GIDC Degree Engineering College
Managed by GIDC Education Society

# Industrial Visit at Balaji Wafer, Valsad

Organized

By

Electrical Engineering Department & Automobile Engineering Department

For

I[st] year students of Electrical and Automobile Engineering

# ACKNOWLEDGEMENT

The industrial visit **Balaji Wafer, Valsad** was impossible to us without the efforts and valuable inputs from collage and faculties. We are here extending to our great acknowledgement and appreciation to following persons with their memorial inputs that are not limited only those mentioned below:-

The first and the most acknowledged is **Dr.K.N.Mistry, Principal Sir** who was very helpful to us. As a principal, he has inspired us to arrange industrial visit to Pre final year students. He has injected us the familiarity and methodology of planning of visit. Not only that as giving the permission of industrial visit, his academic guidance, fairness and responsiveness to kind of queries remains him as a role model, there of we are extending our gratitude to **Dr.K.N.Mistry, Principal Sir.**

Next and the acknowledged **Mr.Rajesh T.Patel (H.O.D. of Electrical Engineering Department )** & **Mrs.Toral V. Patel (H.O.D. of Automobile Engineering)** who was faithful to us, he is also always ready for solving problem related to industrial visit and conclude it, ascertaining him a commemorative plaque at deep of our heart.

***Again thanks for valuable collaborations***

Mr.Bhavesh S. Patel (Assistant Professor)

Miss.Dharmishtha T. Patel (Assistant Professor)

Mr.Ankur P. Desai (Assistant Professor)

Mrs.Apexa Desai (Lab Assistant)

Mrs.Chetna Patel (Lab Assistant)

**Name of Industry: Balaji Wafers,Valsad**

**Date of Visit: 15.03.2017**

The electrical department and automobile engineering department of GIDC Degree engineering College has organized a one day industrial visit at Balaji Wafer, Valsad for 1st year Electrical and Automobile Engineering students. This visit was organized with prior permission and guidance of Principal Dr.K.N.Mistry, Prof.Rajesh T. Patel (H.O.D Electrical) and Prof.Toral V. Patel(H.O.D Automobile) It was conducted by Faculty members Prof.Ankur P. Desai, Prof Dharmishtha T. Patel, Prof. Bhavesh S. Patel, Mrs. Chetna Patel and Mrs.Apexa Desai.The class was divided in two groups for better understanding of every component, process. Students got useful information of PLC, SCADA and industrial automation.

**About History of Company:-**

Balaji Wafers began as a micro-retail enterprise in 1974, managed by the Virani brothers at Astron Cinema, Rajkot. By 1982, spurred by the initiative of Virani brothers, this grew to a home-based manufacturing venture. A decade later, the brothers set up an international standard automatic plant in Gujarat, with steps to increase capacity and quality. In 2000, Balaji Wafers installed its first fully automatic plant. By 2014, Balaji Wafers captured a 70% market share in snacks market. Today, the company employs more than 1800 personnel in their Rajkot and Val sad manufacturing facilities. Balaji has the capacity to manufacture 100,000 kg of potato wafers, along with 500,000 kg of savories per day.

Balaji Wafers is one of the largest potato chips producing company in India, with a high market Share especially in Gujarat. In 2014, a market share of over 70% was reported for Gujarat & over 60% for Maharashtra. In the initial stage, Balaji Group had set up their plant at Aji Vasad (Industrial Zone, Rajkot) with their new concept of making the potato chips. The main benefit they got is the readymade infrastructure availability due to which their cost is reduced to larger extent. They have operated over there around 20 to 22 years. By the overwhelming retail success, they were inspired to set a semi-automatic plant. Instead of preparing wafers by the traditional frying method this semi-automatic plant boosted the quality, taste and more sales also. The fame of taste reached to the whole Gujarat hence it was time to take over the whole Gujarat so the biggest automatic plant of Gujarat came into the picture

**Visit at Balaji Wafers Company:-**

Balaji Wafer plant is an entirely automatic plant and at their Valsad plant they manufacture potato wafers and other Namkeens. We started our journey at 08:00 AM from our college and reached the plant around 11:30 AM. Being around 35 students, we were divided into two groups to be taken turn by turn inside the factory.

