

NEET P-BLOCK ELEMENTS (GROUP 15–18) — GROUP 16 ELEMENTS (OXYGEN FAMILY) — PYQS

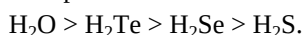
Max. Marks: 72

Questions: 18

Section A (MCQ) — 18 questions

Q.1 Given below are two statements:

Statement-I: The boiling point of hydrides of Group 16 elements follow the order



Statement-II: On the basis of molecular mass, H_2O is expected to have lower boiling point than the other members of the group but due to the presence of extensive H-bonding in H_2O , it has higher boiling point.

In the light of the above statements, choose the correct answer from the options given below:

[NEET (UG) 2024]

- (1) Both Statement-I and Statement-II are true
- (2) Both Statement-I and Statement-II are false
- (3) Statement-I is true but Statement-II is false
- (4) Statement-I is false but Statement-II is true

Scan or tap for the full solution 

Q.2 Among Group 16 elements, which one does NOT show -2 oxidation state? [NEET (UG) 2024]

- (1) O (2) Se (3) Te (4) Po

Scan or tap for the full solution 

Q.3 Match List-I with List-II:

List-I (Oxoacids of Sulphur)		List-II (Bonds)	
A.	Peroxodisulphuric acid	I.	Two S–OH, Four S=O, One S–O–S
B.	Sulphuric acid	II.	Two S–OH, One S=O
C.	Pyrosulphuric acid	III.	Two S–OH, Four S=O, One S–O–O–S
D.	Sulphurous acid	IV.	Two S–OH, Two S=O

Choose the correct answer from the options given below:

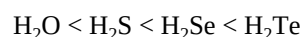
[NEET (UG) 2023]

- (1) A-III, B-IV, C-I, D-II (2) A-I, B-III, C-IV, D-II
(3) A-III, B-IV, C-II, D-I (4) A-I, B-III, C-II, D-IV

Scan or tap for the full solution 

Q.4 Given below are two statements

Statement-I: The boiling points of the following hydrides of group 16 elements increase in the order -



Statement-II: The boiling points of these hydrides increase with increase in molar mass.

In the light of the above statements, choose the most appropriate answer from the options given below :

[NEET (UG) 2022]

- (1) Both Statement-I and Statement-II are correct
- (2) Both Statement-I and Statement-II are incorrect
- (3) Statement-I is correct but Statement-II is incorrect
- (4) Statement-I is incorrect but Statement-II is correct

Scan or tap for the full solution 

Q.5 In which one of the following arrangements the given sequence is not strictly according to the properties indicated against it? [NEET (UG) 2021]

- (1) $\text{CO}_2 < \text{SiO}_2 < \text{SnO}_2 < \text{PbO}_2$: Increasing oxidizing order
- (2) $\text{HF} < \text{HCl} < \text{HBr} < \text{HI}$: Increasing acidic strength
- (3) $\text{H}_2\text{O} < \text{H}_2\text{S} < \text{H}_2\text{Se} < \text{H}_2\text{Te}$: Increasing pK_a values
- (4) $\text{NH}_3 < \text{PH}_3 < \text{AsH}_3 < \text{SbH}_3$: Increasing acidic character

Scan or tap for the full solution 

Q.6 Which of the following oxoacid of sulphur has –O–O– linkage? [NEET (UG) 2020]

- (1) H_2SO_4 , sulphuric acid
- (2) $\text{H}_2\text{S}_2\text{O}_8$, peroxodisulphuric acid
- (3) $\text{H}_2\text{S}_2\text{O}_7$, pyrosulphuric acid
- (4) H_2SO_3 , sulphurous acid

Scan or tap for the full solution 

Q.7 Which is the correct thermal stability order for H_2E ($E = O, S, Se, Te$ and Po)? [NEET (UG) 2019]

- (1) $H_2Po < H_2Te < H_2Se < H_2S < H_2O$
 (2) $H_2Se < H_2Te < H_2Po < H_2O < H_2S$
 (3) $H_2S < H_2O < H_2Se < H_2Te < H_2Po$
 (4) $H_2O < H_2S < H_2Se < H_2Te < H_2Po$

Scan or tap for the full solution



Q.8 In which pair of ions both the species contain S–S bond? [NEET 2017]

- (1) $S_4O_6^{2-}, S_2O_3^{2-}$ (2) $S_2O_7^{2-}, S_2O_8^{2-}$
 (3) $S_4O_6^{2-}, S_2O_7^{2-}$ (4) $S_2O_7^{2-}, S_2O_3^{2-}$

Scan or tap for the full solution



Q.9 Name the gas that can readily decolourise acidified $KMnO_4$ solution. [NEET 2017]

- (1) SO_2 (2) NO_2 (3) P_2O_5 (4) CO_2

Scan or tap for the full solution



Q.10 Hot concentrated sulphuric acid is a moderately strong oxidizing agent. Which of the following reactions does not show oxidizing behaviour?

