

AGA KHAN UNIVERSITY EXAMINATION BOARD

SECONDARY SCHOOL CERTIFICATE

CLASS X

General Science Paper I

Time: 50 minutes Marks: 35

Note: The MCQs in this model paper can also be used as examples and for practice for Annual and Re-sit Examinations 2022.

INSTRUCTIONS

1. Read each question carefully.
2. The MCQs in this model paper can be used as examples and for practice for Annual and Re-sit examinations 2022.
3. Answer the questions on the separate answer sheet provided. DO NOT write your answers on the question paper.
4. There are 100 answer numbers on the answer sheet. Use answer numbers 1 to 35 only.
5. 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.

Correct Way				Incorrect Ways			
1	<input type="radio"/> A	<input type="radio"/> B	<input checked="" type="radio"/> C	<input type="radio"/> A	<input type="radio"/> B	<input checked="" type="radio"/> C	<input type="radio"/> D
	<input type="radio"/> A	<input type="radio"/> B	<input checked="" type="radio"/> C	<input type="radio"/> A	<input type="radio"/> B	<input checked="" type="radio"/> C	<input type="radio"/> D
	<input type="radio"/> A	<input type="radio"/> B	<input checked="" type="radio"/> C	<input type="radio"/> A	<input type="radio"/> B	<input checked="" type="radio"/> C	<input type="radio"/> D
	<input type="radio"/> A	<input type="radio"/> B	<input checked="" type="radio"/> C	<input type="radio"/> A	<input type="radio"/> B	<input checked="" type="radio"/> C	<input type="radio"/> D

Candidate's Signature

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

Note: The MCQs in this model paper can be used as examples and for practice for Annual and Re-sit examinations 2022.

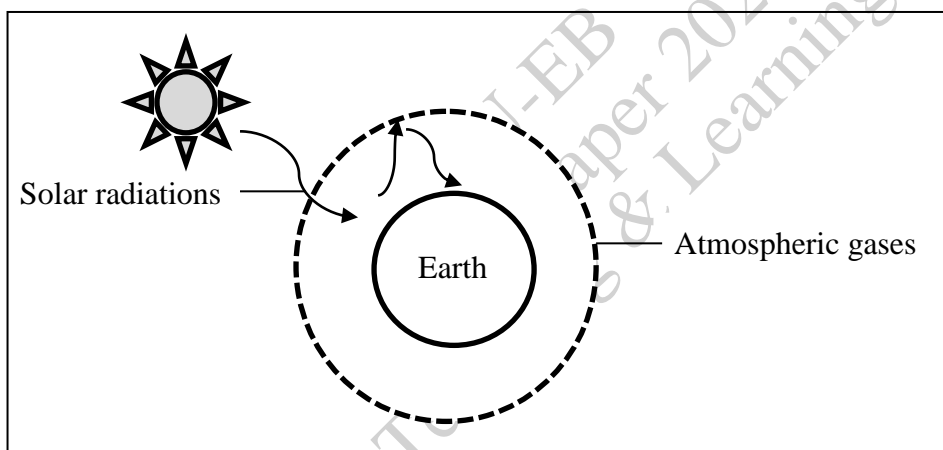
1. Oxygen is reactive in nature. It reacts with all of the given compounds EXCEPT

- A. carbon.
- B. helium.
- C. sodium.
- D. chlorine.

2. The greenhouse effect keeps the temperature of the Earth's atmosphere

- A. cold.
- B. warm.
- C. moderate.
- D. extremely cold.

3. The natural phenomenon illustrated in the given diagram is



- A. acid rain.
- B. eutrophication.
- C. ozone depletion.
- D. greenhouse effect.

4. The compound that MAINLY contributes to the depletion of the ozone layer is

- A. nitrous oxide.
- B. sulphuric acid.
- C. carbon dioxide.
- D. chlorofluorocarbon.

