

B G C S E

CHEMISTRY

EXAMINATION PAPERS

UNDERSTAND • PRACTICE • SUCCEED





THE OPENHANDED CLASSROOM

LEARN MORE. ACHIEVE MORE. SMILE MORE.



BGCSE CLASSES

- ✓ Exam-Focused Learning
- ✓ Past Papers & Strategies
- ✓ Stronger Understanding
- ✓ Better Grades, Brighter Future



[**CLICK HERE**](#)



SAT CLASSES

- ✓ Smart Test Strategies
- ✓ Stronger Scores
- ✓ Time Management Skills
- ✓ College & Scholarship Ready



[**CLICK HERE**](#)



BJC CLASSES

- ✓ Clear, Simple Explanations
- ✓ Focus on Understanding
- ✓ Help That Fits Your Pace
- ✓ Build Confidence, Get Results



[**CLICK HERE**](#)



EXPERT TEACHING.
PROVEN RESULTS.



LEARN SMARTER.
ACHIEVE MORE.



FOCUSED SUPPORT.
REAL RESULTS.



THEOPENHANDEDCLASSROOM:
(242) 426-8891



THE OPENHANDED CLASSROOM

BGCSE FREE SOLUTIONS MANUALS

COMPLETE SOLUTIONS FOR ALL
MAJOR SUBJECTS

- ⦿ MATHEMATICS
- ⦿ ENGLISH LANGUAGE
- ⦿ HISTORY
- ⦿ RELIGIOUS STUDIES
- ⦿ ACCOUNTS
- ⦿ SCIENCES (BIOLOGY, PHYSICS,
COMBINED SCIENCE)
- ⦿ FOREIGN LANGUAGE
(FRENCH AND SPANISH)

UNDERSTAND. PRACTICE. SUCCEED.

[CLICK HERE](#)

EXAM-REAL.

EXAM-PROVEN.

FREE LISTENING COMPREHENSION — AUDIO FILES —



THE **EXACT AUDIO** USED
IN PAST BJC & BGCSE EXAMS



REAL EXAMS

The exact listening comprehension audio from past papers.



REAL PREPARATION

Hear what you'll hear in the real exam.



REAL RESULTS

Practise with purpose. Improve your confidence and performance.

AVAILABLE FOR:



BJC
ENGLISH



BGCSE
ENGLISH LANGUAGE



BJC
FRENCH



BJC
SPANISH



BGCSE
FRENCH



BGCSE
SPANISH

WHY THESE AUDIO FILES MATTER



EXACT AUDIO

The exact recordings used in past BJC & BGCSE exams.



EXAM FAMILIARITY

Get used to the real voices, speed, accents and exam conditions.



STRATEGIC ADVANTAGE

Walk in confident knowing exactly what to expect.



100% FREE

High quality. No cost. Just results.



CLICK HERE

DOWNLOAD • START PRACTISING



BETTER PREPARATION.
BETTER RESULTS.

You've got this!

School Number	Candidate Number
Surname and Initials	

CHEMISTRY**PAPER 1**
(50 marks)

Friday **19 MAY 2023** 12:00 NOON–1:15 P.M.
(1 hr. 15 mins)

Additional materials:
Calculator

MINISTRY OF EDUCATION
NATIONAL EXAMINATIONS**BAHAMAS GENERAL CERTIFICATE OF SECONDARY EDUCATION****INSTRUCTIONS AND INFORMATION TO CANDIDATES**

Do not open this booklet until you are told to do so.

Write your school number, candidate number, surname and initials in the spaces provided above.

Answer **ALL** the questions in this paper.

For each question in this paper, **four** suggested answers, A, B, C and D are given.

Circle the letter of the response which you consider to be correct.

Attempt **ALL** the questions. Marks will **NOT** be deducted for wrong answers. Your total score on this test will be the number of correct answers given.

Relative atomic masses are given in the Periodic Table provided on page 2.

The volume of one mole of gas at room temperature and pressure (r.t.p.) is 24 000 cm³ and at standard temperature and pressure (s.t.p.) is 22 400 cm³.



