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Unit 6 - Week 4

Week 4 : Assignment 4

The due date for submitting this assignment has passed. Due on 2020-02-26, 23:59 IST.
As per our records you have not submitted this assignment.

1) The lowest energy term for the d^6 configuration is *1 point*

- ^2D
- ^5D
- ^1P
- ^1D

No, the answer is incorrect.
Score: 0
Accepted Answers:
^5D

2) The magnetic moment of an octahedral Co(II) complex is 4.0 B.M. The d-electron configuration of Co(II) is *1 point*

- $t_{2g}^4 e_g^3$
- $t_{2g}^5 e_g^2$
- $t_{2g}^6 e_g^1$
- $t_{2g}^3 e_g^4$

No, the answer is incorrect.
Score: 0
Accepted Answers:
$t_{2g}^5 e_g^2$

3) What is the atomic term symbol for helium atom with electronic configuration $1s^2$? *1 point*

- $^2S_{1/2}$

- $^1P_0$
- $^1S_0$
- $^1S_1$

No, the answer is incorrect.
Score: 0
Accepted Answers:
$^1S_0$

4) For the electronic configuration $1s^2 2s^2 2p^4$, two of the possible term symbols are ^1S and ^3P. The remaining term is **1 point**

- ^1D
- ^1F
- ^3D
- ^3F

No, the answer is incorrect.
Score: 0
Accepted Answers:
^1D

5) Which statement is incorrect about myoglobin? **1 point**

- myoglobin transports oxygen
- the five-coordinate ferrous deoxy form is high spin
- the six coordinate oxy form is low spin
- myoglobin contains 154 amino acids

No, the answer is incorrect.
Score: 0
Accepted Answers:
myoglobin transports oxygen

6) In biological systems, the metal ions involved in electron transport are **1 point**

- Na^+ and K^+
- Zn^{2+} and Mg^{2+}
- Ca^{2+} and Mg^{2+}
- Cu^{2+} and Fe^{3+}

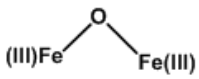
No, the answer is incorrect.
Score: 0
Accepted Answers:
Cu^{2+} *and* Fe^{3+}

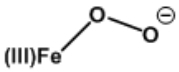
7) Oxymyoglobin $Mb(O_2)$ and oxyhemoglobin $Hb(O_2)_4$, respectively are **1 point**

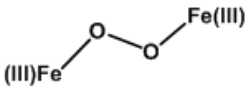
- paramagnetic and paramagnetic
- diamagnetic and paramagnetic
- diamagnetic and diamagnetic
- paramagnetic and diamagnetic

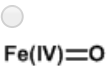
No, the answer is incorrect.
Score: 0
Accepted Answers:
diamagnetic and diamagnetic

8) In absence of bound globin chain, heme group on exposure to O_2 gives the iron-oxygen species **1 point**



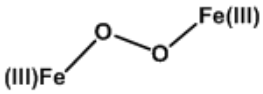






No, the answer is incorrect.
Score: 0

Accepted Answers:



9) The Fe-$N_{porphyrin}$ bond distances in the deoxy and oxy-hemoglobin, respectively are **1 point**

- ~2.1 and 2.0 Å
- ~2.0 and 2.0 Å
- ~2.2 and 2.3 Å
- ~2.3 and 2.5 Å

No, the answer is incorrect.
Score: 0

Accepted Answers:
~2.1 and 2.0 Å

10) The zero magnetic moment of octahedral $[K_2NiF_6]$ is due to **1 point**

- low spin d^6 Ni(IV) complex

- high spin d^6 Ni(IV) complex
- low spin d^8 Ni(II) complex
- high spin d^8 Ni(II) complex

No, the answer is incorrect.
Score: 0

Accepted Answers:
low spin d^6 Ni(IV) complex