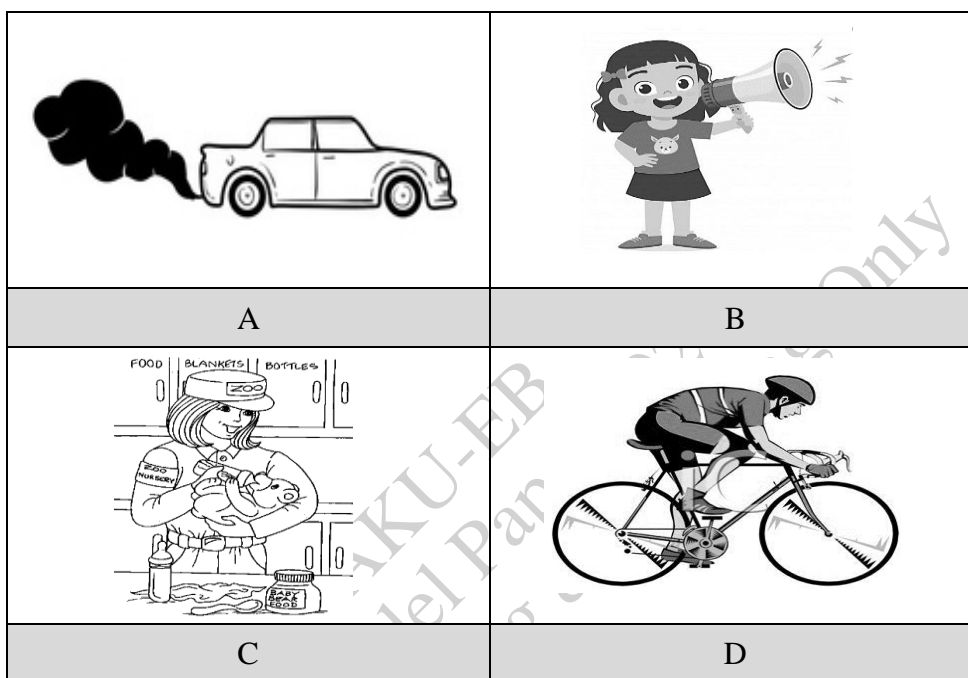
5. The region of atmosphere that extends up to 500 km, has the highest temperature and is closest to the sun is called

- A. troposphere.
- B. mesosphere.
- C. stratosphere.
- D. thermosphere.

6. A pollution that is in the form of energy rather than matter is

- A. air pollution.
- B. land pollution.
- C. noise pollution.
- D. water pollution.

7. Which of the following human activities helps to control air pollution?



8. Water is a universal solvent due to

- A. its polar nature.
- B. its neutral nature.
- C. presence of ionic bonding.
- D. presence metallic bonding.

9. When water changes into ice at 0°C , its volume increases because

- A. the density of water is maximum at this temperature.
- B. water molecules are less tightly packed in ice than in liquid water.
- C. water molecules are more tightly packed in ice than in liquid water.
- D. the density of liquid water is lower than that of ice at this temperature.

10. A physical property of pure water is that it

- A. boils at 60°C .
- B. freezes at 0°C .
- C. is an opaque liquid.
- D. shows minimum density at 4°C .

