

CHEMISTRY 1
0715

BAMENDA ARCHDIOCESAN EXAMINATION BOARD (BAEBOC)
MOCK G.C.E. EXAMINATION

MARCH 2026

ADVANCED LEVEL

Centre N° & Name	
Candidate N°	
Candidate Name	

0715 Chemistry: Multiple - Choice Questions

Duration: 1 hour 30 mins.

INSTRUCTIONS TO CANDIDATES

Read the following instructions carefully before you start answering the questions in this paper. Make sure you have a soft HB pencil and an eraser for this examination.

1. USE A SOFT HB PENCIL THROUGHOUT THIS EXAMINATION
2. DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.

Before the examination begins,

3. Check that this question booklet is headed "Advanced Level Chemistry 0715".
4. Insert the information required in the spaces above.
5. Without opening the booklet, pull out your answer sheet carefully from inside the front cover of this booklet. Take care that you do not crease or fold the answer sheet or make any marks on it other than those asked for in these instructions.
6. Insert the information required in the spaces provided on the answer sheet using your HB pencil: Candidate Name, Centre Number and Name, Candidate Number, Subject Code Number and Paper Number.

HOW TO ANSWER THE QUESTIONS IN THE EXAMINATION.

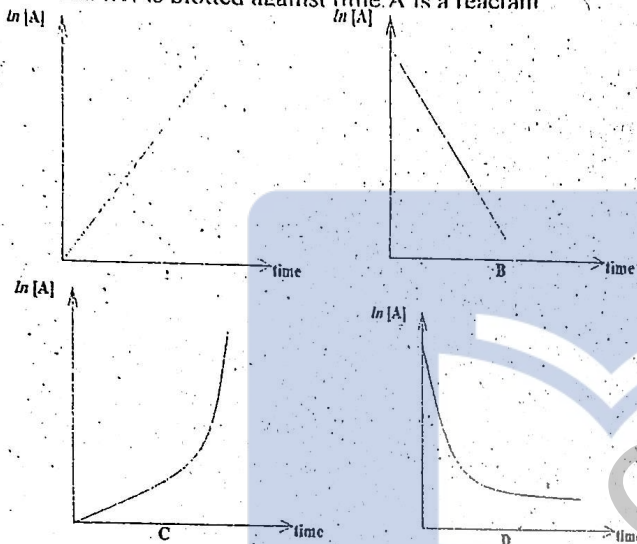
7. Answer all questions in this paper.
8. Each question has FOUR suggested answers: A, B, C and D. Decide on which option is correct. Find the number of the question on the answer sheet and draw a thick horizontal line across the letter to join the square brackets for the answer you have chosen.
For example, if C is your answer, mark C as shown below:
[A] [B] [C] [D]
9. Mark only one answer for each question. If you mark more than one answer, you will score a zero for that question. If you change your mind about an answer, erase the first mark carefully, and then mark your new answer.
10. Avoid spending too much time on any one question. If you find a question difficult, move on to the next question. You can come back to that question later.
11. Do all rough work in this booklet, using where necessary, the blank spaces in the question booklet.
12. Mobile phones are not allowed in the examination room.

TURN OVER

QUESTIONS 1-36 CONCERN THE SHORT RESPONSES. CHOOSE THE CORRECT RESPONSE TO EACH QUESTION FROM A-D

1. Which of the following represents the correct shape and bond angle of ethene (C_2H_4) respectively?
- Tetrahedral and 109.5°
 - Linear and 180°
 - Planar and 120°
 - V-shape(bent) and 104.5°

2. Select from the list below, the graph that corresponds to the first order reaction when $\ln[A]$ is plotted against time. A is a reactant

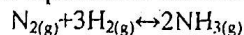


3. Study the experimental lattice energy values of the ionic compounds below and select the correct order of increasing stability, beginning with the least stable

