A TECHNICAL REPORT ON
STUDENT INDUSTRIAL WORKING EXPERIENCE SCHEME
(SIWES)

Held at

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DEDICATION

I dedicate this technical report to the Almighty Allah, the giver of knowledge, wisdom and who is rich in mercy.

ACKNOWLEDGEMENT

I take this opportunity to express my profound gratitude and deep regards to the creator of heaven and earth, the one who knows the beginning and the end, the alpha and the omega, the Almighty Allah and also to my guides (MR & MRS ABDULRASHEED, and to all those who has helped me during my SIWES programme. The blessings, help and guidance given by them, time to time has carry me so this far and shall carry on the journey of life on which I am about to embark. I also take this opportunity to express a deep sense of gratitude to compliment my mentor for his cordial support valuable information and guidance which helped me in completing my SIWES through various stages.

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CHAPTER ONE

1.1 INTRODUCTION TO SIWES

Students Industrial Work Experience Scheme (SIWES) is a Skills Training Program designed to prepare and expose Students of Universities, Polytechnics, Colleges of Technology, Colleges of Agriculture and Colleges of Education for the Industrial Work situation they are likely to meet after graduation. The Scheme affords Students the opportunity of familiarizing and exposing themselves handling equipment and machinery that are usually not available in their institutions.

1.2 HISTORY OF SIWES

The Students' Industrial Work Experience Scheme (SIWES) was initiated in 1973 by the Federal Government of Nigeria under the Industrial Training Fund (ITF) to bridge the gap between theory and practice among products of our tertiary Institutions. It was designed to provide practical training that will expose and prepare students of Universities, Polytechnics, and Colleges of Education for work situation they are likely to meet after graduation.

Before the establishment of the scheme, there was a growing concern among the industrialists that graduates of institutions of higher learning lacked adequate practical background studies preparatory for employment in industries. Thus the employers were of the opinion that

the theoretical education going on in higher institutions was not responsive to the needs of the employers of labour.

As a result of the increasing number of students' enrolment in higher institutions of learning, the administration of this function of funding the scheme became enormous, hence ITF withdrew from the scheme in 1978 and was taken over by the Federal Government and handed to National Universities commission (NUC), National Board for Technical Education (NBTE) and National Commission for Colleges of Education (NCCE). In 1984, the Federal Government reverted back to ITF which took over the scheme officially in 1985 with funding provided by the Federal Government.

1.3 OBJECTIVES OF THE PROGRAMME

The specific objectives of SIWES are to:

- Provide placements in industries for students of higher institutions of learning approved by relevant regulatory authorities (NUC, NBTE, NCCE) to acquire work experience and skills relevant to their course of study
- Prepare students for real work situation they will meet after graduation.
- Expose students to work methods and techniques in the handling of equipment and machinery that may not be available in schools.

- Make transition from school to the labour market smooth and enhance students' conduct for later job placement
- Provide students with the opportunity to apply their knowledge in real life work situation thereby bridging the gap between theory and practice
- Strengthen employer involvement in the entire educational process and prepare students for employment in industry

Promote the desired technological knowhow required for the advancement of the nation.

1.4 OBJECTIVES OF ESTABLISHMENT

- To provide optimum and individual care to patients.
- To develop recognition for patients needs for privacy and preservation of dignity.
- To maintain good relationship with patients, relations and the community through health education.
- To carry out diagnosis and intervention.
- To provide training for students.
- To maintain sufficient hospital supply of equipment and promote their utilization and maintenance.

  To treat and control diseases.

CHAPTER TWO

2.1. PRECUATION TAKEN IN THE LABORATORY

- Wash hand thoroughly after each test
- Wear hand gloves before carrying out any test in the laboratory and discard after use.
- Do not touch exposed eyes, nose or skin gloved hands.
- Wash hand with water and soap or removal of gloves and after the day's work.
- Always put on laboratory coat.
- Ensure that work surface are kept clean and disinfected before each work
- Do not store food, drink or beverages in the laboratory refrigerator.
- Unnecessary talks are disallowed during work.
- Eating, drinking or application of cosmetics is not allowed in the laboratory.

2.2. EQUIPMENT USED IN THE LABORATORY

There are various equipment used in the laboratory to carry out different tests, among which are briefly discussed below:

- Microscope: used for magnifying and focusing image that is not easily seen with the naked eyes.
- Bunsen burner: source of flame (red hot heat)
- Wire loop: used for inoculating
- Test tube: used to heat, centrifuge and hold sample during test.
- Slides: used for routine works such as microscopy and staining purpose in the laboratory.
- Micro capillary reader: used to measure the percentage of PCV
- Capillary tube: Used to spin blood during PCV determination
- Genotype machine: used for genotype determination
- Glucometer machine: used for blood glucose test.
- Laboratory refrigerator: used to keep sample for further use
- Centrifuge machine: used to centrifuge blood or urine.
- Haemocytometer: used for white bloods count
- Wintrobe tube: used for erythrocytes sedimentation rate (ESR).

CHAPTER THREE

3.1 SOME EQUIPMENT IN THE PHARMACEUTICAL COMPANY AND THEIR USES

Weighing balance: A scale or balance is **a device used to measure weight or mass**. These are also known as mass scales, weight scales, mass balances, massometers, and weight balances.

Water Bath: is a container of heated water used to keep samples at a constant temperature. It's a common piece of equipment in laboratories and is used for many purposes, including incubating cell cultures, melting substrates, and determining boiling points.

A tablet friability tester: is a laboratory instrument that measures how easily a tablet breaks apart. It's used to assess the mechanical strength of tablets and ensure they can withstand physical stress during distribution.

