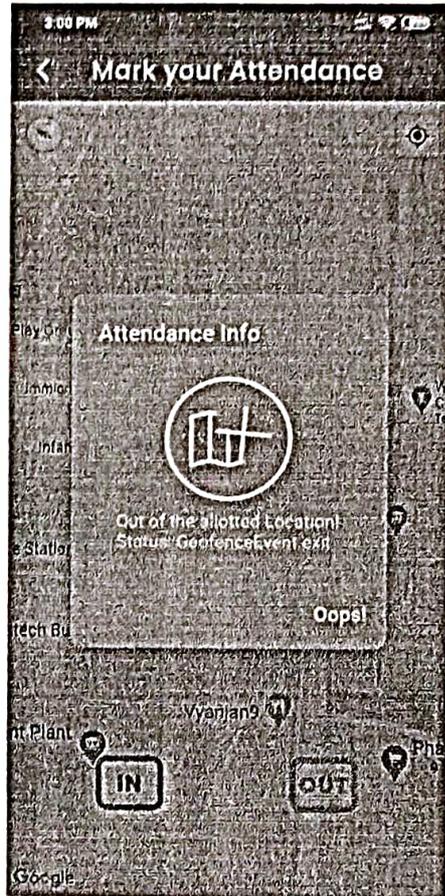
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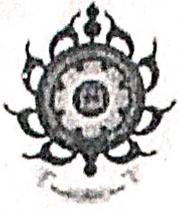
Forgot Password?

LOGIN

Other Options

Don't have Login Details? Contact Admin





Date: 03.12.2021

To

The Manager,
Sathya Engineering Works,
#15/132B, Angalamman Kovil Street,
SIDCO Industrial Estate,
Coimbatore-641021, Tamil Nadu, India

Dear Sir/ Madam,

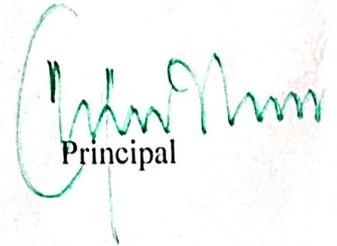
Sub: Requisition for Consultancy Project – Regarding

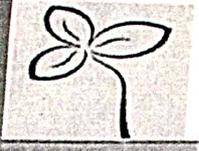
We Mechanical Engineering Department of JCT College of Engineering and Technology College – a reputed Institution in Coimbatore since 2009.

We are having Research and Development Cell in our Mechanical Department. With a clear vision of our R&D cell, “TO DEVELOP THE JIG FIXTURE FOR ENGINE COVER”. We request you to kindly make use of this opportunity and we are eagerly waiting for your positive reply.

Thanking you

Yours Truly,


Principal



SATHYAENGINEERING
WORKS

sathya.precision@yahoo.com
0422-2563622,+91-8778076439
www.sathyaengineeringworks.com
GST:33BCUPB5634C1ZU

Date: 10/12/2021

To

The Principal,
JCT College of Engineering & Technology,
Pichanur,
Coimbatore-641105.

Dear Sir/Madam,

Sub: Acceptance of Project regarding,

It's immense pleasure to receive your letter dated 03/12/2021 and excited to inform that, we surely accept your Consultancy work for the "TO DEVELOP THE JIG FIXTURE FOR ENGINE COVER". We are kindly requesting you to send the quotation for the design and calibration as earlier as possible.

Thanking You,

Yours Faithfully,

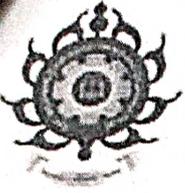
Mr. MURALI,

MANAGER,

SATHYA ENGINEERING WORKS,

COIMBATORE.

SATHYA ENGINEERING WORKS
COIMBATORE-641021



Dr.S.MANOHARAN M.E.,Ph.D.,FIE

PRINCIPAL

Date: 22.02.2022

To

The Manager,
Sathya Engineering Works,
#15/132B, Angalamman Kovil Street,
SIDCO Industrial Estate,
Coimbatore-641021, Tamil Nadu, India

Dear Sir/ Madam,

Sub: Quotation – Regarding

We are so pleased to receive your acceptance letter dated on 05.02.22. The detailed quotation is attached with this letter for the project “TO DEVELOP THE JIG FIXTURE FOR ENGINE COVER”. We request you to go through the quotation in detail and once you give the consent the work would be started.

