

GENERAL INFORMATION AND GUIDELINES FOR REGISTERED CANDIDATES FOR 2010 IPAN FOUNDATION LEVEL EXAMINATION

COURSES AVAILABLE FOR FOUNDATION EXAMINATION

Available Courses for Foundation Examination are: **Chemistry, Pharmacy, Microbiology & Food Technology and Environmental Science**

Exemption

Candidates are to be exempted from their **Major First Degree Course**, with a fee of **Two thousand, five hundred Naira (₦2, 500.00)** only as exemption fee.

Examination

Date:

Dates for Foundation level examination has been fixed for Wednesday 1st and Thursday, 2nd September, 2010. Details of the examination Time table and venue will be made available to all candidates in due course.

Please note that a two- day pre-examination Tutorial Class has been slated for Friday, 13th and Saturday, 14th August, 2010. It will be held at the IPAN secretariat between 10am-4pm on day 1 and 8am -4pm on day 2. The fee per participant for the two days is ten thousand naira (₦ 10,000) only to cover revision materials, mock examination and lunch.

Foundation Candidates will be examined in **two (2) papers only**, namely: papers I and II.

Paper I: Environmental Science is Compulsory and is to be taken by all candidates.

Paper II: Three (3) Courses will be covered under this paper, labeled as sections A, B and C. Candidates are required to take questions from One (1) section only, which must not be in their field of First Degree Specialization; that is the subject area from which they have been exempted.

Recommended text books for Foundation Courses:

CHEMISTRY

Recommended textbook for Chemistry Course is Advanced Chemistry by Philip Mathews: Cambridge University Press.

Candidates will be examined on three (3) parts (Parts A, C & D)

Part A is Physical Chemistry, consisting of the following Chapters:

Chapters	Topics
1.	Elements, atoms and electrons: basic ideas
2.	Energy level
3.	Atoms and the nucleus
4.	Discovery of radioactivity

Chapters	Topics
5.	Radioactive decay

8.	Bohr's model of the atom
11.	Schrödinger's theory of atom
12.	The aufbau method and electro structures
13.	Electrons structures, ionisation energies and shielding
14.	Bonding in molecules: valence bond theory
15.	Coordinate bonding
17.	Shapes of molecules
18.	Ionic bonding
19.	Polar molecule and polar bonds
21.	Hydrogen bonding
23.	The three states of matter
33.	Sizes of atoms, ions and molecules
34.	Real and ideal gases
35.	Kinetic theory of gases
36.	Chemistry and gases
37.	The mole
38.	Molar masses of gases and liquids
39.	Molecules and titrations
40.	Four types of titrations
41.	Oxidation numbers and oxidation states
42.	Energy changes
43.	Enthalpy
44.	Standard enthalpies
45.	Calculations using Hess's law
46.	Lattice energies
47.	Enthalpy changes in solutions
48.	Internal energy
49.	Entropy
50.	Free energy
51.	Equilibrium and free energy
52.	Chemical equilibrium
53.	Some equilibrium reactions
59.	Solubility of salts in water
60.	Explaining solubilities
63.	Distillation
64.	Solubility product
65.	Colligative properties
66.	Electrochemical cells
67.	Cells and concentration changes
68.	Corrosion
69.	Cells and thermodynamics
70.	Redox potentials
71.	Redox charts
72.	Electrolysis
Chapters	Topics

- 73. Conductivity of solutions
- 74. Acids and bases
- 75. Strong and weak acids
- 76. Neutralization and titrations
- 77. Rates of reactions
- 78. Two theories of reaction rates
- 79. Measuring the rates of reaction
- 80. Rates laws
- 81. Reaction mechanisms

PART C is Inorganic Chemistry, consisting of the following Chapters:

Chapters	Topics
87.	The Periodic table
88.	Periodicity of physical properties
89.	Periodicity of chemical properties
90.	Hydrogen and Hydrides
91.	Water
92.	Group I
93.	Group II
94.	Group III
95.	Carbon
96.	Group IV
97.	Nitrogen
98.	Group V
99.	Oxygen and oxides
100.	Group VI
101.	Group VII: The halogens
102.	Compounds of the halogen
103.	Pseudohalides and pseudohalogens
104.	The noble gases
105.	Transition metals
106.	Mores about complex ions
107.	Chromium manganese and ion
108.	Group IIB

Part D is Organic Chemistry, consisting of the following Chapters:

Chapters	Topics
109.	Organic chemistry
110.	Optical activity
111.	Alkanes
112.	Alkenes and alkynes
Chapters	Topics
113.	Aromatic hydrocarbon

- 114. More about electrophilic substitution
- 115. Organic halogen compounds
- 116. Alcohols
- 117. Aromatic alcohols
- 118. Aldehydes and ketones
- 119. Carboxylic acids
- 120. Carboxylic acids derivatives
- 121. Ethers
- 122. Amines
- 123. Amino acids and proteins
- 124. Deoxyribonucleic acid (DNA)
- 125. Carbohydrates
- 126. Vitamins, hormones, steroids and pharmaceuticals
- 127. Polymers
- 128. Polymers and industry
- 129. fats, oils soaps and detergents
- 130. Organic problems

PHARMACY

The Pharmacy Course comprises two (2) parts – **Drugs** and **Cosmetics**.

Recommended book for Drugs is “The Science and Practice of Pharmacy” by Remington (Twenty First Edition/Twentieth Edition).

For Drugs, students will be examined on Chapters, III, IV, and V (Pharmaceutical Chemistry, Pharmaceutical Testing, Analysis & Control and Pharmaceutical Manufacturing).

Recommended material for Cosmetics is IPAN 2005 Pre-Admission Training Workshop on Cosmetics, Pages (171-294) and IPAN Mandatory Training Workshop on Cosmetics (April 2008) (Pages 27-200). The materials are available at the Institute’s Secretariat, 443, Herbert Macaulay Way, Yaba, Lagos, for purchase.

MICROBIOLOGY & FOOD TECHNOLOGY

The Microbiology & Food Technology Course consists of Two aspects: **Food Chemistry** and **Food Microbiology**

The two (2) recommended text books on Microbiology & Food Technology are:

1. Food Chemistry Edited by L.H. Meyer, Published by AVI Company Incorporated, Westport Connecticut and
2. Food Microbiology by W.C. Frazier & D.C. Westhoff (Fourth Edition)

The two (2) books have been considered as study material for Foundation examination on Microbiology & Food Technology.

ENVIRONMENTAL SCIENCE

Environmental Science Course, which is **Compulsory for all Students**, consists of aspects of Environmental Chemistry relevant to the practice of Public Analysts.

The Recommended book is Environmental Chemistry by S.C. Bhatia, CBS Publishing Company, India. **Candidates will be examined on Five (5) parts, with the following chapters as Study material:**

General information- Chapters 1, 2 and 4

Air- Chapters 8, 9 and 10

Water- Chapters 5, 6 and 7

Soil- Chapters 16 and 17

Hazardous Wastes- Chapters 19 and 20

The material is available at the Secretariat for candidates.