

I. 次の文章に関して、空欄補充問題と読解問題の二つがあります。まず、[1] から [10]の空所を埋めるのに、文脈的に最も適切な語を1から3の中から選び、その番号を解答欄(1)から(10)にマークしなさい。次に、内容に関する[11]から[15]の設問には、1から4の選択肢が付されています。そのうち、文章の内容からみて最も適切なものを選び、その番号を解答欄(11)から(15)にマークしなさい。

1 In 1962, one observer believed that America was on the brink of a spiritual breakthrough. But that's not how things have turned out. What a joy it would be to show the America of 2015 to Edward T. Chase.

2 Chase, the author of a 1962 *Atlantic* essay titled "Money Isn't Everything," was positively [1](1. realistic 2. demanding 3. euphoric) as he observed the cultural changes of the post-war period. "It is my belief," he wrote, "that in fact we in the United States are evolving beyond the 'consumption society'—one that has mastered the problems of production—and are approaching a new order of society, the society of self-realization." Via the alchemy of mass prosperity combined with mass education, Americans, Chase explained, were losing their narrow-minded focus on material success, and were instead developing an appreciation for culture, conservation, and jobs that provided "self-fulfillment" [2](1. against 2. over 3. under) financial remuneration.

3 His evidence: a massive increase in spending on "culture," a doubling in how much Americans spent on books between 1955 and 1961, an increase of 29 percent in library-book circulation over a five-year period, a boom in paperback sales, an explosion in the number of museums and in museum attendance, a rise in a desire to pursue "intrinsically important work," and on and on.

4 Man, if this guy could see today.

5 By one measure, "arts and cultural production" today [3](1. accounts 2. compensates 3. makes up) for 4.3 percent of GDP, or nearly \$700 billion. Many, many more Americans read books today than did at mid-century (and young people are reading more than their parents and grandparents did). There are now some 35,000 museums across the country, *The Washington Post* reports. Museum attendance is huge. According to the American Alliance of Museums, "there are approximately 850 million visits each year to American museums, more than the attendance for all major-league sporting events and theme parks [4](1. accompanied 2. accumulated 3. combined)." Both the number and percentage of Americans who have graduated from college continue to rise.

6 And then there's the Internet. Chase would have been shocked by the Internet. Essentially free access to all the world's information from a device two-thirds of Americans have in their pockets.

7 And yet, [5](1. optimism 2. pessimism 3. consumerism) like Edward T. Chase’s occupies little territory in the landscape of today’s sentiments, in which cynicism, contempt, and indifference tend to [6](1. dissipate 2. diverge 3. dominate).

8 Perhaps this is because Chase was wrong. A half-century of cultural edification has passed, and this country is still [7](1. accompanied 2. preoccupied 3. sprinkled) with money and material accumulation. Even the wealthiest are working more hours than they were three decades ago—the very people who are at financial liberty to ease up on work a bit and [8](1. dissociate from 2. do away with 3. indulge in) some of the nonmaterial consumption Chase idealized. Consumption, not culture, has triumphed as though the two were ever separate phenomena to begin with.

9 It’s not only that. America’s gloomy national mood is a reasonable response to very real and very deep problems. [9](1. Because of 2. Despite 3. Thanks to) the country’s prosperity and astonishing technological advances, wages have stagnated, segregation endures, women still [10](1. lag behind 2. linger on 3. tag along) professionally, and the climate has been dangerously destabilized. There’s no need to continue this list when any perusal of a newspaper will suffice. Unmitigated optimism today is the song of the naïve.

10 But a bit of singing is nevertheless warranted. Because for all its troubles, the world today is still a marvel—one that’s all too easily taken for granted.

—Based on Rosen, R.J. (2015, July 24). The triumph of consumerism. *The Atlantic*.

[11] What is meant by the term “a new order of society” as used in the 2nd paragraph?

1. A society in which people place top priority on material success and accumulation of wealth.
2. A society in which people are more concerned with self-realization and self-fulfillment.
3. A society in which people focus on financial remuneration more than anything else.
4. A society in which people enjoy not only mass prosperity but also mass education.

[12] Which of the following best represents the author’s view on a “half-century of cultural edification” as mentioned in the 8th paragraph?

