



Daffodil
International
University

AN INTERNSHIP REPORT

ON

**“STUDIES ON SOFT AND HARD BISCUIT PRODUCTION AT PROTIK FOOD AND
ALLIED LIMITED”**

Submitted to:

Prof. Dr. Md. Bellal Hossain

Head

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Submitted by:

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(i)

LETTER OF TRANSMITTAL

Date:

To

Head,

Professor Dr. Md. Bellal Hossain
Department of Nutrition & Food Engineering
Daffodil International University

Subject: Submission of Internship Report.

Dear Sir,

It is a great pleasure and honor for me to have the opportunity to submit me Internship report as a part of the Nutrition and Food Engineering (NFE) program curriculum.

I have prepared this report based on the acquired taste knowledge during my internship period in Protik Food And Allied Ltd. It is great achievement to work under your active supervision. This report is based on, "Studies on the Production Management of 'Soft And Hard Biscuit Production'". I have got the opportunity to work in Protik Food And Allied Ltd. In "Quality Control and Production Department "for sixty days.

This is the first times this project gave me both academic and practical exposures. Firstly of all I have gained knowledge about the organizational culture of a prominent consumer product producing organization of the country. Secondly, the project gave me the opportunity to develop a network with the corporate environment.

I therefore, would like to place this report to your judgment and suggestion. Your kind advice will encourage me to perform better planning in future.

Sincerely Yours,

Md. Shoriful Islam

ID: 153-34-459

Department of Nutrition and Food Engineering
Daffodil International University

CERTIFICATE OF APPROVAL

I am pleased to certify that the internship report on Production Management of Soft and Hard biscuit production, conducted by **Md. Shoriful Islam** , bearing ID No: 153-34-459 of the department of Nutrition and Food Engineering has been approved for presentation and defense/viva-voice.

I am pleased to hereby certify that the data and finding presented in the report are the authentic work of Md. Shoriful Islam. I strongly recommended the report presented by Md. Shoriful Islam for further academic recommendations and defense/viva-voice. Md. Shoriful Islam bears a strong moral character and a very pleasant personality. It has indeed a great pleasure working with him. I wish him all success in life.

Professor Dr. Md. Bellal Hossain

Head,

Department of Nutrition and Food Engineering

Faculty of Allied Health Sciences

Daffodil International University

Acknowledgement

First of all, I would like to thank my advisor, **Professor Dr Md. Bellal Hossain**. It would have been very difficult to prepare this report up to this mark First I wish to express my gratitude to the almighty ALLAH for giving me the strength and opportunity to perform my responsibilities as an intern and complete the report within the stipulated time.

I am deeply indebted to my Department Head, **Professor Dr. Md. Bellal Hossain**, Daffodil International University for his whole-hearted supervision during my organizational attachment period. I am also grateful to **Mr.Arifuz zaman**, General Manager (Factory GM) Protik Food And Allied Ltd. without their guidance.

I Really most thanks **Md Mohmad Hosain** Deputy General Manager (Factory DGM) for his guidance in Protik Food And Allied Ltd R&D lab in instructing me how to operate and understand the Texture Analyzer, statistical analysis. Additionally, many thanks go out to Md Saiful islam, Junior Quality Officer and Robiul islam, Junior Quality Officer for their endless administrative assistance throughout my graduate career.

Special thanks to **Mr.Habibur Rahman**, Production Manager , for their graduate career company and assistance and production strategy.

Internship program that facilitates integration of theoretical knowledge with real life situation. Moreover, I would also like to express my gratitude **Protik Food And Allied Ltd.**, fellows, seniors and colleagues and senior operator who gave me good advice, suggestions, inspiration and support. I must mention the wonderful working environment and group commitment of this organization that has enabled me to deal with a lot of things.

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CHAPTER 1

1.1. Objective of the Training:

There are two objectives of the Industrial training:

- ❖ General objective.
- ❖ Specific objective.

General Objective:

The main objective of this study is to hazard free safe production and quality control of food products, that's help to gain real life exposure and get a clear idea about processing of these products as well as promoting brand.

Specific Objective:

The specific objectives of this study are as following:

- To focus on the hygienic production and quality control of Protik Food And Allied Ltd
- To have an idea of system & activities of processing unit.
- To know different rules & methods of the industrial Company.
- To identify the hazard during the processing & production of products in the plant & finding how to take necessary steps.
- To identify different critical control point(CCP) in production line and process system.
- To describe the processing of all products.
- To maintain standard quality parameters.
- To give an overview of Protik Food And Allied Ltd.