Thanking you

Yours Truly,

**DEPARTMENT OF MECHANICAL ENGINEERING
PROJECT WORK SCHEDULE**

Schedule-4 Months

S.No	Work Schedule	Duration
1	Draw the outline	60 days
2	Locating	65 days
3	Clamping	30 days
4	Supporting	30 days
5	Applying Cutter Guide	80 days

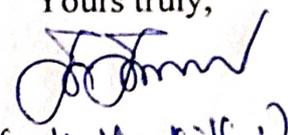
QUOTATION FOR PROPOSED WORK

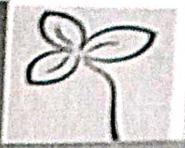
S.N O	ITEM	AMOUNT IN (RS.)
1	Drill	Rs.12,000.00
2	Jig Bush	Rs.13000.00
3	Clamping Screw	Rs.10,000.00
4.	Base	Rs.20,000.00
5.	Adjustable Locating Pin	Rs.10,000.00
6	Machine Table	Rs. 15,000.00
7	Supporting Pin	Rs. 5,000.00
8	Jig Bracket	Rs. 25,000.00



9	Chuck	Rs. 25,000.00
10	Fixtures	Rs. 10,000.00
	TOTALCHARGES	Rs. 1,45,000.00

Thanking you,

Yours truly,

(W. Kastur)



**SATHYAENGINEERING
WORKS**

sathya.precision@yahoo.com
0422-2563622,+91-8776076439
www.sathyaengmeetingworks.com
GST:33BCUP8563AC12U

Date: 04/03/22

To

The Principal,
JCT College of Engineering & Technology,
Pichanur,
Coimbatore-641105.

Dear Sir/Madam,

Sub: Quotation approval and starting of the process.,

We received your letter dated 22/02/22 and happy to say that, we accept your Consultancy work for the "TO DEVELOP THE JIG FIXTURE FOR ENGINE COVER". The amount has been sanctioned and we are requesting you to start the project.

Thanking You,

Yours Faithfully,

Mr. MURALI,

MANAGER,

SATHYA ENGINEERING WORKS,

COIMBATORE.

SATHYA ENGINEERING WORKS

COIMBATORE-641021

DEPARTMENT OF MECHANICAL ENGINEERING

Abstract

There are many types of jigs and fixtures are used in industries. Jig is device which is used to hold the work piece or fix the work piece and guide the cutting tool. The purpose of the jigs is to provide strength, holding, accuracy and interchangeability in the manufacturing of product. The objective of this project is to design and development of drill jig. We found that there is problem in auto part which required three holes of diameter 8.05mm at 120° with the help of drilling manually. It is time consuming process. Also skills and accuracy is required. So with the use of jig time consumption for drilling three holes is less. Drilling jigs make possible the drilling of holes at higher speed with greater accuracy and with less skilled worker.

Designing is very important activity in engineering field. In this paper fixture assembly is designed for the Front End Cover of Pump. We got sponsored project for our final year diploma mechanical engineering students from Leena Engineering, Solapur. We created three dimension and two dimension of fixture assembly in AutoCad2010 software. Dimension of the parts for the assembly are taken on the basis of casting weight and cutting forces generated during actual machining and by referring other fixtures of similar jobs. Selection of material is done as per standard.

1. INTRODUCTION

Minimatic Machine is a SSI unit based established in the year 1984 at Rajkot, which is catering to the needs of OE as well as ancillary units located in this region. The main thrust of the activity of the unit basically is to provide difficult to manufacture Jigs, Fixtures & Measuring Instruments in the workshop of the OE suppliers. A complete Tool Room type setup has been completed by Minimatic Machines at their factory site.