Before entering the plant, all the students were given hair caps as per the Food Safety Act and the Food Hygiene Regulations. After making sure, we complied with all the requirements of the Plant, we were taken in the Factory and explained the whole process as follows: Potatoes that are freshly dug from the ground are placed in trucks and transported to a building before going to the storage for grading.

The cold storage at the plant has the capacity of storing potatoes worth Rs.10 Crore. During the grading process, potatoes are inspected for rot, green heads, double growth, or all other types of defects or disease. In the initial processing phase, the potatoes flow from storage tanks into a large hopper that slowly feeds them into a destoner. This piece of equipment is full of water and has a spiral lift auger that takes the potatoes into the peeler. The destoner will remove all stones, wood, or any other foreign matter that may have been dug when harvesting the potatoes. Here all the potatoes are checked again using an Image Processing Technique for any defects that were missed by human eyes during the grading process. The rejected pieces of potato are then discarded. The peeler consists of abrasive rollers that revolve at a given speed to insure that the potato is peeled properly. Upon completion of removing the skins, the potatoes are processed on an inspection line where employees inspect them again. Potatoes that do not pass inspection are removed prior to processing. Upon completion of inspection, the potatoes proceed on the conveyor belt to a lift where they are dropped into a holding hopper that feeds the slicers. The potatoes are then sliced very thinly after they fall into a revolving slicer that has sharp cutting blades that are set by a gauge. The potato slices then proceed into a rotating mesh drum that is constantly running in water.

As the potato slices tumble in the drum, they are washed and most of the starch removed from them

From the drum, the potato slices proceed up a mesh conveyor where they are washed and dried upon entering the frying kettle. The slices fry for approximately 4 minutes. There are paddle wheels that move the slices forward to the front of the machine. As the potato slices leave the paddle wheel area, they are submerged into the cooking oil by a mesh conveyor. This conveyor finishes cooking the slices. The operator of the cooker inspects the chips to insure they are completely cooked and also to insure the temperature of the machine is proper at all times. This plant operates two manufacturing lines, both of which have production capacity of approximately 2,200 kg/hour.

As the chips proceed past the fryer's inspection point, they fall onto a small mesh stainless steel conveyor and then pass under the salter. As the salt is dispensed, it falls onto a spinner type bracket that spreads the salt evenly on the chips.

Here, different flavors are added along with salt for preparing different products. Here, each time, approximately, 35 -40 kg of salt is used. After the chips are salted, they fall onto a vibrating conveyor where they are inspected using Image Processing Technique. Chips that do not meet the required standards are removed from the line and disposed of into plastic containers. From the inspection conveyor, the chips are dropped into a bucket lift which elevates the chips on to the overhead vibrating conveyors that process the finished product into the automatic packaging machines. The chips are then weighed and deposited into a former which releases the chips into Plastic bags. The bags are then packed into boxes by employees or automatic packers. Packers inspect baggage for proper weight and sealing of the bag. They are then placed on conveyors to be sent to the warehouse. The warehouse personnel stacks the cartons and issue them to the driver salesman for redistribution to selling outlets.

All cases that go into the warehouse are rotated on a daily basis so that first in and first out concept is established.
Since a potato is approximately 80% water, on e will get approximately 20 kg of chips for every 100 kg of potatoes processed.

**At Balaji Wafers, Valsad**

**Faculty Detail:**

Mr. Rajesh T. Patel (H.O.D)

Mr.Bhavesh S. Patel (Assistant Professor)

Miss.Dharmishtha T. Patel (Assistant Professor)

Mr.Ankur P. Desai (Assistant Professor)

Mrs.Apexa Desai (Lab Assistant)

Mrs.Chetna Patel (Lab Assistant)

**Student's details:**

35 (1st Year Electrical and Automobile Engineering students)

**Visit Date: 15.03.2017**

**Venue:**

Balaji Wafers, Valsad

At Balaji Wafers,Valsad

**Report Compiled and edited by,**

**Ankur P Desai**

**Assitant Professor,**

**Electrical Engineering Department**

**GIDC Degree Engineering College, Abrama**

**Annexure-1 Permission letter by GIDC Degree Engineering College**

**GIDC Degree Engineering College**
(Approved by AICTE and Affiliated to Gujarat Technological University)
(Managed by GIDC Education Society)
Abrama, Ta : Jalalpore, Dist. : Navsari - 396 406
E-mail : gidcengcol@gmail.com
Website www.gdec.in
Phone (02637) 229040

Ref No : GDEC/Adm/Ind. visit/2016-17/3342 Dt. : 11/02/2017

To,
HR manger,
Balaji Wafers,
Gujarat State Highway 6,
Shanker Talav, Valsad,
Gujarat 396375
Ph.no. 02632 287 091

SUBJECT: Permission for field Visit for B.E Electrical Engineering Final (2th year, Sem-4th) Students.