LITERATURE REVIEW

Bakery and confectionary is a Most popular product in food industry in several food product, and its simple ingredient list management and ease of preparation make it a most revenue business around the globe. As a wheat-derived staple food with a very long shelf life, it is lot of opportunity to grow and new innovation . This number one sector to keep most quality products to export. this is a product that has great rheological properties, cooking quality, and high consumer acceptance.

There are lot of product in world and lot of biggest company in the world that all ready process Bakery and confectionary products. Due to its low price, ease of preparation, stable shelf life, and overall versatility, pasta is consumed by many people worldwide. Having originated in Asia and the Mediterranean, Italy is still most well-known for its pasta making and leads in national consumer consumption per capita (International Pasta Organization 2011). This highly regulated nation has set the benchmark for quality and preparation everywhere.

The versatility of Bakery and confectionary allows it to be formed into almost any shape and size flavor and mixing system . It comes in varieties such Biscuit, Canachur, Noodles, Candy, Chocolate, Cake, IPED, Cookies, Bread, pasta, motot dal etc . Bakery and confectionary eliminates the drying step and allows for a much quicker product to be made, but has only a portion of the shelf life of Products.

Company overview:

Protik Food And Allied Ltd is a sister concern of Protik Group. Protik Group one of the leading diversified business conglomerates of Bangladesh. Protik Food And Allied Ltd Started its operation in the year 2015. **Protik Food And Allied Ltd** has been established at a beautiful site Dautia, Dhamrai, Dhaka.

It has come mainly provide best quality **Bakery and confectionary products** in Bangladesh. Most of the raw materials are come from various Bangladesh company with foreign Country . At every stage, on-standard products are rejected. Protik Food And Allied Ltd is New company but theirs product market demand so high. There are 25 variety Biscuits. Also Biscuit, Noodles, Candy, Chocolate, Dry Cake, IDP, Cookies,

There are almost 3000 plus worker and 50 plus specialist Officer and strong management system. Expert machine operator with technician. All over auto motion machine auto packaging machine without hand contamination. Protik Food And Allied Ltd highly hygiene system are maintained with officer and worker. Main all raw and final product standard quality parameter.

Protik Food And Allied Ltd is ISO 9001:2008 certified food industry to harmonize the requirements of food safety managements in industry.

Company Products list and details

Company products list

- Biscuits
 1. Milk Extra Big
 2. Milky malli Big
 3. Butter milk big
 4. Butter milk mini
 5. Milky butter big
 6. Milky butter mini
 7. Kullfy regular
 8. Kullfy family
 9. Milk Extra mini
 10. Milk Malli Mini
 11. Strawberry cream
 12. Vanilla cream
 13. Orange cream
 14. Chocolate cream
- Noodles
 1. Protik instant Noodles
 2. Wow instant Noodles
 3. Danish Noodles
 4. Dekko Instant Noodles
 5. ICCPL Instant Noodles

- Candy:
 1. Milk Candy
 2. Mango Candy
 3. Pineapple Candy
 4. Shelfy Candy

- Chocolate Bar
 1. Milky chocolate
 2. Choco chocolate
- Cookies
 1. Butter Cookies
 2. Brown Cookies
- Dry Cake
- IDP Powder
- Peanut bar
- Other



Figure: Biscuits sample



Figure: noodles sample

Biscuits

Overview : Biscuit is one of the most popular product in worldwide. Its found in variety of biscuit in world most of the variety come from different mixture and dough process. Likely most ingredient and process are same to make biscuit . basically flavor, chemical ingredients low and high size make different dough which is responsible for various type of biscuit.

Recipe: Milk Extra Biscuit

| SI NO. | Ingredients | Unit | Qty. | % |
|--------|--------------------|------|--------|--------|
| 1 | Flour | Kg | 200.00 | 62.132 |
| 2 | Palm Oil | kg | 38.00 | 11.805 |
| 3 | Sugar | Kg | 63.00 | 19.572 |
| 4 | Starch | Kg | 2.00 | 0.621 |
| 5 | Salt | Kg | 1.400 | 0.435 |
| 6 | A.B.C | kg | 6.5 | ~ |
| 7 | Lecithin | kg | 0.500 | ~ |
| 8 | Vanilla Powder | Kg | 0.220 | 0.068 |
| 9 | Liquid Glucose | Kg | 2.200 | 0.683 |
| 10 | Skim Milk Powder | kg | 1.00 | 0.311 |
| 11 | S.M.S | Kg | 0.270 | ~ |
| 12 | SAPP | Kg | 0.250 | ~ |
| 13 | Invert Syrup | Kg | 6.5 | ~ |
| 14 | S.B.C | Kg | 0.600 | 0.186 |
| 15 | Kheer Mix Flavor | Kg | 0.450 | ~ |
| 16 | Fresh Milk Flavor | Kg | 0.100 | 0.031 |
| 17 | Powder Milk Flavor | Kg | 0.300 | 0.093 |
| 18 | TBHQ | Kg | 0.005 | 0.002 |
| | Total | | | |

