



〈R08200017〉

注 意 事 項

1. 試験開始の指示があるまで、問題冊子および解答用紙には手を触れないこと。
2. 問題は2～11ページに記載されている。試験中に問題冊子の印刷不鮮明、ページの落丁・乱丁および解答用紙の汚損等に気付いた場合は、手を挙げて監督員に知らせること。
3. 解答はすべて、HBの黒鉛筆またはHBのシャープペンシルで記入すること。
4. マーク解答用紙記入上の注意
 - (1) 印刷されている受験番号が、自分の受験番号と一致していることを確認したうえで、氏名欄に氏名を記入すること。
 - (2) マーク欄にははっきりとマークすること。また、訂正する場合は、消しゴムで丁寧に、消し残しがないようによく消すこと。

マークする時	<input checked="" type="radio"/> 良い	<input type="radio"/> 悪い	<input type="radio"/> 悪い
マークを消す時	<input type="radio"/> 良い	<input type="radio"/> 悪い	<input type="radio"/> 悪い

5. 解答はすべて所定の解答欄に記入すること。所定欄以外に何かを記入した解答用紙は採点の対象外となる場合がある。
6. 問題冊子の余白等は適宜利用してよいが、どのページも切り離さないこと。
7. 試験終了の指示が出たら、すぐに解答をやめ、筆記用具を置き解答用紙を裏返しにすること。
8. いかなる場合でも、解答用紙は必ず提出すること。
9. 試験終了後、問題冊子は持ち帰ること。

Part I. Based on Text I, Text II, and Text III, choose the best option from a – d for questions 1 – 15.

Text I

Introduction

Vertical farming is a modern agricultural practice of growing crops, stacked vertically in a protected indoor environment, which mainly utilizes a hydroponic or aeroponic cultivation system. Vertical farming offers numerous potential benefits, including more efficient uses of space, reduced water usage, shorter growing times, reduced need for pesticides/herbicides, and shelter from extreme weather. In addition, since vertical farms can be set up practically anywhere, even underground, they could enable hyper-localised production, thus shortening food supply chains and providing fresh and nutritious local foods all year around.

Vertical farming: Mitigation for food security

Urbanisation has continuously increased worldwide and 55% of the world's population inhabits urban areas. Whilst the population of rural areas residents is expected to drop by 11% in 2030, the number of urban settlements will be continuously increased. As the demand for food supply in city residents has increased, smart urban-vertical farming has been highlighted. Urban agriculture mitigates societal, environmental and economic challenges related to food security owing to controlled and optimal growing conditions such as temperature, humidity, CO₂ and lighting conditions. It eventually contributes to shortening the growing cycle and increasing plant density and enhancing harvest yield. Owing to urban accessibility, urban agriculture alleviates energy and expenses for transportation, distribution and storage management, and enables the reduction of the carbon footprint of food crops.

According to Armanda et al. (2019), several countries in Europe and Asia and the United States of America have been practising commercialised vertical farming systems. Unlike conventional controlled environmental agriculture such as glasshouse cultivation with natural sunlight, indoor vertical farming is based on fully controlling and monitoring the growing condition including artificial light sources with a high yield in less space. Farms vary in location, such as underground, in abandoned areas or on rooftops, reflecting that each farm applies distinctive technologies for specific microenvironments. Overall, urban agricultural farms focus on growing leafy vegetables with a high annual food production. Vertical farming has been widely employed in East and Southeast Asian countries, including China, Japan, Singapore and South Korea. In North America, the USA and Canada feature several urban farm projects. The AeroFarms is based in New Jersey and it is one of the largest indoor vertical farms in the world with 8400 square metres of growing space using an aeroponic growing system.

Because of the significant rate of urbanisation, urban agriculture is rapidly developing and practised in Asian countries. However, there are several challenges to its implementation in Asia. For instance, there is a lack of arable areas in urban or peri-urban regions and significant requirements for residential areas as opposed to urban farms. Varying legislation and regulations in different regions also hinder the urban agriculture development. Although urban agriculture faces several challenges, numerous examples have shown that urban agriculture not only delivers food crops successfully but also provides environmental (e.g. provision of biodiversity and sustainability in urban areas) and socioeconomic benefits (e.g. leisure, education and reduction of transportation for food crops).