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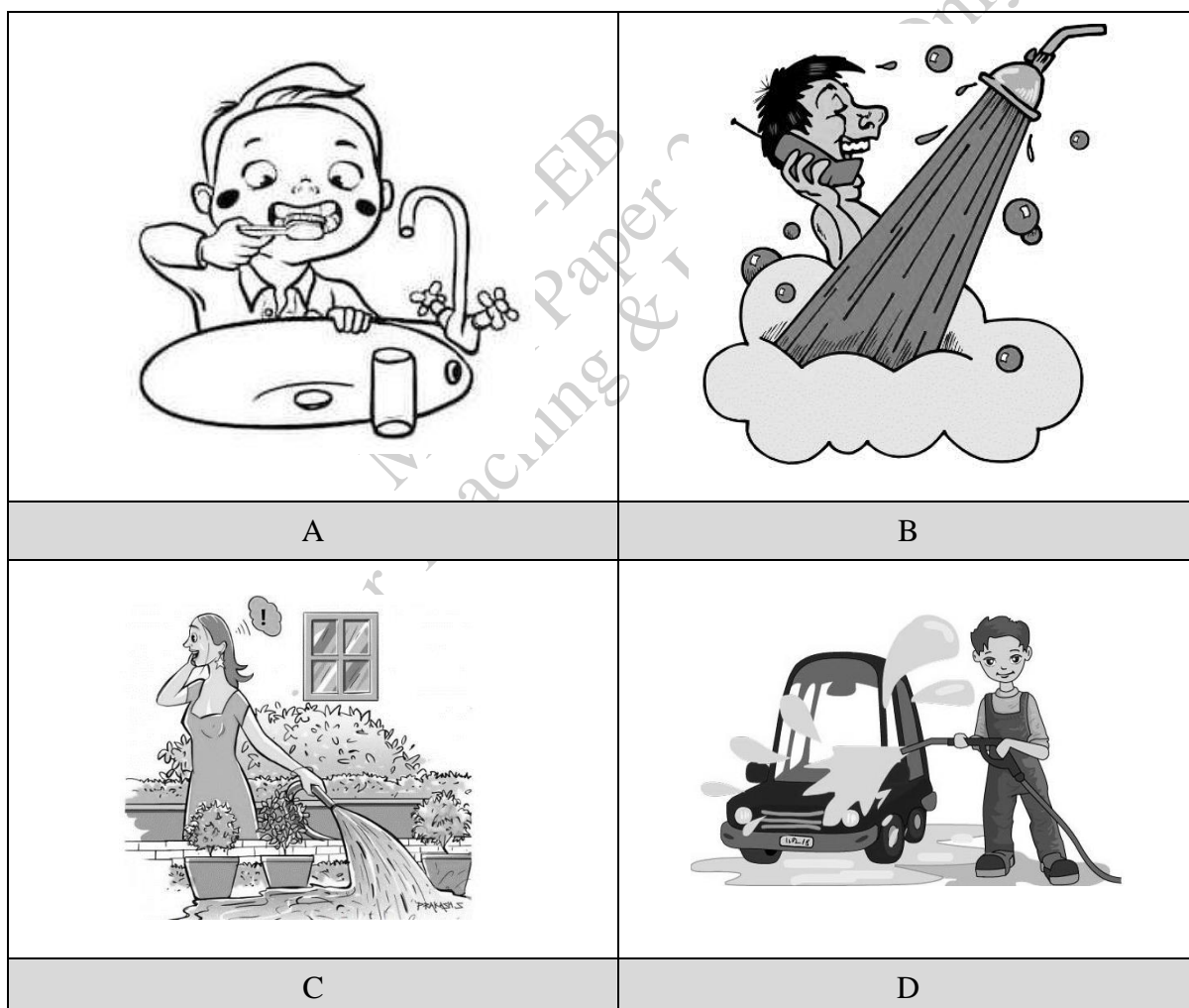
11. Water shows anomalous expansion when temperature changes from

- A. 4°C to 0°C
- B. 0°C to -4°C
- C. 0°C to 37°C
- D. 100°C to 0°C

12. Density of water is maximum at

- A. -1°C
- B. 0°C
- C. 4°C
- D. 100°C

13. Which of the following images depicts the conservation of water?

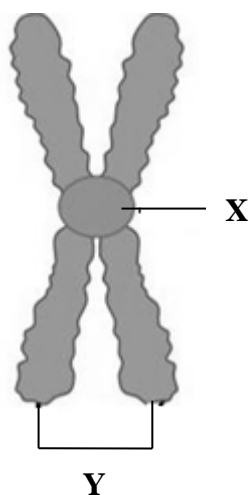


14. In a molecule of deoxyribonucleic acid (DNA), the two strands are held together by **X** bonds between **Y** structures that are present opposite to each other.

The option that CORRECTLY identifies **X** and **Y** is

	X	Y
A	hydrogen	nucleotides
B	covalent	nucleotides
C	hydrogen	nitrogenous bases
D	covalent	nitrogenous bases

15. The given diagram shows a chromosome.



The option which CORRECTLY identifies **X** and **Y** is

	X	Y
A	centriole	chromatin
B	centriole	chromatids
C	centromere	chromatin
D	centromere	chromatids

16. A wild plant contains pest-resistant genes. If these genes are cut and inserted into a crop plant, then the crop plant would be known as a
- donor plant.
 - cloned plant.
 - transgenic plant.
 - selective breeding plant.