For Examiner's Use	
TOTAL MARKS	

This question paper consists of 14 printed pages and 2 blank pages.



The Periodic Table of the Elements

Group																	
I	II											III	IV	V	VI	VII	0
1 H Hydrogen																	
7 Li Lithium 3	9 Be Beryllium 4											11 B Boron 5	12 C Carbon 6	14 N Nitrogen 7	16 O Oxygen 8	19 F Fluorine 9	20 Ne Neon 10
23 Na Sodium 11	24 Mg Magnesium 12											27 Al Aluminium 13	28 Si Silicon 14	31 P Phosphorus 15	32 S Sulphur 16	35.5 Cl Chlorine 17	40 Ar Argon 18
39 K Potassium 19	40 Ca Calcium 20	45 Sc Scandium 21	48 Ti Titanium 22	51 V Vanadium 23	52 Cr Chromium 24	55 Mn Manganese 25	56 Fe Iron 26	59 Co Cobalt 27	59 Ni Nickel 28	64 Cu Copper 29	65 Zn Zinc 30	70 Ga Gallium 31	73 Ge Germanium 32	75 As Arsenic 33	79 Se Selenium 34	80 Br Bromine 35	84 Kr Krypton 36
85 Rb Rubidium 37	88 Sr Strontium 38	89 Y Yttrium 39	91 Zr Zirconium 40	93 Nb Niobium 41	96 Mo Molybdenum 42	101 Ru Ruthenium 44	106 Pd Palladium 46	108 Ag Silver 47	112 Cd Cadmium 48	115 In Indium 49	119 Sn Tin 50	122 Sb Antimony 51	128 Te Tellurium 52	127 I Iodine 53	131 Xe Xenon 54		
133 Cs Caesium 55	137 Ba Barium 56	139 La Lanthanum 57	178 Hf Hafnium 72	181 Ta Tantalum 73	184 W Tungsten 74	186 Re Rhenium 75	190 Os Osmium 76	192 Ir Iridium 77	195 Pt Platinum 78	197 Au Gold 79	201 Hg Mercury 80	204 Tl Thallium 81	207 Pb Lead 82	209 Bi Bismuth 83	210 Po Polonium 84	210 At Astatine 85	222 Rn Radon 86
87 Fr Francium	226 Ra Radium	227 Ac Actinium															

* 58-71 Lanthanoid series
† 90-103 Actinoid series

a

X

b

Key

a = relative atomic mass
X = atomic symbol
b = proton (atomic) number

140 Ce Cerium 58	141 Pr Praseodymium 59	144 Nd Neodymium 60	150 Sm Samarium 62	152 Eu Europium 63	157 Gd Gadolinium 64	159 Tb Terbium 65	162 Dy Dysprosium 66	165 Ho Holmium 67	167 Er Erbium 68	169 Tm Thulium 69	173 Yb Ytterbium 70	175 Lu Lutetium 71	
232 Th Thorium 90	232 Pa Protactinium 91	238 U Uranium 92	238 Pu Plutonium 94	238 Np Neptunium 93	238 Am Americium 95	238 Cm Curium 96	238 Bk Berkelium 97	238 Cf Californium 98	238 Es Einsteinium 99	238 Fm Fermium 100	238 Md Mendelevium 101	238 No Nobelium 102	238 Lr Lawrencium 103

1. A mixture of water and sand needs to be separated and collected.

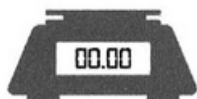
Which method of separation is used to separate this mixture?

- A. chromatography
- B. crystallisation
- C. evaporation
- D. filtration

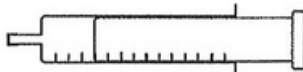
2. Which gas is **not** found in clean air?

- A. carbon dioxide
- B. carbon monoxide
- C. nitrogen
- D. oxygen

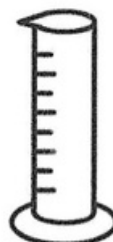
3. The following pieces of apparatus are used to conduct an experiment with magnesium metal and hydrochloric acid.



