Reading Passage 3

You should spend about **20 minutes** on **Questions 27-40**, which are based on **Reading Passage 3.**

FAVORITE TIME FOR GIVING BIRTH

A. Does it ever seem like you're invited to an awful lot of summer birthday gatherings? For good reason. In the United States, most births occur between June and early November. Count back nine months, and you'll see that places most conceptions in the fall and winter. What's going on? Is the crisp autumn air, or the joy (or anxiety) of the holiday season, triggering more unprotected sexual intercourse? Or is it something else entirely?

B. It turns out reproduction is seasonal across all living organisms, from plants to insects, to reptiles, to birds and mammals – including human beings. The ultimate explanation for this phenomenon is an evolutionary one. Earth's environment is seasonal. Above or below the equator, the year is structured by the winter, spring, summer and fall. In equatorial regions, the wet and dry seasons punctuate the year. Organisms have evolved strategies to reproduce at the time of year that will maximize their lifetime reproductive success. Humans are no exception and maintain this evolutionary outcome: birth seasonality. Researchers, including us, have recently been working to understand more about why births are seasonal because these patterns can have a big impact on childhood disease outbreaks.

C. The monthly birth rate over time was per 1,000 people. Over the decades, it's not a smooth line because each year has an internal peak. The annual timing of each state's peak in number of births correlates with its latitude. More northern regions see a birth peak in June or July while more southern areas have more births in October or November. The pattern holds even as the overall birth rate varies in different states.

D. The first studies demonstrating human birth seasonality date back to the early 1800s. In some countries, local customs can also explain birth seasonality. For example, in the 1990s, researchers showed that the traditional July-August wedding season in Catholic communities in Poland resulted in lots of births in the spring. But wedding season does not drive birth seasonality everywhere, and there is only a small correlation between weddings and births 9 to 15 months later in most locations. Thus, nuptial beds are not the full story.

E. Research shows that the seasonality of births correlates with changes in local temperature and day length. And regions with extreme temperatures typically have two peaks in births every year. For example, data from the early 1900s showed two pronounced birth peaks per year in West Greenland and Eastern Europe. Rural populations tend to have a more dramatic seasonal birth pulse than urban populations, probably because country dwellers may be more subject to environmental conditions, including changes in temperature and day length. Environmental factors like these could influence human sexual behavior.

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F. Additionally, as in other animals, these environmental changes could drive seasonal changes in fertility. This means that, rather than just an increase in frequency of sexual intercourse, female and/or male fertility may change throughout the year, as an endogenous biological phenomenon, making people more likely to conceive at certain times – with the prerequisite of sexual intercourse, of course. Biologists know that the fertility of non-human mammals is influenced by day length, which may act like a reproductive calendar. For example, deer use the shortening days of autumn as a signal for timing reproduction. Females get pregnant in the fall and carry their pregnancy through winter. The goal is to give birth at a time when plenty of resources are available for newborns – being born in springtime is evolutionarily beneficial. Humans may not be so different from other mammals. Day-length has the potential to influence human fertility and it does seem to explain the patterns of birth seasonality in some places, but not others. In addition to the length of day, researchers have shown that social status and changes in the standard of living also affect birth seasonality. There seems to be no single driver for birth seasonality in people, with an array of social, environmental and cultural factors all playing a role.

H. However, people are starting to lose birth seasonality throughout the Northern Hemisphere. There are two pieces of evidence to support this. First, the strength of the birth pulse – from June to November in the U.S. – has been decreasing for decades; and second, locations that had two birth peaks per year now only have one. This loss of birth seasonality may be partially due to social factors, such as pregnancy planning and the increasing disconnect humans have with the natural environment and, therefore, the seasons. The root of this change is likely tied to industrialization and its downstream societal effects, including indoor work, fewer seasonal jobs, access to family planning, and modern housing and artificial light that obscures the natural day length that could influence fertility. Whatever the cause of birth seasonality, one thing remains clear, at least here in the U.S. – right now remains the prime time for conception.

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Questions 27-32

Reading Passage 3 has eight sections, **A-H.**

Which paragraph contains the following information?

Write the correct letter, **A-H**, in boxes **27-32** on your answer sheet.

27. A wise reaction of living species to increase their life span by giving birth at favorable times of year.

28. A denial against the role of traditional events in determining the birth time of a region.

29. An evolutionary strategy of being pregnant to the advantage of the baby animals.

30. Different extents of seasonal birth effects on residents in and outside the city.

31. A question if emotion during a certain time of year may lead to more birth given.

32. Differences in birth season based on different geographical locations.

Questions 33-36

Do the following statements agree with the information given in the **Reading Passage 3**?

In boxes **33-36** in your answer sheet, write

YES	If the statement agrees with the claims of the writer
NO	If the statement contradicts with the claims of the writer
NOT GIVEN	If it is impossible to say what the writer thinks about this

33. Apart from humans, most animals are not likely to know how to choose a good time to reproduce.

34. Some animals are noticed to give birth upon a reduction in the length of the day, especially in fall.

35. Changes in social status affect birth seasonality to the same degree as changes in living standard.

36. Human fertility is also negatively influenced by modern lifestyles and inventions devised in recent centuries.

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