

1. Vocabulary
2. Questions – 4
3. Analyse answers

Words for comprehension:



## Review

Last class?

### Part C:

- Question types
- Elimination: opposite, partial, against the knowledge/morals, etc.
- Simplifying the Question?

The internal body clock can fall out of sync or weaken as we grow older or due to a range of disorders, but it can also be disrupted as a result of lifestyle. One study has suggested that normal reproductive cycles can be disturbed by having irregular sleep patterns, for example using the weekend to catch up on a sleep debt accumulated during the working week. Whilst we are still somewhat in the dark and haven't yet fully understood the mechanisms behind it, it appears that unsettling a woman's circadian rhythms may impact reproductive hormone secretion. Changing sleep and wake times leads to mistiming when the body is expecting to sleep and be exposed to light. We already know that female shift-workers are more prone to irregular menstrual cycles, difficulties falling pregnant and miscarriages, and evidence is now pointing to circadian rhythms as the culprit. These cycles also regulate inflammation, which could explain the link discovered by irregular sleep patterns and menstrual pain.

17. In the third paragraph, the writer says that disruption to circadian rhythms may

- (A) make it harder for women to conceive.
- (B) cause the body to age prematurely.
- (C) lead to more frequent infections.
- (D) affect females more than males.

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17. In the third paragraph, the writer says that disruption to circadian rhythms may

- (A) make it harder for women to conceive.
- (B) cause the body to age prematurely. Not given
- (C) lead to more frequent infections. Not given
- (D) affect females more than males. No comparative

Can you tell me 2 easy eliminations? SHOULD BE TRUE  
Not given



Remove some words:

- Reference to the text ("In the third para...")
- articles: the, an, a
- prepositions (sometimes): in, on, and, behind
- Relative pronoun: who, where, which, etc.
- Primary auxiliary (only (not modal auxiliary))

Normal	Auxiliary
I have a car sat. run, walk, etc.	Primary auxiliary: be have do Modal auxiliary: Must, should, have to - obligation Might, could, can - possibility

I have bought a car She ~~is~~ not like swimming

## Text 2: Circadian rhythms

In this era of global travel, 24-hour shift patterns and insomnia-inducing gadgets, the awarding of the Nobel Prize for work on the mechanisms controlling circadian rhythms was entirely appropriate. Circadian rhythms are the internal clocks that living organisms use to track the day-night cycle and they are synchronised with solar time. All life on Earth has evolved on a planet that spins on its axis once every 24 hours and as different parts of its surface face the sun, bringing warmth and light, conditions can change dramatically. Virtually every living organism anticipates these fluctuations and adapts to optimise its behaviour and physiology. The existence of this internal clock was first discovered in 1729 when the French scientist Jean-Jaques d'Ortous de Mairan found that mimosa plants opened their leaves during the day and closed them again at night, even when kept in cold, dark conditions around the clock.

Because circadian rhythms control so many of our biological processes, they have profound implications for our understanding of disease and all-round well-being. Many metabolic pathways, including hunger, pain thresholds and productivity, peak and ebb in specific patterns and they are regulated by peripheral clocks and interactions with other organs. Circadian health has been linked to the risk of diabetes, cardiovascular disease and neuro-degeneration. It is also known that the timing of meals and drugs rounds can influence metabolism, meaning that the delivery of chemotherapy and blood-pressure drugs can be timed to achieve optimum effect at lower doses, minimising the risk of side effects.

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More recent research has raised the question of whether disturbances to the circadian rhythm could influence cancer survival rates. Breast cancer has a survival rate of up to 99% when detected in the early stages. However, if it is metastatic, meaning that it is spreading to other parts of the body, the rate plummets to just 26%. This points to an urgent need for a greater understanding of how it travels. The answer could lie in a circadian rhythm gene, known as *Arh2*. Ken Hunter from the National Cancer Institute, in Maryland USA, discovered that active variants of this gene appear to be associated with the advancement of cancer. He claims that this raises the possibility that disruption to our circadian rhythms might affect metastasis in cancer cells, therefore lowering chances of survival.

Many critically ill patients suffer from circadian dysrhythmia, a sleep disturbance that negatively impacts cellular and organ function, and this often exacerbates a condition. It is now looking increasingly likely that this vicious circle can be addressed using a cheap and effective remedy: light. Recent research by Klaus Martiny of the Psychiatric Centre in Copenhagen has shown that people being treated in hospital for severe depression were discharged almost twice as quickly if their rooms were south-west facing and therefore 17 to 20 times brighter. Although the precise mechanism is not known, it is believed to be connected to exposure to the morning light, which advances and stabilises their sleep-wake cycles.

15. What is suggested about circadian rhythms in the first paragraph?

- (A) People's lifestyles still tend to follow them.
- (B) An award has brought them to public attention.
- (C) They are particularly affected by global location.
- (D) Studying them has proved to be very worthwhile.

16. In the second paragraph, the writer explains that greater insight into circadian rhythms leads to

- (A) better management of public health.
- (B) cures being found for certain diseases.
- (C) medications being used more efficiently.
- (D) people being able to regulate their weight.

18. In the fourth paragraph, what point does the writer make about cancer?

- (A) The speed at which it moves in the body is determined by DNA.
- (B) Patients will be able to play a greater role in limiting its progression.
- (C) Fluctuating sleep patterns could lead to a higher risk of mortality.
- (D) It will soon be possible to predict its level of advancement.

- 15. D Studying them has proved to be very worthwhile.
- 16. C medications being used more efficiently.
- 17. A make it harder for women to conceive.
- 18. C Fluctuating sleep patterns could lead to a higher risk of mortality.