第１問　次の英文を読んで、後の問いに答えなさい。

Overpopulation is, arguably, the greatest challenge facing humanity. It took until 1800 for our numbers to reach 1 billion. Now the human population exceeds 7 billion and is set to reach 10 billion by 2085. Although problematic, it is also a testament to our success as a species. In a world in which people are increasingly well fed, healthy and safe, a population explosion is only to be expected. In fact, the surprising thing about human numbers is that they are not growing faster. Far from increasing rapidly as you might expect under such good conditions, human fertility rates are plummeting all over the planet. The question is, why?

An obvious answer is that access to contraception gives us control over our reproductive fate, (　あ　). But why we choose to do this is a puzzle for evolutionary biologists. After all, you are only alive to read this because you are descended from a long line of ancestors who were good at reproducing. When times were hard and resources scarce, they were the ones who successfully managed to pass their genes down to the next generation. Today, survival is much easier for many of us, so why aren't we (　い　)? Indeed, why do people in the richest parts of the world tend to have fewer children?

In traditional and developing societies, reproductive rates rise with increasing wealth, but this pattern is reversed in richer, industrial nations — a phenomenon known as the demographic transition. In the European Union, for example, the average number of children per woman now stands at about 1.6, well below the 2.1 needed to maintain the population. The demographic transition has puzzled biologists for decades, as it seems to go totally against evolutionary principles. 《A》On the face of it, our tendency to have fewer children as we amass more wealth looks maladaptive — an evolutionary wrong turn. But it may not be so. Low fertility could actually be evolutionarily advantageous in the long run if, by investing heavily in fewer children, parents ultimately increase the number of descendants they have, ensuring the survival of their lineage.

The first hard evidence that there might be something in this idea came in 2008, when David Lawson and Ruth Mace published findings from a study of 14,000 children in the UK. They found that children in larger families suffer in terms of reduced investment of parental time and money, and this has negative consequences for their educational and physical development. Meanwhile, those with [　ア　] siblings did [　イ　] in school assessments and were even likely to be [　ウ　] than children from [　エ　] families.

So parents who choose to have fewer children may be (　う　). But in evolutionary terms the key question remains: are the advantages of wealth and small family size carried through the

generations to produce more descendants ultimately? Answering this would require data on education, wealth and reproduction spanning several generations. Remarkably, this information is available for a cohort of 14,000 Swedish women born in 19th-century Uppsala and their descendants to the present day. Lawson and colleagues have recently analysed that data set. So what does it tell us?

Mirroring the previous study, the descendants of women in the original cohort who had fewer children were more likely to go to university and earn more. However, these high-investment lineages were not more successful in the long run. Instead, the mothers who originally had more children have more descendants today. "It's a very close relationship, (　え　)," says Lawson.

《B》Bang goes the theory. But there may still be an evolutionary rationale underpinning the demographic transition. Evolutionary anthropologist Sarah Hrdy points out that natural selection would not have favoured women who had the urge to produce lots of babies, simply because throughout most of our species' history, any woman fit enough to ovulate would mate, get pregnant and bear a child. However, evolution would have favoured women who were most successful at competing for status, which would give them more resources, greater personal security and access to higher-quality mates. And that is {　a　} in affluent parts of the modern world. "If you're living in a society that values high status and income, and where your position is determined by the kind of job you get, by the kind of education you get, then you are going to give priority to those things over having a baby," says Hrdy.

Lawson believes that an evolved tendency to seek status explains the link between increasing wealth and decreasing fertility. "We know that trying to acquire status and wealth is a universal, clear, conscious strategy — everyone wants to be successful, and liked, and have resources." Throughout most of human existence, he says, a desire for sex has been enough to maximise our reproductive output, but in modern, skill-based, wage-labour economies, status-seeking is {　b　} having children. You might expect wealthy people to be able to afford more children, but if they feel they must provide their offspring with the trappings of status such as private schooling and good healthcare, then children become less affordable. 《C》Low fertility is a strategy the wealthy use to keep their advantage, says Lawson. As a result, status-seeking leaves us vulnerable to making maladaptive reproductive decisions, ones that decrease our chances of passing on our genes.

