

FINAL EXAMINATION - Part C

TERM	COURSE NAME	COURSE CODE	VERSION
Summer 2020	Object-Oriented Software Development using C++	OOP345	A

Name	
Student Number	
Section	

PROFESSORS: Hossein Pourmodheji, Mufleh Al-Shatnawi, Asam Gulaid

SPECIAL INSTRUCTIONS:

Test Component	Availability	Time Limit
Part A and B	Aug 11 th , 8 AM to Aug 12 th , 8 AM	No Time Limit
Part C	Aug 11 th , 8 AM to Aug 12 th , 8 AM	3 hours
Part D	Aug 12 th , 8 AM to Aug 13 th , 8 AM	3 hours
Part E	Aug 13 th , 8 AM to Aug 14 th , 8 AM	4 hours

- For Part C, D and E, 80% of the mark is dedicated to the coding part, and 20% is dedicated to the explanation.

SENECA'S ACADEMIC HONESTY POLICY

As a Seneca student, you must conduct yourself in an honest and trustworthy manner in all aspects of your academic career. A dishonest attempt to obtain an academic advantage is considered an offense, and will not be tolerated by the College.

APPROVED BY:
Kathy Dumanski, Chair, School of SDDS

Part C: (20%)

Design and implement a function named `printStats(...)` that receives as a parameter a vector of integer numbers, and—using the `algorithms` library—prints the answer to the following questions:

- How many numbers bigger than 10 are in the vector?
- How many numbers smaller than 10 are in the vector?
- What is the average of all numbers in the vector?
- What is the average of the numbers that are smaller or equal to 10?
- Sort the numbers in the vector in **descending** order (from biggest to smallest) and print them.

Deliverables:

1. Your implementation **should not include any manual loops**—use the `algorithms` library to process the vector. For reference, see the functions on the last page.
2. Explain how you would test this program. **(50 - 100 words)**
3. Explain how you would incorporate multi-threading into this Project? **(50 - 100 words)**
4. **Submit the working program, plus the test routines, and screen captures of the test results, and the required explanations.**