MATRIC REVISION

MATRIC REVISION 2008

education
Department:
Education
REPUBLIC OF SOUTH AFRICA

TOP TIPS FROM THE EXPERTS: EDITION 11 OF 13 PHYSICAL SCIENCES, PAPER 2 CHEMISTRY

Good luck message

Celebrity hola!

The Parlotones

Kahn Morbee, lead singer of The Parlotones – Apply yourself because you are the future. You are responsible for your own future.

Put your grey matter to the test

LEAN ON ME: The matrics from Jules High School in Johannesburg look to each other for support with their studying

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Some general tips:

- Get a good night's sleep before the exam.
- Write your name and correct examination number on your examination book as well as on any loose sheets of paper that you will be handing in.
- Show your workings for all calculations.
- Remember to write the units for every answer.
- Obey all the examination rules.
- Read the instructions carefully and make sure you understand them
- Read the questions carefully and make sure you understand exactly what is being asked of you before attempting to answer them.
- Bring more than one pen to the examination room.
- Listen carefully when announcements are made during the examination: they could be very important and might even affect the paper you are writing.

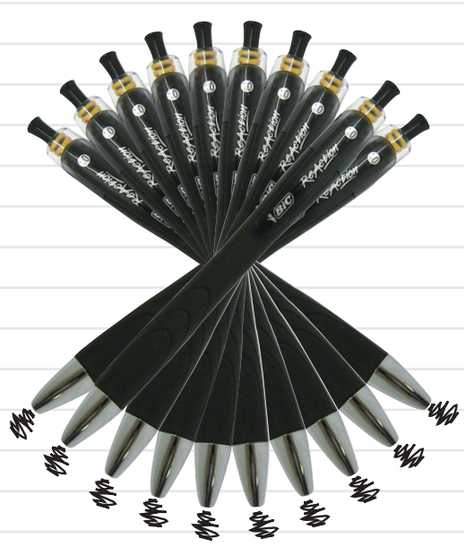
Some tips on the Chemistry examination:
You will mainly be required to provide either descriptions or calculations in your Chemistry exam.

Descriptions: You could be asked to provide definitions, principles and general descriptions of phenomena, concepts and processes. Questions beginning with "What is?", "Why?", "How?" and very rarely "Who?" will usually require descriptive answers.

Calculations: Calculations, on the other hand, will usually require you to use available data to calculate a required quantity.

In order to be able to carry out the calculations in your Chemistry exam, you need to understand the basic concepts you were taught in Grade 10 and Grade 11. Once you have mastered these concepts, you will find that studying Chemistry is relatively easy.

If you still battle with any of the concepts outlined below, you need help! Consult your teacher and/or textbook and make sure that you master the basics before you tackle the specific topics in your Grade 12 Chemistry curriculum.



Apart from mastering the basic concepts, you need to focus on understanding the descriptions and applying the principles you have learned.

Be aware that all Chemistry concepts are related. In other words, if you are answering a section on Electrochemistry, apply what you know from other sections like Rates of Reactions and Chemical Equilibrium, etc.

Do not try to put your Chemistry knowledge into little compartments as per the chapters in your textbook or the different sections in the curriculum. These different sections were created merely to make the teaching and learning of the principles in the subject easier. In life everything is integrated. Integrate your knowledge, especially when answering questions that deal with application: apply the relevant knowledge you have learned in other sections as well.

What you need to know before you enter the exam room:
Basic concepts:

Chemical formulae

- If you are given the name of a compound, you should be able to write its chemical formula. The subscripts and superscripts are very important and you should be able to interpret them in order to calculate molar mass and the number of moles, etc.

Naming of compounds

- If you are given a chemical compound, you should be able to give its proper name. Name endings are very important as they mean different things that affect the masses or moles of compounds in a calculation or even a reaction.

Oxidation states

- You should be able to look at a chemical reaction and decide which elements have been reduced or oxidised – and hence which of the compounds are reducing compounds or oxidising compounds. It will not help you much if you memorise what has been oxidised or reduced in a particular reaction: knowing why it was oxidised or reduced is much more helpful. The use of language is very important in the sections that deal with oxidation and reduction. Make sure you understand what a reducing agent is and what is being reduced. Do the same for oxidation.

The mole concept

- If you are given a particular quantity, you should be able to calculate the mass, molar mass or the number of moles.

Stoichiometry

- You should be able to balance a chemical equation. Remember: Always balance a chemical equation if you are going to use it.

Limiting and excess reagents

- If you are given quantities in grams, moles or concentrations, you should be able to work out how much product (expressed in moles, mass or concentration) is formed, as well as how much of a reactant will be used up or will remain when the reaction goes into completion.

Concentrations

- Given a particular mass of substance and a particular volume, you should be able to work out the required concentration.

Unit conversions

- You should be able to convert quantities like m*l* to litres or dm^3, etc. You should be able to work out what quantities change when, for instance, you halve a solution of a particular concentration, etc.

Pay attention to the following specific topics:
Organic molecules

- Always remember that a carbon atom must have all four bonds around it for all functional groups.

Chemical change

- Remember all your basic concepts in this section!

Chemical systems

- Be able to apply everything you have learnt in electrochemistry, chemical equilibrium and basic concepts.

MEET OUR PHYSICAL SCIENCES EXPERT

Morongwa Masemula

SUSSED AT SCIENCE: Chief Education Specialist Morongwa Masemula is well qualified to give you the low-down on your Chemistry exam

In life everything is integrated. Integrate your knowledge in Chemistry, especially when answering questions that deal with application.

Morongwa Masemula completed her matric at St Pauls High School in Taung, in North west. She went on to study for a BSc Ed at the University of Bophuthatswana (now the University of North West, in Mafikeng). Her majors were Mathematics, Chemistry and Education. She later obtained her BSc Honours in Chemistry and Science Education at the University of the Witwatersrand.

Morongwa started off her working life as a laboratory analyst for Shell and the Coal Marketing Corporation. Her teaching career started at the Lehurutshe College of Education in Zeerust, where she lectured Physical Science to students enrolled for the Senior Primary Teachers Diploma (SPTD) and Secondary Teachers Diploma (STD). From there she went on to lecture Physical Science at the East Rand College of Education in Springs.

She joined the Department of Education as first Education Specialist in Benoni and currently works for the national Department of Education as a Chief Education Specialist.

NEXT WEEK: LIFE SCIENCES