In European countries, urban agriculture is expected to handle the societal transformations of both urban and rural areas, such as ageing and generational renewal in the agriculture. There are several successful commercialised urban farms in Northwest European countries including Belgium, France, Germany, the Netherlands, Sweden, and the United Kingdom.

The importance of urban agriculture/vertical farming is significant in low- and low-middle-income countries such as in sub-Saharan Africa and parts of Southern Asia. Unlike in high- or high-middle-income countries, urban agriculture has greatly impacted small growers since it is practised for the purpose of self-sufficiency in low- and low-middle-income countries. Therefore, there are relatively few urban agriculture projects on a large scale, such as at the community or national level. However, recent urban agricultural programmes have attempted to enhance food security and mitigate the adverse effects on the environment based on an understanding of the current barriers to urban agriculture, including formal settlement issues, rights of property and distance from urban farms to food retailers.

[Adapted from: Oh, S. & Lu, C. (2022). Vertical farming - smart urban agriculture for enhancing resilience and sustainability in food security. *The Journal of Horticultural Science and Biotechnology*, 98(2), 133–140.]

※WEB掲載に際し、以下のとおり出典を追記しております。

Oh, S., & Lu, C. "Vertical farming - smart urban agriculture for enhancing resilience and sustainability in food security." *The Journal of Horticultural Science and Biotechnology*, vol. 98, no. 2, 2022, pp. 133–140, <https://doi.org/10.1080/14620316.2022.2141666>. Licensed under CC BY-NC-ND 4.0.

Questions 1 – 9 refer to Text I.

1. What is a key benefit of urban agriculture/vertical farming in low- and low-middle-income countries?
 - a. It restricts recent urban agricultural programs to enhance food security.
 - b. It enhances the self-sufficiency of small-scale farming efforts.
 - c. It resolves various property-related issues between urban farms and retailers.
 - d. It has relatively few large-scale projects at the community or national level.
2. Which of the following is NOT identified as one of the benefits of vertical farming?
 - a. It reduces transportation costs and therefore carbon footprint.
 - b. It increases plant density and harvest yield over time.
 - c. It protects plants and other agricultural products against extreme weather.
 - d. It fulfills the demand for food supply in city residents.
3. Which of the following is consistent with the meaning of the sub-heading, “Vertical farming: Mitigation for food security”?
 - a. In order to increase or intensify food security, we should reduce or alleviate vertical farming.
 - b. Food security and vertical farming should both be eliminated or eradicated.
 - c. Vertical farming is a means by which food security may be increased or intensified.
 - d. The creation or initiation of food security begins with vertical farming.
4. Which of the following crop combinations would most likely be found in an urban agricultural farm?
 - a. cabbage, lettuce, and spinach
 - b. wheat, corn, and potatoes
 - c. pineapples and bananas
 - d. soybeans and peanuts
5. Which of the following is closest in meaning to “arable”?
 - a. able to be bought or sold quickly
 - b. easily convertible for private use
 - c. usable for agricultural purposes
 - d. having plenty of clean, fresh air
6. How is vertical farming expected to promote energy efficiency?
 - a. It reduces the need for local energy sources such as solar and wind power.
 - b. It increases the availability of sunlight, wind, and water for other purposes.
 - c. It increases job opportunities for a larger number of urban dwellers.
 - d. It minimizes fuel consumption as farms would be closer to food supply chains.
7. Which of the following would be the LEAST likely location in a city to convert into a vertical farm, assuming no regulatory restrictions?
 - a. a park that is frequently used by the public
 - b. the basement of a community center or school
 - c. an abandoned warehouse
 - d. the roof-top space of a non-toxic factory
8. What is implied as the reason for the ongoing rise in urban agriculture?
 - a. The per-person rate of food consumption is rapidly increasing.
 - b. Rural agriculture is decreasing in Asia, Europe, and North America.
 - c. There is a rapid increase in the number of urban settlements.
 - d. The number of people in the world is increasing.
9. Which of the following best describes the information structure of the text?
 - a. First, vertical farming is defined, and then its advantages and disadvantages are explained.
 - b. Vertical farming is introduced as an example of urban agriculture and the differences between the two in different countries are explained.
 - c. Vertical farming is explained as a possible solution to changing climate conditions and then suggestions are given for how it may be addressed world-wide.
 - d. The main topic of vertical farming is introduced, and then its implementation in different regions of the world is discussed.