Mairi Macleod, "Population paradox", *NewScientist*, October 26, 2013（一部改変）

注 testament: 証拠　fertility rate: 出生率　plummet: 急落する　contraception: 避妊
demographic transition: 人口転換　amass: 集める　maladaptive: 不適応な
lineage: 血統　sibling: 兄弟姉妹　cohort: 集団　Uppsala: ウプサラ（地名）
underpin: 支持する　ovulate: 排卵する　trappings: 象徴

問 1. 空所（ あ ）～（ え ）にはそれぞれ次の (1)～(4) のいずれかが入る。各空所に入るものの番号を答えなさい。

(1) allowing us to limit the number of children we have
(2) investing more in those they have
(3) suggesting there's no adaptive benefit to having fewer kids
(4) taking the biological advantage and having lots of babies

問 2. 下線部《A》の'On the face of it'と最も近い意味になるものを 1 つ選び、その番号を答えなさい。

(1) Accidentally　(2) Firstly　(3) Seemingly　(4) Slightly

問 3. 空所［ ア ］～［ エ ］に入れる語句の組み合わせとして最も適当なものを 1 つ選び、その番号を答えなさい。

(1)	ア: more	イ: better	ウ: shorter	エ: bigger
(2)	ア: more	イ: worse	ウ: shorter	エ: smaller
(3)	ア: fewer	イ: better	ウ: taller	エ: bigger
(4)	ア: fewer	イ: worse	ウ: taller	エ: smaller

問 4. 下線部《B》の 'Bang goes the theory.' と最も近い意味になるものを 1 つ選び、その番号を答えなさい。

(1) The theory appears beneficial.
(2) The theory appears changeable.
(3) The theory appears correct.
(4) The theory appears false.

問 5. { a } には次の(1)～(5)の語をある順序に並べた表現が入る。2番目と 4 番目に入る語の番号を答えなさい。

(1) behave　(2) how　(3) influences　(4) we　(5) what

問 6. { b } に入れるのに最も適切なものを 1 つ選び、その番号を答えなさい。

(1) at the risk of　(2) in conflict with　(3) in favour of　(4) on account of

問 7. 下線部《C》を日本語にしなさい。

問 8. 本文の内容に合致するものを 2 つ選び、その番号を答えなさい。

(1) The population of a rich country in which people are well fed, healthy and safe grows much faster than expected.
(2) Our existence indicates that our ancestors were good at passing their genes down to the next generation even in hard times.
(3) The term 'demographic transition' refers to the phenomenon where the fertility rate rises in proportion to increasing wealth.
(4) The data set from a group of Swedish women and their descendants shows that wealth helps women to produce more offspring.
(5) According to Hrdy and Lawson, a demographic transition comes from an evolved tendency to put greater emphasis on seeking status.

第２問　次の英文を読んで、後の問いに答えなさい。

Most organs for transplantation come from cadavers, but as these have failed to meet the growing need for organs, attention has turned to organs from living donors. Organ donation by living donors presents a unique ethical dilemma, in that physicians must risk the life of a healthy person to save or improve the life of a patient. Transplantation surgeons have therefore been cautious in tapping this source. As surgical techniques and outcomes have improved, however, this practice has slowly expanded.

Three categories of donation by living persons can be distinguished: (　あ　); (　い　), in which the donor gives an organ to the general pool to be transplanted into the recipient at the top of the waiting list; and (　う　), whereby donors choose to give to a specific person with whom they have no prior emotional connection.