The name of the industry is Minimatic Machines. The owner of the industry is Mr. Jaysukh Nagewadia. The industry manufactures CNC turning machines. Types of the turning centers are MGT50, MGT100, and MGT200. Also they manufacture VMC200. Industry also manufactures special purpose machines, measuring instruments and different auto parts. Special purpose machines like abrasive belt grinder, bench center and measuring instruments like cam profile checking unit, comparator stand, dial calibration stand, run-out checking instruments are made.

2. INTRODUCTION OF JIG

It is a work holding device that holds, supports and locates the work piece and guides the tool for a very specific operation. Increasing the productivity and accuracy are the two basic aims of mass production. As we know the solution to this is by reducing the set up cost of the machine and also reducing the manual fatigue. In this case the device that caters our needs is the use of jigs. Let us take one example. Let us consider that one gets an order of say 1000 products. There need to be three holes drilled on this product. Accuracy is the main problem in such cases. In doing so it increases the work load on the operator. Hence using of jig to position and guide the tool to its right path is preferred rather than using scribes, square, straighteners or center punch etc. Thus the productivity is increased which is done by eliminating individual positioning, marking and

frequent checking. Interchangeability is the chief advantage here. All the parts fit in properly except only the similar components are interchangeable. One does not need to repeatedly clamp and unclamp the object for various purposes like positioning as the locating, clamping and guiding of the tool is done by the jig itself. Bushing which is a tool guiding tool is used. So it reduces the presence of skilled laborer. Drill jig helps to drill, ream and tap at a much faster speed and with great accuracy as compared to holes done conventionally by hand. In case of a drill jig bushings are used. These drill bushings guide the drill bit during the drilling operation. Generally work piece is held by a fixture and the fixture is arranged in such a way that the loading and unloading of the job is quick.

A fixture is a work-holding or support device used in the manufacturing industry. Fixtures are used to securely locate and support the work, ensuring that all parts produced using the fixture will maintain conformity and interchangeability. Using a fixture improves the economy of production by allowing smooth operation and quick transition from part to part, reducing the requirement for skilled labor by simplifying how work pieces are mounted, and increasing conformity across a production run. A fixture differs from a jig in that when a fixture is used, the tool must move relative to the work piece, a jig moves the piece while the tool remains stationary.

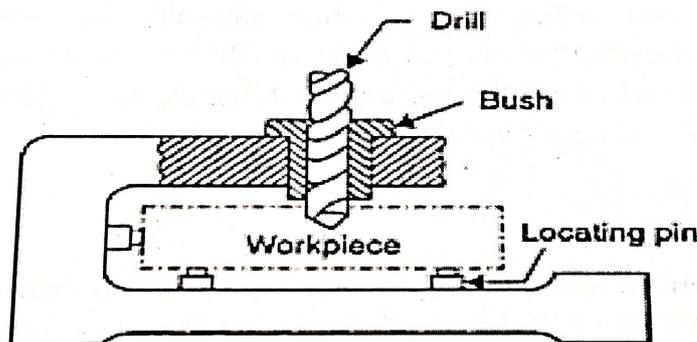


Fig. 1 jig

2.1 PROBLEM SUMMARY:

Today's business scenario is characterized by increase demand of product, faster response and mass production. To meet the current challenges it has become imperative for companies to increase the production rate. Industry manufactures pressure plate. In the manufacturing of pressure plate different operations and process like casting, inspection, drilling, chamfering is done. In drilling operation, marking and punching are done manually. So more time is required for marking and punching. . Moreover the setting and holding of job during machining is difficult and time consuming task. Also more time required for inspection of bore diameter.

2.2 INDUSTRIAL PROCESS (PRESSURE PLATE):

- The pressure plate which is made with the help of casting process. Sand casting is used for manufacturing pressure plat. - After casting process, rough machining process is done with the help of different tools.

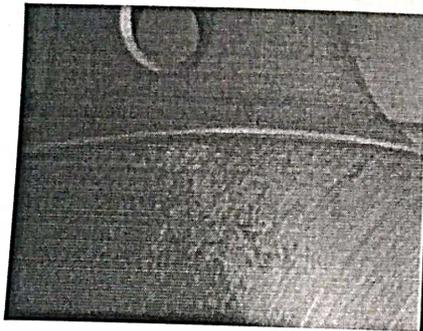


Fig. 2.4(Chamfering)



Fig. 2.5(Chamfering)

3. PROBLEM SPECIFICATION:

- In drilling, marking and punching are done manually for drilling 3 holes (ϕ 8.10mm) at 120 degree.
- So more time is required for marking and punching at 120 degree angle and pitch circle diameter of 261.5mm. - Also more time required for inspection of bore diameter.

