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FORM TP 2026–059

CANDIDATE – PLEASE NOTE!

PRINT your name on the line below and return this booklet with your answer sheet. Failure to do so may result in disqualification.

TEST CODE **01212010**

MAY–JUNE 2026

CARIBBEAN EXAMINATIONS COUNCIL

CARIBBEAN SECONDARY EDUCATION CERTIFICATE® EXAMINATION

CHEMISTRY

Paper 01 – General Proficiency

1 hour 15 minutes

01 JUNE 2026 (p.m.)

READ THE FOLLOWING INSTRUCTIONS CAREFULLY.

1. This test consists of 60 items. You will have 1 hour and 15 minutes to answer them.

2. In addition to this test booklet, you should have an answer sheet.

3. Each item in this test has four suggested answers lettered (A), (B), (C), (D). Read each item you are about to answer and decide which choice is best.

4. On your answer sheet, find the number which corresponds to your item and shade the space having the same letter as the answer you have chosen. Look at the sample item below.

Sample Item

The SI unit of length is the

(A) metre
(B) second
(C) newton
(D) kilogram

Sample Answer

● B C D

The best answer to this item is "metre", so (A) has been shaded.

5. If you want to change your answer, erase it completely before you fill in your new choice.

6. When you are told to begin, turn the page and work as quickly and as carefully as you can. If you cannot answer an item, go on to the next one. You may return to that item later.

7. You may do any rough work in this booklet.

8. Figures are not necessarily drawn to scale.

9. You may use a silent, non-programmable calculator to answer items.

DO NOT TURN THIS PAGE UNTIL YOU ARE TOLD TO DO SO.

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1. 'Mass number' is the number of

(A) neutrons plus protons
(B) electrons plus protons
(C) electrons plus neutrons
(D) neutrons minus protons

2. Which of the following statements is true with regard to protons?

(A) Protons are negatively charged and are found in shells.
(B) Protons are positively charged and are found in the nucleus.
(C) Protons have no charge and are found in the nucleus.
(D) Protons are positively charged and are found in the shells.

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3. Which of the following terms describes the structure of copper?

(A) Simple molecular
(B) Macromolecular
(C) Ionic crystals
(D) Metallic

4. Which of the following techniques may be used to separate a mixture of plant pigments?

(A) Centrifugation
(B) Solvent extraction
(C) Fractional distillation
(D) Paper chromatography

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5. The calcium ion has an oxidation number of +2 because the calcium atom has

(A) two electrons in its outermost shell
(B) six electrons in its outermost shell
(C) two allotropes
(D) two isotopes

Item 6 refers to Compound X which melts at 18 °C and boils at 55 °C.

6. Compound X is MOST likely

(A) a liquid metal
(B) a giant molecule
(C) a simple molecule
(D) an ionic compound

7. In which of the following compounds does hydrogen have a negative oxidation number?

(A) CH_4
(B) NaH
(C) NH_3
(D) H_2O_2

8. Which of the following mixtures are arranged in order of INCREASING particle size?

(A) Solutions, colloids, suspensions
(B) Solutions, suspensions, colloids
(C) Colloids, solutions, suspensions
(D) Suspensions, colloids, solutions

9. The rate of a chemical reaction does NOT depend on the

(A) presence of a catalyst
(B) concentration of the reactants
(C) temperature of the reacting system
(D) energy change associated with the reaction

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10. Sodium hydrogen carbonate and hydrochloric acid reacted to produce sodium chloride. The mixture effervesced. The effervescence is caused by the evolution of

(A) oxygen
(B) hydrogen
(C) carbon dioxide
(D) hydrogen chloride

11. In order to prepare a sample of sodium chloride, 3 g of sodium hydrogen carbonate are added to 100 cm^3 of 0.2 mol dm^{-3} hydrochloric acid.

