

### Sample answer

1.

1)

Senescence is a programmed cellular response and state that is activated after stress such as irreparable damage, especially associated with during disease or chronic aging.

2)

DNA damage, reactive oxygen species (ROS), oncogenic signaling, disease, neurodegeneration, aging

のうち3つで正解

3)

p21, p16, p19, phosphorylated histone H2AX (γ-H2AX)

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2.

1)

Dr. Yamanaka was surprised to find that both iPSCs and ESCs are nearly indistinguishable, by sharing overlapping features in gene expression, epigenetic status, and differentiation propensity regardless of their very different origins and derivation methods.

2)

Regenerative medicine, drug discovery, transplantation of iPSC-derived corneal sheath, elucidation of Neanderthal brains, preservation of endangered species, modeling of human embryos, stem-cell-based dopamine treatments for Parkinson's disease, cardiovascular and neurological diseases, immunology

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3)

Dr. Yamanaka advised young people to regard unexpected results as a big chance to start something new and unique studies.

3.

The purpose of the question is to assess whether you can logically organize and express your intended graduate research in English.