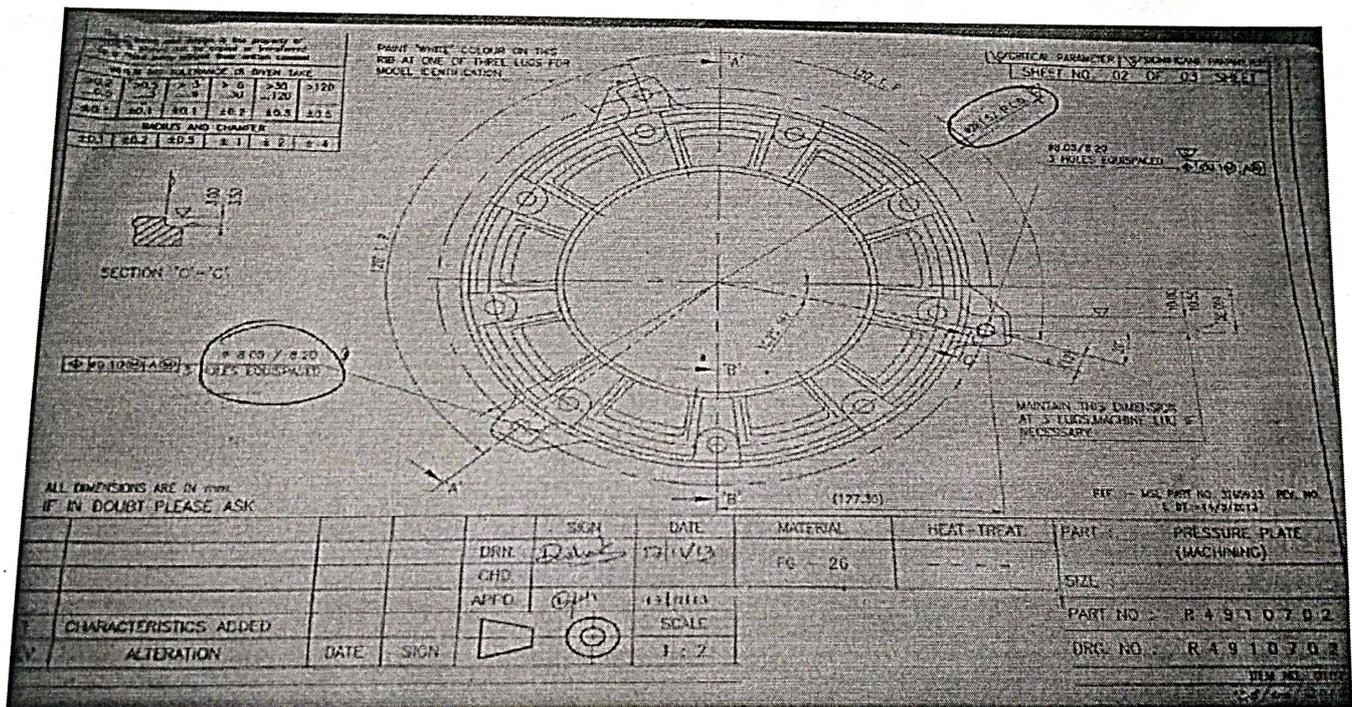


Fig. 3.1 Pressure Plate top view (2D)

4 CLAMPING DEVICES

There are different types of clamps which help in clamping of the jig at the required position. Clamps hold the work piece firmly. This helps in better engagement of job during the operation. Various forces develop during the cutting operation. The clamping should be such that it will sustain these forces during the operation. At the same time if clamping is so tight that it damages the work piece then it must be avoided. The timing required for clamping and unclamping of the device should be as less as possible. These clamping must also restrict vibrations and chatter during the cutting operation.