Dear Sir/Madam,

As you may be aware, GIDC Degree Engineering College, Village-Abrama, Taluka-Jalalpore, Dist- Navsari is the first PPP Mode College of the "GIDC EDUCATION SOCITY, GANDHINAGAR" Supported by Government of Gujarat. The college offers bachelor degree courses in Electrical, Mechanical, Civil, Automobile and Computer engineering.

Apart from the curriculum, we encourage students to undertake field visit to industries of repute to further enhance their knowledge. We feel it will be fruitful that the students with academic background of electrical power have a glance of the generation, distribution and transmission of power in order to have a better appreciation of practical exposure for real time process.

In above background, we would like to send strength of about 65 students of B.E. Electrical Engineering accompanied by 03 staff members to visit your esteemed industry preferable any date of Feb-2017 (last week).

We request you to kindly accord the necessary permission for site visit of Balaji Wafers, Valsad, Gujarat. Let us know the date of visit as per your convenience.

We shall be grateful for a favourable response.

Mr.Ankur P Desai
Assistant Professor;
Electrical Engineering;
Mo.No.8511224911

Mr. Rajesh T. Patel
Head of Department,
Electrical Engineering.

Dr. K.N.Mistry

**Annexure-2 Permission/Undertaking by Teachers/ Parents/Guardian**

---

**Letter of Undertaking for industrial tour given by Parents/Guardian**

Date:

To,
The Principal
GIDC Degree Engineering College,
Abrama, Navsari

Dear Sir,

SUB: Submission of "Industrial Tour Undertaking"

We, Mr./Mrs._____ parents of _____ bearing enrollment number _____ studying in _____Semester, Department of _____ in GIDC Degree Engineering College Abrama, Navsari herewith voluntarily submitting the under taking.

We, the undersigned parents/guardian are aware that, our son/daughter is participating in the industrial tour organized by the Institute scheduled during_____with our full acceptance and will be bearing all the expenditure incurred for the Industrial tour towards travel and other expenses from our end.

We shall ensure that our son/daughter shall abide by the college terms and conditions for industrial tour. We , hereby declare and confirm that the college shall not be held responsible in the event of any misfortune or accidents and/or personal injuries whether fatal or otherwise involving our son/daughter.

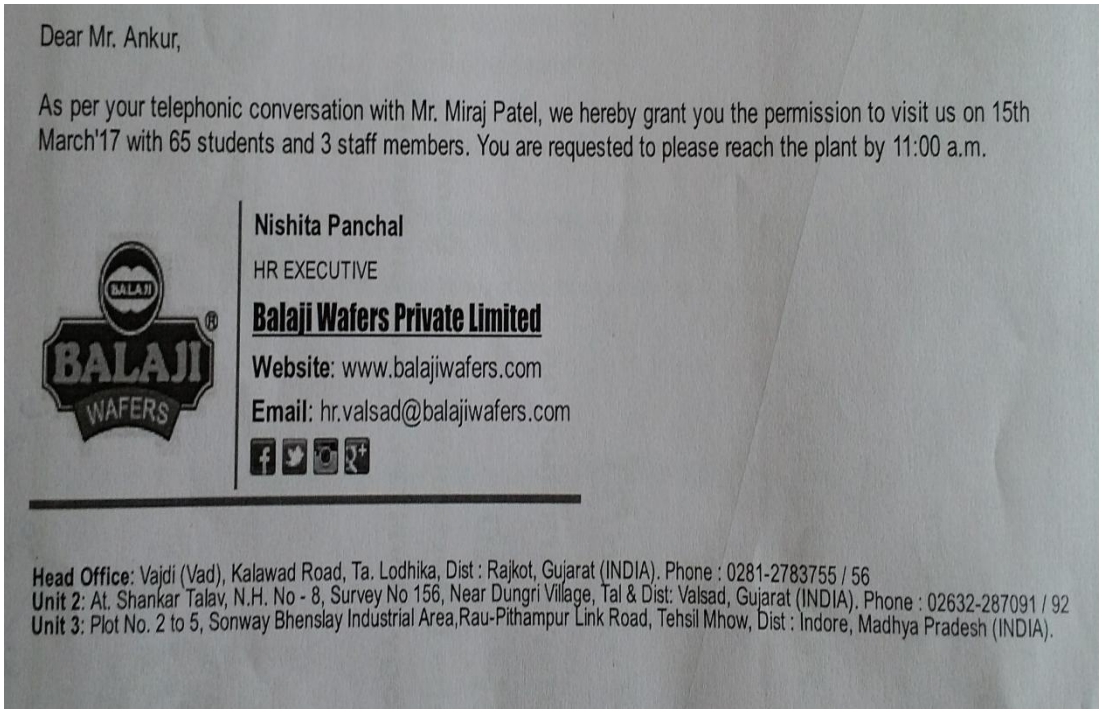
We shall undertake full responsibility of all the consequences should any other person or body suffer such accidents and/or personal injuries and/or damage to property as a result of our son/daughter negligent act during the period of industrial tour.
We further confirm that the college shall not be held responsible for our son/daughter misconduct or wrongdoing at all times during the period of industrial tour and shall obey the instructions of the faculty members who are accompanying during the industrial tour.