1. Cultural edification would have been impossible without the promotion of higher education.
2. As envisioned by Chase, the increase in cultural edification has contributed to a decrease in consumerism.
3. Despite the fact that people have easy access to a variety of cultural opportunities, it does not seem to have eradicated materialism.
4. The Internet has made the greatest contribution to cultural edification by making possible free access to the world’s information.

[13] In the 8th paragraph, the author states “the wealthiest are working more hours than they were three decades ago” in order to show that

1. cultural edification has had a great impact on the majority of less wealthy people, but not on the most wealthy.
2. the wealthiest people are invariably hard-working; thus, they are entitled to enjoy nonmaterial consumption.
3. even the wealthiest cannot sustain their cultural activities unless they work more hours than before.
4. money and material accumulation remain an important concern even for those who are already wealthy.

[14] Which of the following best represents the author’s view on today’s America?

1. It is futile to dwell on the problems of today; instead, people should learn to have unmitigated optimism.
2. The country is faced with a number of serious problems, yet we shouldn’t be all that pessimistic about the present situation.
3. The country is entrenched with all sorts of devastating problems, so much so that people cannot see a bright future ahead of them.
4. The country is enjoying a high level of prosperity and technological advances, which will eventually eradicate many of the problems faced today.

[15] From this article, we can assume that the author

1. seems to be amused by the fact that Chase’s 1962 essay failed to predict the American society of today.
2. thinks highly of Chase because he was able to envision the kind of society that America would strive for in as early as 1962.
3. tries to maintain as neutral and impersonal a position as possible in order to be objective in his evaluation of Chase’s prediction.
4. attempts to make a scapegoat of Chase by accusing him of something he is not responsible for.

II. 次の文章に関して、空欄補充問題と読解問題の二つがあります。まず、[16]から[25]の空所を埋めるのに、文脈的に最も適切な語を1から3の中から選び、その番号を解答欄(16)から(25)にマークしなさい。次に、内容に関する[26]から[30]の設問には、1から4の選択肢が付されています。そのうち、文章の内容からみて最も適切なものを選び、その番号を解答欄(26)から(30)にマークしなさい。

1 Researchers all over the world have been trying to measure happiness for decades. They have conducted surveys partly to determine what makes people happy and partly to gauge social progress. One of the things these surveys tell us is that, not surprisingly, people in rich countries are happier than people in poor countries. [16](1. Alternatively 2. Obviously 3. Unexpectedly), money matters. But these surveys also reveal that money doesn't matter as much as you might think. Once a society's level of per capita wealth crosses a [17](1. hedge 2. mark 3. threshold) from poverty to adequate subsistence, further increases in national wealth have almost no effect on happiness. You find as many happy people in Poland as in Japan, for example, even though the average Japanese is almost ten times richer than the average Pole.

2 If we look at happiness within a nation at different times, we find the same story. In the last forty years, the per capita income of Americans has more than doubled. The percentage of homes with dishwashers has increased from 9 percent to 50 percent. The percentage of homes with air-conditioning has increased from 15 percent to 73 percent. But this does not mean we have more happy people. Even more [18](1. comforting 2. devastating 3. striking), in Japan, per capita wealth has increased by a factor of five in the last forty years, again with no measurable increase in the level of individual happiness.

3 But if money doesn't do it for people, what does? What seems to be the most important factor in [19](1. adopting 2. eliminating 3. promoting) happiness is close social relations. People who are married, who have good friends, and who are close to their families are happier than those who are not. Being connected to others seems to be much more important to subjective well-being than being rich. But a word of caution is [20](1. at stake 2. in order 3. on demand). We know with certainty that there is a relationship between being able to connect socially and being happy. It is less clear, however, which is the cause and which is the effect. Miserable people are surely less likely than happy people to have close friends, devoted family, and [21](1. endangered 2. enduring 3. entrusted) marriages. So it is possible that happiness comes first and close relations come second. What seems likely to me is that the causality works both ways: happy people attract others to them, and being with others makes people happy.

4 What's puzzling here is that close social ties actually decrease freedom, choice, and autonomy, which presumably [22](1. constitute 2. recognize 3. reorganize) important elements for happiness. For example, to be someone's friend is to undertake weighty responsibilities that may limit your own

freedom. So, what seems to contribute most to happiness binds us rather than liberates us. Obviously, it is [23](1. imperative 2. justifiable 3. naïve) to maintain that freedom of choice automatically leads to happiness.

