AGA KHAN UNIVERSITY EXAMINATION BOARD

SECONDARY SCHOOL CERTIFICATE

CLASS X EXAMINATION

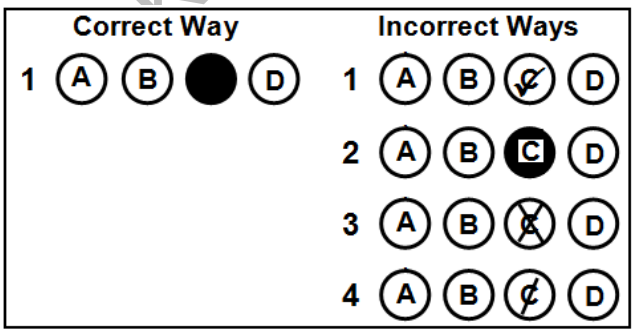
APRIL/ MAY 2017

Chemistry Paper I

Time: 35 minutes Marks: 25

INSTRUCTIONS

1. Read each question carefully.
2. Answer the questions on the separate answer sheet provided. DO NOT write your answers on the question paper.
3. There are 100 answer numbers on the answer sheet. Use answer numbers 1 to 25 only.
4. In each question there are four choices A, B, C, D. Choose ONE. On the answer grid black out the circle for your choice with a pencil as shown below.



Candidate's Signature

5. If you want to change your answer, ERASE the first answer completely with a rubber, before blacking out a new circle.
6. DO NOT write anything in the answer grid. The computer only records what is in the circles.
7. You may use a simple calculator if you wish.

1. In an endothermic reversible reaction, an increase in temperature will

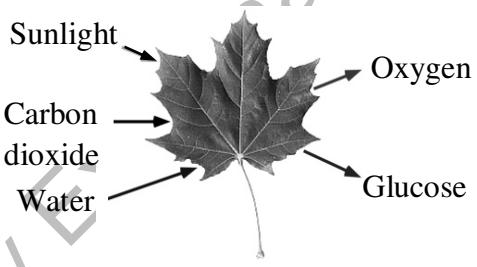
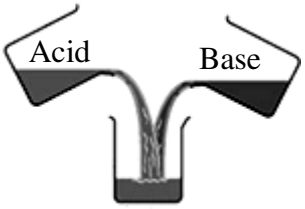
   A. stop the reaction from proceeding further.
   B. shift the equilibrium in the reverse direction.
   C. shift the equilibrium in the forward direction.
   D. equalise the rate of forward and reverse reactions.

2. The unit of equilibrium constant K_c for the given reversible reaction is

   $N_2O_{4(g)} \rightleftharpoons 2NO_{2(g)}$

   A. mol dm^{-3}
   B. $\text{mol}^3\,\text{dm}^{-9}$
   C. $\text{mol}^{-1}\,\text{dm}^3$
   D. $\text{mol}^{-2}\,\text{dm}^6$

3. Which figure represents an endothermic reaction?

 Woods on fire	
A	B
 Nails rusting	 Salt + Water
C	D

4. What happens when the following two soluble salt solutions are mixed?

   $BaCl_{2(aq)} + 2AgNO_{3(aq)} \rightarrow ?$

   A. Two soluble salts are produced.
   B. Two insoluble salts are produced.
   C. One insoluble salt, water and a gas are produced.
   D. One soluble salt and one insoluble salt are produced.

5. Which type of salt is $Pb(OH)CH_3COO$?

   A. Basic salt
   B. Acidic salt
   C. Double salt
   D. Normal salt

6. The figure below shows the colours of two indicators: methyl orange and litmus solution at different pH values.

   Methyl orange and litmus solution both produce the same result of red colour when introduced in a solution of

   A. sugar and water.
   B. sodium and water.
   C. sulphur dioxide and water.
   D. sodium chloride and water.

7. The functional group $–NH_2$ is found in

   A. esters.
   B. amines.
   C. alcohols.
   D. aldehydes.

8. The chemical diversity of organic compounds is due to the

   A. non-polar nature of carbon.
   B. self-linking ability of carbon.
   C. non-volatile nature of carbon.
   D. solubility of carbon in organic solvents.

9. Organic compounds have **X** bonding; therefore they exhibit **Y** electrical conductivity both in fused state and in solution form.

   Which of the following CORRECTLY identifies **X** and **Y**?

