Assignment 7

The due date for submitting this assignment has passed. As per our records you have not submitted this assignment.

Due on 2018-09-19, 23:59 IST.

The following questions have one correct answer. Find Them. One of them is short answer type question. Just write down the answer.

1) Using character tables and standard working formulae, work out the symmetry of normal modes of vibration to the maximum extent possible, for the following molecule:

Boron Trifluoride

\[ A_1^+ + 2E^+ + A_2^+ \]

\[ 2A_1^+ + E^+ + A_2^+ \]

\[ 3A_1^+ + 2E^+ + A_2^+ \]

\[ 2A_1^+ + E^+ + 2A_2^+ \]

No, the answer is incorrect.

Score: 0
Accepted Answers:
\[ A_1^+ + 2E^+ + A_2^+ \]

2) Using character tables and standard working formulae, work out the contribution of bond stretching vibrations, for the following molecule:

Boron Trifluoride

\[ A_1^+ + 2E^+ \]

\[ 2E^+ + A_2^+ \]

\[ A_1^+ + 2E^+ + A_2^+ \]

No, the answer is incorrect.

Score: 0
Accepted Answers:
\[ A_1^+ + 2E^+ + A_2^+ \]
3) Using character tables and standard working formulae, assign the Raman inactive normal mode of vibration for the following molecules:

Boron trifluoride

No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: String) A2"  

4) Using character tables and standard working formulae, work out the symmetry of normal modes of vibration to the maximum extent possible, for the following molecule:

Ammonia

A1+E
2A1+E
A1+3E
2A1+E

No, the answer is incorrect.
Score: 0
Accepted Answers:
2A1+E

5) Using character tables and standard working formulae, work out the symmetry of contribution of bond bending vibrations, to the maximum extent possible, for the following molecule:

Ammonia

2A1+E
E+A2
A1+A2
A1+E

No, the answer is incorrect.
Score: 0
Accepted Answers:
A1+E

6) Using character tables and standard working formulae, assign the IR-active modes for the following molecules:

Ammonia

2A1
E+A2
7) Using character tables and standard working formulae, work out the symmetry of normal modes of vibration to the maximum extent possible, for the following molecule:

Pyridine

- $A_1 + E + A_2$
- $A_1 + E$

No, the answer is incorrect.
Score: 0
Accepted Answers:
$A_1 + E$

8) Using character tables and standard working formulae, work out the symmetry of normal modes of rotation to the maximum extent possible, for the following molecule:

Pyridine

- $A_1 + B_1 + B_2$
- $A_2 + B_1 + B_2$
- $2A_1 + B_1$
- $A_1 + A_2 + B_1$

No, the answer is incorrect.
Score: 0
Accepted Answers:
$2A_1 + B_1$

$A_2 + B_1 + B_2$