

Student Number

--	--	--	--	--	--	--	--	--

Total Score:

--

Question 1 - 5 [5 marks]

1

C

2

C

3

B

4

E

5

A

Question 6 [3 marks]

A

A

B

```
new C().f(1.0);
```

```
new B().f(1.0);
```

Must use double on both; cannot use class A

Question 7 [2 marks]

1

```
elems[idx] = elems
```

 in add method will cause error because `elems` is not an array

Correction: use `this.elems[idx] = elems` instead

2

```
add
```

 method will have the same signature after type erasure

Correction: rename one of the methods

Question 8 [3 marks]

A

5

B

```
public B copy() {  
    return new B(x, a.copy()); // change here only  
}
```

Midterm Assessment

Question 9 [7 marks]

A

```
public final <T extends Comparable<T>> void descending(T[] arr)
```

B

```
class AscendingOrder extends DescendingOrder {  
    public AscendingOrder() { }  
    public final <T extends Comparable<T>> void ascending(T[] arr)  
    {  
        super.descending(arr);  
        for(int i=0, j=arr.length-1; i<j; i++, j--) {  
            super.swap(arr, i, j);  
        }  
    }  
}
```

- i. cannot override due to final keyword
- ii. for-loop for the swap must swap from i to half the array with the other half you cannot simply use for(int i=0; i<size; i++) { ... } as that will re-swap the already ascending ordered array
- iii. method signature must also use T[] due to part (A)
- iv. swapping is needed because we cannot create temporary array