Yours sincerely,

_____ _____
_____ Signature of the student
(Parents/Guardian's Signature)
Name of the Father: _____
Name of the Mother: _____
Name of the Guardian: _____
Contact Address:_____
Contact Phone No:_____

---

**Annexure-3 Permission from HR Department of Balaji Wafers, Valsad**



Dear Mr. Ankur,

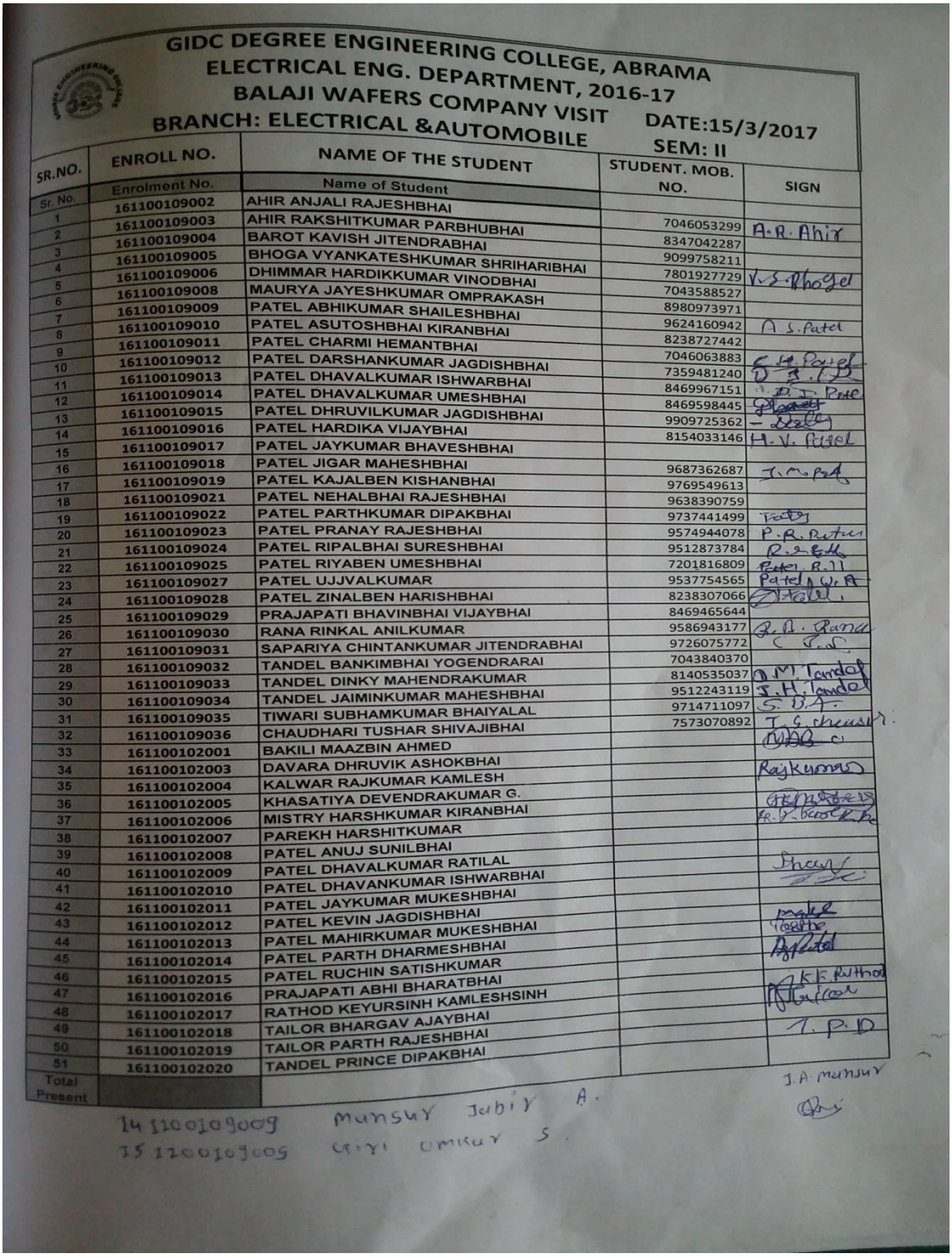
As per your telephonic conversation with Mr. Miraj Patel, we hereby grant you the permission to visit us on 15th March'17 with 65 students and 3 staff members. You are requested to please reach the plant by 11:00 a.m.