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The number of moles of hydrochloric acid used in this reaction is

(A) 0.2×100

(B) $\frac{100 \times 0.2}{1000}$

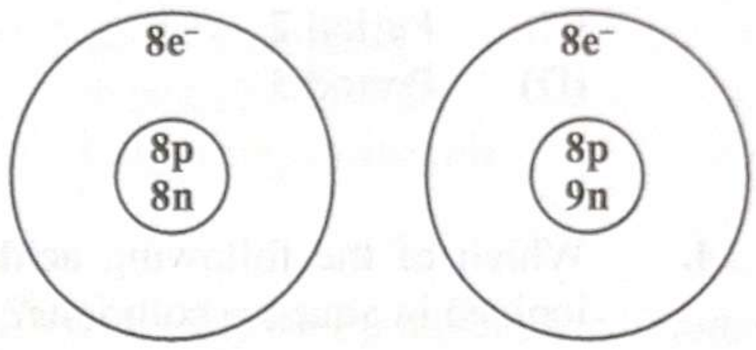
(C) $\frac{1000 \times 0.2}{100}$

(D) $\frac{100}{0.2}$

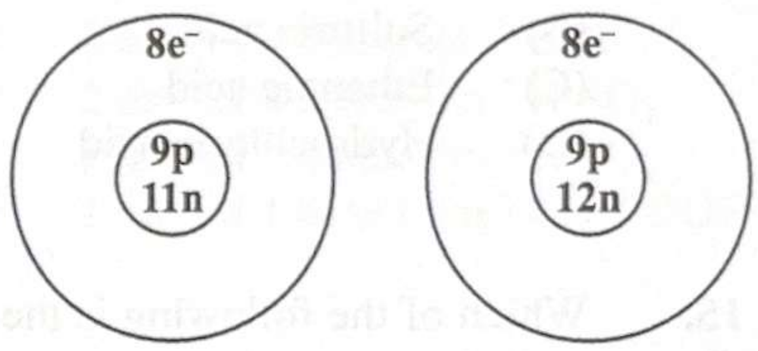
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12. An element, X, has 8 electrons in its outer shell. Which of the following are possible isotopes of X?

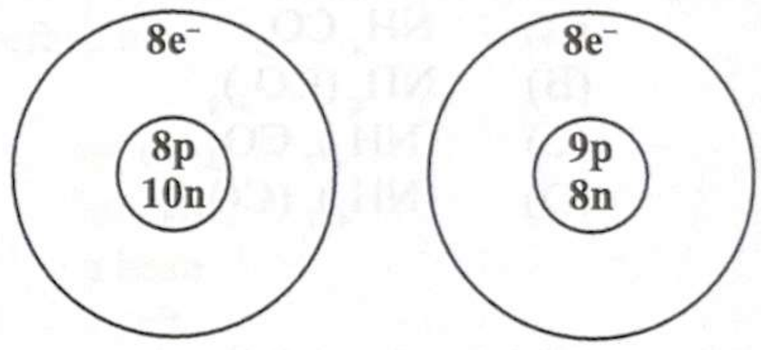
(A)



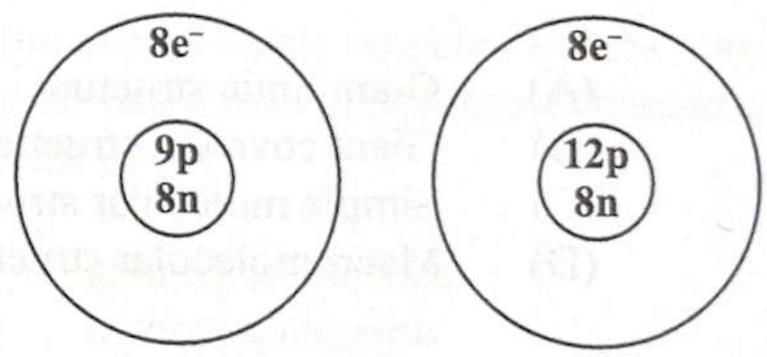
(B)



(C)



(D)



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13. Which set of elements forms molecules which contain two atoms?

(A) Group 2
(B) Group 7
(C) Period 2
(D) Period 3

14. Which of the following acids is weakly ionized in aqueous solutions?

(A) Nitric acid
(B) Sulfuric acid
(C) Ethanoic acid
(D) Hydrochloric acid

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15. Which of the following is the correct formula for ammonium carbonate?