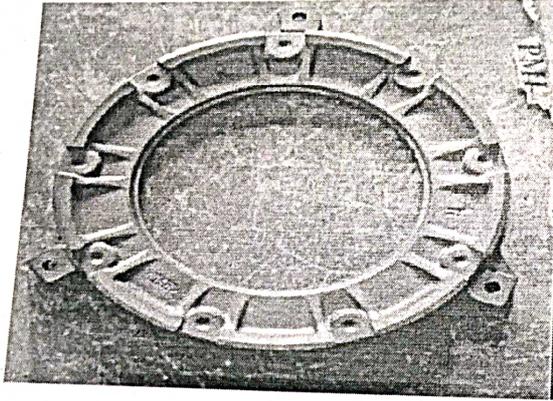


Fig. 2.1 Pressure plate (3D)

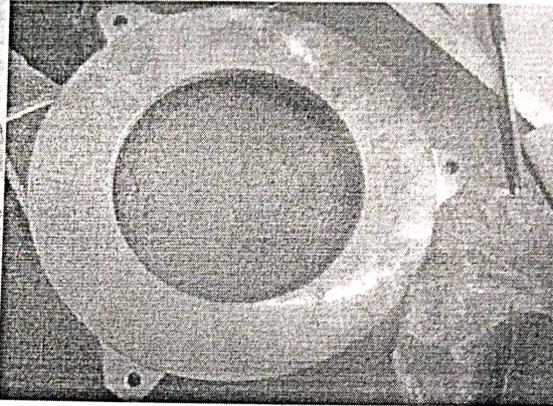


Fig. 2.2 Pressure plate

(3D)

- After completion of the rough finishing process, final finishing processes like filing and polishing are done.
- Then inspection is carried out on the part. In the inspection process, checking the internal and outside diameter is carried out.
- After completion of the inspection, drilling operation is carried out for drilling 3 holes (120 degree) on the part.

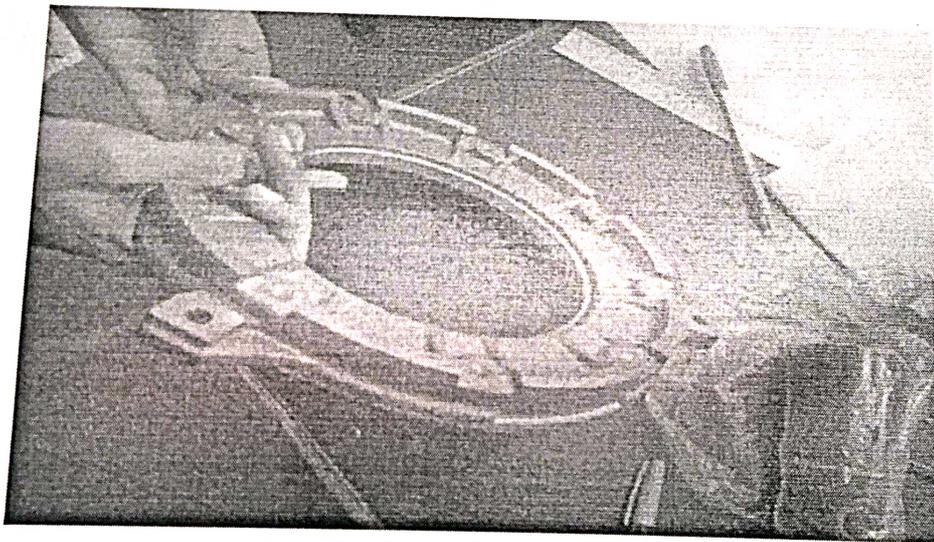


Fig. 2.3 Side of Pressure plate

- After drilling operation, chamfering on the holes is carried out and also final inspection of the part is carried out.
- After chamfering, final inspection, plating and painting are done.

4.1. TYPES OF CLAMPS:-

1. Screw Clamps:

These are widely used for jigs and fixtures. These have lower costs. However, their operating speed is quite slow. The basic screw clamp uses the torque developed by a screw thread to hold a part in place. This is done by direct pressure or by acting on another clamp.