Compound	MgO	NaCl	CaO	NaF
L.E/KJmol ⁻¹	-3933	-776	-3401	-915

- MgO, CaO, NaF and NaCl
 - NaCl, NaF, MgO and CaO
 - NaF, CaO, NaCl and MgO
 - NaCl, NaF, CaO and MgO
4. Determine the volume of water needed to dilute 200cm^3 of 0.25MNaOH solution to 0.2M
- 50cm^3
 - 100cm^3
 - 250cm^3
 - 500cm^3
5. Select from the list below, the theory that best describes, what just happens before products are formed during a chemical reaction.
- Collision theory
 - Kinetic theory
 - Transition state theory
 - Le Chatelier's principle

6. The equilibrium constant, K_c for the reaction:



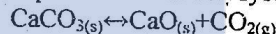
Can be affected by:

- Change in pressure
 - Change in temperature
 - Using a catalyst
 - Change in concentration of $NH_{3(g)}$
7. The pure vapor pressures of methanol and ethanol are 28mmHg and 22mmHg respectively, assuming that the mole fraction of ethanol is 0.46 . Determine the partial vapour pressure of methanol in the mixture.
- 12.88mmHg
 - 10.12mmHg
 - 50mmHg
 - 15.12mmHg

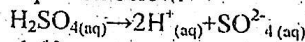
8. Which of the following is responsible for the x-ray diffraction in crystal lattice?

- Electrons
 - Atoms
 - Protons
 - Nucleus
9. A Lewis acid is defined as:
- A proton donor
 - A proton acceptor
 - An electron pair donor
 - An electron pair acceptor

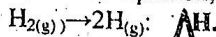
10. How many phases and components are found in the equilibrium reaction system below:



- 3 phases and 3 components
 - 2 phases and 2 components
 - 2 phases and 3 components
 - 3 phases and 2 components
11. Calculate the pH of $0.025\text{MH}_2\text{SO}_4$ according to the equation below.



- 1.60
 - 2.30
 - 1.30
 - 2.60
12. Consider the equation;



Name the energy change represented by:

- Enthalpy change of atomization
- Bond dissociation energy
- Enthalpy change of ionization
- Enthalpy change of Neutralization

13. Which of the following will produce a white precipitate with $\text{BaCl}_2(\text{aq})$ which is insoluble in excess $\text{HCl}(\text{aq})$
- CO_3^{2-}
 - NO_3^-
 - SO_3^{2-}
 - SO_4^{2-}
14. determine the number of particles present in 1.2g of magnesium ($M_r = 24$ $L = 6.02 \times 10^{23}$)
- 3.01×10^{22}
 - 0.05
 - 1.2×10^{21}
 - 1.02×10^{22}
15. Use the data below to calculate the enthalpy change for the reaction;
- $$\text{C}_2\text{H}_4(\text{g}) + \text{H}_2(\text{g}) \rightarrow \text{C}_2\text{H}_6$$
- $$\Delta H_{\text{at}}[\text{C}_2\text{H}_4] = +2250 \text{ KJmol}^{-1}$$
- $$\Delta H_{\text{at}}[\text{H}_2] = +436 \text{ KJmol}^{-1}$$
- $$\Delta H_{\text{at}}[\text{C}_2\text{H}_6] = +2810 \text{ KJmol}^{-1}$$
- -124 KJmol^{-1}
 - $+124 \text{ KJmol}^{-1}$
 - -5270 KJmol^{-1}
 - -5270 KJmol^{-1}
16. Chlorine is usually used in the treatment of water. Which of the following is responsible for the killing of bacteria when chlorine dissolves in water?
- HClO
 - ClO_2
 - ClO^-
 - HClO_2
17. Select the ion with the smallest ionic radius
- Al^{3+}
 - N^{3-}
 - Mg^{2+}
 - Na^+
18. One of the main reason why transition elements form coloured compound is because of:
- d-d electron transition
 - High electronegativity
 - Presence of unpaired electrons in the 4s orbital
 - Low ionization energy
19. Which of the following statements is true about the periodic trends?
- Electronegativity decreases across the period
 - Atomic radius decreases down the group
 - Metallic character increases across the period
 - Ionization energy decreases down the group
20. Select the formula of a carbonate that is stable to heat
- K_2CO_3
 - Li_2CO_3
 - CaCO_3
 - MgCO_3
21. Which of the following statements is true about group (IV) elements.
- The stability of +4 oxidation state increase down the group
 - The stability of +2 oxidation state increases down the of group
 - The stability of +4 oxidation state decreases up the group
 - The stability of +2 oxidation decreases down the group
22. Ammonia is manufactured industrially by the habber process. Indicate a suitable catalyst for this process
- Vanadium (V) oxide
 - Platinum /Rhodium gauze
 - Finely divided iron
 - Manganese (IV) oxide
23. Which of the following is an amphoteric oxide of period 2?
- Al_2O_3
 - PbO
 - BeO
 - Li_2O
24. Choose the pair of oxides that are all acidic
- SiO_2 and CO_2
 - CO_2 and CO
 - GeO and PbO_2
 - SiO_2 and PbO
25. Identify an element with a hexagonal closed packed structure
- Fe
 - Na
 - Ba
 - Mg
26. Select from the list below, an element which when burnt in oxygen produce an oxide which is a reducing agent
- Al
 - S
 - H
 - Mg
27. An element, x (where x is not the usual symbol of the element) has the electronic configuration $1\text{s}^2 2\text{s}^2 2\text{p}^6$. Which group and period does x belong?
- Group (III) and period 3
 - Group (III) period 2
 - Group (VI) and period 4
 - Group (VIII) and period 2
28. Calculate the e.m.f of the cell when the two half cells below are coupled.
- $$\text{Cr}^{3+}(\text{aq}) + \text{e}^- \leftrightarrow \text{Cr}^{2+}(\text{aq}) \quad E^\circ = -0.41\text{V}$$
- $$\text{Cu}^{2+}(\text{aq}) + 2\text{e}^- \leftrightarrow \text{Cu}(\text{s}) \quad E^\circ = +0.34\text{V}$$
- 0.07V
 - +0.07V
 - +0.75V
 - 0.75V