Table: Biscuit recipe

Recipe: butter milk Biscuit

| SI NO. | Ingredients | Unit | Qty. | % |
|--------|--------------------|------|--------|--------|
| 1 | Flour | Kg | 200.00 | 62.132 |
| 2 | Palm Oil | kg | 40.00 | 11.805 |
| 3 | Sugar | Kg | 60.00 | 19.572 |
| 4 | Starch | Kg | 2.00 | 0.621 |
| 5 | Salt | Kg | 1.400 | 0.435 |
| 6 | A.B.C | kg | 6.5 | ~ |
| 7 | Lecithin | kg | 0.500 | ~ |
| 8 | Vanilla Powder | Kg | 0.220 | 0.068 |
| 9 | Liquid Glucose | Kg | 2.200 | 0.683 |
| 10 | Skim Milk Powder | kg | 1.00 | 0.311 |
| 11 | S.M.S | Kg | 0.270 | ~ |
| 12 | SAPP | Kg | 0.250 | ~ |
| 13 | Invert Syrup | Kg | 6.5 | ~ |
| 14 | S.B.C | Kg | 0.600 | 0.186 |
| 15 | Kheer Mix Flavor | Kg | 0.450 | ~ |
| 16 | Fresh Milk Flavor | Kg | 0.100 | 0.031 |
| 17 | Powder Milk Flavor | Kg | 0.300 | 0.093 |
| 18 | TBHQ | Kg | 0.005 | 0.002 |
| | Total | | | |

Table: Biscuit recipe

Recipe: kulffi malai Biscuit

| SI NO. | Ingredients | Unit | Qty. | % |
|--------|--------------------|------|--------|--------|
| 1 | Flour | Kg | 200.00 | 62.132 |
| 2 | Palm Oil | kg | 46.00 | 11.805 |
| 3 | Sugar | Kg | 56.00 | 19.572 |
| 4 | Starch | Kg | 2.00 | 0.621 |
| 5 | Salt | Kg | 1.400 | 0.435 |
| 6 | A.B.C | kg | 6.5 | ~ |
| 7 | Lecithin | kg | 0.500 | ~ |
| 8 | Vanilla Powder | Kg | 0.220 | 0.068 |
| 9 | Liquid Glucose | Kg | 2.200 | 0.683 |
| 10 | Skim Milk Powder | kg | 1.00 | 0.311 |
| 11 | S.M.S | Kg | 0.270 | ~ |
| 12 | SAPP | Kg | 0.250 | ~ |
| 13 | Invert Syrup | Kg | 6.5 | ~ |
| 14 | S.B.C | Kg | 0.600 | 0.186 |
| 15 | Kheer Mix Flavor | Kg | 0.450 | ~ |
| 16 | Fresh Milk Flavor | Kg | 0.100 | 0.031 |
| 17 | Powder Milk Flavor | Kg | 0.300 | 0.093 |
| 18 | TBHQ | Kg | 0.005 | 0.002 |
| | Total | | | |

_Table: Biscuit recipe

Recipe: Milky butter Biscuit

| SI NO. | Ingredients | Unit | Qty. | % |
|--------|-------------------|------|--------|--------|
| 1 | Flour | Kg | 200.00 | 62.132 |
| 2 | Palm Oil | kg | 38.00 | 11.805 |
| 3 | Sugar | Kg | 63.00 | 19.572 |
| 4 | Starch | Kg | 2.00 | 0.621 |
| 5 | Salt | Kg | 1.400 | 0.435 |
| 6 | A.B.C | kg | 6.5 | ~ |
| 7 | Lecithin | kg | 0.500 | ~ |
| 8 | Vanilla Powder | Kg | 0.220 | 0.068 |
| 9 | Liquid Glucose | Kg | 2.200 | 0.683 |
| 10 | Skim Milk Powder | kg | 1.00 | 0.311 |
| 11 | S.M.S | Kg | 0.270 | ~ |
| 12 | SAPP | Kg | 0.250 | ~ |
| 13 | Invert Syrup | Kg | 6.5 | ~ |
| 14 | S.B.C | Kg | 0.600 | 0.186 |
| 15 | Butter Mix Flavor | Kg | 0.450 | ~ |
| 18 | TBHQ | Kg | 0.005 | 0.002 |
| | Total | | | |