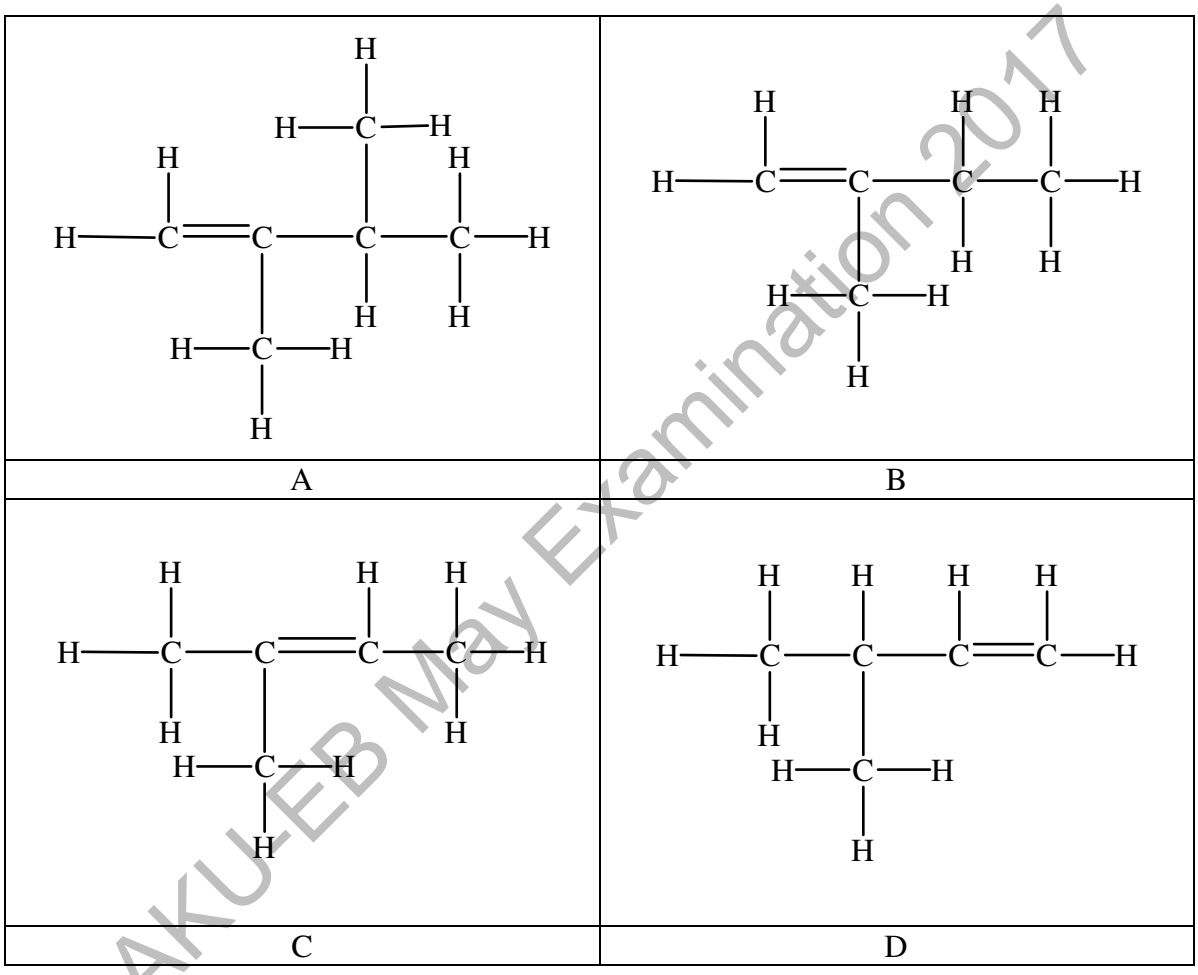
	X	**Y**
A	Ionic	Poor
B	Metallic	Good
C	Covalent	Poor
D	Ionic	Good

10. The IUPAC name of the given organic compound is

$H_2C{=}CH{-}CH{=}CH{-}CH_3$

A. 1,3-pentene.
B. 2,4-pentene.
C. 1,3-pentadiene.
D. 2,4-pentadiene.

11. The structural formula of 2-methyl-1-butene is



A | B | C | D

12. When alkenes react with $KMnO_4$, decolourisation of pink colour occurs. This is because the double bond electrons react with

A. MnO_4^-
B. MnO_2
C. H_2O
D. K^+

13. Which of the following statements is TRUE about oils?

    A. They are denser than water.
    B. They are good conductors of electricity.
    C. They are stable and cannot be hydrogenated.
    D. They are triglycerides of unsaturated fatty acids.

14. Oils can be converted into fats by the process of

    A. oxidation.
    B. hydration.
    C. halogenation.
    D. hydrogenation.

15. Dextrose is given intravenously to patients with

    A. high fever.
    B. low blood sugar.
    C. low calcium level.
    D. high blood pressure.

16. Which of the following statements is FALSE about deoxyribonucleic acid (DNA)?

    A. Damage to DNA causes typhoid.
    B. It is a long double stranded molecule.
    C. Synthesis of RNA is controlled by DNA.
    D. It stores all genetic information of the cell.

17. Which of the following oxides are produced by electrical discharge of lightning during thunderstorm?

    A. Nitric oxide
    B. Sulphur dioxide
    C. Carbon dioxide
    D. Carbon monoxide

18. Which of the following is a characteristic of the hydrosphere?

    A. It is a source of minerals and fossil fuels.
    B. It is a solid, rocky crust covering the entire planet.
    C. It is a collective mass of oceans and fresh water bodies.
    D. It is a combination of plants, animals and microorganisms.

19. Which of the following is an adverse effect of ozone depletion?

    A. It melts icebergs.
    B. It causes suffocation.
    C. It damages buildings.
    D. It disrupts food chain.

20. Fluorosis is a water borne disease which shows the symptom of

A. weakening of teeth.
B. loss of blood in stool.
C. inflammation of the liver.
D. loss of fluids from the body.

21. Na_2CO_3 removes hardness of water by precipitating the impurities in the form of

A. oxalates.
B. sulphates.
C. carbonates.
D. bicarbonates.

22. The water of swimming pools is treated with hypochlorous acid (HOCl) because it helps in the removal of

A. odour.
B. germs.
C. colour.
D. turbidity.

23. Which of the following shows the CORRECT sequence of the metallurgical processes involved in concentrating an ore?

	Step 1	**Step 2**	**Step 3**	**Step 4**
A	Electromagnetic separation	Froth flotation process	Gravity separation	Crushing and grinding
B	Froth flotation process	Crushing and grinding	Electromagnetic separation	Gravity separation
C	Crushing and grinding	Gravity separation	Froth flotation process	Electromagnetic separation
D	Gravity separation	Crushing and grinding	Electromagnetic separation	Froth flotation process

24. During the extraction of iron in a blast furnace, the haematite ore is

A. reduced.
B. oxidised.
C. hydrated.
D. neutralised.

25. During the extraction of copper, the process of roasting involves the conversion of impurities into

A. oxides.
B. silicates.
C. sulphates.
D. carbonates.

END OF PAPER

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Please use this page for rough work