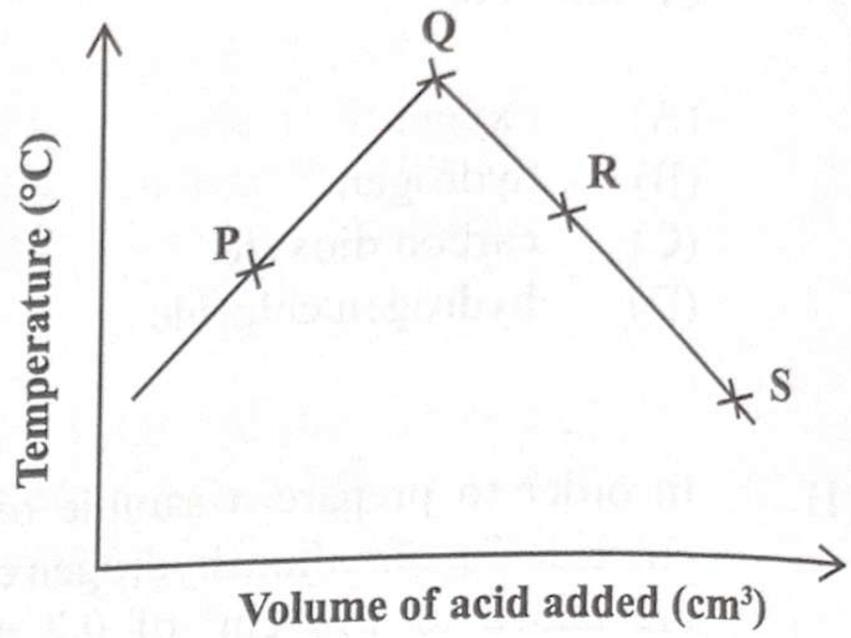
(A) $NH_4 CO_3$
(B) $NH_4 (CO_3)_2$
(C) $(NH_4)_2 CO_3$
(D) $(NH_4)_2 (CO_3)_2$

16. Which of the following terms describes calcium chloride?

(A) Giant ionic structure
(B) Giant covalent structure
(C) Simple molecular structure
(D) Macromolecular structure

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Item 17 refers to the following graph which shows what occurs when a solution of sodium hydroxide is neutralized by the addition of dilute hydrochloric acid.



17. Which of the points on the graph represents the neutralization point of the reaction?

(A) P
(B) Q
(C) R
(D) S

18. Which of the following atoms would NOT form a positive ion?

(A) Chlorine
(B) Lithium
(C) Hydrogen
(D) Beryllium

19. Which of the following pairs of substances would be MOST suitable for the preparation of copper sulfate crystals?

(A) Copper and dilute sulfuric acid
(B) Copper and concentrated sulfuric acid
(C) Copper nitrate and dilute sulfuric acid
(D) Copper oxide and dilute sulfuric acid

20. Which of the following ionic equations involves oxidation?

(A) $S^{2-} \rightarrow S + 2e^-$
(B) $Na^+ + e^- \rightarrow Na$
(C) $2H^+ + 2e^- \rightarrow H_2$
(D) $Cl_2 + 2e^- \rightarrow 2Cl^-$

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21. The atomic number of Element D is 13. In which group of the periodic table would Element D be found?

(A) 5
(B) 4
(C) 3
(D) 2

22. Which of the following statements is true of an endothermic reaction?

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(A) Heat is given up to the surroundings.
(B) Heat is absorbed from the surroundings.
(C) The products have less energy than the reactants.
(D) The products have the same energy as the reactants.

23. Which of the following substances, when added to pure water, SIGNIFICANTLY increases the water's conductivity?

(A) Graphite
(B) Sodium chloride
(C) Iron(II) hydroxide
(D) Copper(II) hydroxide

24. Which of the following aqueous solutions contains 1 mole of hydrogen ions?

(A) 2 dm^3 of 0.5 mol dm^{-3} HCl
(B) 2 dm^3 of 0.5 mol dm^{-3} H_2SO_4
(C) 1 dm^3 of 1.0 mol dm^{-3} H_2SO_4
(D) 1 dm^3 of 1.0 mol dm^{-3} CH_3COOH