BALAJI WAFERS

Nishita Panchal
HR EXECUTIVE
**Balaji Wafers Private Limited**
**Website**: www.balajiwafers.com
**Email**: hr.valsad@balajiwafers.com

**Head Office**: Vajdi (Vad), Kalawad Road, Ta. Lodhika, Dist : Rajkot, Gujarat (INDIA). Phone : 0281-2783755 / 56
**Unit 2**: At. Shankar Talav, N.H. No - 8, Survey No 156, Near Dungri Village, Tal & Dist: Valsad, Gujarat (INDIA). Phone : 02632-287091 / 92
**Unit 3**: Plot No. 2 to 5, Sonway Bhenslay Industrial Area,Rau-Pithampur Link Road, Tehsil Mhow, Dist : Indore, Madhya Pradesh (INDIA).

**Annexure-4 List of Students who attended the industrial visit at Balaji Wafers,Valsad**



GIDC DEGREE ENGINEERING COLLEGE, ABRAMA
ELECTRICAL ENG. DEPARTMENT, 2016-17
BALAJI WAFERS COMPANY VISIT DATE:15/3/2017
BRANCH: ELECTRICAL &AUTOMOBILE SEM: II

| SR.NO. | ENROLL NO. | NAME OF THE STUDENT | STUDENT. MOB. NO. | SIGN |
|---|---|---|---|---|
| Sr. No. | Enrolment No. | Name of Student | | |
| 1 | 161100109002 | AHIR ANJALI RAJESHBHAI | 7046053299 | A.R. Ahir |
| 2 | 161100109003 | AHIR RAKSHITKUMAR PARBHUBHAI | 8347042287 | |
| 3 | 161100109004 | BAROT KAVISH JITENDRABHAI | 9099758211 | |
| 4 | 161100109005 | BHOGA VYANKATESHKUMAR SHRIHARIBHAI | 7801927729 | V.S. Bhogel |
| 5 | 161100109006 | DHIMMAR HARDIKKUMAR VINODBHAI | 7043588527 | |
| 6 | 161100109008 | MAURYA JAYESHKUMAR OMPRAKASH | 8980973971 | |
| 7 | 161100109009 | PATEL ABHIKUMAR SHAILESHBHAI | 9624160942 | A S. Patel |
| 8 | 161100109010 | PATEL ASUTOSHBHAI KIRANBHAI | 8238727442 | |
| 9 | 161100109011 | PATEL CHARMI HEMANTBHAI | 7046063883 | |
| 10 | 161100109012 | PATEL DARSHANKUMAR JAGDISHBHAI | 7359481240 | |
| 11 | 161100109013 | PATEL DHAVALKUMAR ISHWARBHAI | 8469967151 | |
| 12 | 161100109014 | PATEL DHAVALKUMAR UMESHBHAI | 8469598445 | |
| 13 | 161100109015 | PATEL DHRUVILKUMAR JAGDISHBHAI | 9909725362 | |
| 14 | 161100109016 | PATEL HARDIKA VIJAYBHAI | 8154033146 | H. V. Patel |
| 15 | 161100109017 | PATEL JAYKUMAR BHAVESHBHAI | | |
| 16 | 161100109018 | PATEL JIGAR MAHESHBHAI | 9687362687 | J. M. Pat |
| 17 | 161100109019 | PATEL KAJALBEN KISHANBHAI | 9769549613 | |