_Table: Biscuit recipe

Biscuit Production Procedure:

There are Four Stage of Biscuit Production Procedure

- I. Mixing Steps
- II. Cutting / Molding Steps
- III. Baking Steps
- IV. Packaging Steps

Mixing Steps:

Mixing Steps Can be derivate are Three Steps

1st Steps (Time: 500s)

(Make Cream: A.B.C, Palm Oil, Sugar, Starch, Salt, Lecithin,
Liquid Glucose, S.M.S, SAPP etc.)



2nd Steps (Time: 300s)

(Add Flour)



3rd Steps (Time: 10s)

(Add Flavor)

Mixture Machine :



Figure: Mixture machine



Figure: mixture machine

Cutting / Molding Steps:

In this steps make dough sheet and small size Though Molding



Figure: biscuit mold cutter



Figure: biscuit mold cutter

Baking Steps:

There are Three Steps in baking system

1st Steps

(Remove Moisture at Tem 270 °C)



2nd Steps

(Biscuit Reaching / Proofing at Tem 270 °C)



3rd Steps

(Biscuit Coloring at Tem 270 °C)



Figure: Baking oven

Oven

Three stages to be followed in oven:

- Removal of moisture.
- Building of structure of biscuits.
- Colouring of biscuits takes place.



Figure: baking oven net



Figure: gas chamber oven



Figure: biscuit moisture dryer



Figure: biscuit mold cutter

Packaging Table & Packaging Machine :



Figure: packaging machine



Figure: packaging filler

Biscuit Quality Control (QC) Parameter:

Most of the Qc Parameter Are similar all of biscuit. They are maintain important Parameter

- ✓ Moisture
- ✓ Thickness
- ✓ Die / Length
- ✓ Texture / shape / Odor
- ✓ Packet Net Weight
- ✓ Packet wrapper Sealing
- ✓ Good packet wrapping
- ✓ Total Carton Weight

Other Parameter

- ✓ Flour Cleaning
- ✓ Personal Hygiene
- ✓ Manufacturing Date / Exp. Date
- ✓ Carton Date

| Time | Product Name | Batch Weighting | Dough Mixing Time | physical Appearance | Length / Dia(mm) | Width(mm) | 10Pcs Thickness(mm) | Weight / pkt(gm) | Moisture % | Organoleptic Test | Colour | Remark's |
|------|--------------|-----------------|-------------------|---------------------|------------------|-----------|---------------------|------------------|------------|-------------------|--------|----------|
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

Table : Online Quality Check Report-Biscuits

Production Maintenance Calculation :

-Total 1 Batch Weight = 320 kg (Depending on Items)

- Total Mixture Time

✓ Cream Time = 500s

✓ Dough Time = 300s

Total time = 900s(15m)

Total Batch Cutting Time = 17 m (880 RPM)

Total Oven Baking time = 4.35m (950 RPM)

Oven Out to Staking Time = 12m (250 RPM)

Packaging Machine Speed = 108 pak/m

Per Package Wet = 60g (12 pic, Dia/length-48mm, Thickness-90mm)

Total Ctn Wet = 24 x 60 = 1440g (Note:24 packet per ctn 1packet 60g)

1 Batch = 4872 Packet = 203 Ctn = 320 kg

Man Power Calculation for Packaging Line :