Each type of donation prompts distinct ethical concerns. With (　あ　), worries arise about the intense pressure that can be put on people to donate, leading those who are reluctant to do so to feel coerced. In these cases, transplantation programs are typically willing to identify a plausible medical excuse, so that the person can bow out gracefully. Equally important, however, are situations in which people feel compelled to donate regardless of the consequences to themselves. In one instance, both parents of a child who was dying of respiratory failure insisted on donating lobes of their lungs in a desperate but unsuccessful attempt to save her life. Such a sense of compulsion is not unusual. In cases like these, simply obtaining the informed consent of the relative is {　A　} — physicians are obligated to prevent people from making potentially life-threatening sacrifices unless the chance of success is proportionately large.

(　い　) raises different ethical concerns. The radical altruism that motivates a person to make a potentially life-threatening sacrifice for a stranger calls for careful scrutiny. One recent case involved a man who seemed pathologically obsessed with giving away everything, from his money to his organs, saying that doing so was "as much a necessity as food, water, and air." After donating one kidney to a stranger, he wondered how he might give away all his other organs in a dramatic suicide. Other psychologically suspect motivations need to be ruled out as well. Is the person trying to compensate for depression or low self-esteem, seeking media attention, or harboring hopes of becoming involved in the life of the recipient? Transplantation teams have an obligation to assess potential donors in all these dimensions and prohibit donations that arouse serious concern.

(　う　) raises similar ethical questions with a few additional wrinkles. This type of

donation usually occurs when a patient advertises for an organ publicly, on television or billboards or over the Internet. Such advertising is not illegal, but it has been strongly discouraged by the transplantation community. Two central objections are that the practice is unfair and that [　ア　].

The most ethically problematic cases are those in which the recipient is chosen on the basis of race, religion, or ethnic group. In one case, for example, the family of a brain-dead Florida man agreed to donate his organs — but insisted that because of the man's racist beliefs, the recipients must be white. Although the organs were allocated accordingly, Florida subsequently passed a law {　B　} on donation.

{　C　} the motives for choosing a recipient may be unethical, however, there might be reasons for allowing the donation to proceed. Consider a case that was discussed at a recent public forum hosted by Harvard Medical School's Division of Medical Ethics: a Jewish man in New York learned of a Jewish child in Los Angeles who needed a kidney transplant. The man wanted to help someone of his own faith and decided he was willing to donate a kidney to help this particular child. Despite his discriminatory preference, [　イ　], since [　ウ　]. Whether (　う　) violates standards of fairness is thus controversial. But if it is permitted, it will be very difficult to prohibit discriminatory preferences, since donors can simply specify that the organ must go to a particular person, without saying why.

Robert D. Truog, "The Ethics of Organ Donation by Living Donors"
New England Journal of Medicine, August 4, 2005（一部改変）

注 cadaver：死体　tap：利用する　recipient：被移植者　coerce：強制する
bow out：やめる　respiratory failure：呼吸不全　lobe of the lung：肺葉　compulsion：強制
altruism：利他主義　scrutiny：調査　pathologically：病的に　kidney：腎臓
harboring：隠れた　wrinkle：問題点　billboard：広告板　allocate：割り当てる

問 1.　下線部の a unique ethical dilemma とは、ここでは

【　甲　】を目指せば【　乙　】ができなくなり、
【　乙　】を目指せば【　甲　】ができなくなる

という板ばさみ状態のことと考えられる。空所【　甲　】と【　乙　】に入ることばを、それぞれ 15 文字以内の日本語で答えなさい（甲と乙は入れ替え可能）。

問 2. 空所（ あ ）～（ う ）にはそれぞれ次の (a)～(c) のいずれかの表現が入る(複数ある同じ名前の空所には同じ表現が入る)。各空所に入るものの組み合わせとして最も適切なものを１つ選び、その番号を答えなさい。

(a) directed donation to a loved one or friend

(b) directed donation to a stranger

(c) nondirected donation

(1) あ－(a), い－(b), う－(c)　(2) あ－(a), い－(c), う－(b)
(3) あ－(b), い－(a), う－(c)　(4) あ－(b), い－(c), う－(a)
(5) あ－(c), い－(a), う－(b)　(6) あ－(c), い－(b), う－(a)

