

PRESIDENT'S OFFICE
REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT
JOINT INSPIRING EXAMINATIONS FOR PRIVATE SECONDARY
SCHOOLS



(JIEPSS)

FORM TWO JOINT TERMINAL EXAMINATION
CHEMISTRY

Time: 2: 30 Hours

May/june 2025

Instructions

- ✓ This paper consists of sections A, B and C with a total of 10 questions.
- ✓ Answer all questions.
- ✓ Section A and C carry 15 marks each and section B seventy (70) marks.
- ✓ All handwritings must be in blue or black ink except diagrams which must be in pencil.

FOR EXAMINERS' USE ONLY			
QUESTION NUMB	✓ TICK	SCORE	EXAMINER'S INT
1			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10			
TOTAL			

SECTION A (15 marks)

1. For each of the items i-x choose the best option in the given alternatives and write the letter of the correct response in the answer sheet provided below.
 - i. A group of chemists noticed that the houses roofed with iron sheets near the ocean rusted faster than the houses found in the inland areas, the reason is?
 - A. The areas hear the ocean have a lot of moisture.
 - B. The ocean water contains various chemical compounds
 - C. The ocean water has a high concentration of oxygen.
 - D. Ocean water contains salts such as sodium chloride which speeds up corrosion of iron.
 - ii. A certain pink-coloured compound turned blue when heated, when few drops of water were added to to the heated sample, it changed back to pink? The pink compound is?
 - A. Anhydrous copper(II)sulphate.
 - B. Hydrated cobalt(II) chloride.
 - C. Anhydrous copper(II)sulphate.
 - D. Anhydrous cobalt(II) chloride.
 - iii. An element burns in oxygen to form a white residue, the residue dissolves in water to form a solution which has no effect on the blue litmus paper, but turned a red litmus paper to blue this implies that?
 - A. The residue is acidic
 - B. The residue is basic
 - C. The residue is neutral
 - D. The oxide is acidic
 - iv. What is the form of water when precipitation occurs?
 - A. Rain and clouds
 - B. Rain, hail and snow
 - C. Water ice
 - D. Snow and hail
 - v. What is the suitable method of obtaining cooking oil from sunflower seeds?
 - A. Sublimation
 - B. Solvent extraction
 - C. Layer separation
 - D. Fraction distillation
 - vi. Which one is an example of a liquid solutions
 - A. Dental amalgam
 - B. Alloys

- C. Milk
- D. Vinegar

- vii. What is the oxidation state of nitrogen in NH_4^{+} ?
- A. -2
 - B. -3
 - C. +2
 - D. +3
- viii. What is the relative mass of an electron compared to a proton?
- A. 1/18
 - B. 1/184
 - C. 1/1840
 - D. 1/1900
- ix. The reason to why hydrogen is not a constituent of air is?
- A. Soluble in water
 - B. Less dense than water
 - C. Denser than air
 - D. Highly flammable gas
- x. A form II student asked her teacher to explain to her why hot foods smell from a distance than cold foods? The most correct explanation is
- A. Molecules from hot food are lighter, hence move faster than those from cold food.
 - B. Molecules from hot food have high kinetic energy hence diffuse faster in air than those from cold food.
 - C. Molecules from cold food are fewer than those from hot food.
 - D. Molecules from hot food are many compared to the those from cold food.

ANSWERSHEET FOR QUESTION 1

Question	i	ii	iii	iv	v	vi	vii	viii	ix	x
Answer										

- 2 Match the following extinguishing agents of fire in **list A** with the corresponding types of fire in **list B**, by writing the letter of the correct response against the question number in the answer sheet provided below.

LIST A	LIST B
i. Bromochloro-difluoro-methane	A. Air pressurized air(APW)
ii. carbon dioxide gas under extreme high pressure	B. Wet chemical
iii. protein and fluoro-protein	C. foam
iv. Ordinary water pressurized by air	D. Carbon dioxide
v. silicon dioxide	E. Dry chemical
	F. ABC
	G. Potassium acetate
	H. Halon
	I. Sand bucket

QUESTION	i	ii	ii	iv	v
ANSWER					

SECTION B (70 marks)

- 3 a) A form II student combined a calcium ion with a phosphate ion to form compound Q.