29. The organic compounds below are from the same family. Identify the family
 $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{CHO}$ and $\text{CH}_3\text{CH}_2\text{COCH}_2\text{CH}_3$
 A. Aldehydes and ketones
 B. Ethers
 C. Carbonyls
 D. Alcohols

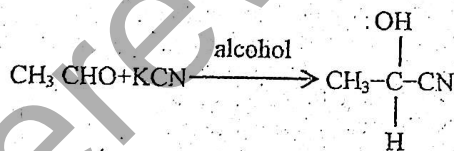
30. An organic compound with a molecular formula $\text{C}_4\text{H}_8\text{O}_2$ gives effervescence with NaHCO_3 . Suggest the main functional group likely to be present
 A. $-\text{COOH}$
 B. OH^-
 C. O
 $\parallel$
 $\text{R}-\text{C}-\text{H}$
 D. O
 $\parallel$
 $\text{R}-\text{C}-\text{R}$

31. Which of the following gives a yellow precipitate with iodine in alkaline medium (iodo form test)?
 A. Methanol
 B. Propan-2-ol
 C. Ethanoic acid
 D. Propanal

32. Which of the following reagents is used to identify a halogen in an organic compound?
 A. $\text{I}_2/\text{NaOH}_{(\text{aq})}$
 B. $\text{Conc. HCl}/\text{ZnCl}_2$
 C. $\text{Conc. HNO}_3/\text{H}_2\text{SO}_4$
 D. HNO_3 and AgNO_3

33. Select the most basic compound from the list below
 A. CH_3CONH_2
 B. $\text{C}_6\text{H}_5\text{NH}_2$
 C. NH_3
 D. $\text{C}_2\text{H}_5\text{NH}_2$

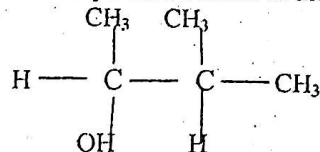
34. Identify the type of organic reaction involved in the reaction below



- A. Electrophilic addition
 B. Electrophilic substitution
 C. Nucleophilic addition
 D. Nucleophilic substitution

