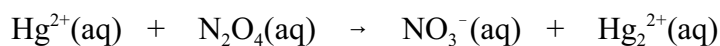


Consider the following *unbalanced* oxidation reduction reaction for the next three questions.

[F 02, ex3]



1. The oxidation number of N in NO_3^- is _____ and Hg in Hg_2^{2+} is _____. The answers in order are

(a) -1, +1 (b) -1, +2 (c) +6, +4 (d) +5, +2 (e) +5, +1

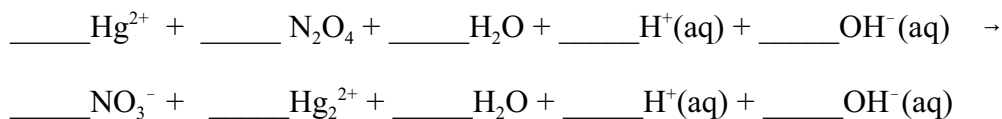
2. What is being oxidized in the reaction?

(a) Hg^{2+} (b) N_2O_4 (c) NO_3^- (d) Hg_2^{2+}

3. What is being reduced in the reaction?

(a) Hg^{2+} (b) N_2O_4 (c) NO_3^- (d) Hg_2^{2+}

4. The complete balanced equation in **ACIDIC** media for the reaction has the following stoichiometry coefficients. (Note that some of the values may be 0 indicating that the compound does not appear!)

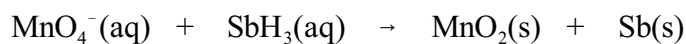


The stoichiometry coefficients, in order are

(a) 6,2,0,4,0 → 2,3,2,0,0 (b) 2,1,0,0,4 → 2,1,2,0,0
 (c) 2,1,0,2,0 → 2,1,1,0,0 (d) 2,1,2,0,0 → 2,1,0,4,0
 (e) 6,2,2,0,0 → 2,3,0,0,4

Consider the following *unbalanced* oxidation reduction reaction for the next three questions.

[S 02, ex3]



5. The oxidation number of Mn in MnO_4^- is _____ and Sb in SbH_3 is _____. The answers in order are

(a) +3, -3 (b) -1, +3 (c) +7, -3 (d) -1, 0 (e) +7, 0

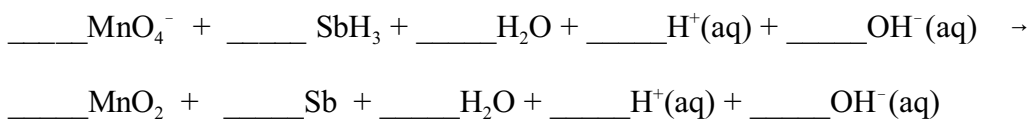
6. What is the oxidation agent in this reaction?

(a) MnO_4^- (b) SbH_3 (c) MnO_2 (d) Sb

7. What is the reducing agent in this reaction?

(a) MnO_4^- (b) SbH_3 (c) MnO_2 (d) Sb

8. The complete balanced equation in **BASIC** media for the reaction has the following stoichiometry coefficients. (Note that some of the values may be 0 indicating that the compound does not appear!)

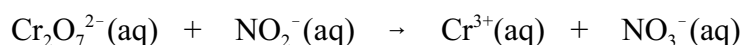


The stoichiometry coefficients, in order are

(a) 3,1,0,0,0 → 3,1,3,0,3 (b) 3,1,0,3,0 → 3,1,6,0,0
 (c) 1,1,0,1,0 → 1,1,2,0,0 (d) 1,1,0,0,0 → 1,1,1,0,1
 (e) 2,1,0,0,0 → 2,1,1,0,1

Consider the following *unbalanced* oxidation reduction reaction for the next 3 questions.

[F 01, ex 3]



9. The oxidation number of Cr in $\text{Cr}_2\text{O}_7^{2-}$ is _____ and N in NO_2^- is _____. The answers in order are

- (a) +12, +3 (b) +6, +3- (c) 2, -1 (d) +6, +5 (e) +7, +5

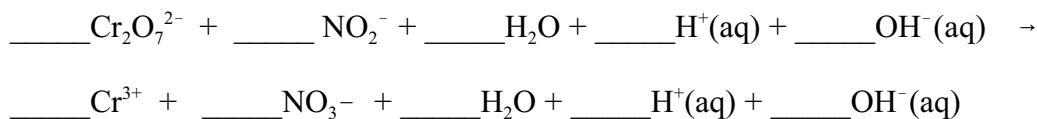
10. What is the oxidizing agent in the reaction?

- (a) $\text{Cr}_2\text{O}_7^{2-}$ (b) NO_2^- (c) Cr^{3+} (d) NO_3^- (e) O_2

11. What is being reduced in the reaction?

- (a) $\text{Cr}_2\text{O}_7^{2-}$ (b) NO_2^- (c) Cr^{3+} (d) NO_3^- (e) O_2

12. The complete balanced equation in **ACIDIC** media for the reaction has the following stoichiometry coefficients. (Note that some of the values may be 0 indicating that the compound does not appear!)



The stoichiometry coefficients, in order are

- (a) 1,1,1,0,0 → 2,1,0,2,0 (b) 1,3,4,0,0 → 2,3,0,0,8
 (c) 2,9,0,10,0 → 2,9,5,0,0 (d) 1,3,0,8,0 → 2,3,4,0,0
 (e) 2,3,3,0,0 → 4,3,0,6,0

Answers: 1 e, 2 b, 3 a, 4 d, 5 c, 6 a, 7 b, 8 d, 9 b, 10 a, 11 a, 12 d.