- 5 Political scientist Robert Lane maintains that the growth of material affluence has not brought with it an increase in subjective well-being. He points out that we are experiencing a significant decrease in well-being as [24](1. enforced 2. evidenced 3. triggered) by the fact that the rate of clinical depression has more than tripled over the last two generations. According to Lane, we are achieving increased affluence and increased freedom [25](1. at the sacrifice of 2. in addition to 3. under the guise of) social relations. We earn more and spend more, but we spend less time with others. And this adds to our burden of choice. As Lane writes: “What was once given by neighborhood and work now must be achieved; people have had to make their own friends...and actively cultivate their own family connections.” In other words, our social fabric is no longer a birthright but has become a series of deliberate and demanding choices.

—Based on Schwartz, B. (2004). *The paradox of choice*. New York: HarperCollins Publishers Inc.

[26] According to the article, which of the following is true?

1. The level of material affluence has no impact on the level of subjective well-being.
2. People can attain a high level of subjective well-being if they learn to live a frugal life.
3. People’s sense of well-being is determined by the level of national wealth only to a certain extent.
4. As a society’s level of per capita wealth increases, people’s sense of well-being increases proportionately.

[27] The author makes reference to the Polish and the Japanese in the 1st paragraph in order to show that

1. the level of national wealth of Poland is significantly lower than that of Japan.
2. the level of national wealth of Poland is just about the same as that of Japan.
3. further economic development will result in increased happiness.
4. the level of national wealth is not a clear indicator of happiness.

[28] According to the article, which of the following is true?

1. Poor people tend to form fewer social ties than society’s more affluent people.
2. It has been proven that happiness brings about close social ties.
3. It is assumed that close social ties are the main cause of happiness.
4. There is some relationship between close social connection and personal well-being.

[29] According to the 4th and 5th paragraphs, which of the following is true?

1. Having to make many choices can be a burden, which may contribute to decreased subjective well-being.
2. The best way to cope with an increase in the rate of clinical depression is to allow people more freedom of choice.
3. Having unlimited freedom of choice, rather than the growth of material affluence, tends to promote subjective well-being.
4. The growth of material affluence is responsible for a rapid increase in the rate of clinical depression.

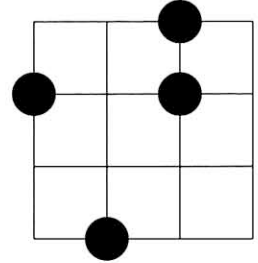
[30] What does Robert Lane mean when he states that “our social fabric is no longer a birthright”, as mentioned in the 5th paragraph?

1. We cannot take it for granted that modern society will provide us with social ties that support us.
2. The basic structure of our society is such that we cannot take it for granted that we are born with human rights.
3. Our society no longer provides us with our basic needs like food, clothes, and shelter.
4. Our society does not allow us to enjoy happiness and prosperity which should be guaranteed as an important part of our birthright.

III

座標平面の格子点 $\{(i, j) \mid 1 \leq i \leq n, 1 \leq j \leq n\}$ に n 個の基石を置く．ここで， n は正の整数とする．ただし，これらの基石は同じ種類であり，互いに区別できない．また，格子点には高々 1 つの基石しか置けないものとする．各 i に対して， $\{(i, j) \mid 1 \leq j \leq n\}$ を第 i 列，各 j に対して $\{(i, j) \mid 1 \leq i \leq n\}$ を第 j 行と呼ぶ．

例: 4×4 の場合



(1) n 個の基石を置くすべての場合の配置の総数を A_n とすると

$$A_1 = 1, A_2 = 6, A_3 = \boxed{(61) (62)}, A_4 = \boxed{(63) (64) (65) (66)}, \dots$$

である．

(2) n 個の基石を置くとき，どの行およびどの列にも 1 個の基石を置く場合の配置の総数を B_n とすると

$$B_1 = 1, B_2 = 2, B_3 = \boxed{(67) (68)}, B_4 = \boxed{(69) (70) (71) (72)}, \dots$$

である．

(3) n 個の基石を置くとき，どの行およびどの列にも高々 2 個の基石を置く場合の配置の総数を C_n とすると

$$C_1 = 1, C_2 = 6, C_3 = \boxed{(73) (74)}, C_4 = \boxed{(75) (76) (77) (78)}, \dots$$

である．

総

IV

3つの直線 $x + 2y - 4 = 0$, $2x - y - 2 = 0$, $x - y + 5 = 0$ によって作られる三角形を考える.

