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https://www.100test.com/kao_ti2020/646/2021_2022_2010_E5_B9_B4_E8_81_8C_c91_646681.htm 第15篇 Obtaining Drinking Water

from Air Humidity Not a plant to be seen, the desert ground is too 1 . But the air contains water, and research scientists have found a 2 of obtaining drinking water from air humidity. The system is based completely on renewable energy and is therefore autonomous.

Cracks permeate the dried-out desert ground and the landscape bears testimony to the lack of water. But even here, where there are no lakes, rivers or groundwater, considerable quantities of water are stored in the air. In the Negev desert¹ in Israel², for example, annual average relative air humidity is 64 percent -- in every cubic meter of air there are 11,5 milliliters of water. [www. Examda.CoM](http://www.Examda.CoM) 考试就到

百考试题 German research scientists have found a way of converting this air humidity autonomously into drinkable water.

"The process we have developed is based exclusively on renewable energy sources such as thermal 3 collectors and photovoltaic cells, which makes this method completely energy-autonomous. It will therefore function in regions 4 there is no electrical infrastructure," says Siegfried Egner, head of the research team. The principle of the 5 is as follows³: hygroscopic brine ~ saline solution which absorbs moisture -- runs down a tower-shaped unit and absorbs water from the air. It is then sucked into a tank a few meters 6 the ground in which a vacuum prevails⁴. Energy from solar collectors heats up the brine, which is diluted by the water it has 7 . Because of the vacuum,

the boiling point of the liquid is 8 than it would be under normal atmospheric pressure. This effect is known from the mountains: as the atmospheric pressure 9 is lower than in the valley, water boils at temperatures 10 below 100°C. The evaporated, non-saline water is condensed and runs down through a completely filled tube in a controlled manner. The gravity of this water column continuously produces the vacuum and so a vacuum pump is not needed. The reconcentrated⁵ brine runs down the tower surface 11 to absorb moisture from the air. "The concept is suitable for various water 12 . Single-person units and plants 13 water to entire hotels are conceivable," says Egner. Prototypes have been built for both system components air moisture absorption and vacuum evaporation and the research scientists have already 14 their interplay on a laboratory scale. In a further step the researchers intend to develop a demonstration 15 .

词汇： autonomous adj.独立的 thermal adj.热的
 permeate v.遍布 photovoltaic adj.光电的 hygroscopic n.吸湿的
 infrastructure n.基础设施 brine n.盐水 interplay n.相互作用 saline
 adj.含盐的 注释： 1. Negev desert：内盖夫沙漠(位于以色列南部的沙漠地区，占以色列国土面积一半以上)。 2. Isreal：以色列
 3. as follows：如下 4. in which a vacuum prevails：水箱里是真空状态。 Which 指代的是前半句的 tank。 Prevail 意为“占上风”。 5. reconcentrated：重新浓缩的。

练习：答案与题解：
 1. A 第一段说的是，沙漠没有河流、湖泊等，所以缺水。但空气中含有水汽，可以从空气中吸取水。根据上下文的意思，dry 是答案。 2. B 前面的句子说，虽然沙漠缺水，但空气含有水汽，人们可以从其中吸湿制水。最后一句的意思显然是，

科学家已经找到从空气中吸湿制水的方法。在四个选项 route(路线), way(方法), channel(途径)和 road(道路)中, 只有 way 最合适。 3. D renewable energy(可再生能源)是解题的重要线索, oil/wood/coal 不是 renewable energy, 只有 solar energy 才是 renewable energy。 4. C 这套吸湿制水机靠太阳能驱动, 他可以自主独立工作, 适合于没有发电厂提供电能的地区使用。...there is no electrical infrastructure 是定语从句, 修饰地点名词 regions, 连接词应该选 where。 5. D 本句说明吸湿制水机的工作原理, promise(答应), progress(进展)或 prospect (前景)都与句意不符, 只有 process(工作过程, 方法)最合适。 6. C of the ground 和 with the ground 与句意接不上, below the ground 不合逻辑, 因为从空气中吸湿制水的设备不可能安装在地面之下。 Off the ground(离开地面), 置设备于离开地面若干公尺的空气之中就合理了。 7. A 同一段的前面句子中出现 absorbs moisture 和 absorbs water from the air, 这是吸湿制水机工作过程的第一阶段(第二阶段是用蒸馏法脱盐以获取淡水)。所以, absorbed 是合乎逻辑的选择。 8. D 本段第二句由 “ as the atmospheric pressure ... is lower than in the valley... ”, 这是解题的重要线索。此外, 根据科学常识, 大气压力降低, 水的沸点也随着降低。所以, lower 是答案。 9. B 根据上下文的意思, 可以判断出, 答案是 there, 因为这里的意思是 “ 那儿的大气压..... ”。 10. B 首先要知道四个选项英语单词的词义。 gradually(逐渐地)below 100 , necessarily below 100 (必须地)或 possibly(可能地) below 100 , 都不符合 “ 大气压力降低, 水的沸点也随着降低 ” 的原理。所以。只有选 distinctly 最合适。 11. A 从上下文判断, 只有 again 才是答案

。其余三个选项填入句子中都说不通。12. A 后面句子的 single-person(units)和 hotels 是吸湿制水机的用户，提示了本题的答案是 users. 13. C 本句的意思是：适合个人使用的吸湿制水机及可供整间酒店用水的吸湿制水厂是有望制造成功的。Supplying 是答案。吸湿制水机或吸湿制水厂本身不会“使用”(using)水。Obtaining(获得)后接 from，而本句用的是 to，所以不是答案。Cleaning 也不是答案，因为若吸湿制水机或吸湿制水厂为酒店清洁用水，cleaning 后要接 for，而不是 to。14. D 从上下文判断，再加上 on a laboratory scale 的提示，本题要选 tested。15. C 本题前面的句子谈到，科学家已经制成了吸湿制水机的原型并在实验室中进行了试验运行，下一步该做什么呢?demonstration 提供了线索，答案应该是(demonstration) facility(示范设备)。来源：www.examda.com
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