A pH meter: is a scientific instrument used to measure the acidity or alkalinity of a solution in a laboratory. It's also known as a potentiometric pH meter.

Milling Machine: is a machine used to grind and pulverize materials for analysis. It can be used to process hard, dry materials like coffee beans.

Granule weighing balance: A material weighing machine equipped with a table / rotary feeder to measure the weight of fine powder, dry color, and tanker.

A desiccators: is a sealed container that keeps moisture out of items stored inside. It's commonly used in laboratories to protect chemicals and samples from dust and moisture.

CHAPTER FOUR

4.1 EXPERIENCES GAINED

4.1.1 PRODUCTION OF PARACETAMOL BY 96

- Material needed for pcm by 96
- Paracetamol powder
- Corn starch
- Gelaten
- Tak powder
- Mog stearale

- Metly paraben
- Propyl paraben
- Purified water

EQUIPMENT NEEDED FOR PARACETAMOL BY 96 ARE

- Mixer
- Fluid bed dryer
- Milling machine
- Posle port
- Transferring bucket
- Stirrer
- Mesh

PROCEDURE FOR MANUFACTURING PARACETAMOL X96

1. Line clearance must be properly done by cleaning all the manufacturing vessels and take the last **wale** to the lab for chemical & microbiological analysis.
2. Transfer some quantity of starch to the mixer machine and mix for prepare the paste by using cornstarch or the ingredient.
3. Transfer the paste into the mixer and mix thoroughly for about 1hr the process is called slurry transfer into the dryer and dry for about 30mins transfer into the milling machine & using marsh
4. Transfer into the dryer to the second drying add the blending material such as the powder and mig for 30minutes.
5. Transfer into the drum and tale the sample to the **40 for lod and assay**. Transfer the product to the quantity room and affix under test label and name of analyst.
6. Take the product to the compression room and compressed with compressing machine and test for friability dress and weight

4.1.2 PRODUCTION VITAMIN C (ASCARBIC ACID)

MATERIALS NEEDED FOR VITAMIN C (ASCARBIC ACID)

- Ascorbic Acid (API)
- Granulated Sugar (Sweetner)
- Sodium carboxyl methyl cellulose

- Sodium Metabi sulphide
- Orange haver
- Sunset yellow
- EOTA
- Sodium boxiale
- Purity waver
- Sodium sulphure

EQUIPMENT NEEDED FOR VITAMIN C

- Jacketed vessel
- Holding tank
- Transferring pump
- Stirrer
- Dip stick
- Transferring vessel

PROCEDURE FOR MANUFACTURING VITAMIN C

1. Line clearance must be properly done by clearing all the manufacturing vessels and tase the last rinse water to the lab for chemical and microbiological analysis.
2. Transfer some quantity of water to the jacketed vessel and heat to the boiling point.

3. Transfer the sugar to the biology H2o and mix with stirrer for about the process is called sugar syram.
4. Transfer all the materials to the sugar sygrue are after the other and mix thoroughly with stirrer for about 30 min.
5. All the colour and to it and mix thoroughly for about 30 mins
6. Affix an under test label on the jacketed vessel bearing the name of the product, batch num, maty date, exp date and name of analyst. Allow the product to cool and take sample to the lab for analysis the following gram eters, PH, viscosity, temperature.

4.1.3 PRODUCTION OF AMOXICILLIN

- Amoxicillin tridydrate
- Granulated sugar
- Sodium citrate
- Atrie acid
- Aerosol
- Tarliazine
- Methyl parabel
- Propyl parabel
- Sodium ciraiq

EQUIPMENT NEEDED FOR AMOXICILLIN

- Dryer

- ❖ Milling machine
- ❖ Diagonal mixer

PROCEDURE FOR MANUFACTURING AMOXICILLIN

1. Line decorance must be done cleaning all the manufacturing vessel and talking the last rinse to lab for microbiologic observe.
2. Check that all the materials on the M.O are weigh
3. Transfer all weigh materials from the dispensary both reactive and recipient
4. Dry granulcoted sugar and sodium carboxyl methyl cellulose in dryer for one hour at 100^0c
5. Transfer into mixer
6. Dry amoxicillin trihydrate, citric acid and sodium citrate for their at 100^0c
7. Transfer to the mixer and mix thoroughly for 40min
8. Dry tartecue 30mins at 100^0c
9. Transfer into the mixer and mix thoroughly for 25min
10. Thill the whole content using thiling machine man size 10ml

CHAPTER FIVE

5.0 CONCLUSION AND RECOMMENDATIONS

5.1 CONCLUSION

Having passed through the SIWES training, have been able to discover and explore different things about the microbial world; therefore, its usefulness cannot be over – emphasized. The interesting part of this is that the field of microbiology has gotten answer to most of the infection and disease affecting the world. For the few infections that has not been diagnosed, precautionary measures that can be taken against it has been discovered. The only section left is for people should come out of their ignorance and go for medical check – up instead of relying on self – medication and visiting unqualified practitioners, if people could visit hospitals or health – centers frequently and follow the treatments given to them, mortality rate will drastically be reduced and the health status of the nation will be promoted.

More importantly I have been able to see the various prospects available in the field and also the various challenges that call for quick attention. Indeed, the industrial training program has been impactful; it was never a waste of time and energy.

5.2 RECOMMENDATIONS

The effort of the industrial training fund (ITF) was recommended for bringing up this programme known as student industrial work scheme (SIWES). This has paved way for self practice of the theoretical works that have been taught during lectures.