

FQC Assignment 4 Date: 25-05-2020 (Monday) Time: 4.00-5.30 PM

Instructions to students:

- Students have to write the answers in their own handwriting on a white sheet of paper
- The following details should be mandatorily written in the answer sheet.
 - Name, Semester, Section, Branch, Roll No., Registered No., Subject name, and Signature with date.

1. For the following combinations of a , N , apply Shor's algorithm to find the factors of N .

$$N=15, a=7$$

You should show **all** your working, including the states of the two registers after each calculation.

You may find the following information useful.

x	0	1	2	3	4	5	6	7
$7^x \bmod 15$	1	7	4	13	1	7	4	13