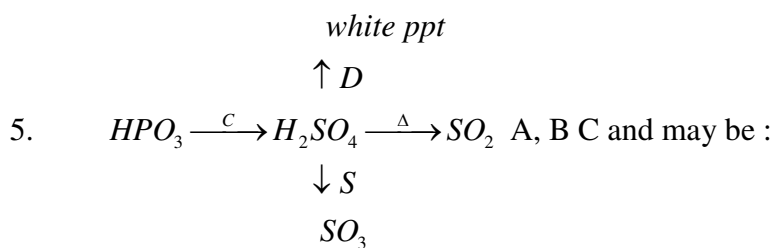


# SRIGAYATRI EDUCATIONAL INSTITUTIONS

## INDIA

### 16 th group

1. The Oxidation number of sulphur in  $S_3, S_2F_2$  and  $H_2S$  respectively are :  
1) 0, +1 and +2  
2) 0, +1 and -2  
3) +2, +1 and -2  
4) -2 + 1, and -2
2. Select the incorrect statement the Following  
1)  $O_3$  is used as germicide for purification of air  
2) In  $O_3$ ,  $O-O$  bond length is identical with that of molecular Oxygen  
3)  $O_3$  Molecules is angular in shape  
4)  $O_3$  is an Oxidising agent
3. Which of the following statements regarding Ozone is not Correct ?  
1) The Ozone molecule is angular in shape  
2) The Ozone is resonance hybrid of two structure  
3) The Oxygen – Oxygen bond length in ozone is identical with that of molecule oxygen  
4) Ozone is used as a germicide and disinfectant for the purification of air
4.  $\alpha$  and  $\beta$  Form of sulphur are at equilibrium at a temperature Known as :  
1) Cortical temperature  
2) transition temperature  
3) Boyel's temperature  
4) inversion temperature



A                B                C                D

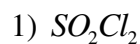
- 1) Cu         $P_2O_5$          $P_2O_5$          $BaCl_2$



3) Both (a) (b)

4) None of these

6. When  $H_2SO_4$  reacts with  $PCl_5$  the products obtained are :



4) All of these

(i) A

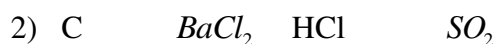
(ii) B

7.  $H_2SO_4 \rightarrow S$

(iii) C

(iv) P

A	B	C	D
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8. In case of hydride of oxygen family which of the following physical property change on moving down the group

a) Melting

b) Thermal stability

c) Boiling

d) Critical temperature

9. The dipole moment of  $H_2O_2$  is more than that of  $H_2O$  but  $H_2O_2$  is not a good Solvent Because :

1) It has a very high dielectric constant So that ionic compounds cannot be dissolved in it

2) It does not act as an Oxidising agent

3) It acts as a reducing agent

4) It dissociates easily and acts as an oxidising agent in chemical reaction

10. The Correct order of S – S bond length in following Oxyanions is :



- 1) I > II > III              2) I > III > I              3) III > II > I              4) III > I > II

11. Consider the following statements in respect of Oxides of sulphur

a) In gas phase  $SO_2$  molecule is V – shape

b) In gas phase  $SO_3$  Molecule is planar

c) V -  $SO_3$  in cyclic trimer

Which of the above statements are Correct

- 1) 1 and 2 Only              2) 2 and 3 Only              3) 1 and 3 Only              4) 1 , 2 and 3

12. Which of the following halides cannot be hydrolysed at room temperature ?

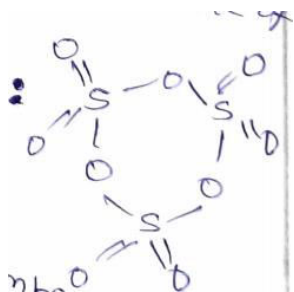


- 1) III and IV              2) I , II and III              3) I , II and IV              4) II and IV

Numerical value Questions

13. Marshall's acid  $\xrightarrow{H_2O} A + B$   $A \xrightarrow{H_2O} B + C$  If P and Q represent maximum number of atoms that can lie in a plane of compound A and C respectively then find Out value of (P+Q)