Text II

Reducing food wastage, which comprises food loss and food waste, and capturing more of the food that is produced for human consumption is an obvious opportunity to increase food security without increasing the environmental burden of production. Food loss is the decrease in edible food mass, which occurs at production,

postharvest and processing stages in the food supply chain, while food waste refers to what is lost at retail and by consumers. Recovering food loss and waste is a huge opportunity to reduce production demand, given that about 1.6 billion tonnes of food is wasted along the chain and of this 1.3 billion is edible. The relative amounts of food loss and food waste in various regions vary. Food loss is the major contributor to food wastage in developing countries. This is in contrast to developed countries where waste primarily occurs at the retail and consumer end of the food supply chain.

Food science and technology has a significant role to play in achieving food and nutrition security. Food preservation and stabilisation technologies to extend shelf life of products (e.g. processing techniques such as drying to reduce water activity, heat treatment or high pressure processing to reduce microbial load or fermentation to reduce pH) underpin the ability of food to be made accessible and safe and are integral to the sustainability of the food supply and reducing food waste. Good post-harvest handling practices from farm to retail, including supporting logistics and infrastructure, can mitigate against the loss of fresh produce. This is becoming increasingly relevant as the food produced in rural areas has to reach the growing population in urban areas and megacities. This results in increased pressure for the optimisation of the distribution of food flows, improved access to appropriate modes of transportation, infrastructure, and better management of cool chain logistics, to ensure sustainable food supply.

[Adapted from: Cole, M. B., August, M. A., Robertson, M. J., & Manners, J. M. (2018). The science of food security. *Science of Food*, 2, 14.]

※ページ下部に出典を追記しております。

Questions 10 – 12 refer to Text I and Text II.

10. Which of the following statements is best inferred from the texts?
 - a. Vertical farming was developed to reduce microbial load and fermentation.
 - b. Vertical farming leads to the reduction of food loss.
 - c. Vertical farming was developed to improve food preservation and stabilization.
 - d. Vertical farming leads to the reduction of food waste.
11. Which of the following is the most reasonable way to see the relationship between urban agriculture and food wastage?
 - a. Both urban agriculture and reducing food wastage can be essential components in maintaining food security.
 - b. Urban agriculture and food wastage are in a reciprocal relationship where if one increases, the other decreases.
 - c. The effort to optimize food wastage requires the development of urban agriculture as they are causally dependent.
 - d. In an optimal food security policy, either urban agriculture or reducing food wastage may be useful but not both.
12. Which of the following themes is covered in both texts?
 - a. Urbanization plays a crucial role in food systems and their efficiency.
 - b. Improving logistics management is important for optimizing food distribution.
 - c. Self-sufficiency can be promoted through vertical farming within cities.
 - d. The optimization of food waste at retail can address the challenges related to food security.

Text III

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Questions 13 – 15 refer to Text I, Text II, and Text III.

13. What is the most likely result of adopting all of the following three policies?
- (i) Increasing subsidies for vertical farming.
 - (ii) Expanding technologies for utilization of unused restaurant food.
 - (iii) Restricting the free trade of rice.
- a. a decrease in food waste
 - b. an increase in food waste
 - c. a decrease in the food self-sufficiency rate
 - d. an increase in the food self-sufficiency rate
14. The concept “food security” is mentioned in all three texts but is never defined. Which of the following would be the best definition of the concept, consistent with all three texts?
- a. The ability of a country’s population to produce enough food domestically to sustain itself while relying heavily on imports.
 - b. A stable access to the quantity of food that people need without any restrictions on quality or nutrition.
 - c. The availability at all times of affordable and nutritious food for everyone in a country or region.
 - d. A situation where every person has access to sufficient, safe, and nutritious food to meet their dietary needs and preferences for an active and healthy life.
15. How do Texts I, II, and III relate to each other?
- a. All three texts relate to the problem of food security: Text I and Text II describe specific methods to promote it, while Text III discusses the specific situation in one region.
 - b. All three texts are concerned with urban agriculture: Text I discusses it directly while Text II and Text III explain the direct implications of it.
 - c. All three texts are concerned with promoting a certain policy proposal, but only Text I and Text II are explicit about what they propose.
 - d. All three texts explain government policy as it relates to food development and distribution in countries, and Text III argues for a specific government policy position.

Part II. Read the passage and rearrange the seven words in 1 – 5 in the correct order. Then choose from a – d the option that contains the third and fifth words.

