

Name: _____

Date: _____

Complete the passage by filling in the blank with the most appropriate sentence.

1. Social stratification refers to a society's hierarchical categorization of its people into groups based on socioeconomic factors such as wealth, income, race, education, ethnicity, gender, occupation, social status, or power. It assigns groups to different levels of privilege and describes the relative social position of persons within a social group, category, geographic region, or other social unit. In modern Western societies, stratification is commonly defined in terms of upper, middle, and working classes, each of which can be subdivided. Whether it first appeared in hunter-gatherer, tribal, and band societies or began with agriculture and large-scale social exchange remains debated. ---- Generally, the greater the social complexity of a society, the more social stratification exists through social differentiation.

- A)** The structure of social stratification arises from inequalities of status among persons; therefore, the degree of social inequality determines a person's social stratum.
- B)** Weber's theory distinguishes class, status, and party as separate but related sources of power, each having different effects on social action.
- C)** These census categories provide the only reliable explanation for why the disputed transition described above occurred at precisely that historical stage.
- D)** Inequalities of status disappear as societies become more complex, so every person eventually occupies the same social stratum and receives identical privileges.
- E)** Pitirim Sorokin introduced the concepts of social stratification and social mobility in his 1927 book, which was titled Social Mobility.

2. CRISPR, an acronym for clustered regularly interspaced short palindromic repeats, is a family of DNA sequences found in the genomes of prokaryotic organisms such as bacteria and archaea. Each sequence within an individual prokaryotic CRISPR is derived from a DNA fragment of a bacteriophage that previously infected the prokaryote or one of its ancestors. ---- Hence, these sequences play a key role in the antiviral defense system of prokaryotes and provide a form of heritable, acquired immunity. CRISPR occurs in approximately half of sequenced bacterial genomes and nearly 90 percent of sequenced archaea. Cas9 is an enzyme that uses CRISPR sequences as a guide to recognize and open specific strands of complementary DNA.

- A)** Cas9 enzymes together with CRISPR sequences form the basis of a technology that can be used to edit genes within living organisms.
- B)** These clinical trials established that every inherited disease could be cured immediately after the newly identified treatment was administered.
- C)** These sequences are used to detect and destroy DNA from similar bacteriophages during subsequent infections in the prokaryotic host.
- D)** The stored fragments prevent prokaryotes from recognizing related bacteriophages, leaving them without any defense against a subsequent viral infection.
- E)** The development of the CRISPR-Cas9 genome-editing technique was recognized by the 2020 Nobel Prize in Chemistry awarded to Emmanuelle Charpentier and Jennifer Doudna.