25. A substance, Y, reacts with an ammonium salt to produce ammonia gas. Y must therefore be

(A) an ester
(B) an acid
(C) a base
(D) a salt

26. An ion with a single negative charge may be converted into a neutral atom of the same element by

(A) gaining an electron
(B) losing an electron
(C) losing a neutron
(D) losing a proton

27. How many coulombs (C) of electricity passes through an electrolyte when a current of 100 A flows for 10 minutes?

(A) 100
(B) 600
(C) 10 000
(D) 60 000

28. The particle $^{24}_{12}X^{2+}$ has 12 protons.

How many neutrons and electrons does the particle have?

	Neutrons	Electrons
(A)	12	10
(B)	12	12
(C)	24	10
(D)	24	12

29. Which of the following oxides reacts with both acids and bases?

(A) MgO
(B) Al_2O_3
(C) CuO
(D) CaO

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Item **30** refers to the following table.

Acid	P	Q	R	S
pH	2	3	4	5

30. The strongest acid is

(A) S
(B) R
(C) Q
(D) P

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31. In which of the following substances will electrolysis NOT occur when an electrical current is passed through it?

(A) Sodium hydroxide solution
(B) Molten sodium chloride
(C) Solid sodium chloride
(D) Dilute sulfuric acid

32. Barium is below calcium in Group II of the periodic table. When these two metals react with water, the main difference observed is the

(A) rate of reaction
(B) type of gas evolved
(C) colour of the product
(D) colour change with litmus

33. Which metal reacts vigorously with water to produce a strongly alkaline solution?

(A) Al
(B) Cu
(C) Fe
(D) Na

34. Which metal has an alloy which is used in the manufacture of aircraft?

(A) Fe
(B) Cu
(C) Al
(D) Na

35. Which of the following methods can be used in the extraction of aluminium?

(A) Displacement by a metal higher up the electrochemical series
(B) Electrolysis of the oxide in its molten state
(C) Reduction of the oxide by hydrogen
(D) Reduction of the oxide by carbon

36. Which of the following compounds may be used to counteract the effects of acid rain on the soil?

(A) CaO
(B) H_2S
(C) SO_2
(D) CO

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37. Which of the following metals neither reacts with water nor displaces hydrogen from dilute hydrochloric acid?

(A) Iron
(B) Zinc
(C) Copper
(D) Calcium

38. Why is aluminium more resistant to corrosion than iron?

(A) Aluminium oxide formed is more reactive than iron oxide formed.
(B) Aluminium has reacted completely but iron has not reacted completely.
(C) Aluminium oxide does not react with aluminium but iron oxide reacts with iron.
(D) Aluminium oxide protects the aluminium but iron oxide does not protect the iron.

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Item **39** refers to the following table which shows the reaction of four metals, W, X, Y and Z, with water or steam. The table also shows the products formed when the nitrates of each metal are heated.

Metal	Reaction with Water or Steam	Products Formed When Nitrate is Heated
W	No reaction	Metal, NO_2 and O_2
X	Reacts with steam but not with cold water	Oxide, NO_2 and O_2
Y	Reacts rapidly with cold water	Nitrite and O_2
Z	Reacts slowly with cold water	Oxide, NO_2 and O_2

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39. Which of the metals is likely to form a soluble hydroxide?

(A) Z
(B) Y
(C) X
(D) W

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40. Which of the following elements would NOT form an acidic oxide when burnt in air?

(A) Sulfur
(B) Carbon
(C) Nitrogen
(D) Magnesium

41. Ammonia may be produced in the laboratory by heating a mixture of ammonium chloride and

(A) ammonium sulfate
(B) calcium hydroxide
(C) calcium chloride
(D) copper

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Item **42** refers to the following sequence of reactions involving iron compounds, where I, II, III and IV represent progressive stages in the sequence.

$$FeCO_3 \xrightarrow{I} FeO \xrightarrow{II} Fe_2O_3 \xrightarrow{III} Fe_2(SO_4)_3 \xrightarrow{IV} Fe(OH)_3$$

42. A suitable reagent that could be used at Stage IV is

(A) steam
(B) hydrogen
(C) solid copper oxide
(D) aqueous sodium hydroxide

43. Which of the following metals appears between copper and aluminium in the reactivity series and is an important component in haemoglobin?