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- | | | | |
|---------------------------------|---------------------------------|-------------------------------|------------------------------------|
| 1. a. 3rd: idea
5th: accept | b. 3rd: accept
5th: idea | c. 3rd: to
5th: the | d. 3rd: the
5th: to |
| 2. a. 3rd: set
5th: them | b. 3rd: to
5th: apart | c. 3rd: apart
5th: them | d. 3rd: to
5th: them |
| 3. a. 3rd: that
5th: in | b. 3rd: living
5th: that | c. 3rd: chemical
5th: that | d. 3rd: disobeys
5th: organisms |
| 4. a. 3rd: in
5th: chemistry | b. 3rd: complicated
5th: its | c. 3rd: in
5th: any | d. 3rd: its
5th: than |
| 5. a. 3rd: these
5th: of | b. 3rd: that
5th: of | c. 3rd: of
5th: that | d. 3rd: these
5th: that |

Part III. Answer the questions in Sections A and B.

Section A: Read the text and choose the best option from a – d for questions 1 – 6.

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- Which of the following best fits in blank A?
a. by b. for c. to d. with
- Which of the following best fits in blank B?
a. ever b. yet c. never d. already
- Which of the following best fits in blank C?
a. that b. where c. while d. which
- Which of the following best fits in blank D?
a. factor that has b. factors that will have c. factor that had d. factors that have
- Which of the following best fits in the two blanks labeled E?
a. that b. since c. though d. when
- Which of the blanks i, ii, iii, and iv must be filled with the article 'a'?
a. i and iii only b. ii and iv only c. iii and iv only d. i, ii, and iii only

Section B: The five paragraphs [A] – [E] below make up a passage but are not properly ordered. Moreover, the five sentences (1) – (5) in paragraph [A] are not properly ordered, either. Read the passage and choose the best option from a – d for questions 7 and 8.

- [A] (1) According to a study carried out several years ago at the U.S. National Cancer Institute, only about 33% of new drugs are entirely synthetic and completely unrelated to any naturally occurring substance.
- (2) Unmodified natural products isolated directly from the producing organism account for 24% of NMEs, while natural products that have been chemically modified in the laboratory account for the remaining 28%.
- (3) Where do the new drugs come from?
- (4) Vaccines and genetically engineered proteins of biological origin account for 15% of NMEs, but most new drugs come from *natural products*, a catchall term generally taken to mean small molecules found in bacteria, plants, algae, and other living organisms.
- (5) The remaining 67% take their lead, to a greater or lesser extent, from nature.

[B] If the drug is one of the 25% of the original group that make it to the end of phase III, all the data are then gathered into a New Drug Application (NDA) and sent to the FDA for review and approval, which can take another 2 years. Ten years have elapsed and at least \$500 million has been spent, with only a 20% success rate for the drugs that began testing. Finally, though, the drug will begin to appear in medicine cabinets.

[C] Human testing takes, or should take, 5 to 7 years and is divided into three phases. Phase I clinical trials are carried out on a small group of healthy volunteers to establish safety and look for side effects. Several months to a year are needed, and only about 70% of drugs pass at this point. Phase II clinical trials next test the drug for 1 to 2 years in several hundred patients with the target disease or condition, looking both for safety and efficacy, and only about 33% of the original group pass. Finally, phase III trials are undertaken on a large sample of patients to document definitively the drug's safety, dosage, and efficacy.

[D] It has been estimated that major pharmaceutical companies in the United States spent some \$200 billion on drug research and development in 2020, while government agencies and private foundations spent another \$28 billion. What does this money buy? From 1983 to 2022, the money resulted in a total of 1237 new molecular entities (NMEs)—new biologically active chemical substances approved for sale as drugs by the U.S. Food and Drug Administration (FDA).

[E] Many years of work go into screening many thousands of substances to identify a single compound that might ultimately gain approval as an NME. But after that single compound has been identified, the work has just begun because it takes an average of 9 to 10 years for a drug to make it through the approval process. First, the safety of the drug in animals must be demonstrated and an economical method of manufacture must be devised. With these preliminaries out of the way, an Investigational New Drug (IND) application is submitted to the FDA for permission to begin testing in humans.

