TSSM™
Creating VCE Success

Exam Practice Guide

Unit 1
Chemistry
Examination 1

Key Features:

- ✓ 121 original examination style questions on all examinable topics.
- ✓ Full solutions and a marking guide to all questions.
- ✓ Separated into key topic areas within each Area of Study, enabling students to master one topic at a time.
- ✓ Written by VCE assessors who mark the real examinations.
- ✓ Excellent resource for examination practice.

Helping VCE students be the best they can be.

TSSM
ACN 099 422 670
ABN 54 099 422 670
A: Level 14, 474 Flinders Street Melbourne VIC 3000
T: 1300 134 518
F: 03 97084354
W: tssm.com.au
E:info@tssm.com.au

CONTENTS

Unit 1 – How can the diversity of materials be explained?

AREA OF STUDY 1: How can knowledge of elements explain the properties of matter?

AREA OF STUDY 2: How can the versatility of non-metals be explained?

Unit 1 – How can the diversity of materials be explained?

AREA OF STUDY 1: How can knowledge of elements explain the properties of matter?

Topic 1 – Structure of atoms

Question 1.

The number of neutrons in $^{37}_{17}Cl^-$ is

A. 17
B. 36
C. 38
D. 20

Question 2.

Which of the following lists only contains isoelectronic species?

A. Ca^{2+}, O^{2-}, K^+, Ar
B. Ca^{2+}, S^{2-}, K^+, Ne
C. Mg^{2+}, S^{2-}, K^+, Ar
D. Ca^{2+}, S^{2-}, K^+, Ar

Question 3.

Which of the following is the ground state electronic configuration of a period 4 group 2 element?

A. $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2$
B. $1s^2 2s^2 2p^6 3s^2 3p^4 4s^2$
C. $1s^2 2s^2 2p^6 3s^2 3p^6 3d^5 4s^2$
D. $1s^2 2s^2 2p^6 3s^2$

Question 4.

Which of the following is the correct chronological order for the discovery of the sub-atomic particles?

A. Electron, neutron, proton
B. Proton, electron, neutron
C. Neutron, electron, proton
D. Electron, proton, neutron

Question 5.

An orbital can be best described as:

A. the orientation of an electron
B. a region of space of high probability where an electron resides
C. a shell level otherwise known as the principal quantum number
D. a quantum of energy sometimes termed a photon

Question 6.
The 'Pauli exclusion principle' says that an orbital can contain a maximum of how many electrons?

A. 1
B. 2
C. 3
D. 8

Question 7.
Who discovered the electron?

A. J.J. Thomson
B. James Chadwick
C. John Dalton
D. Marie Curie

Question 8.
How many neutrons are there in $^{25}_{12}\mathrm{Mg}^{2+}$?

A. 10
B. 12
C. 13
D. 25

Question 9.
The number of neutrons in the uranium atom represented by $^{238}_{92}\mathrm{U}$ is?

A. 92
B. 146
C. 238
D. 330

Question 10.
Which modern scientist first isolated radioactive elements?

A. J.J. Thomson
B. James Chadwick
C. John Dalton
D. Marie Curie

Question 11.
The number of electrons in the anion $^{14}_{7}N^{3-}$ is?

A. 7
B. 14
C. 10
D. 17