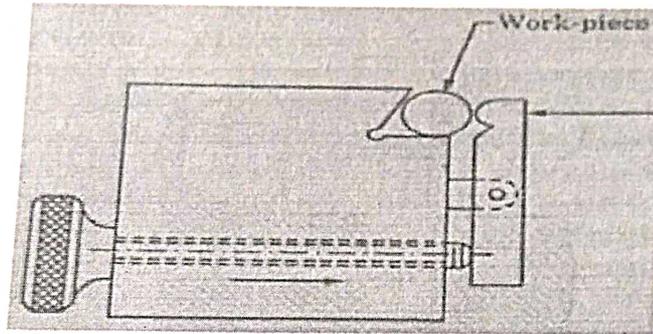


Fig. 4.1 Screw Clamp

2. Cam-action Clamps:

Cam-action clamps, when properly used, provide a fast, efficient, and simple way to hold work. Due to their construction and basic operating principles, the use of cam-action clamps is limited in some types of tools.

3. Hinged Clamps:

These utilize hinged lids for loading and unloading the components. Generally the clamp is made integral with the hinged lid. The figure shows that an arrangement using combination of hinged clamp is often required when it is necessary to move both the clamp and the bolt completely out of the way for the loading of component. The jig casing is designed such that the lugs are provided for locating the hinge pins.

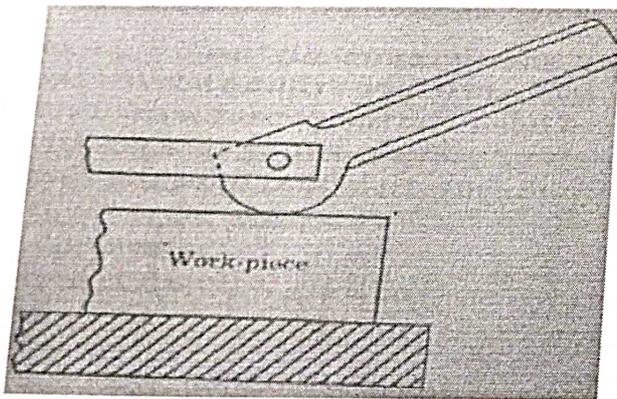


Fig. 4.2 cam action Clamp

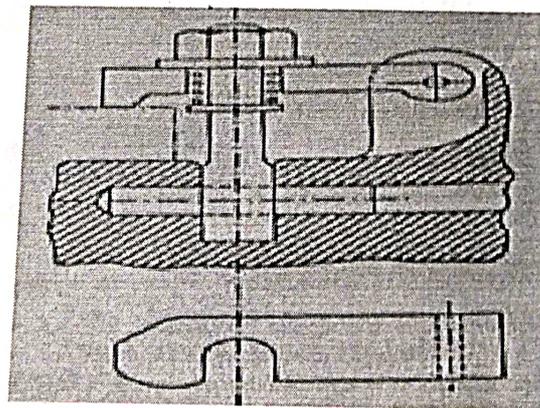


Fig. 4.3 hinged Clamp

5. OUTLINE OF THE SOLUTION:

In the manufacturing of pressure plate different operations and process like casting, inspection, drilling, chamfering is done. In drilling operation, marking and punching are done manually. So more time is required for marking and punching. Moreover the setting and holding of job during

machining is difficult and time consuming task. Also more time required for inspection of bore diameter.

So we have suggested and design a JIG for drilling process.

5.1. DESIGN PROCESS OF JIG:

- > **RAW MATERIAL:-**
 Base plate (310*20 mm)
 Square bar (180*40*20 mm)
 Square bar (180*40*8 mm)