[Adapted from: McMurry, J. (2023). *Organic Chemistry*. Houston, Texas: OpenStax. <https://openstax.org/details/books/organic-chemistry>]

※出典は下記に記載しております。

7. Which of the following shows the best (most coherent) sentence order for paragraph [A]?
- a. 4-5-2-1-3 b. 3-1-5-4-2 c. 2-3-1-4-5 d. 1-3-2-4-5
8. Which of the following shows the best (most coherent) paragraph order for the passage?
- a. D-B-A-C-E b. C-B-E-D-A c. D-A-E-C-B d. C-A-D-B-E

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This content is adapted from *Organic Chemistry* by John McMurry (2023), OpenStax, Rice University, licensed under CC BY-NC-SA 4.0. Original source: <https://openstax.org/details/books/organic-chemistry>.

Part IV. Read the texts in Sections A and B and answer the questions.

Section A: Choose the best option from a – d for questions 1 – 5.

Explanatory virtues are aspects of an explanation that generally make it strong. There are many explanatory virtues, but we will focus on four. A good hypothesis should be explanatory, simple, and conservative and must have depth.

The word “explanatory” simply means that it must explain all the available evidence. A good explanation is often simple. You may have heard of Occam’s razor, formulated by William of Ockham (1287–1347), which says that the simplest explanation is the best explanation. Ockham said that “entities should not be multiplied beyond necessity” (Spade & Panaccio 2019). By “entities,” Ockham meant concepts or mechanisms or moving parts.

Examples of explanations that lack simplicity abound. For example, conspiracy theories present the very opposite of simplicity since such explanations are by their very nature complex. Conspiracy theories must posit plots, underhanded dealings, cover-ups (to explain the existence of alternative evidence), and maniacal people to explain phenomena and to further explain away the simpler explanation for those phenomena. Conspiracy theories are never simple, but that is not the only reason they are suspect. Conspiracy theories also generally lack the virtues of being conservative and having depth.

A conservative explanation maintains or conserves much of what we already believe. Conservativeness in science is when a theory or hypothesis fits with other established scientific theories and explanations. For example, a theory that accounts for some physical phenomenon but also does not violate Newton’s first law of motion is an example of a conservative theory. On the other hand, accepting a conspiracy theory requires rejecting a wide range of beliefs, and so the theory is not conservative.

A conspiracy theorist may offer alternative explanations to account for the tension between their explanation and established beliefs. However, for each explanation the conspiracist offers, more questions are raised. And a good explanation should not raise more questions than it answers. This characteristic is the virtue of depth. A deep explanation avoids _____, or an explanation that itself is in need of explanation.

[Adapted from: Smith, N. (2022). *Introduction to Philosophy*. Houston, Texas: OpenStax.
<https://openstax.org/details/books/introduction-philosophy>]

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1. Imagine the following: Luke came home to find his kitchen a mess and his pet dog acting guilty. According to Occam’s razor, which of the following would be the WORST explanation of the situation?
 - a. A thief broke in, surprising Luke’s dog. He tied up the dog, searched for money, untied the dog, and left.
 - b. Luke forgot to leave some food for his dog and so the dog searched the kitchen to find something to eat.
 - c. One of Luke’s roommates accidentally left the kitchen door open before going out to work for the day.
 - d. The dog, who is usually not allowed in the kitchen, managed to get in and excitedly made a mess.
2. Imagine the following: A scientist discovered a new phenomenon that had not been observed before. She published a paper that describes some aspects of the phenomenon clearly using theories found in earlier papers. Which virtue is most demonstrated in her work?
 - a. explanatory
 - b. simple
 - c. conservative
 - d. deep
3. Which of the following best fits in the blank in the last paragraph?
 - a. questionable questions
 - b. unquestioned questions
 - c. explained explanations
 - d. unexplained explainers
4. Imagine the following: The normally dry town of Red Rock experienced a sudden rainstorm. Which of the following alternative explanations raises more questions than it answers?
 - a. Climate scientists conducted a controlled weather experiment.
 - b. An underground group used secret weather manipulation technology.
 - c. The government tested new climate control measures.
 - d. An atmospheric phenomenon brought warm air from a tropical region.
5. Which of the following can be inferred from the text?
 - a. A single hypothesis cannot violate several explanatory virtues at once.
 - b. Although not identified as such, Occam’s razor is a fifth explanatory virtue.
 - c. The depth virtue is the least important of the four explanatory virtues.
 - d. Conspiracy theories violate more than one of the explanatory virtues.

Section B: Choose the best option from a – d for questions 6 – 10.