Srteking = 2 person

Per Packaging Machine 7 person

i. 1 + 1 = 2 Hoper

ii. 1 + 1 = 2 checker

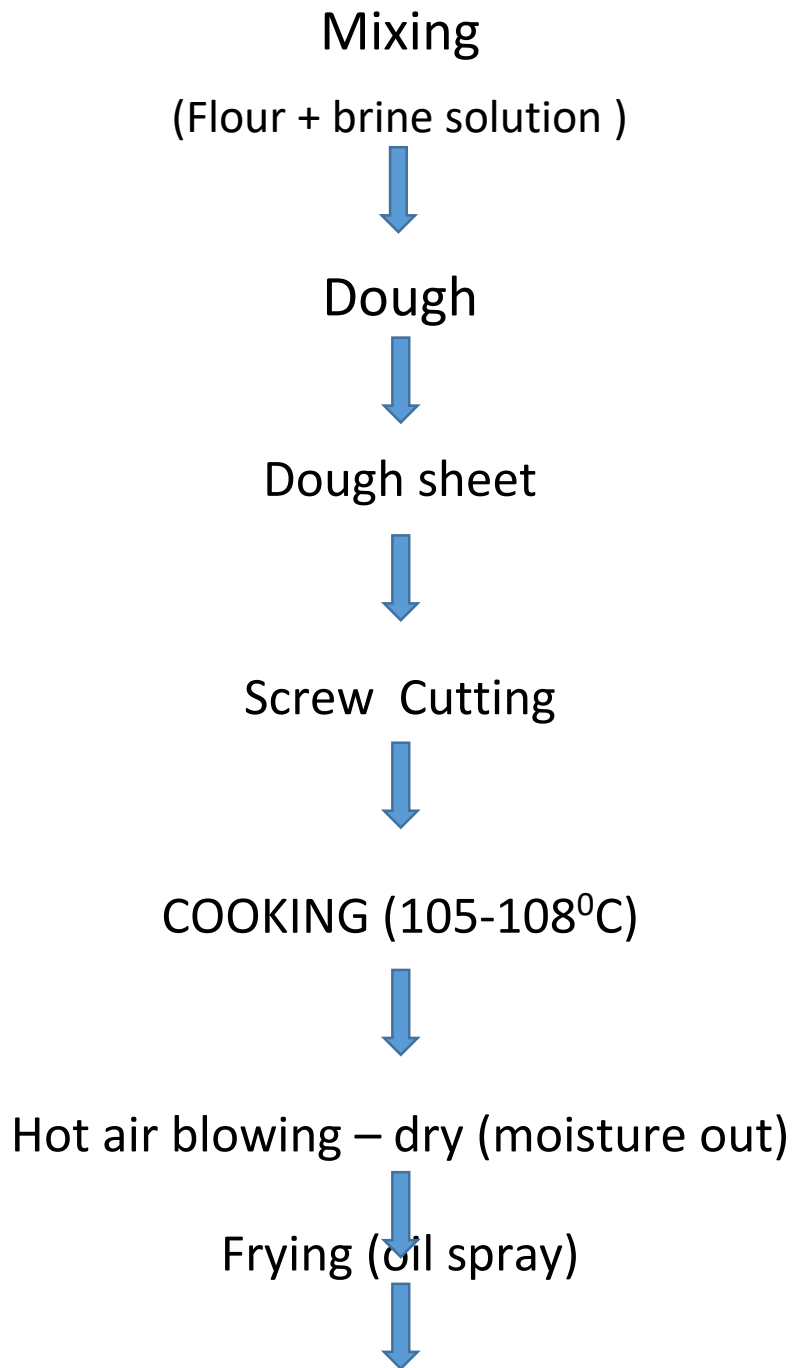
iii. 1+1+1 = 3 Biscuit Pack, Taping, cartooning

Loos Controlling = 3 person

Total = 33 person

3. Noodles / Pasta

Flow process of noodles



Packaging line



Package



Storage



Figure: noodles packaging

1.4. Quality Management System (QMS)

Protik Food And Allied Ltd manufacture its products under strict quality control standards and norms to ensure that the finished product is high qualified and durable. In the process of manufacturing of different products, quality checks are maintained from the stage of sourcing raw materials, during the preparation of materials for making of products and through the various stages of manufacture. Finished products are finally checked and assured of quality desired.

Chapter-2

2.1. Summary of work Description

1. Daily Activities Record of the Trainee in Following Preformat:

| Date | Time | | | Name of the Work | Name of the Departments |
|--|---------|---------|------------|---|-------------------------|
| 01.07.2018 to 05.07.2018 | Form | To | Total Hour | Visited All industry, All section process flow | |
| | 8.00 AM | 8.00 PM | 12 hrs | | |
| Remark: to Make understand all over industry process rule. To Make understand machinery handling. | | | | | |