> **PROCEDURE:-**

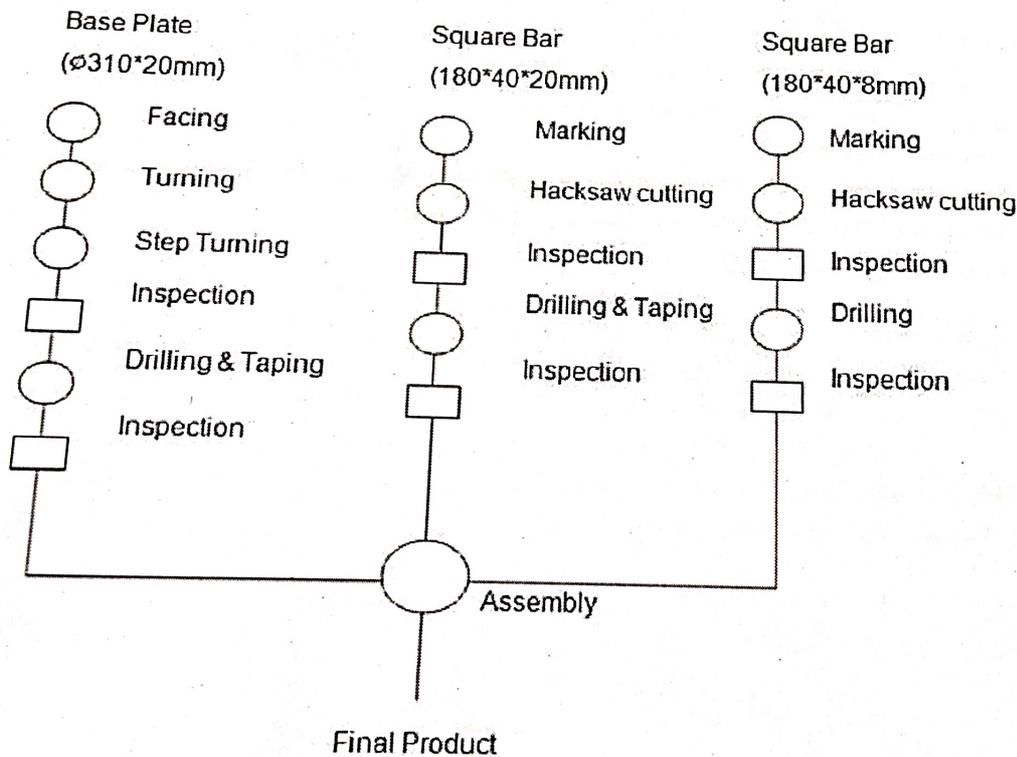


FIG. 5.1 Design Procedure of Jig

> **BASE PLATE:-**

- First take base plate of dia. 310 mm *20 mm. Facing and turning operation is carried out on the base plate for straightness. Then step turning of dia. 150.1 mm is done. -Drilling of dia. mm is done at the center of the base plate.
- Then drilling two holes at the bottom of the base plate as per the marking which is carried out with the help of pressure plate. After that the tapping is done.

FOR 610 RPM:-

1) Material Removal Rate $MRR = \pi * D^2 * f * N / 4 = \pi * (8)^2 * 0.123 * 610 / 4$
 $= 3771.4 \text{ mm}^3 / \text{min}$

2) Total Depth
 Total Depth $L = \text{Total height} + 2 * 0.29 * D$
 $= 20 + 2 * 0.29 * 8$
 $= 24.64 \text{ mm}$

3) Drilling Time
 Drilling Time $T = L / N * f$
 $= 24.64 / 610 * 0.123$
 $= 59.112 \text{ sec}$

4) Loading And Unloading Time = 51 sec
 5) Total Time
 Total Time = Loading and Unloading Time + Drilling Time for Drill 3 holes = $51 + 59.112 * 3$
 $= 231 \text{ sec}$

FOR 912 RPM:-

6) Material Removal Rate $MRR = \pi * D^2 * f * N / 4$
 $= \pi * (8)^2 * 0.123 * 912 / 4$
 $= 5638.58 \text{ mm}^3 / \text{min}$

7) Total Depth
 Total Depth $L = \text{Total height} + 2 * 0.29 * D$
 $= 20 + 2 * 0.29 * 8$
 $= 24.64 \text{ mm}$

8) Loading and Unloading Time = 51 sec
 9) Total Time
 Total Time = Loading and Unloading Time + Drilling Time for Drill 3 holes = $51 + 39.5377 * 3 = 171 \text{ sec}$