(A) Magnesium
(B) Lead
(C) Iron
(D) Zinc

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Item **44** refers to the following information.

When treated with concentrated hydrochloric acid, a compound gives off a greenish-yellow gas which bleaches moist red litmus paper.

44. The gas given off is

(A) chlorine
(B) sulfur dioxide
(C) hydrogen sulfide
(D) nitrogen dioxide

45. How many covalent bonds are there in a nitrogen molecule?

(A) 4
(B) 3
(C) 2
(D) 1

Item **46** refers to the following information.

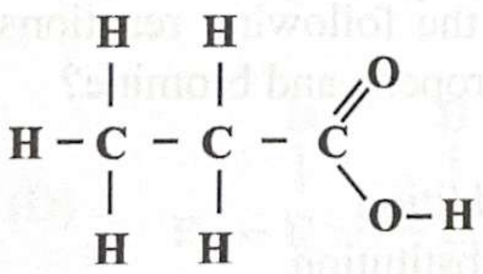
A solution of iron(II) sulfate was added to a solution of barium nitrate until in EXCESS. The precipitate produced was filtered off and water was added to the residue in the filter paper.

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46. The colour of the precipitate produced was

(A) yellow
(B) brown
(C) green
(D) white

Item **47** refers to the following diagram of the fully displayed formula of a compound.



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47. To which homologous series does the compound belong ?

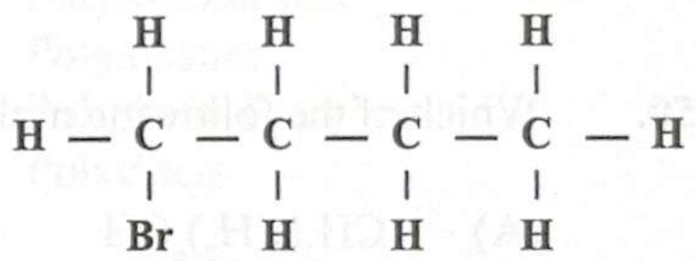
(A) Alkanoic acids
(B) Alcohols
(C) Alkenes
(D) Alkanes

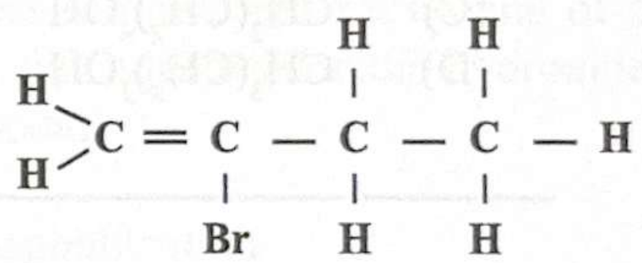
48. When a hydrocarbon molecule is cracked, which of the following smaller molecules are produced?

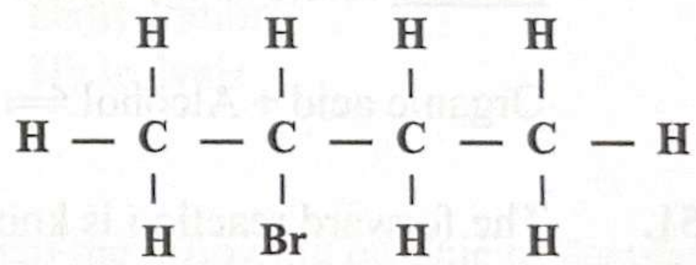
I. An alkane
II. An alkene
III. An alcohol

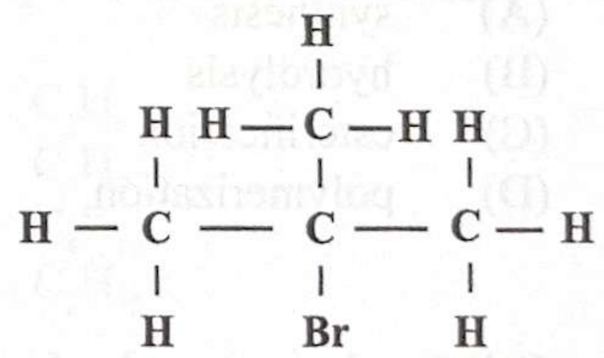
(A) I and II only
(B) I and III only
(C) II and III only
(D) I, II and III