14. Consider the following molecule : Calculate value of p + q, here p and q are total number of  $\pi$  . P  $\pi$  bonds and total number of  $SP^3$  hybridised atoms respectively in given molecule



15. If x , y and z are total number of  $\pi$  - bonds in  $H_2S_2O_6$  , and  $H_2S_2O_7$  respectively then calculate value of expression x + z + y

## KEY SHEET

1) 3	2) 2	3) 3	4) 2	5) 3	6) 4	7) 3	8) 2	9) 4	10) 1
11) 4	12) 4	13) 8	14) 12	15) 17					

## HINTS

1.  $S_8 \Rightarrow O$

$$S_2F_2 \Rightarrow 2x + (-2) = 0$$

$$x = 1$$

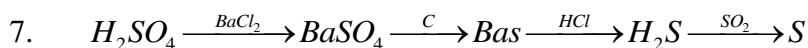
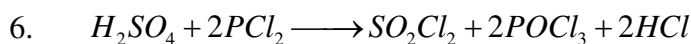
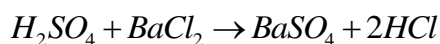
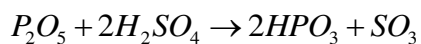
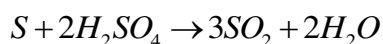
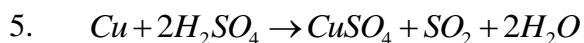
$$H_2S \Rightarrow x + (+2) = 0$$

$$X = -2$$

2. Conceptual

3. Conceptual

4. Conceptual

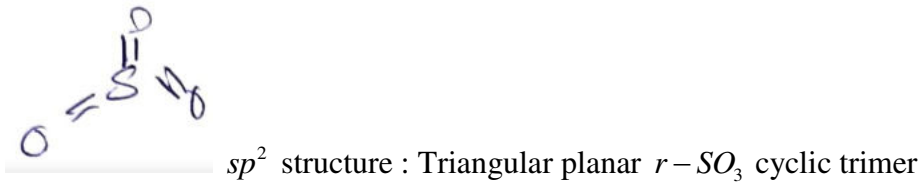
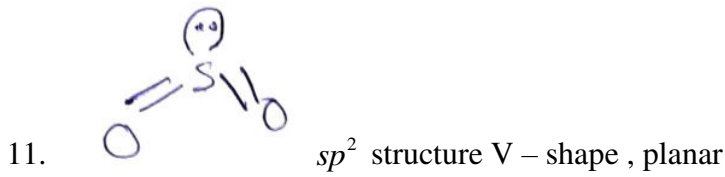


8. Order of M.P (or) B.P (or) Critical temp  $H_2O > H_2Te > H_2Se > H_2S$

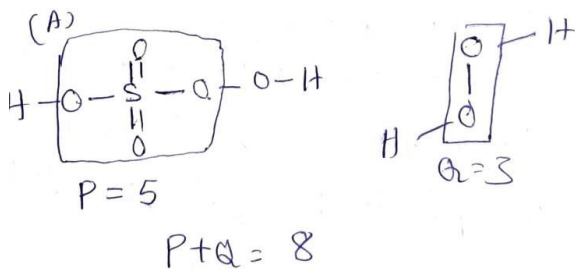
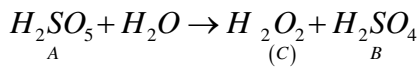
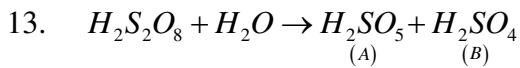
9.  $H_2O_2$  thermally unstable and it decomposes easily  $H_2O_2(P) \rightarrow H_2O(l) + \frac{1}{2}O_2(g)$  Its

decomposition is catalysed by alkali metals present in traces in the glass of the vessel

10. according to bonds value



12. In  $SF_6$ , S is sterically hindered by six fluorine atoms hence, attack of  $H_2O$  molecule will not occur,  $NF_3$  is not hydrolysed due to absence of vacant orbital either on N or F atom  $TeF_6$  is hydrolysed due to large size of Te



14.  $P=6, q=6 : P+Q=12$

15.