1



2



3



4

Which apparatus is used to measure the volume of the gas produced and the acid used?

- A. 1 and 3
- B. 2 and 3
- C. 2 and 4
- D. 3 and 4

4. Compound **Z** has a melting point of 82 °C and a boiling point of 105 °C.

Which statement is true about compound **Z**?

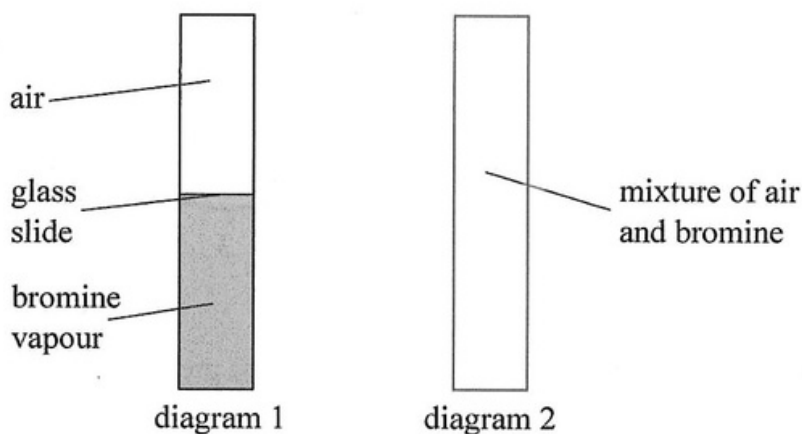
- A. It is a liquid at 41 °C and a gas at 100 °C.
- B. It is a liquid at 78 °C and a gas at 110 °C.
- C. It is a liquid at 83 °C and a gas at 94 °C.
- D. It is a liquid at 91 °C and a gas at 115 °C.

5. Which substance has the most kinetic energy?

- A. alcohol
- B. ice
- C. steam
- D. water

6. Two gas jars contain air and bromine. The gas jars are connected and the glass slide is removed. The behaviour of the gas particles is shown in diagram 2.

Which process occurs in diagram 2?



- A. boiling
- B. condensation
- C. diffusion
- D. oxidation



7. Which ion gains electrons to have the same number of electrons as a neon atom?

- A. calcium
- B. magnesium
- C. oxygen
- D. sulphur

8. X and Y represent two atoms.



Which statement is true about atoms X and Y?

- A. They are different elements because they have different atomic numbers.
- B. They are different elements because they have different mass numbers.
- C. They are isotopes because they have different atomic numbers.
- D. They are isotopes because they have different mass numbers.

9. Which statement is **true** about atoms?

- A. Atoms have a neutral charge.
- B. Neutrons are positively charged.
- C. The atomic mass represents the number of electrons.
- D. The number of electrons and neutrons are equal.

10. A compound with formula TF_2 has a relative atomic mass of 47.

What is element T?

- A. beryllium
- B. calcium
- C. magnesium
- D. strontium

The table shows information about four elements in the Periodic Table. The letters do not represent symbols of elements. Use the table to answer questions 11 and 12.

Element	Number of Protons	Mass Number
P	3	7
Q	16	32
R	8	16
S	19	39

11. Which element is located in Period 2, Group VI?
- P
 - Q
 - R
 - S
12. Which **two** elements combine with each other to form a covalent compound?
- P and Q
 - P and S
 - Q and R
 - R and S
13. What is the empirical formula for the molecular formula C_6H_{14} ?
- CH_2
 - CH_3
 - C_3H_7
 - C_6H_{14}



Use the table of substances and their pH values to answer questions 14 and 15.

	Substance	pH value
A	battery acid	0
B	black coffee	5
C	hand soap	10
D	stomach acid	2

14. Which substance is the most acidic? A B C D

15. Ammonium hydroxide is an alkaline solution.

Which substance has a pH value very close to ammonium hydroxide?

