



ST. FRANCIS
METHODIST SCHOOL
Possibilities to Realities

Curriculum Description for Singapore-Cambridge GCE 'O' Level

SCIENCE (Pure) - CHEMISTRY 5068

Introduction:

This syllabus is designed to place less emphasis on factual material and greater emphasis on the understanding and application of scientific concepts and principles.

Aims:

These are not listed in order of priority. The aims are to:

1. provide, through well designed studies of experimental and practical chemistry, a worthwhile educational experience for all students, whether or not they go on to study science beyond this level and, in particular, to enable them to acquire sufficient understanding and knowledge to
 - 1.1 become confident citizens in a technological world, able to take or develop an informed interest in matters of scientific import;
 - 1.2 recognise the usefulness, and limitations, of scientific method and to appreciate its applicability in other disciplines and in everyday life;
 - 1.3 be suitably prepared and stimulated for studies beyond Ordinary Level in Chemistry, in applied sciences or in science-dependent vocational courses.
2. develop abilities and skills that are relevant to the study and practice of science; useful in everyday life; encourage efficient and safe practice and, encourage effective communication.
3. develop attitudes relevant to science such as accuracy and precision; objectivity; integrity; enquiry; initiative; inventiveness.
4. stimulate interest in and care for the environment.
5. promote an awareness that
 - 5.1 the study and practice of science are co-operative and cumulative activities, and are subject to social, economic, technological, ethical and cultural influences and limitations;
 - 5.2 the applications of sciences may be both beneficial and detrimental to the individual, the community and the environment;
 - 5.3 science transcends national boundaries and that the language of science, correctly and rigorously applied, is universal;
 - 5.4 the use of information technology is important for communications, as an aid to experiments and as a tool for interpretation of experimental and theoretical results.

Scheme of Assessment:

Candidates are required to enter for Papers 1, 2 and 3.

Paper	Type of Paper	Duration	Marks	Weighting
1	Multiple Choice	1 h	40	26.7%
2	Structured and Free Response	1 h 45 min	80	53.3%
3	Practical test	1 h 30 min	30	20.0%

Subject Content (Topics):

1. Experimental Chemistry
2. The Particulate Nature of Matter
3. Formulae, Stoichiometry and the Mole Concept
4. Electrolysis
5. Energy from Chemicals
6. Chemical Reactions
7. The Chemistry and Uses of Acids, Bases and Salts
8. The Periodic Table
9. Metals
10. Atmosphere and Environment
11. Organic Chemistry

Mathematical Requirements

Candidates should be able to:

1. add, subtract, multiply and divide;
2. use averages, decimals, fractions, percentages, ratios and reciprocals;
3. recognise and use standard notation;
4. use direct and inverse proportion;
5. use positive, whole number indices;
6. draw charts and graphs from given data;
7. interpret charts and graphs;
8. select suitable scales and axes for graphs;
9. make approximate evaluations of numerical expressions;
10. recognise and use the relationship between length, surface area and volume, and their units on metric scales;
11. solve equations of the form $x = yz$ for any one term when the other two are known;
12. comprehend and use the symbols/notations $<$, $>$, \approx , $/$, ∞ ;
13. comprehend how to handle numerical work so that significant figures are neither lost unnecessarily nor used beyond what is justified.

Please refer to the SEAB website for more information regarding this course.

<http://www.seab.gov.sg>