A stem-and-leaf display or stem-and-leaf plot is a device for presenting quantitative data in a graphical format, similar to a histogram, to assist in visualizing the shape of a distribution. They evolved from Arthur Bowley’s work in the early 1900s, and are useful tools in exploratory data analysis. Stem-and-leaf displays became more commonly used in the 1980s after the publication of John Tukey’s book on exploratory data analysis in 1977. The popularity during those years is attributable to their use of monospaced (typewriter) typestyles that allowed computer technology of the time to easily produce the graphics. Modern computers’ superior graphic capabilities have meant these techniques are less often used.

To construct a stem-and-leaf display, the observations must first be sorted in ascending order: this can be done most easily if working by hand by constructing a draft of the stem-and-leaf display with the leaves unsorted, then sorting the leaves to produce the final stem-and-leaf display.

Next, it must be determined what the stems will represent and what the leaves will represent. Typically, the leaf contains the last digit of a number and the stem contains all of the other digits. In the case of very large numbers, the data values may be rounded to a particular place value (such as the hundreds place) that will be used for the leaves. The remaining digits to the left of the rounded place value are used as the stem.

The stem-and-leaf display is drawn with two columns separated by a vertical line. The stems are listed to the left of the vertical line. It is important that each stem is listed only once and that no items are skipped, even if it means that some stems have no leaves. The leaves are listed in increasing order in a row to the right of each stem.

[Adapted from: Wikipedia contributors. (2025, May 7). Stem-and-leaf display. In Wikipedia, The Free Encyclopedia.

https://en.wikipedia.org/wiki/Stem-and-leaf_display

※ページ下部に出典を追記しております。

6. Based on the text, which of the following sets of data would be best visualized with a stem-and-leaf display?
 - a. the ages of players in a national soccer team
 - b. locations of convenience stores in a city
 - c. the national flags of different countries
 - d. students’ opinions about the future of AI
7. Based on the information in the text, which of the following reasons best explains the decline in use of stem-and-leaf displays today?
 - a. Modern computers have simpler user interfaces.
 - b. Modern computers have superior graphic capabilities.
 - c. Modern computers can process textual and numerical data.
 - d. Modern computers can use a range of typestyles.
8. Based on the information in the text, which of the following is required to display a numerical stem-and-leaf display?
 - a. The stem column contains the last digit of the number.
 - b. The lower ranked items are removed.
 - c. The numbers are ordered from the smallest to the largest.
 - d. The leaf column contains rounded values.
9. Figure 1 shows a stem-and-leaf display of valid two-letter words in the Collins Scrabble Words board game. Which of the following statements (i)-(iii) are implied from the display?
 - (i) The three most common initial letters are ‘a’, ‘e’, and ‘o’.
 - (ii) No two-letter words begin with ‘v’.
 - (iii) The words ‘ha’, ‘ki’, and ‘wo’ are all valid words, but ‘se’ is not.
 - a. (i) only
 - b. (i) and (ii) only
 - c. (ii) and (iii) only
 - d. (i), (ii), and (iii)
10. Which of the following properties does the stem-and-leaf display in Figure 1 NOT have?
 - a. It gives the reader a quick overview of the word distribution.
 - b. It shows the words most commonly used in the board game.
 - c. It allows all the raw data to be recovered.
 - d. It highlights the exceptional cases.



Figure 1: Stem-and-leaf display of valid two-letter words in the Collins Scrabble Words board game.

Part V. For questions 1 – 15, two definitions are given with one sample sentence each. Think of a word that matches both definitions and also fits in the blanks in both sentences. Convert each letter of the word into a number 1 to 4 according to the table below: number 1 represents letters *a – g*, 2 represents *h – m*, 3 represents *n – s*, and 4 represents *t – z*. Then choose the matching sequence of numbers from options a – d. For example, if the word you think of is *wise*, for which the first letter *w* is given, the remaining letters would be changed into 2 for *i*, 3 for *s*, and 1 for *e*. Hence, the correct answer would be *w231*.