問 3. 空所 { A } に入る語として最も適切なものを１つ選び、その番号を書きなさい。

(1) necessary　(2) unnecessary　(3) sufficient　(4) insufficient

問 4. 空所 [ア] ～ [ウ] にはそれぞれ次の (a)～(c) のいずれかの表現が入る。各空所に入るものの組み合わせとして正しいものを１つ選び、その番号を答えなさい。

(a) at least some patients would benefit (the child would receive a kidney, and those below her on the waiting list would move up one notch) and no one would be harmed (those above the girl on the waiting list would not receive the kidney under any circumstances, because the man would not give it to them)

(b) it threatens the view that an organ is a "gift of life," not a commodity to be bought and sold

(c) one might view the donation as permissible

(1) ア－(a), イ－(b), ウ－(c)　(2) ア－(a), イ－(c), ウ－(b)
(3) ア－(b), イ－(a), ウ－(c)　(4) ア－(b), イ－(c), ウ－(a)
(5) ア－(c), イ－(a), ウ－(b)　(6) ア－(c), イ－(b), ウ－(a)

問 5. 空所 { B } には次の５つをある順序に並べ替えた表現が入る。２番目と４番目に入る表現の番号を答えなさい。

(1) from　(2) patients or families　(3) placing
(4) prohibiting　(5) such restrictions

問 6. 空所 { C } に入る表現として最も適切なものを１つ選び、その番号を答えなさい。

(1) As far as　(2) Even when　(3) Only if　(4) Since

問 7. 次の中から本文の内容と合致するものを２つ選び、その番号を答えなさい。

(1) 生きた人から提供される臓器は、移植手術の成功率が高くなるために注目されたが、倫理的な問題があるので外科医たちはその利用に慎重になっている。

(2) 家族からの生体臓器提供の場合は、移植を受ける方の人が臓器提供者の身体に負担がかかることを恐れて消極的になるケースが多い。

(3) たとえ移植をしても子供を助けることは困難な状況であるにもかかわらず命の危険も顧みずに臓器を提供しようとする親に対しては、医師は制止しなければならない。

(4) 自分の持っているものはすべて投げ出して誰かの役に立ちたいという病的な思いに駆られて臓器提供しようとする人もいるので、移植チームは慎重でなければならない。

(5) 脳死患者本人の人種的偏見に基づいて提供先を白人に制限する臓器提供を行おうとした事例があったが、法律に反するという理由でこの提供は実現しなかった。

第３問　次の英文の空所 ア～シ に、それぞれ与えられた文字で始まる単語を入れなさい。

From 2008 to 2009, "herbivore men (*sôshoku danshi* or *sôshoku-kei danshi* in Japanese)" became a trendy, widely used term in Japanese. It flourished in all sorts of media, including TV, the Internet, newspapers and (ア: m_____), and could even occasionally be heard in everyday conversation. As it became more popular (イ : i_____) original meaning was diversified, and people began to use it with a variety of (ウ: d_____) nuances. In December of 2009 it made the top ten (エ: l_____) of nominees for the "Buzzword of the Year" contest sponsored by U-CAN. By 2010 it had (オ: b_____) a standard noun, and right now, in 2011, people do not seem particularly interested in it. Buzzwords have a (カ: s_____) lifespan, so there is a high probability that it will soon fall out of use. The fact (キ: r_____), however, that the appearance of this term has radically changed the way (ク : p_____) look at young men. It can perhaps even be described as an epochal event in the history of the (ケ: m_____) gender in Japan.

The term "herbivore men" became popular because of the existence within Japanese society of actual "men" to (コ: w_____) it applied. People had already picked up on the fact that young men who seemed to have lost their "manliness" or become "feminized" were increasing in (サ: n_____). Signs of this trend had existed from around the (シ: t_____) highly fashion-conscious young men who dyed their hair light brown, wore designer rings, and pierced their ears started appearing at the end of the 20th century.

Masahiro Morioka, "A Phenomenological Study of "Herbivore Men" "
The Review of Life Studies, Vol.4, 2013