35. Which of the compounds below is optically active?
 A. $\text{CH}_3\text{CH}(\text{OH})\text{COOH}$
 B. $\text{CH}_3\text{CH}_2\text{CH}=\text{CH}_2$
 C. $\text{CH}_3\text{C}(\text{CH}_3)_2\text{CH}_3$
 D. $\text{CH}_3\text{COCH}_2\text{CH}_3$

36. Give the systematic name of the compound below



- A. 1,2-dimethylpropan-1-ol
 B. 3-methylbutan-2-ol
 C. 2,2-dimethylpropan-1-ol
 D. 1,3-dimethylbutan-2-ol

Question 37-45 (nine questions)

Directions: for each of the questions below, one or more of the responses is (are) correct, decide which of the response is (are) correct. Then choose;

- A. If 1, 2 and 3 are correct
 B. If 1 and 2 only are correct
 C. If 2 and 3 only are correct
 D. If 3 only is correct

Directions summarized

A	B	C	D
1,2,3 correct	1,2 correct	2,3 correct	3 Only correct

37. Which of the following statement(s) is (are) true about Al_2O_3 ?

1. It can react with $\text{HCl}_{(\text{aq})}$
 2. It can react with $\text{NaOH}_{(\text{aq})}$
 3. It has basic property

38. Choose the correct statement(s) describe(s) change(s) that occur(s) when a mixture deviates negatively from Raoult's Law

1. There is a fall in temperature
 2. There is a decrease in total vapor pressure
 3. There is bond formation

39. Which of the following is (are) true about benzene and methylbenzene?

1. Methylbenzene is more stable than benzene
 2. The methyl group deactivates the ring making it more stable than benzene.
 3. The methyl group activates the ring, making it less stable than benzene.

40. Identify the true statement (s) about the complex ion, $[\text{Co}(\text{EDTA})]^{2-}$

1. The oxidation state of cobalt (Co) in the complex is +2.
 2. The coordination number of Co in the complex is 6.
 3. EDTA is a bidentate Ligand

41. The product(s) obtained from the ozonolysis of the alkene $(\text{CH}_3)_2\text{CH}=\text{CH}_2$ is (are)

1. HCHO
 2. CH_3COCH_3
 3. $\text{CH}_3\text{CH}_2\text{CHO}$

42. Which of the following is (are) involved in an attempt to identify the presence of nitrogen in an organic compound?

1. Neutral iron (iii)chloride
2. Iron (ii)Sulphate
3. Concentrated $\text{HCl}_{(\text{aq})}$

43. According to Markovnikov's rule;

1. An unsymmetrical reagent, HX is added to an unsymmetrical alkene
2. The major product is that which the hydrogen atom attaches to the carbon atom of the double bond with lesser number of hydrogen atoms
3. A symmetrical reagent, HX is added to a symmetrical alkene

44. Select the property or properties associated with amino acids

1. They form polymers
2. They can react with a base
3. They can react with an acid

45. Which of the following alcohols cannot be dehydrated to form alkene(s)?

1. $\text{CH}_3\text{CH}(\text{OH})\text{CH}_3$
2. $(\text{CH}_3)_3\text{COH}$
3. CH_3OH

Question 46-50 (five questions): for each of these questions, a statement is given on the left hand column followed by a statement on the right hand column. Decide whether the second statement is true or false. Then choose as on the table.

	First statement	Second statement	Summary
A	True	true	Second statement is a correct explanation of the first
B	True	True	Second statement is not a correct

			explanation of the first
C	True	False	
D	false	True	

	First statement	Second statement
46	2-aminopropanoic acid can produce two structural isomers which are mirror image of each other	2-aminopropanoic acid exhibits stereoisomerism
47	Propanol has a higher boiling point than propane	Propanol molecule are held together by strong hydrogen bonds while propane does not have hydrogen bonds
48	Methylbenzene is more stable than benzene	The methyl group activates the benzene ring making it less stable
49	All transition elements have partially filled d-subshells	Scandium and zinc are not transition elements but they are d-block elements
50	Ethanol and water form a miscible liquid	Ethanol and water have similar intermolecular forces, hydrogen bonding, which enable them to form a homogenous solution