Number	Letters
1	a, b, c, d, e, f, g
2	h, i, j, k, l, m
3	n, o, p, q, r, s
4	t, u, v, w, x, y, z

1. (i) to show to be right or reasonable: This framework is the first to theoretically (*j*__) the use of regression methods.
 (ii) to free from blame or guilt: The recent increases in the prices of gasoline (*j*__) the large-scale protests.
 a. *j13322* b. *j434214* c. *j213112* d. *j32134*
2. (i) a plan of work or action: The experimental results confirm the superiority of the proposed (*s*__).
 (ii) a secret agenda: The opposition party had prepared a (*s*__) aiming at the collapse of the current government.
 a. *s41333* b. *s2244233* c. *s12121* d. *s343223*
3. (i) not showing off one's abilities or achievements: She's always been (*m*__) when it comes to her art skills.
 (ii) not very large in quantity or amount: After years of struggling, the small business finally experienced a (*m*__) success.
 a. *m32344431* b. *m13412* c. *m113433414* d. *m31134*
4. (i) a possible result or effect of an action: The conclusions of the study have (*i*__)s affecting a wide range of research fields.
 (ii) involvement in the cause of a situation: The suspect challenged his (*i*__) in the crime.
 a. *i13121* b. *i3214122* c. *i41222334233* d. *i2322114233*
5. (i) to seize or hold something or someone firmly with your hands: He tried to (*g*__) the slippery fish with his bare hands, but failed again.
 (ii) to comprehend something fully: She finally (*g*__)ed the concept after watching a video explanation.
 a. *g3133* b. *g34231* c. *g3114* d. *g23213421*
6. (i) what one wants to achieve or an aim in life or work: The company's (*o*__) is to increase sales by 10% each year.
 (ii) based on facts and not influenced by personal feelings or opinions: He gave an (*o*__) review of the movie without bias.
 a. *o442231* b. *o12114241* c. *o333234122* d. *o23142*
7. (i) to move an object to a different position: Energy is needed to (*d*__) water from a tank.
 (ii) to force to move away: The disaster prevention policies will (*d*__) people from their hometowns.
 a. *d334212* b. *d411223* c. *d2332111* d. *d12421314*
8. (i) to handle or use skillfully: Objects having a surface that is too smooth are not easy to (*m*__).
 (ii) to alter or adjust information for one own's sake: An employee cannot (*m*__) evidence that possibly leads to her eventual punishment.
 a. *m132342141* b. *m4132211* c. *m231134* d. *m3212431134*

9. (i) being kept from falling or sinking in a fluid: Bacteria (*s*__)*ed* in aqueous solution are essential for natural degradation of organic matter.
(ii) to postpone or put a temporary stop to: The court decision was (*s*__)*ed* due to a sudden electricity fault.
a. *s*213431 b. *s*131212 c. *s*433131 d. *s*342213
10. (i) a piece of magic that is performed by saying certain words or performing specific actions: The wizard cast a magic (*s*__) to make the flowers bloom.
(ii) to say or write out the letters of a word in their correct sequence: The teacher helped students (*s*__) difficult words in class.
a. *s*1241 b. *s*3122 c. *s*4341232 d. *s*34342
11. (i) an action for harmonizing: Some (*a*__)*s* were made so that the opinions were included in the final draft.
(ii) a place for staying for a while: To secure (*a*__), early registration and reservation are recommended.
a. *a*113223114233 b. *a*412342 c. *a*312314233 d. *a*214213311344
12. (i) to act or be in accordance with: Previous research found that people may (*c*__) to society if they perceive obvious benefits.
(ii) agreement with rules or standards: After moving to a new country, the family had to make efforts to behave in (*c*__)*ity* with the expectations of neighbors.
a. *c*212324 b. *c*143231 c. *c*4111221 d. *c*331332
13. (i) unison or cooperation: In (*c*__) with its allies, the country decided to oppose the enforcement of tariffs on trade with its neighbors.
(ii) a musical performance: The start of the (*c*__) was delayed by over an hour due to the pianist's late arrival.
a. *c*331134 b. *c*1213443 c. *c*31343 d. *c*11213
14. (i) a prediction of the approximate amount or value: The new method can be applied in the accurate (*e*__) of the optimum temperature.
(ii) a judgment of worthiness: In the public's (*e*__), the first candidate was more suitable than the second candidate.
a. *e*1412414233 b. *e*342214233 c. *e*22213233 d. *e*431313233
15. (i) two straight lines that are equidistant and never meet: The opposing edges of a square are, by definition, (*p*__) to each other.
(ii) similar or duplicate in nature: The problem faced in educational settings is (*p*__) to that faced by parents in many other aspects of society.
a. *p*3331134 b. *p*1443132 c. *p*1312212 d. *p*23221224

[End of Exam]