

**MTH-101A**

**QUIZ-2, 23-11-2020 4:10-4:20PM**

- (1) Let  $A : \{(x, y) \in \mathbb{R}^2 : x \geq 0 \text{ and } y \in \mathbb{R}\}$  and  $f : A \rightarrow \mathbb{R}$  be the function defined as

$$f(x, y) = \begin{cases} xy \sin(xy) & \text{if } x \geq 0 \text{ and } y \geq 0 \\ -xy \sin(xy) & \text{if } x \geq 0 \text{ and } y < 0 \end{cases}$$

Determine the points on  $A$  where  $f$  is continuous. [5]