Roll No: _____   Name: _____

Q1. Consider the given code and rewrite code using OOP concepts:

```python
class Library_Item:
    def __init__(self, no, title, publisher):
        self.book_no = no
        self.title = title
        self.publisher = publisher

    def __str__(self):
        return f'Book Number: {self.book_no}\nTitle: {self.title}\n\
                nPublisher: {self.publisher}\n'


class Book(Library_Item):
    def __init__(self, no, title, author, publisher, edition):
        super().__init__(no, title, publisher)
        self.author = author
        self.edition = edition

    def __str__(self):
        return super().__str__() + Author: {self.author}\nEdition:
                                                {self.edition}'


class ReferenceBook(Library_Item):
    def __init__(self, no, title, author, publisher, edition):
        super().__init__(no, title, publisher)
        self.author = author
        self.edition = edition

    def __str__(self):
        return super().__str__() + Author: {self.author}\nEdition:
                                    {self.edition}\n*** Reference Book ***'

class Magazine(Library_Item):
    def __init__(self, no, title, author, publisher, month, year):
        super().__init__(no, title, publisher)
        self.month = month
        self.year = year

    def __str__(self):
        return super().__str__() + Month: {self.month}\nYear:
                                {self.year}'
```

Q2. Consider classes in question one; write Library class having a common list. Create init function without parameter and input. Write three method to add book, reference book and magazine. Write str function to concatenate all items in separate line, with books on top, followed by reference books, followed by magazines?

```python
from Book import *
…

class Library:
    def __init__(self):
        library_items = []
    def add_book(no, title, author, publisher, edition):
        library_items.append(Book(no, title, author, publisher, edition)
    def add_reference_book(no, title, author, publisher, edition):
        library_items.append(ReferenceBook(no, title, author, publisher,edition)
```

```python
def add_magazine(no, title, publisher, month, year):
    library_items.append(Magazine(no, title, publisher, month, year)

def __str__(self):
    st = ''
    for item in libarary_items:
        if type(item) == Book:
            st += str(item) + '\n'
    for item in libarary_items:
        if type(item) == ReferenceBook:
            st += str(item) + '\n'
    for item in libarary_items:
        if type(item) == Magazine:
            st += str(item) + '\n'
    return str
```