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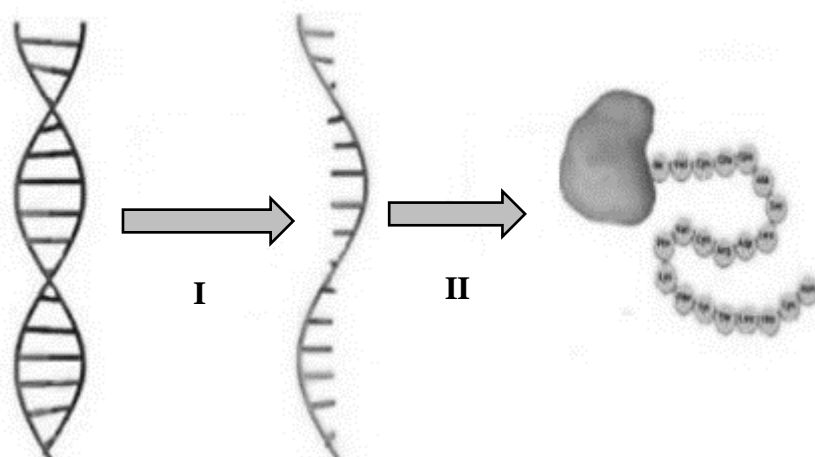
17. Chromosomes are made up of deoxyribonucleic acid (DNA) and

- A. fats.
- B. fibres.
- C. proteins.
- D. carbohydrates.

18. The production of better varieties of crops is an application of

- A. genetic engineering.
- B. chemical engineering.
- C. electrical engineering.
- D. mechanical engineering.

19. The given diagram represents the central dogma of gene expression.



The option that CORRECTLY identifies the steps **I** and **II** is

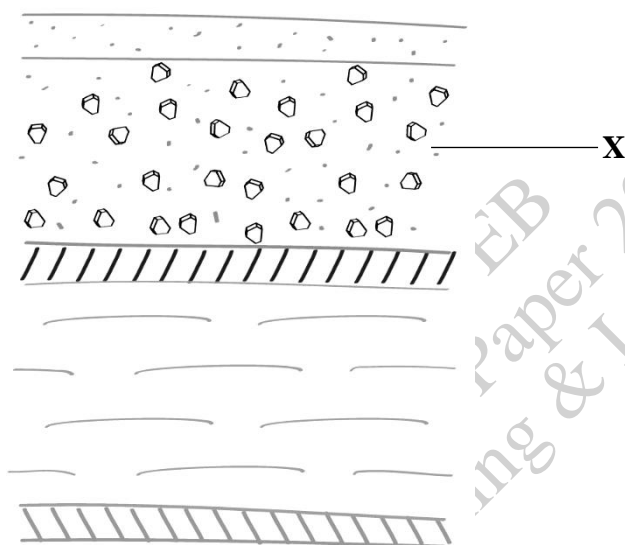
	I	II
A	transcription	translation
B	translation	transcription
C	translation	translation
D	transcription	transcription

20. Given is a nitrogenous base sequence of a DNA strand.

GTCAATTAGATT

The complementary base sequence for the given sequence is

- A. CAGTTAATCTAA
 - B. CUGATAUCUUA
 - C. GACUUAGUTTAU
 - D. TTCTTAATCAUA
21. The labelled part **X** in the given cross section of a photographic film is the key component for the chemical reaction in film processing.