49. The compound 2-bromobutane has a structural formula of

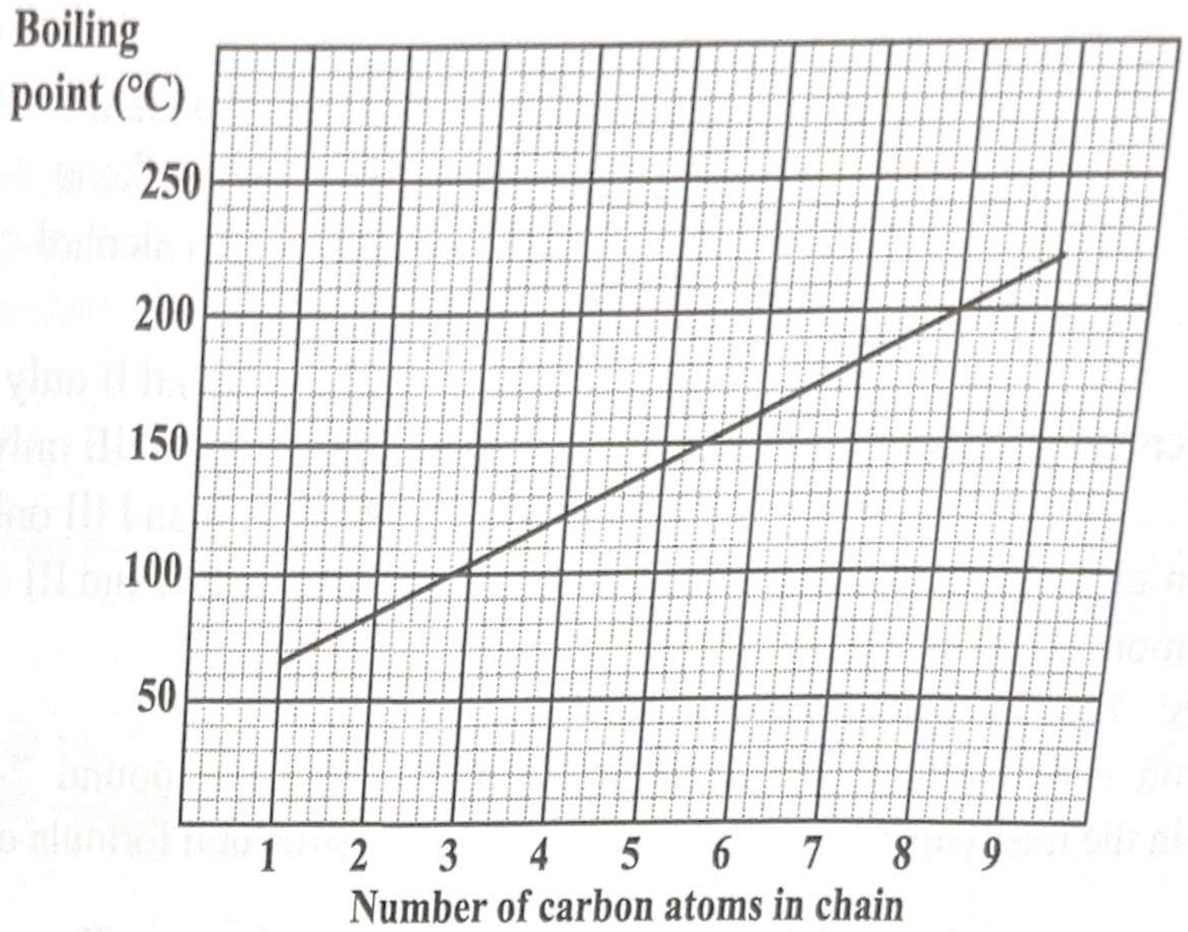
(A)


(B)


(C)


(D)


Item 50 refers to the following graph which shows the boiling points of some straight-chain alcohols.



