A TECHNICAL REPORT

STUDENT INDUSTRIAL WORKING EXPERIENCE SCHEME

(SIWES)

UNDERTAKEN AT

UNITY DIAGNOSTIC CENTRE

OLOJE, ILORIN, KWARA STATE

BY

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ND/23/SLT/PT/0013

SUBMITTED TO

DEPARTMENT OF SCIENCE LABORATORY TECHNOLOGY

INSTITUTE OF APPLIED SCIENCE

KWARA STATE POLYTECHNIC, ILORIN

INPARTIAL FULFILLMENT OF THE AWARD OF THE REQUIREMENT OF THE AWARD OF NATIONAL DIPLOMA IN SCIENCE LABORATORY TECHNOLOGY

AUGUST TO NOVEMBER, 2024

CERTIFICATION

This is to certify that this report of SIWES program for the 2023/2024 session is written and submitted by **ADEYEYE MARY** with matriculation number **ND/23/SLT/PT/0013** to the department of SCIENCE LABORATORY TECHNOLOGY (SLT), Kwara state Polytechnic, Ilorin.

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Student signature Date

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SIWES Coordinator Signature Date

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CHAPTER ONE

1.1. BACKGROUND OF SIWES

The students industrial work experience scheme (SIWES) was introduced in the year 1976, during the military regime of Muhammed and General Olusegun Obasanjo. Although the scheme was introduced by military, it was not full force until 1977. Consequently, the need for student in tertiary institution to acquire practical knowledge, gave rise to introduction of the scheme by the federal government of tertiary institutions.

The scheme which is to last for at least three months industrial attachments for students into different organization either private or government owed, is designed for students in universities, polytechnics, monotechnics, and college of educations.

This programme serves as a great deal to help students, as it expose them to practical knowledge of the theoretical aspect of what they have been though their different institutions.

Furthermore, the scheme help the student to adapt to challenge which might spring up that now gives them the clear distinction between theoretical lecturing in the lecture rooms and practical experience derived in organizations where related practices are on daily basis exhibited. This therefore serves as a first – hand – test of what transpires on a daily basis in the different professions which student would delve into after graduation from their tertiary institution.

During the period the ITF keeps the student on allowance through their liaison offices set up in different states of the federations; with headquarter in Mango, in Jos, the capital of Plateau State. This allowance is however given by the federal government to students who genuinely completed the scheme.

1.2. OBJECTIVES OF SIWES

The student industrial work experience scheme (SIWES) in of great benefit to students in tertiary institutions. Below are some objectives of the scheme.

Firstly, the scheme serve as first – hand – test of what the students would actually be exposed to after graduation. It proves an avenue for students in Nigeria universities to acquire practical skills, knowledge and experiences in their course of study.

Secondly, it exposes students to work methods and techniques in handing equipment and machinery that may not be available in the universities.

Thirdly, it provides students with an opportunity to apply their theoretical knowledge in real work situation, thereby bridging the gap between universities work and actual practices.

Lastly, the scheme enlists and strengthens employer's involvement in the entire educational process of preparing universities graduates for employment in the institutions.

1.3. 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 AND THEIR USES

- Microscope: this is use to observe microorganism
- Centrifuge: is a machine to spine blood and urine sample.
- Electrophoresis machine: it is use to determine the genotype of a patient.
- Haematocrit reader: is used for reading the percentage level of blood.
- Tile: it is flat and white which is used in blood group, widal test etc.

3.2 SAMPLE COLLECTION

The procedure used to collect blood through the vain

- Collect the necessary material such as syringe, cotton wool, spirit and tourniquet.
- Look for the vein and tie the tourniquet around the patient hand.
- Ask the patient to fold his or her hand in order to show clear appearance of the vein.
- Clean the particular place where you can see the vein clearly with spirit and cotton wool.
- Insert the syringe inside the vein, a little bit deep.
- Draw it little by little, in the case where you did not see blood at that particular place, gently remove the syringe and put it in another place.
- After you have get the blood, ensure that you remove the tourniquet before the syringe, then put the cotton wool on the place that you have remove syringe.

Another method used in the laboratory to collect sample is the use of fingertrip lancet.

- Clean the finger with spirit swap
- Use the lancet to prink the finger

Collect the sample with EDTA capillary tube

CHAPTER FOUR

4.1 MICROBIOLOGY UNIT

Microbiology unit is concerned with laboratory test to detect causes of diseases which are associated with microbial infection. This must do a bit of parasitology, example of this is the malaria parasite test. The microbiology unit performs different functions which includes:

4.2 LABELLING

The collected samples are labeled with patients name, age, sex, address, nature of sample and investigation required. Therefore, a special code number is given to each sample. All these are entered into the laboratory register.

4.3 WIDAL AGGLUTINATION TEST

The method used for this test are basically two i.e. tube agglutination test method and rapid slide titration method.

- Rapid slide titration method.
- Materials.

a. Patients serum
b. A suitable pipette
c. A suitable dropper
d. White tile
e. Commercially prepared febrile. Antigens –H and O (somatic and flocular Antigens).

- **Method**

1. Using a suitable pipette, 0.08, 0.04, 0.02, 0.01, 0.005, of undiluted patient's serum is delivered on to a row of circles on a clean white tile.
2. The dropper is used to add one drop of appropriate suspension of Antigens O and H to each of serum aliquot on the tile.
3. It is mixed by stirring for a few seconds using a wooden stick starting with the mixture containing 0.005ml of serum and proceeding to the well containing 0.08ml
4. The tile is rotated slowly i.e. roaked and agglutination is read at 1 minute. The reactions seen in the circles are approximately equivalent to those that would occur in tube agglutination test with serum dilution 1 in 20, 1 in 80 and 1 in 320. The rapid slide titration therefore provides an approximate titre for the test serum.

4.4 HEPATITIS TEST (HBs Ag)

Hepatitis test strip is a rapid chromatography immuno assay for a qualitative detection of hepatitis, it can be performed using either serum and plasma

PROCEDURE

Remove the test strip from the sealed pouch

For whole blood

Put a drop of blood on the test strips

Add a drop of buffer

Leave for 15 minute

For serum

Put a drop of serum on the test strips

Leave for 15 minutes.

RESULT

If only one colour band appeared at the control line (c), it is negative

If two colour band appeared at the test line (T) it is positive

If none of the colour band should be repeated

4.5. HAEMATOLOGY UNIT

This section is concerned majorly with blood test. There is also a blood bank in this section.

Common test in the haematology laboratory are:

4.6 PACKED CELL VOLUME (PCV)

Packed cell volume is a measure of the porportion of blood volume that is occupied by red blood cell, to check the level of blood in the body, it is determine by centrifuging heparinized blood in a capillary tube.

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.

6.2. 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.