[NEET 2016 (Phase 2)]

- (1) $Cu + 2H_2SO_4 \longrightarrow CuSO_4 + SO_2 + 2H_2O$
 (2) $3S + 2H_2SO_4 \longrightarrow 3SO_2 + 2H_2O$
 (3) $C + 2H_2SO_4 \longrightarrow CO_2 + 2SO_2 + 2H_2O$
 (4) $CaF_2 + H_2SO_4 \longrightarrow CaSO_4 + 2HF$

Scan or tap for the full solution



Q.11 Which of the statements given below is incorrect?

[AIPMT 2015]

- (1) O_3 molecule is bent.
 (2) ONF is isoelectronic with O_2N^-
 (3) OF_2 is an oxide of fluorine.
 (4) Cl_2O_7 is an anhydride of perchloric acid.

Scan or tap for the full solution



Q.12 Nitrogen dioxide and sulphur dioxide have some properties in common. Which property is shown by one of these compounds, but not by the other?

[AIPMT 2015 (Cancelled)]

- (1) Is soluble in water.
 (2) Is used as a food preservative.
 (3) Forms 'acid-rain'.
 (4) Is a reducing agent.

Scan or tap for the full solution



Q.13 Acidity of diprotic acids in aqueous solutions increases in the order [AIPMT 2014]

- (1) $H_2S < H_2Se < H_2Te$ (2) $H_2Se < H_2S < H_2Te$
 (3) $H_2Te < H_2S < H_2Se$ (4) $H_2Se < H_2Te < H_2S$

Scan or tap for the full solution



Q.14 Roasting of sulphides gives the gas X as a byproduct. This is a colourless gas with choking smell of burnt sulphur and causes great damage to respiratory organs as a result of acid rain. Its aqueous solution is acidic, acts as a reducing agent and its acid has never been isolated. The gas X is

[NEET 2013]

- (1) CO_2 (2) SO_3 (3) H_2S (4) SO_2

Scan or tap for the full solution



Q.15 In which of the following arrangements the given sequence is not strictly according to the property indicated against it? [AIPMT 2012 (Mains)]

- (1) $HF < HCl < HBr < HI$: increasing acidic strength
 (2) $H_2O < H_2S < H_2Se < H_2Te$: increasing pK_a values
 (3) $NH_3 < PH_3 < AsH_3 < SbH_3$: increasing acidic character
 (4) $CO_2 < SiO_2 < SnO_2 < PbO_2$: increasing oxidising power

Scan or tap for the full solution



Q.16 Sulphur trioxide can be obtained by which of the following reactions? [AIPMT 2012 (Prelims)]

- (1) $CaSO_4 + C \xrightarrow{\Delta}$ (2) $Fe_2(SO_4)_3 \xrightarrow{\Delta}$
 (3) $S + H_2SO_4 \xrightarrow{\Delta}$ (4) $H_2SO_4 + PCl_5 \xrightarrow{\Delta}$

Scan or tap for the full solution



Q.17 Match **List-I** (substances) with **List-II** (processes) employed in the manufacture of the substances and select the correct option. [AIPMT 2010 (Mains)]

List-I (Substances)		List-II (Processes)	
A.	Sulphuric acid	i.	Haber's process
B.	Steel	ii.	Bessemer's process
C.	Sodium hydroxide	iii.	Leblanc process
D.	Ammonia	iv.	Contact process

- (1) (A) $\rightarrow$ (i); (B) $\rightarrow$ (iv); (C) $\rightarrow$ (ii); (D) $\rightarrow$ (iii)
 (2) (A) $\rightarrow$ (i); (B) $\rightarrow$ (ii); (C) $\rightarrow$ (iii); (D) $\rightarrow$ (iv)
 (3) (A) $\rightarrow$ (iv); (B) $\rightarrow$ (iii); (C) $\rightarrow$ (ii); (D) $\rightarrow$ (i)
 (4) (A) $\rightarrow$ (iv); (B) $\rightarrow$ (ii); (C) $\rightarrow$ (iii); (D) $\rightarrow$ (i)

Scan or tap for the
full solution



Q.18 What is the correct relationship between the pH of isomolar solutions of sodium oxide, Na_2O (pH_1), sodium sulphide, Na_2S (pH_2), sodium selenide, Na_2Se (pH_3) and sodium telluride Na_2Te (pH_4)?

[AIPMT 2005]

- (1) $\text{pH}_1 > \text{pH}_2 > \text{pH}_3 > \text{pH}_4$
 (2) $\text{pH}_1 > \text{pH}_2 \approx \text{pH}_3 > \text{pH}_4$
 (3) $\text{pH}_1 < \text{pH}_2 < \text{pH}_3 < \text{pH}_4$
 (4) $\text{pH}_1 < \text{pH}_2 < \text{pH}_3 \approx \text{pH}_4$

Scan or tap for the
full solution



ANSWER KEY

Ques.	1	2	3	4	5	6	7	8	9	10	11
Ans.	1	4	1	2	3	2	1	1	1	4	3
Ques.	12	13	14	15	16	17	18				
Ans.	2	1	4	2	2	4	1				