Quantum Mechanics
PHYS1501
Fall, 2020

Assignment 1

Due date : 2020. 09. 08 (Tuesday)

Name : Multipluz
Student ID : 45875852
Grade : _____

Problem 1 Score: _____. Show that this LaTeX template supports following functions:

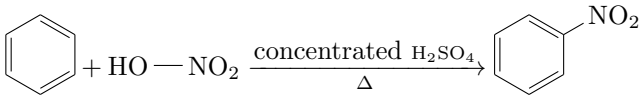
(1) Mathematical formulas;

(2) Chemistry formulas.

Proof: (1) In three-dimensional space, the Schrödinger equation of a particle in a potential $V(\boldsymbol{r}, t)$ is

$$i\hbar\frac{\partial}{\partial t}|\psi(\boldsymbol{r}, t)\rangle = -\frac{\hbar^2}{2m}\nabla^2|\psi(\boldsymbol{r}, t)\rangle + V(\boldsymbol{r}, t)|\psi(\boldsymbol{r}, t)\rangle. \tag{1}$$

(2) Heating and using concentrated sulfuric acid as catalyst, benzene can react with nitric acid to produce nitrobenzene:



(2)

□

Problem 2 Score: _____. Conduct following operation:

(1) Insert figures:

(a) single figure, setting its position mandatorily;

(b) two subfigures;

(2) Insert such a table:

▷ with merged multi-row and multi-column cells;

▷ three-line table;

▷ cross-page;

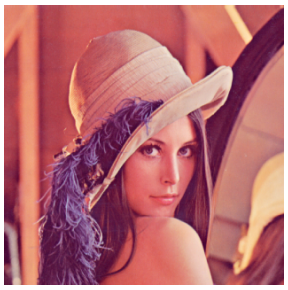
(3) Insert code;

(4) Cite a reference.

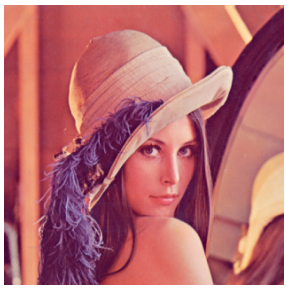
Solution: (1) (a) As figure 1.

Figure 1: Lenna.

(b) As the subfigures 2(a) and 2(b) in figure 2.



(a) lenna 1.



(b) lenna 2.

Figure 2: Lenna.

(2) As table 1.

Table 1: Exemplary table.

merged multi-row cell	merged multi-column cell		merged multi-column cell	
	Column 1	Column 2	Column a	Column b
If	you	shed	tears	when
you	missed	the	sun	
you	also	miss	the	stars

(3) Code are shown as following:

```
program main
    implicit none

    write(*,*) 'hello world'
end program main
```

(4) This book [1] provides a good introduction to quantum mechanics.

□

References

[1] Claude Cohen-Tannoudji, Bernard Diu, Frank Laloe, and Bernard Dui. Quantum mechanics (2 vol. set), 2006.