| 18 | 161100109021 | PATEL NEHALBHAI RAJESHBHAI | 9638390759 | |
| 19 | 161100109022 | PATEL PARTHKUMAR DIPAKBHAI | 9737441499 | |
| 20 | 161100109023 | PATEL PRANAY RAJESHBHAI | 9574944078 | P.R. Patel |
| 21 | 161100109024 | PATEL RIPALBHAI SURESHBHAI | 9512873784 | |
| 22 | 161100109025 | PATEL RIYABEN UMESHBHAI | 7201816809 | |
| 23 | 161100109027 | PATEL UJJVALKUMAR | 9537754565 | |
| 24 | 161100109028 | PATEL ZINALBEN HARISHBHAI | 8238307066 | |
| 25 | 161100109029 | PRAJAPATI BHAVINBHAI VIJAYBHAI | 8469465644 | |
| 26 | 161100109030 | RANA RINKAL ANILKUMAR | 9586943177 | R. R. Rana |
| 27 | 161100109031 | SAPARIYA CHINTANKUMAR JITENDRABHAI | 9726075772 | |
| 28 | 161100109032 | TANDEL BANKIMBHAI YOGENDRARAI | 7043840370 | |
| 29 | 161100109033 | TANDEL DINKY MAHENDRAKUMAR | 8140535037 | D.M. Tandel |
| 30 | 161100109034 | TANDEL JAIMINKUMAR MAHESHBHAI | 9512243119 | J.H. Tandel |
| 31 | 161100109035 | TIWARI SUBHAMKUMAR BHAIYALAL | 9714711097 | S. B.A. |
| 32 | 161100109036 | CHAUDHARI TUSHAR SHIVAJIBHAI | 7573070892 | |
| 33 | 161100102001 | BAKILI MAAZBIN AHMED | | |
| 34 | 161100102003 | DAVARA DHRUVIK ASHOKBHAI | | Rajkumar |
| 35 | 161100102004 | KALWAR RAJKUMAR KAMLESH | | |
| 36 | 161100102005 | KHASATIYA DEVENDRAKUMAR G. | | |
| 37 | 161100102006 | MISTRY HARSHKUMAR KIRANBHAI | | |
| 38 | 161100102007 | PAREKH HARSHITKUMAR | | |
| 39 | 161100102008 | PATEL ANUJ SUNILBHAI | | |
| 40 | 161100102009 | PATEL DHAVALKUMAR RATILAL | | |
| 41 | 161100102010 | PATEL DHAVANKUMAR ISHWARBHAI | | |
| 42 | 161100102011 | PATEL JAYKUMAR MUKESHBHAI | | |
| 43 | 161100102012 | PATEL KEVIN JAGDISHBHAI | | |
| 44 | 161100102013 | PATEL MAHIRKUMAR MUKESHBHAI | | |
| 45 | 161100102014 | PATEL PARTH DHARMESHBHAI | | |
| 46 | 161100102015 | PATEL RUCHIN SATISHKUMAR | | |
| 47 | 161100102016 | PRAJAPATI ABHI BHARATBHAI | | |
| 48 | 161100102017 | RATHOD KEYURSINH KAMLESHSINH | | |
| 49 | 161100102018 | TAILOR BHARGAV AJAYBHAI | | |
| 50 | 161100102019 | TAILOR PARTH RAJESHBHAI | | |
| 51 | 161100102020 | TANDEL PRINCE DIPAKBHAI | | |
| Total Present | | | | |

14 161100109009 Munsur Jubir A.
15 161100109005 Giri Omkar S.

J.A. Munsur