OPERATION	EXISTING SOLUTION	PROPOSED SOLUTION (USING JIG)	
		By standard table measurement	By measurement
Marking and punching	690 sec	-----	-----
Loading and unloading time	20 sec	51 sec	51 sec
Drilling time	40 sec	60 sec	40 sec



FIG. 5.2 Base Plate

> SQUARE BAR:-

- First take square bar of 180*40*20 mm. marking at length of 30mm, 60mm and 90mm is carried out consequently. Then the cutting operation of two square bar is carried out with the help of hacksaw cutting machine as per the Marking.
- Then drill two holes (as per size of bolts) at the bottom of the First square bar with the use of base plate and also tapping of the holes are carried out.
- After that drill two holes of same size at top of that first square bar and also on the second square bar as per the first square bar. Then joint two square bar with the help of I & key bolt.
- Drill one hole of dia. 8 mm on the top of that plate with the use of pressure plate. - Same procedure is done for the remaining two holes of the pressure plate.

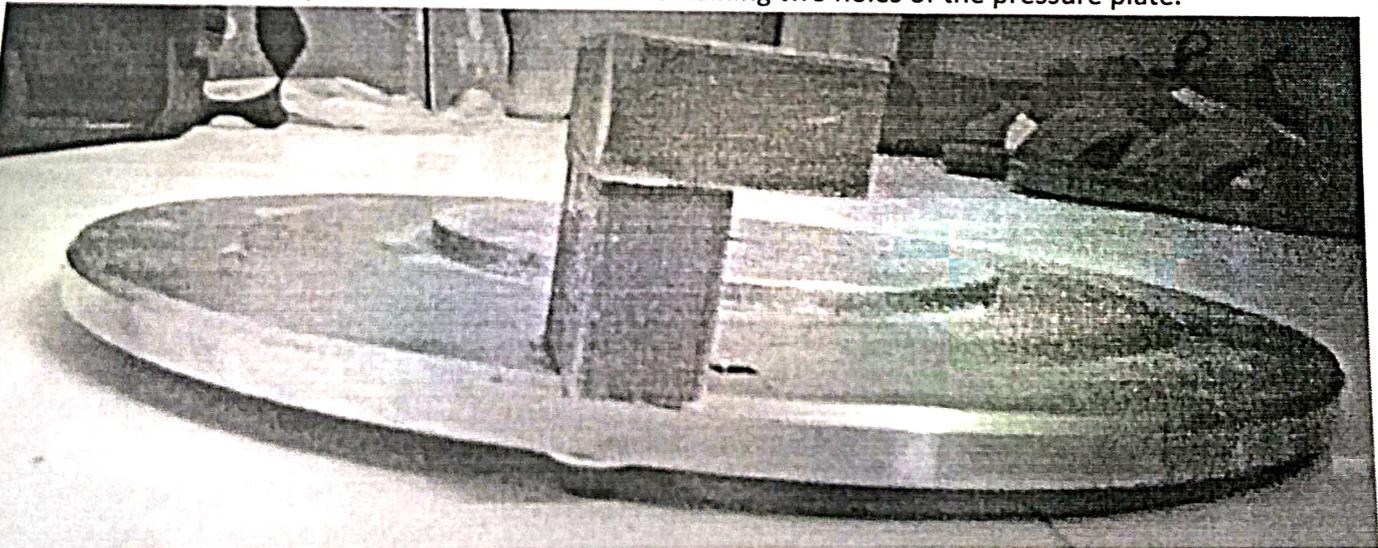


FIG.5.3 Square Bars

6. SUMMERY OF RESULT**6.1. TIME ANALYSIS:-****CALCULATIONS:-**

Drill Size : 8mm or 5/16 Inch

Feed Rate : 0.123 mm / rev

6.4.2 Funds / Grants received from non-government bodies, individuals, philanthropers during the year (not covered in Criterion III)

Year	Name of the non government funding agencies/ individuals	Purpose of the Grant	Funds/ Grants received (INR in lakhs)	Link to Audited Statement of Accounts reflecting the receipts
2021-2022	nil	-	-	