

LEAP INTO ENGLISH

TOEFL PREPARATION COURSE

Read the following text, then answer the questions.

The Purpose of Sleep

There has been much scientific research and discussion of the purpose of sleep. Although most scientists agree that sleep is essential to maintaining a healthy state, not all researchers agree on why.

The development of the electroencephalograph has allowed scientists to measure electrical patterns of activity produced by the brain while it is asleep. By recording brain waves during sleep, it has been possible to develop a description of five different stages of sleep. Stage one is shallow sleep and marks the transition between being awake and being asleep. Stage two features two forms of brain waves known as spindles and K-complexes. Stages three and four are the deepest sleep, often referred to as slow-wave sleep. The fifth stage is known as REM (rapid eye movement) because it is accompanied by rapid, jerky eye movements.

There are several theories for why sleep is important. One theory suggests that periods of activity and inactivity were a part of evolutionary development and are a means of conserving energy. According to this theory, all species adapt to sleep during periods of time when they need energy the least, so that they can have more energy at times when they need to hunt, or when there is a chance of danger. It appears, for example, that animals that have few natural predators, such as bears and lions, often sleep between 12 to 15 hours each day. Animals that have many natural predators, however, sleep for only short periods, usually no more than four or five hours each day.

A second theory is that sleep is essential for maintaining the physiological processes that keep the body and mind healthy. It has been suggested that shallow sleep is important for restoring physiological functions, while REM sleep is essential in restoring mental functions. In support of this theory, it is clear that when we are deprived of sleep, or after **strenuous** physical activity, we tend to sleep longer the next night or spend longer in deep sleep.

A third theory suggests that sleep is necessary in order to process information that has been acquired during the day. There is some research to suggest that memories are transferred from short-term memory to long-term memory during sleep. During sleep, the brain forgets unimportant information, and makes room for new information. There is no doubt that lack of sleep can affect our cognitive function. A study of college students found that students performed better in exams after a good night's sleep.

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Directions: Answer the questions.

1. The word **strenuous** in paragraph 4 is closest in meaning to
 - ☐ lengthy.
 - ☐ tiring.
 - ☐ healthy.
 - ☐ important.
2. According to paragraph 3, some animals sleep very little because
 - ☐ they are afraid.
 - ☐ they are small.
 - ☐ they are not tired.
 - ☐ they need to hunt.
3. Why does the author mention college students in paragraph 5?
 - ☐ To differentiate between long- and short-term memory
 - ☐ To show how long-term memory affects exam performance
 - ☐ To provide an example of how lack of sleep affects the brain's function
 - ☐ To illustrate the purpose of sleep
4. Complete the table below to summarize the information about the different theories of sleep. Match the seven appropriate statements to the theory with which they are associated. This question is worth 4 points.

Type of theory	Statements
Evolutionary theory	☐ _____
	☐ _____
Biological repair theory	☐ _____
	☐ _____
Information processing theory	☐ _____
	☐ _____
	☐ _____
	☐ _____

1. Deep sleep is accompanied by eye movement.
2. It is not easy to remember things without sleep.
3. The brain decides what to remember.
4. There are five stages of sleep.
5. We need a minimum amount of sleep each day.
6. We sleep at times when it is safe.
7. The brain categorizes information.
8. Without sleep, we would become ill.
9. Without sleep, we would not have enough energy the next day.

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