The component **X** is the crystals of

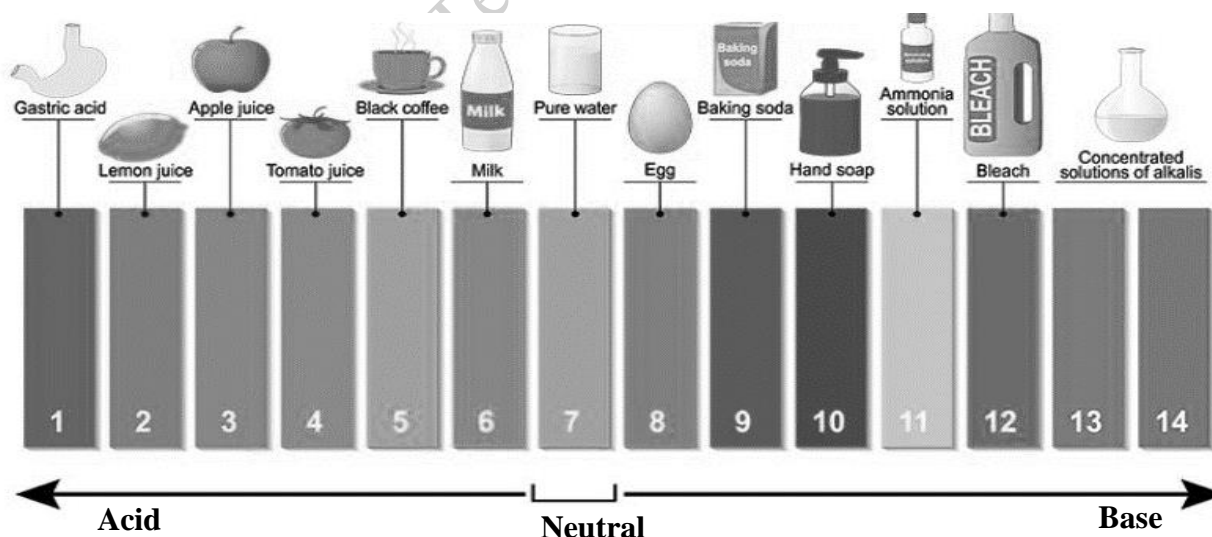
- A. silver bromide.
 - B. copper sulphate.
 - C. sodium chloride.
 - D. calcium carbonate.
22. The active ingredient in a toothpaste that prevents the formation of cavity is
- A. sorbitol.
 - B. fluoride.
 - C. calcium carbonate.
 - D. sodium bicarbonate.
23. The food that is highly acidic is
- A. beetroot.
 - B. banana.
 - C. carrot.
 - D. apple.

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24. From the given lists of ingredients of different perfumes, the perfume that is NOT suitable as a gift for a practicing Muslim is

<div> <p>Rose water</p> <p>Ethanol</p> <p>Fragrance</p> <p>Citral</p> </div>	<div> <p>Rose water</p> <p>Indole</p> <p>Fragrance</p> <p>Acetic acid</p> </div>
A	B
<div> <p>Rose water</p> <p>Aloe vera extract</p> <p>Fragrance</p> <p>Almond oil</p> </div>	<div> <p>Rose water</p> <p>Bay oil</p> <p>Fragrance</p> <p>Benzoic acid</p> </div>
C	D

25. The given diagram shows distribution of different substances on the pH scale.



The substances which are considered as weak bases are

- egg and bleach.
- egg, baking soda and hand soap.
- hand soap, ammonia solution and bleach.
- bleach and concentrated solutions of alkalis.

26. Which of the following examples exhibits the property of effervescence?
- A. Melting of ice cubes
 - B. Mixing of sugar and salt in water
 - C. Chopping of vegetables and fruits
 - D. Dissolving a disprin tablet in a glass of water
27. All of the following activities are the examples of information technology EXCEPT
- A. sending emails to recipients.
 - B. sending couriers through riders.
 - C. online payment for purchasing of different goods.
 - D. retrieving data of school alumni through Facebook.
28. Radio and television transmissions are broadcasted through the
- A. research satellite.
 - B. navigational satellite.
 - C. astronomical satellite.
 - D. communication satellite.
29. In p-type materials, majority of the charge carriers are
- I. holes
 - II. neutrons
 - III. electrons
- A. I only.
 - B. III only.
 - C. I and II.
 - D. II and III.
30. The basic working principle of a semi-conductor diode is to
- A. store charges in an electric circuit.
 - B. allow unidirectional flow of electric current.
 - C. provide resistance in the flow of electric current.
 - D. minimise the heating effect in an electric circuit.
31. Semi-conductor diodes are used in
- A. dry cells.
 - B. electric motors.
 - C. microprocessors.
 - D. electric generators.

32. A doctor recommended a cancer patient to undergo one of the modern diagnostic methods to determine the exact location, size, and the spread of tumour.

This recommended diagnostic method would MOST probably be a/ an

- A. EEG.
- B. X-ray.
- C. CT-scan.
- D. angiography.

33. Angiography is a technique that is used to

- A. visualise blood vessels.
- B. remove cancerous cells.
- C. diagnose neural diseases.
- D. widen the narrowed blood vessels.

34. The diagnostic techniques which involve ionising and radiation imaging methods are

- A. X-ray and MRI.
- B. CT-scan and X-ray.
- C. MRI and ultrasound.
- D. CT-scan and ultrasound.

35. Cotton contamination analyser is a machine which is used to identify seed-coat fragments and trash particles in cotton.

This machine is used in the

- A. steel industry.
- B. sugar industry.
- C. textile industry.
- D. leather industry.

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