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https://www.100test.com/kao_ti2020/122/2021_2022__E8_8B_B1_E8_AF_AD_E5_9B_9B_E7_c83_122332.htm There are some earth phenomena you can count on, but the magnetic field, some say, is not one of them. It fluctuates in strength, drifts from its axis, and every few 100,000, years undergoes a dramatic polarity reversal a period when north pole becomes south pole and south pole becomes north pole. But how is the field generated, and why is it so unstable? Groundbreaking research by two French geophysicists promises to shed some light on the mystery. Using 80 metres of deep sea sediment (沉淀物) core, they have obtained measurements of magnetic-field intensity that span 11 polarity reversals and four million years. The analysis reveals that intensity appears to fluctuate with a clear, well-defined rhythm. Although the strength of the magnetic field varies irregularly during the short term, there seems to be an inevitable long-term decline preceding each polarity reversal. When the poles flip a process that takes several hundred thousand years the magnetic field rapidly regains its strength and the cycle is repeated. The results have caused a stir among geophysicists. The magnetic field is thought to originate from molten (熔化的) iron in the outer core, 3,000 kilometers beneath the earth's surface. By studying mineral grains found in material ranging from rocks to clay articles, previous researchers have already been able to identify reversals dating back 170 million years, including the most recent switch 730,000 years ago. How and why they occur, however, has

been widely debated. Several theories link polarity flips to external disasters such as meteor (隕星) impacts. But Peter Olson, a geophysicist at the Johns Hopkins University in Baltimore, says this is unlikely if the French researchers are right. In fact, Olson says intensity that predictably declines from one reversal to the next contradicts 90 percent of the models currently under study. If the results prove to be valid, geophysicists will have a new theory to guide them in their quest to understand the earth's inner physics. It certainly points the direction for future research.

1. Which of the following titles is most appropriate to the passage?
A. Polarity Reversal: A Fantastic Phenomenon of Nature
B. Measurement of the Earth's Magnetic-Field Intensity
C. Formation of the Two Poles of the Earth
D. A New Approach to the Study of Geophysics

2. The word "flip" (Line 6, Para. 2) most probably means " ____ ".
A. decline
B. intensify
C. fluctuate
D. reverse

3. What have the two French geophysicists discovered in their research?
A. Some regularity in the changes of the earth's magnetic field.
B. Some causes of the fluctuation of the earth's magnetic field.
C. The origin of the earth's magnetic field.
D. The frequency of polarity reversals.

4. The French geophysicists' study is different from currently prevailing theories in _____.
A. its identification of the origin of the earth's magnetic field
B. the way the earth's magnetic intensity is measured
C. its explanation of the shift in the earth's polarity
D. the way the earth's fluctuation rhythm is defined

5. In Peter Olson's opinion, the French experiment _____.
A. is likely to direct further research in the inner physics of the earth
B. has successfully solved the mystery of polarity

reversalsC.is certain to help predict external disastersD.has caused
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