(1) 三角形の各頂点からの距離の2乗和が最小になる点は $\left(\frac{\begin{array}{|c|c|} \hline (79) & (80) \\ \hline \end{array}}{\begin{array}{|c|c|} \hline (81) & (82) \\ \hline \end{array}}, \frac{\begin{array}{|c|c|} \hline (83) & (84) \\ \hline \end{array}}{\begin{array}{|c|c|} \hline (85) & (86) \\ \hline \end{array}} \right)$ である.

(2) 三角形の各辺からの距離の2乗和が最小になる点は $\left(\frac{\begin{array}{|c|c|} \hline (87) & (88) \\ \hline \end{array}}{\begin{array}{|c|c|} \hline (89) & (90) \\ \hline \end{array}}, \frac{\begin{array}{|c|c|} \hline (91) & (92) \\ \hline \end{array}}{\begin{array}{|c|c|} \hline (93) & (94) \\ \hline \end{array}} \right)$ である.

V

ある議会において、現在、3つの政党 A, B, C が 70 議席ずつ獲得している。各議員は提案された議案に賛成するか反対するかのどちらかを選択するが、党議拘束がかけられるため、同じ政党に属する議員は同じ選択をする。今、賛成を Y, 反対を N で表すものとし、例えば政党 A が賛成、政党 B が反対、政党 C が賛成した場合を YNY, 政党 A が反対、政党 B が賛成、政党 C が賛成した場合を NYN と表す。議案の可決には過半数の 106 票以上が必要であり、YYY, YYN, YNY, NYN のときに議案は可決され、YNN, NYN, NNY, NNN のときに否決される。賛成と反対が同数の場合には否決される。

ここで、他の政党の選択は変わらないという条件のもとで、ある政党が自らの選択を変えたときに、議案の採決の結果まで変えてしまうなら、その政党はスイングであるとよぶ。例えば、YNN の場合を考えると、政党 A が選択を Y から N に変えると、NYN となり、採決の結果が可決から否決に変わってしまう。政党 B が選択を Y から N に変えた場合にも、採決の結果が可決から否決に変わってしまう。しかし、政党 C が選択を N から Y に変えても、YYY となり採決の結果は可決のままで変わらない。したがって、YNN の場合には、政党 A と政党 B がスイングである。

次に YNN の場合を考えると、政党 B と政党 C がスイングであることが分かる。しかし、YYY や NNN の場合にはスイングは存在しない。このように、政党 A がスイングになるのは、YNN, YNY, NYN, NNY の場合であり、政党 B がスイングになるのは、YNN, YNN, NYN, NNY の場合であり、政党 C がスイングになるのは、YNY, YNN, NYN, NYN の場合である。よって、各政党ともに 4 つの場合でスイングになる。スイングになる場合の回数を賛成・反対の組み合わせの総数 8 で割った値を影響力指数とよぶと、現在の議席数では各政党とも影響力指数は $\frac{1}{2}$ で同一である。

(1) 次の選挙において、政党 A が 90 議席、政党 B が 75 議席、政党 C が 45 議席になったとすると、政党 A の影響力指数は $\frac{\boxed{95}}{\boxed{96}}$ 、政党 B の影響力指数は $\frac{\boxed{97}}{\boxed{98}}$ 、政党 C の影響力指数は $\frac{\boxed{99}}{\boxed{100}}$ となる。

(2) さらに上記の選挙の半年後に、政党 C が 30 議席を有する政党 C₁ と 15 議席の政党 C₂ に分裂したとすると、政党 A の影響力指数は $\frac{\boxed{101}\boxed{102}}{\boxed{103}\boxed{104}}$ 、政党 B の影響力指数は $\frac{\boxed{105}\boxed{106}}{\boxed{107}\boxed{108}}$ 、政党 C₁ の影響力指数は $\frac{\boxed{109}\boxed{110}}{\boxed{111}\boxed{112}}$ 、政党 C₂ の影響力指数は $\frac{\boxed{113}\boxed{114}}{\boxed{115}\boxed{116}}$ となる。