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50. Which of the following molecular formulae represents the alcohol whose boiling point is 160 °C?

(A) $CH_3(CH_2)_6OH$
(B) $CH_3(CH_2)_5OH$
(C) $CH_3(CH_2)_4OH$
(D) $CH_3(CH_2)_3OH$

Item 51 refers to the following equation.

Organic acid + Alcohol $\rightleftharpoons$ Ester + Water

51. The forward reaction is known as

(A) synthesis
(B) hydrolysis
(C) esterification
(D) polymerization

52. Cellulose is an example of a polysaccharide that can be used for the manufacture of

(A) guttering
(B) pipe fittings
(C) garbage bags
(D) paper

53. Which of the following reactions occurs between propene and bromine?

(A) Addition
(B) Substitution
(C) Precipitation
(D) Condensation

54. Which of the following statements is true of soapless detergents?

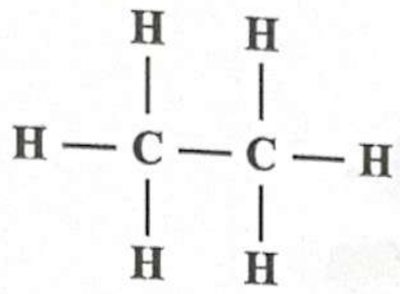
(A) They are made from fats.
(B) They are all biodegradable.
(C) They are inorganic materials.
(D) They are not affected by hard water.

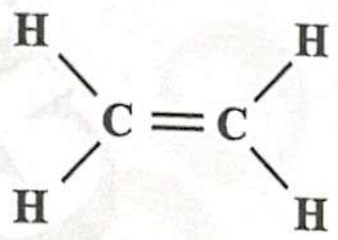
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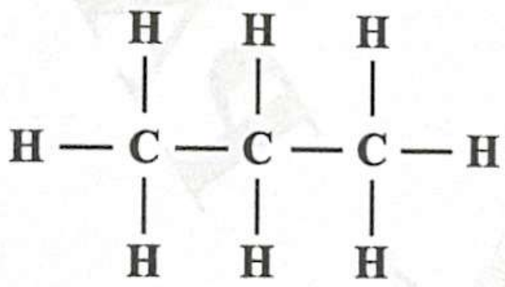
55. What is the name of the process by which proteins are formed from amino acids?

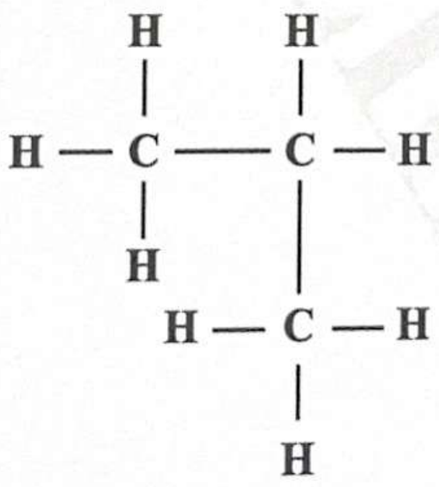
(A) Addition
(B) Isomerism
(C) Esterification
(D) Polymerization

56. Which of the following compounds can decolourize potassium manganate(VII)?

(A) 

(B) 

(C) 

(D) 

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57. Octane, the major component of gasoline, is an alkane with eight carbon atoms per molecule.

Which of the following formulae represents octane?

(A) C_8H_{12}
(B) C_8H_{14}
(C) C_8H_{16}
(D) C_8H_{18}

58. Which of the following is NOT formed from condensation polymerization?

(A) Polysaccharides
(B) Polyalkenes
(C) Polyamides
(D) Polyesters

59. Which reaction involves the boiling of a fat or oil with aqueous sodium hydroxide (caustic soda)?

(A) Saponification
(B) Esterification
(C) Dehydration
(D) Hydrolysis

60. Which of the following organic molecules has only two structural isomers?

(A) C_2H_6
(B) C_3H_8
(C) C_4H_{10}
(D) C_6H_{12}

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END OF TEST

IF YOU FINISH BEFORE TIME IS CALLED, CHECK YOUR WORK ON THIS TEST.