A B C D

16. Which salt remains when a solution of H_2SO_4 is reacted with a solution of $\text{Ca}(\text{OH})_2$?

- A. calcium hydroxide
- B. calcium sulphate
- C. calcium sulphide
- D. calcium sulphite

17. Which metal is **not** used for electroplating by using an aqueous solution?

- A. chromium
- B. copper
- C. silver
- D. sodium

18. Which ion produces a blue-green flame in a flame test?

- A. Ba^{2+}
- B. Cu^{2+}
- C. K^+
- D. Na^+

19. Which reaction is endothermic?

- A. carbon dioxide gas changing into solid carbon dioxide
- B. freezing of water
- C. photosynthesis in a leaf
- D. rusting of iron

20. Zinc was reacted with dilute hydrochloric acid to produce a gas. This gas was collected in a test tube and tested with a lighted splint. A popping sound occurred with the lighted splint.

Which gas does this test identify?

- A. carbon dioxide
- B. chlorine
- C. hydrogen
- D. oxygen

21. Hydrogen peroxide decomposes to produce oxygen. A catalyst can increase the rate of this reaction. In an experiment, equal volumes of hydrogen peroxide were mixed with equal masses of four catalysts. The table shows the amount of oxygen released at various times when each catalyst was added.

Which one was the most efficient catalyst?

Catalyst	Volume of oxygen released/cm ³	Time/s
A	2	10
B	4	20
C	8	30
D	9	40

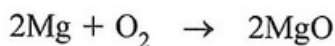
22. Which equipment/substance can be used to test for the gas produced when ammonium nitrate (NH_4NO_3) is heated with sodium hydroxide (NaOH)?

- A. aqueous ammonia
- B. glowing splint
- C. lime water
- D. moist red litmus paper



23. Magnesium burns in oxygen with a bright, white light.

The balanced chemical equation for the reaction is written as shown.



Which statement is **true** about the reaction?

- A. Magnesium is oxidised because it loses electrons.
- B. Magnesium reacting with oxygen is a physical change.
- C. Magnesium reacts with oxygen to form a black solid.
- D. Oxygen is reduced because it loses electrons.

24. Zinc is less reactive than magnesium.

Which statement confirms this?

- A. Magnesium can displace zinc ions from zinc compounds.
- B. Magnesium is lower than zinc in the reactivity series of metals.
- C. Zinc can displace magnesium ions from magnesium compounds.
- D. Zinc is more easily oxidised than magnesium.

25. What causes the rate of a chemical reaction to be increased?

- A. decreasing the concentration of reactants
- B. decreasing the reaction temperature
- C. increasing the surface area of the reactants
- D. removing a catalyst

26. Water is formed from 48 g of oxygen combined with 6 g of hydrogen.

Which mass of oxygen combines with 2 g of hydrogen?

- A. 12 g
- B. 16 g
- C. 48 g
- D. 96 g



27. Which group of the Periodic Table contains a non-metal conductor?

- A. IV
- B. V
- C. VI
- D. VII

28. Which statement about the elements in Group I is correct?

- A. Hydrogen is evolved when they react with water.
- B. Ions of Group I elements have a -1 charge.
- C. Sodium is more reactive than potassium.
- D. Solid sodium is a poor conductor of electricity.

29. G is a monatomic gas.

Which statement about G is correct?

- A. It burns in air.
- B. It is coloured.
- C. It is unreactive.
- D. It has the electronic configuration 2.6.

30. Which metal reacts with steam but **not** with water?

- A. calcium
- B. potassium
- C. sodium
- D. zinc

31. Which nitrate decomposes with heat to produce oxygen and a nitrite?

- A. calcium nitrate
- B. copper nitrate
- C. magnesium nitrate
- D. potassium nitrate



32. Metal L reacts with an acid. The reaction is slow at first and then very vigorous.

Which element is metal L?

- A. aluminium
- B. calcium
- C. lithium
- D. magnesium

33. Metal M does not react with an acid but its metal oxide reacts with acids.

Which element is metal M?

- A. copper
- B. iron
- C. sodium
- D. zinc

Questions 34 and 35 are based on the following processes.

