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**2022 Spring 7W1
Examination Period****College of Applied Science & Technology
Applied Computing**

EXAM CODES: APCV 101
TITLE OF PAPER: Final Exam
EXAM DURATION: 2 hours writing time
READING TIME: 10 minutes

THIS PAPER IS FOR STUDENTS STUDYING AT: (check where applicable)

- ☐ Sierra Vista ☐ Yuma ☐ Douglas ☐ Tucson
☐ Location 5 ☐ Location 6 ☐ Locatin 7 ☐ Other (specify)

During an exam, you must not have in your possession any item/material that has not been authorised for your exam. This includes books, notes, paper, electronic device/s, mobile phone, smart watch/device, calculator, pencil case, or writing on any part of your body. Any authorised items are listed below. Items/materials on your desk, chair, in your clothing or otherwise on your person will be deemed to be in your possession.

No examination materials are to be removed from the room. This includes retaining, copying, memorising or noting down content of exam material for personal use or to share with any other person by any means following your exam.

Failure to comply with the above instructions, or attempting to cheat or cheating in an exam will result in disciplinary action from the Dean of Students.

AUTHORISED MATERIALS

OPEN BOOK ☐ YES ☒ NO

CALCULATORS ☒ YES ☐ NO
TI-92 or similar

SPECIFICALLY PERMITTED ITEMS ☒ YES ☐ NO if yes, items permitted are: **Laptops**

Candidates must complete this section if required to write answers within this paper

STUDENT ID: _____ DESK NUMBER: _____

The exam contains **FIVE** questions. **ALL** questions must be answered. The exam is worth 100 marks in total.

QUESTION 1

Show that the following expression is the MLE for the variance assuming a Gaussian distribution.

$$\hat{\sigma}^2 = \frac{1}{n} \sum_{i=1}^n (x_i - \bar{x})^2$$

20 marks

Total: 20 marks

— END OF QUESTION 1 —

QUESTION 2

Second question.

(a) Part a.

4 marks

(b) More stuff.

10 marks

(c) Final part.

6 marks

Total: 20 marks

— END OF QUESTION 2 —