Philadelphia University

Faculty of Engineering

Student Name:
Student Number:
Serial Number:

Second Quiz, First Semester: 2019/2020
Dept. of Communication & Electronics Engineering

Course Title:	Probability and Random Variables	**Date:**	09/12/2019
Course No:	650364	**Time Allowed:**	10 minutes
Lecturer:	Dr. Qadri Hamarsheh	**No. Of Pages:**	1

Instructions:

- **ALLOWED**: pens, calculators and drawing tools (**no red color**).
- **NOT ALLOWED**: Papers, literatures and any handouts. Otherwise, it will lead to the non-approval of your examination.
- **Shut down** Telephones, and other communication devices**.**

Please note:

- *This quiz paper contains 1 question totaling 6 marks.*

Question 1 ***(6 marks)***

Suppose that the random variables $\boldsymbol{X}$ and $\boldsymbol{Y}$ have a joint density function given by

$$f(x,y) = \begin{cases} c(2x+y) & 2 < x < 6, 0 < y < 5 \\ 0 & \text{otherwise} \end{cases}$$

Find

a) The constant $\boldsymbol{c}$. ***(1.5 marks)***

b) The marginal distribution (**CDF**) functions for **X**. ***(1.5 marks)***

c) The marginal density functions (**PDF**) for X. ***(1.5 marks)***

d) $\boldsymbol{P}(\mathbf{3} < \boldsymbol{X} < \mathbf{4}, \boldsymbol{Y} > \mathbf{2})$ ***(1.5 marks)***

Solution

GOOD LUCK