



CHEMISTRY

BOOKS - PATHFINDER CHEMISTRY

(BENGALI ENGLISH)

P-BLOCK ELEMENTS

Question Bank

1. Why does oxygen not show an oxidation state of +4 and +6 like sulphur?



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2. Which element in the periodic table has the highest ionization energy?



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3. Which oxide of nitrogen is solid?



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4. Arrange the following halogens in decreasing order of negative electron gain enthalpy -F,Cl,Br,I



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5. Which is more covalent $SbCl_5$ or $SbCl_3$?



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6. Name two compounds in which oxygen has oxidation state other than -2.



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7. Give reason ammonia is soluble in water whereas other group 15 hydrides are insoluble.



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8. Oxygen is gas whereas sulphur is solid at room temperature .Explain.



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9. Why the reducing character of group 15 hydrides increase in descending the group?



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10. Give the preparation reaction of $XeOF_4$.



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11. What are interhalogens compounds? Why are most interhalogen compounds more reactive than molecular halogens?



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12. What is inert pair effect? explain in reference to chemistry of 15 group elements.



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13. Why is acidic character of $HClO_4$ higher than $HClO_3$?



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14. Account for the diprotic nature of H_3PO_3 .



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15. In contact process some amount of H_2SO_4 is used to dissolve SO_3 explain which catalyst is used for the preparation of SO_3 ?



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16. Give equation for reaction of chlorine with anhydrous calcium hydroxide



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17. Give equation for reaction of chlorine with aqueous solution of hot calcium hydroxide



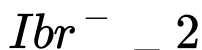
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18. Why SO_2 is a better reducing agent in alkaline medium as compared to that in acidic medium?



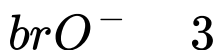
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19. Give the formula and describe the structure of a noble gas species which is isostructural with



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21. Assign reasons for the following

PCl_5 behaves as an ionic species in solid state.



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22. Assign reasons for the following

The acid strength of acids increase in the order $HFLTHCl < HBr < HI$



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23. NH_3 is stronger base than PH_3 why?



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24. Draw the structure of the following molecules



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25. Draw the structure of the following molecules



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26. Draw the structure of the following molecules



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27. Write the chemical equations for the following process

Calcium phosphide reacts with water



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28. Write the chemical equations for the following process

orthophosphoric acid is heated



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29. Write the chemical equations for the following process

platinum hexafluoride is heated with xenon



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30. Discuss the Haber's process for manufacture of ammonia.



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31. Ammonia is a good complexing agent why?



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32. Account for the following

Only heavier members of group 18 form compounds



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33. Account for the following

Fluorine is a stronger oxidizing agent than chlorine



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34. Account for the following

SF_6 is not easily hydrolysed whereas SF_4 is



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35. Answer the following

CIF_3 exists but FCl_3 does not exist why?



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36. Why the bond dissociation enthalpy of F_2 is less than that of Cl_2 .



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37. Answer the following

Why do noble gases have comparatively large atomic sizes?



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38. Answer the following

Why is a mixture of helium and oxygen gas preferred over air for respiration during deep sea diving?



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39. Answer the following

Why does fluorine not show variable valency?



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40. How is oxygen prepared in the laboratory?



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41. How is ozone prepared?



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42. Why is ozone a good oxidising agent?



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43. How is oxygen different from rest of the group members?



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44. Sulphur in vapour state exhibits paramagnetic behaviour.



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45. Why is H_2S acidic whereas H_2O is neutral?



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46. Sulphur hexafluoride is used as a gaseous electrical insulator .why?



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47. Sulphur exhibits greater tendency for catenation than selenium.why?



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48. Explain why the catenation property of sulphur is higher than that of oxygen?



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49. $S\text{Cl}_6$ is not known but $S\text{F}_6$ exists why?



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