

# CONTENTS

<b>Dedication</b>	<b>I</b>
<b>Acknowledgement</b>	<b>II</b>
<b>Abstract (English)</b>	<b>III</b>
<b>Abstract (Arabic)</b>	<b>IV</b>
<b>List of tables</b>	<b>V</b>
<b>List of Figures</b>	<b>VI</b>
<b>1.0 Literature Review</b>	<b>1</b>
<b>1.1 Introduction</b>	<b>1</b>
1.1.1 Antibody Techniques	2
<b>1.2 Radioimmunoassay</b>	<b>3</b>
1.2.1 Principles	3
1.2.2 Practical Aspects	6
1.2.3 The Major Advantage of RIA	10
1.2.4 The Major Disadvantage of RIA	10
1.2.5 Immunoradiometric Assay	11
<b>1.3 Enzyme-Linked Immunosorbent Assay</b>	<b>13</b>
1.3.1 Principles	14
1.3.2 Competitive ELISA Method	15
1.3.3 Double Antibody ELISA Method	15
1.3.4 Indirect ELISA Method	18
1.3.5 Enzyme Amplification Method	20
1.3.6 Practical Aspects	21
<b>2.0 Objectives</b>	<b>25</b>
<b>3.0 Materials and Methods</b>	<b>26</b>
<b>3.1 Subjects</b>	<b>26</b>
<b>3.2 Specimen Collection and Preparation</b>	<b>26</b>
<b>3.3 Microplate Immunoenzymometric Assay</b>	<b>26</b>
3.3.1 Principle	27
3.3.2 Apparatus Required	28
3.3.3 Reagents	28
3.3.4 Reagents Preparation	29
3.3.5 Test Procedure	29
3.3.6 Results	30
3.3.7 Normal Range	31
<b>3.4 Total Thyroxine Microplate Enzyme Immunoassay</b>	<b>31</b>

3.4.1 Principle	31
3.4.2 Reagents	32
3.4.3 Assay Procedure	33
3.4.4 Results	33
3.4.5 Normal Range	33
<b>3.5 Immunoradiometric Assay</b>	<b>34</b>
3.5.1 Principle	34
3.5.2 Serum TSH Coated Bead IRMA	34
3.5.3 Cross-reactivities in the TSH IRMA	35
3.5.4 Normal Range	36
<b>3.6 Serum T4 Radio Immunoassay</b>	<b>36</b>
3.6.1 Principle	36
3.6.2 Serum T <sub>4</sub> Coated Tube RIA	36
3.6.3 Calculation of Results	37
3.6.4 Internal Quality Control	38
3.6.5 Normal Range	38
<b>3.7 Data Analysis</b>	<b>38</b>
<b>3.8 Statistics</b>	<b>38</b>
<b>4.0 Results</b>	<b>39</b>
<b>5.0 Discussion and Conclusion</b>	<b>58</b>
<b>6.0 Recommendations</b>	<b>63</b>
<b>7.0 References</b>	<b>64</b>