

NAME:		ROLL NO:		TIME:	50: MIN
SUB:	Chemistry	Date:		CLASS:	1 st Year
SYLLABUS	Chp. 12 (Nitrogen and Sulphur)	T. MARKS	26	OBT. M	

Q. 1 Choose the Correct Answer. Cutting, Erasing, Double Selection is Strictly Prohibited. (1x6=6)

- The oxidation state of S in $S_2O_3^{2-}$ is:
(A) +1 (B) +2 (C) +3 (D) +4
- Despite being the most abundant gas in the Earth atmosphere, nitrogen does not readily participate in combustion reactions because;
(A) It is denser than oxygen
(B) It has a high specific heat capacity
(C) Breaking the $N \equiv N$ bond requires a large amount of energy
(D) It is a noble gas
- The shape of ammonium (ion) is:
(A) Pyramidal (B) Triangular planar (C) Tetrahedral (D) Linear
- Nitrification is the process by which:
(A) Atmospheric nitrogen is converted into ammonia
(B) Nitrate is converted into nitrogen gas
(C) Ammonia is converted into nitrite and then nitrate
(D) Organic nitrogen is converted into ammonia
- The most stable species in an acidic environment is:
(A) SO_4^{2-} (B) SO_2 (C) H_2S (D) S
- Sulphur trioxide (SO_3) is not directly dissolved in water to produce sulphuric acid in the contact process because this reaction is:
(A) Too slow
(B) Reversible and would result in a low yield
(C) Highly exothermic and produces a mist of sulphuric acid
(D) Requires very high pressures

PART-I

Q. 2 Write Short Answers of the Following Questions (2x6=12)

- If magnesium ribbon is ignited and placed in a jar containing N_2O , it continues to burn brightly. Explain this observation with reason.
- Why N_2 gas is used in food packaging?
- Write down the reduction and oxidation reactions that occur in the catalytic converter in the vehicle exhausts.
- What is basic principle of catalytic converter? Describe the role of catalyst in the catalytic converter.
- Give the reaction of S with NaOH.
- Write down self-ionization equation of sulphuric acid and its ionization in water.

PART-II

Write Answers of the Following Questions in Detail.

- Q. 3 (a) Discuss sulphuric acid as an oxidizing agent and a dehydrating agent with three reactions for each. 4
(b) How oxides of nitrogen (NO_x) cause the formation of photochemical smog and PAN? Give its mechanism. 4



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1ST YEAR REVISION & TEST SESSION



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Answer Key

1	A	2	C	3	C	4	C
5	C	6	C				