| Date | Time | | | Name of the Work | Name of the Departments |
|--|---------|---------|------------|--|----------------------------|
| 06.07.2018 To 14.07.2018 | Form | To | Total Hour | Biscuits Processing "Mixture Dough" | |
| | 8.00 AM | 8.00 PM | 12 hrs | | |
| Used Equipments and Plant: | | | | | 1. Biscuits Section |
| Name the Types of Works: | | | | | |
| Soft water: Raw water collection, Filtration by Multimedia filter, Soften by Resin tank, Soft water storage tank etc. | | | | | |
| RO water: Soft water collection Multimedia sand filter, Activated carbon filter, Teco | | | | | |

| Date | Time | | | Name of the Work | Name of the Departments |
|---|---------|----------|------------|---------------------------------------|---------------------------|
| 15.07.2018 To 22.07.2018 | Form | To | Total Hour | Dough sheet cutter or molding biscuit | |
| | 8.00 AM | 08.00 PM | 9 hrs | | |
| Used Equipments and Plant: | | | | | 1.Biscuits Section |
| Name the Types of Works: Work for chorine test: Correctly measurement of sample, chemical adding, and color detection. Work for PM test: Taking sample, adding P-indicator, adding T-solution, titration, adding M-indicator, titration. | | | | | |

| Date | Time | | | Name of the Work | Name of the Departments |
|--------------------------------|---------|---------|------------|--|---------------------------|
| 22.07.2018 To 30.07.2018 | Form | To | Total Hour | Biscuit Production package line, Finish goods. | |
| | 8.00 AM | 8.00 PM | 9 hrs | | |
| Remrk: | | | | | 1.Biscuits Section |

| Date | Time | | | Name of the Work | Name of the Departments |
|-----------------------------|-------------|-----------|-------------------|--------------------------------|-------------------------|
| 01.08.2018 to 10.08.2018 | Form | To | Total Hour | Laboratory Test: Flour test | |
| | 8.00 AM | 8.00 PM | 12 hrs | | |

Used Equipments and Plant:

Dumping hopper, Dissolver tank, Filter, Pasteurization tank, Reaction tank, Press filter, Bag filter, Reserve tank etc.

**Quality Control
Qc & RND**

Name the Types of Works:

Introduce with different equipments.

| Date | Time | | | Name of the Work | Name of the Departments |
|------------|-------------|-----------|-------------------|--------------------|-------------------------|
| 10.08.2018 | Form | To | Total Hour | Noodles production | |
| | 6.00 AM | 8.00 PM | 12 hrs | | |

Used Equipments and Plant:

Production process

1. Noodles
production

Name the Types of Works:

Online quality

| Date | Time | | | Name of the Work | Name of the Departments |
|------------|-------------|-----------|-------------------|------------------|-------------------------|
| 12.08.2018 | Form | To | Total Hour | candy | |
| | 6.00 AM | 8.00 PM | 9 hrs | | |

Used Equipments and Plant:

Candy Production line

1 chocolate & and
candy department

| Date | Time | | | Name of the Work | Name of the Departments |
|--|-------------|-----------|-------------------|------------------|-------------------------|
| 13.08.2018 to 16.08.2018 | Form | To | Total Hour | IDP | |
| | 8.00 AM | 8.00 PM | 12 hrs | | |
| Used Equipments and Plant: Processing | | | | | Product line |
| Name the Types of Works: Sample measurement & taking, adding indicator, titration till color appear, end point detection, calculation. | | | | | |

| Date | Time | | | Name of the Work | Name of the Departments |
|--|-------------|-----------|-------------------|------------------|-------------------------|
| 17.08.2018 To 25.08.2018 | Form | To | Total Hour | Cake | |
| | 8.00 AM | 8.00 PM | 12 hrs | | |
| Used Equipments and Plant: Cake online quality control | | | | | 1 cake production |
| Name the Types of Works: Texture test, weight, Oder. Packing . | | | | | |

| Date | Time | | | Name of the Work | Name of the Departments |
|--|-------------|-----------|-------------------|--------------------------------|-------------------------|
| 26.08.2018 To 05.09.2018 | Form | To | Total Hour | Introduce into the total plant | |
| | 9.00 AM | 6.00 PM | 9 hrs | | |
| Name the Types of Works: Introduce with the plant equipments. | | | | | |

Chapter-3

Conclusion:

This study shows how to maintain the hygiene production and quality control of food & beverage.

The industrial attachment programmer has covered both hygiene production and quality control of food products. To ensure hygiene production and quality control different types of test parameter including Physical, Chemical, Microbiological has been taken. Actually a BSTI standard maintains or regulates its quality parameter. Physical and chemical tests are done routinely in the lab. Microbiological test is also important especially for final product.