- i. Derive the chemical formula of the compound Q?

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- ii. Write the IUPAC name the compound Q?

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- iii. Calculate the oxidation state of phosphorus in the compound Q above?

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b) Chemists discovered a certain naturally occurring element uranium in a piece of rock, on critical laboratory analysis it was found that uranium exists in two isotopic forms uranium-235 and uranium-238 with percentage abundances of X% and 99.3% respectively

- i. Calculate the relative atomic mass of uranium, give your answer to 2 significant figures

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- ii. Give a reason why the relative atomic mass has no units

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- 4 a) A certain element Q in group V, period 2 chemically combines with another element R of group I, period 1 to form a compound W, element R shares some unique characteristics with the halogen family.

- i. Identify the elements Q and R?

Q isand R is

- ii. Use dot or cross diagrams show how chemical union occur between element Q and R?

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- iii. Write the chemical formula of the molecule W?

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- iv. What is the name of the molecule W?

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- v. What type of bond holds the atoms of the molecule W?

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vi. Name two examples of molecules with the same type of bond identified in 4(iv) above?

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b) For each of the following radicals write the chemical formula, valency and oxidation state.

RADICAL NAME	FORMULA	VALENCY	OXIDATION STATE
Chlorate			
Nitrite			

5 a) Your father and mother want to know how chemistry knowledge regarding laboratory apparatus skills will be applied in real life situations. Using a kitchen as a laboratory setting how would can you help them to understand. Give three points

i.
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ii.
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iii.
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b) Using a relevant example, settle a strong argument in which a form II student tries to convince his colleagues that agriculture and chemical industry can work together other than separate?

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c) It is advisable to wash, rinse with clean water and dry glassware every after a chemistry practical activity. Give three (3) reasons?

i.

ii.

iii.

d) Give two areas where scientific procedure can be applied?

i.

ii.

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6 During a chemistry experiment the form II students accidentally left glass bottle containing hydrogen peroxide which had a closed screw top on a sunny window, after few days the bottle exploded causing serious injuries to some students

a) What caused the bottle to explode?

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b) Write the molecular equation to show the reaction that lead to the explosion?

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c) Identify two types of injuries that students encountered after the explosion?

- i.
- ii.

d) Suggest a suitable method for storing hydrogen peroxide safely for future use?

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e) Assume you have been invited at the scene of the accident and the laboratory technician requested you to put a sign on the remaining bottles of hydrogen peroxide in order to give precaution to all laboratory users, /'Draw the sign expected?



7 a) You are invited to one of the television stations in Tanzania for a live interview of promoting a new fuel product **NISHATI BORA** suitable for domestic and industrial uses. How can you convince the nation basing on the following qualities of **NISHATI BORA** compared to other fuels?

i. Pyrometric burning effect

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ii. Calorific value

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iii. Environmental conservation

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iv. Affordability

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b) A chief cook at a local restaurant at Iringa usually wakes up at 4AM daily to prepare warm water for the customers to wash their hands by burning 800g of fire wood charcoal to warm 20litres of water at a temperature of 35° C to 55°C after all the charcoal has burnt to ashes he cleans the charcoal stove, collects all the residue ashes and re-measure it giving a constant result of 200g per day. What is the calorific value of the fire wood fuel produced per day?

[illegible]

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i.
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iv. Necklace.....

Centennial CS, Sr Pauline Bommer, St. Joseph Millenium, FilbertBayi, St Ursula Dodoma
Bright Future, Canossa, St. Augustine Tagaste, Libermann Boys St. Aloysius Girls SS

i. Empirical formula

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ii. Molecular formula

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b) An organic compound Q consists of 80% carbon and the rest being hydrogen if Q has a vapor density of 15. determine the molecular mass of Q?

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c) Name the following compounds

i. SF_6

ii. N_2O_5

SECTION C (15 Marks)

Answer question ten (10)

10 the minister of mineral and energy resources faces a very strong opposition from the more than a half of the members of parliament regarding the government proposal of construction of a hydrogen fuel plant where a natural forest is and near the banks of lake victora. support the government's proposal by giving six points

