

第5回パソコン入カスピード認定試験問題 (23.2.12)

英 語 部 門

(制限時間 10分)

試験委員の指示があるまで、下の事項を読みなさい。

[書 式 設 定]

1. A4 縦長用紙
2. 1行の文字数を半角76字(全角38字)、1ページの行数を29行に設定しなさい。
3. ヘッダーに試験実施校名、受験番号を入力しなさい。
4. ページ番号を答案用紙の下に入れること。
5. フォントの種類は明朝体、フォントのサイズは12ポイントに設定すること。(問題のフォントは Courier New で作成している。)
6. プロポーショナルフォントは使用しないこと。

[注 意 事 項]

1. 問題のとおり、すべて半角英数文字で入力しなさい。
2. 入力したものの訂正などの操作は制限時間内に行いなさい。

試験終了後

1. 答案用紙が2枚以上になった場合、左端上をステープラ(ホチキス)でとめなさい。
2. 答案用紙、試験問題を提出しなさい。

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Winter whiteouts, freezing weather and power outages everywhere	64
from Europe to Washington and Beijing have been making headlines these	135
last few months, but as fingers by the million have been going numb,	204
Japan has one nifty weapon of mass defrostation to alleviate the	269
seasonal problem: self-warming pads.	308
Popularly known as kairo, literally meaning "fire inside the	369
pocket," these pads emitting neither flames nor smoke nonetheless warm	440
the cockles of many a Japanese heart when the mercury takes its seasonal	513
dive. With the disposable types, all you need to do is to rip off the	584
outside plastic wrap and shake the bag a few times, though some types	654
nowadays even don't need shaking. Then the pads automatically warm up	725
to 50 or 60 C and continue exuding their heat for up to 20 hours.	792
Sold across the country at convenience stores or drug stores,	854
and normally costing less than ¥50 apiece, disposable kairo have long	924
been a must-have item in this seasonally frigid land.	979
While these pads are not known in other parts of the world, they	1044
are particularly popular in Japan. According to Nihon Kairo Kogyokai, a	1117
total of 1.4 billion kairo were sold during what they call the 2008	1185
season. That's more than 10 pads each for every one of the 120-odd	1253
million people in the country. But how do these magic warmers work?	1323
What's inside? And how did the kairo culture start and catch on here	1393
to such a degree?	1412
One man who holds the key to these nagging questions is the	1472
president of major kairo manufacturer in Tochigi Prefecture. Warming to	1545
my questions in a recent interview, the president said it was his	1611
grandfather who brought the concept of body warmers to Japanese	1675
consumers more than 100 years ago. Back then, in 1904, the company	1743
launched the first commercial kairo, using a form of coal made from hemp	1816
stems as a heating device. The coal, once lit, would be placed in a	1885

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portable tin case that people could tuck inside their kimono, allowing 1956
 them to feel its moderate heat for hours, he said. 2008

Warm tins were most often used by the elderly and the sick, but 2072
 they also helped soldiers withstand the cold during Japan's military 2141
 campaigns in China in the 1930s and 40s. After the war, he said, the 2211
 firm's business shifted in large part from soldiers to sportspeople, 2280
 as it started shipping hemp coal to Europe and the United States, where 2352
 golfers used the tins to warm their golf balls in order to make them 2421
 fly further. But with Japan's rapid economic growth through the early 2492
 1970s, natural hemp which had primarily been cultivated to extract fiber 2565
 became less popular and was replaced by synthetics. Then came the "iron 2638
 revolution." 2652

Most of the kairo currently sold in Japan use iron powder. 2712

Interestingly enough, as with many inventions, it came about through an 2784
 experiment that went wrong. Back in the mid-1970s, major confectionery 2856
 company was working with an outside contractor to develop a more 2921
 powerful oxygen absorber, using iron powder, to put in small sachets in 2993
 its bags of confections to stop them going stale. By accident, water 3063
 got mixed into the iron and, lo and behold, it got warm. So what 3129
 exactly happened? 3148

Put simplistically for the equationally challenged, it seems that 3214
 what this company scientists stumbled on that day more than 30 years ago 3287
 and what's still happening in millions of people's pockets and inside 3357
 their jackets and socks every cold winter day is the rusting of iron, 3427
 which takes place when it is mixed with oxygen in the air and water. 3497

This company quickly turned the mishap into a business opportunity. 3566
 In 1978, the company became the first in Japan to launch iron-filled, 3636
 portable heating pads. Today many companies market kairo that work 3704
 through the same chemical reaction. To the dismay of this company 3771

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engineers, the iron-powder kairo itself could not be patented because 3841
its chemical formula is considered too general, he said. 3899

Along the way, however, manufacturers have popped various other 3963
things into the pads and also carefully studied the combination of 4030
substances in them to make them heat up faster and last longer. So in 4101
addition to iron powder, many now have salt mixed in, which serves as a 4173
catalyst and speeds up the heating process. Many, too, now include 4241
what's called "activated carbon" an extremely porous processed coal that 4314
can absorb oxygen, while another common addition is bits of expanded 4383
vermiculite that are excellent at holding water. These materials are 4453
mixed in advance to allow the iron to rust gradually and consistently. 4525
Finally, in today's high-tech heat pads, all these ingredients are 4592
wrapped in nonwoven fabric with myriad invisible holes that permit the 4663
iron oxidization process to kick off the moment the outside plastic 4731
wrapping is opened and air gets in. 4768

One of the biggest drawbacks of these iron-fueled warmers, however, 4836
is that they cannot be recycled. And whether disposable kairo should be 4909
burned or buried along with other unburnable waste depends on each 4976
municipality. 4991

The president of the major kairo company said his company has 5053
tried for years to develop other materials to make kairo recyclable, 5122
but so far in vain. "However, we are now trying to make our products 5192
less damaging to the environment by making each pad lighter and more 5261
powerful with less material," he said. 5299