Problem Sheet – Python Sets

1. Create an empty set. Show the code and output.
2. Find the output of the following code.

```python
my_set = {1, 3}
print(my_set)

my_set.add(2)
print(my_set)

my_set.update([2, 3, 4])
print(my_set)

my_set.update([4, 5], {1, 6, 8})
print(my_set)


my_set = {1, 3}
print(my_set)

my_set.add(2)
print(my_set)

my_set.update([2, 3, 4])
print(my_set)

my_set.update([4, 5], {1, 6, 8})
print(my_set)
```

3. Write a python code to generate the following output. (Line number may vary according to your program).

```
{1, 3, 4, 5, 6}
{1, 3, 5, 6}
{1, 3, 5}
{1, 3, 5}
Traceback (most recent call last):
  File "<string>", line 28, in <module>
KeyError: 2
```

4. Execute the following code and observe the output. Write the necessary explanation.

```python
A = {1, 2, 3, 4, 5}
B = {4, 5, 6, 7, 8}
print(A | B)
```

5. Execute the following code and observe the output. Write the necessary explanation.

```
A = {1, 2, 3, 4, 5}
B = {4, 5, 6, 7, 8}
print(A.union(B))
print(B.union(A))
```

6. Execute the following code and observe the output. Write the necessary explanation.

```
A = {1, 2, 3, 4, 5}
B = {4, 5, 6, 7, 8}
print(A & B)
```

7. Execute the following code and observe the output. Write the necessary explanation.

```
A = {1, 2, 3, 4, 5}
B = {4, 5, 6, 7, 8}
print(A - B)
```

8. Execute the following code and observe the output. Write the necessary explanation.

```
A = {1, 2, 3, 4, 5}
B = {4, 5, 6, 7, 8}
print(A ^ B)
```

9. Explore the following functions in set and describe them with clear examples.

Function
max()
min()
sorted()
sum()

10. Explore the following functions in set and describe them with clear examples.

Method	Description
copy()	Returns a copy of the set
difference()	Returns the difference of two or more sets as a new set
intersection()	Returns the intersection of two sets as a new set
intersection_update()	Updates the set with the intersection of itself and another
isdisjoint()	Returns `True` if two sets have a null intersection
issuperset()	Returns `True` if this set contains another set
symmetric_difference()	Returns the symmetric difference of two sets as a new set
symmetric_difference_update()	Updates a set with the symmetric difference of itself and another
union()	Returns the union of sets in a new set
update()	Updates the set with the union of itself and others