- A. Contact
- B. electrolysis
- C. Haber
- D. reduction

- | | | | | | |
|-----|--|---|---|---|---|
| 34. | Which process is used in the extraction of iron? | A | B | C | D |
|-----|--|---|---|---|---|

- | | | | | | |
|-----|--|---|---|---|---|
| 35. | Which process is used to manufacture sulphuric acid? | A | B | C | D |
|-----|--|---|---|---|---|

36. Cryolite is an important chemical in the extraction of which element?

- A. aluminium
- B. calcium
- C. copper
- D. magnesium

37. Which salt is acidic?

- A. AgCl
- B. CaCl_2
- C. $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$
- D. NaHSO_4

38. Which gas is produced when sulphuric acid reacts with copper?

- A. H_2
- B. H_2O
- C. SO_2
- D. SO_3

39. The tests shown are performed on salt W:

Salt W blue solution	→	Few drops of $\text{NH}_3(\text{aq})$	→	blue precipitate
	→	Few drops $\text{BaCl}_2(\text{aq})$	→	white precipitate

What is salt W?

- A. copper(II) carbonate
- B. copper(II) sulphate
- C. iron(II) carbonate
- D. iron(II) sulphate

40. What is the functional group of the alcohol series?

- A. alkyl group
- B. carboxyl group
- C. hydroxide group
- D. hydroxyl group

41. Natural gas (methane) is burned in air.

Which one of the gases will be produced when there is plenty of oxygen gas available?

- A. carbon dioxide
- B. carbon monoxide
- C. sulphur dioxide
- D. sulphur monoxide



42. Which substance has the largest number of nitrogen atoms?

- A. NH_4NO_3
- B. $(\text{NH}_4)_3\text{PO}_4$
- C. KNO_3
- D. K_2SO_4

43. What is the formula of a saturated straight-chain hydrocarbon with 12 carbon atoms given that the formula for this type of hydrocarbon is $\text{C}_n\text{H}_{2n+2}$?

- A. $\text{C}_{12}\text{H}_{12}$
- B. $\text{C}_{12}\text{H}_{24}$
- C. $\text{C}_{12}\text{H}_{26}$
- D. $\text{C}_{12}\text{H}_{28}$

44. A Group VII element reacts with water, it creates an acidic solution. When the solution produced is tested with blue litmus paper, it turns red, then bleaches it white.

Which Group VII element causes this reaction?

- A. bromine
- B. chlorine
- C. fluorine
- D. iodine

45. Which set of cations are responsible for hardness in well water?

- A. Ca^{2+} and Mg^{2+}
- B. Ca^{2+} and Na^+
- C. K^+ and Ca^{2+}
- D. K^+ and Mg^{2+}

46. Which compound has atoms that are ionically bonded?

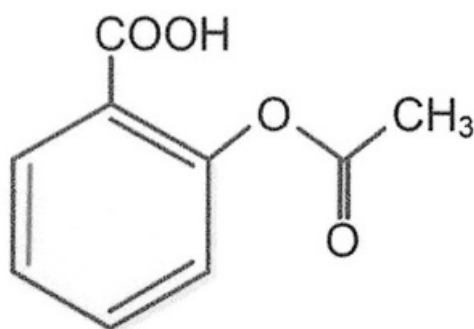
- A. carbon monoxide
- B. magnesium chloride
- C. nitrogen dioxide
- D. sulphur trioxide

47. Methane reacts with bromine in the presence of ultraviolet light.

Which kind of reaction is taking place?

- A. addition
 - B. combustion
 - C. polymerization
 - D. substitution
48. Which of the elements shown is most abundant in fossil fuels?
- A. carbon
 - B. fluorine
 - C. nitrogen
 - D. oxygen

49. Aspirin is used as a pain reliever. Its chemical formula is shown.



Based on the structural formula, which homologous series does this drug belong to?

- A. alcohol
 - B. alkane
 - C. alkene
 - D. carboxylic acid
50. What is a benefit of recycling metals?
- A. increase in electrical costs
 - B. increase in air pollution
 - C. increase in job opportunities
 - D. increase in use of landfills



BLANK PAGE