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QUESTION 1

Coughs that linger after a cold or sinus problem cause constant disruption in the home, school, and workplace. Often, these dry, nonproductive coughs become increasingly troublesome although other symptoms ?fever, congestion, and fatigue ?resolved days or weeks ago. This stubborn cough persists for weeks, and plagues its victim and the victim's family night and day. The diagnosis might be a common, but overlooked cause of lingering cough: atypical pneumonia caused by mycoplasma. Mycoplasma ? pleomorphic bacteria that lack a cell wall ?are the smallest and simplest self-replicating organisms known to humans. They probably evolved from gram-positive, walled eubacteria by degenerative evolution. Smaller than amoebas, these 0.1-micrometer organisms grow and reproduce slowly and require no oxygen or host cell. They also change shapes asymmetrically, appearing as long, thin filaments, tiny spheres, or branches. Scientists have identified more than 100 mycoplasma species. Fifteen species are known to live in humans, most as normal symbiotic flora. Mycoplasma pneumoniae, previously called "walking pneumonia," is pathogenic in humans. Mycoplasma pneumoniae glides freely and uses its specialized filamentous tips to burrow between cilia within the respiratory epithelium, causing the respiratory epithelial cells to slough. It also produces hydrogen peroxide, which causes initial cell disruption in the respiratory tract and damages erythrocyte membranes. Researchers have determined that more than 40% of infants younger than 1 year old have had a mycoplasma infection. By age 5, approximately 65% of children have been infected. Nearly all adults have been infected at least once, often repeatedly. Mycoplasma pneumonia usually affects people younger than 40 years of age. The highest incidence is found in the 5- to 9-year age group. The risk of contracting mycoplasma pneumonia is greatest for people who live or work in crowded areas, such as daycare facilities, schools, homeless shelters, long-term care units, and military and prison environments. However, many people who develop mycoplasma infections have no identifiable risk factor. Most mycoplasma infections cause mild to moderate clinical symptoms, but the infection incubates over 3 weeks and can last weeks without treatment. This infection cannot be diagnosed based on symptoms alone; laboratory testing is essential. Infection can also cause ear infections, sinus infections, bronchitis, croup, severe sore throats, infectious asthma, and 1 type of the common cold. When mycoplasma infects children, about 25% of them develop nausea, vomiting, or diarrhea.

Within the context of the passage as a whole, paragraph 2 serves what purpose?

- A. Give a general description of mycoplasma.
- B. Provide specific details of mycoplasma and how it relates to the common cold.
- C. Describe the progression of "walking pneumonia" in humans.
- D. Define the characteristics of mycoplasma pneumoniae.

Correct Answer: A

Passage 2 primarily describes the physical characteristics of mycoplasma, its requirements for survival, and the number of species known to man. All of these serve as a general description of the bacteria.

QUESTION 2

PLASTICS

Plastics have long been considered one of the great conveniences of the modern era, but evidence is mounting to indicate that these conveniences have come at an incredible cost. The chief benefit of plastics is their durability, but this benefit turns out to be the same reason plastic has become a significant problem: It takes 200 to 400 years to decompose. All of this plastic has accumulated into a catastrophic mess and has also caused disease in humans.

Between Hawaii and Japan, a giant mass of plastic twice the size of Texas slowly swirls with the currents of the Pacific Ocean. This area has come to be known as the Great Pacific Garbage Patch, and its effects on the ecology of the ocean are unimaginable. According to United Nations researchers, a hundred thousand sea mammals and a million

seabirds die each year. They are found with cigarette lighters, syringes, and other plastics that they mistake for food in their stomachs.

Evidence also indicates that the plastic receptacles that people store their food in poses health risks. For instance, phthalates have been shown to have detrimental effects on the reproductive system, yet they are found in many plastic products including baby bottles and water bottles. They have also been linked to various forms of cancer. Additionally, a chemical called bisphenol A that is found in many plastics can mimic the effects of the hormone estrogen, which can also affect the reproductive system.

As used in this passage, the word "mimic" most nearly means:

- A. Intensify
- B. Reduce
- C. Cancerous
- D. Resemble

Correct Answer: D

QUESTION 3

What is the product of 0.34×0.06 ?

- A. 0.0204
- B. 2.04
- C. 0.204
- D. 20.4

Correct Answer: A

The product of 0.34 and 0.06 is 0.0204. Remember to count the number of places to the right of the decimal.

QUESTION 4

For most Americans, the words "Alzheimer's disease" (AD) are often mispronounced purposefully or accidentally as "old timers' disease" and signify devastating memory loss and stigma. The information about AD is often learned solely through the media and may lead individuals to believe that AD is inevitable (it isn't), and possibly think that all AD patients receive poor care (there are many remarkably good AD units). Many individuals may envision a future burdened with more dementia patients and fewer societal resources to help support them (a real possibility). In general, pharmacists are well aware of what AD is and isn't. AD is complex and relentlessly progressive; it affects patients, loved ones, and caregivers adversely. Pharmacists can provide pertinent information about AD's myths, realities, and available symptomatic treatments. AD's harbinger is language difficulties, which include aphasia (language disturbance), apraxia (inability to carry out motor functions), and agnosia (failure to recognize or identify objects). Consequently, those with AD will often create new words for items. They may call a pencil a "list writer," or a key a "door turner." Clinicians stage AD as mild, moderate, or severe depending on the patient's cognitive and memory impairment, communication problems, personality changes, behavior, and loss of control of bodily functions. People often dismiss mild AD as normal cognitive decline or senility—in other words, "normal" aging. For this reason, most people don't seek treatment and are diagnosed in the late-mild to early-moderate stage. In the severe stage, difficulty swallowing elevates the risk of

aspiration pneumonia, which often marks the beginning of the downward spiral that ultimately ends with death; AD has no cure. A handful of pharmacologic treatments ?acetylcholinesterase inhibitors and N-methyl-D-aspartate antagonists ?alter the decline trajectory. These treatments slow disease progression, enhance cognitive function, delay cognitive decline, and decrease disruptive behaviors. Not all patients respond to these medications, but experts generally believe that those who do will show mild to moderate improvements for 6 months to a year. Although the drugs\' effects are short-lived, they improve patients\' quality of life and briefly enable independence. Determining when medications stop providing a therapeutic benefit and should be discontinued is challenging. Clinicians use various methods to monitor decline, including mental status tools, patient self-report, and loved ones\' observations. Most clinicians continue drug treatment if the patient seems to tolerate the medication well, can afford it, and if there seems to be a benefit. With disease progression, specific behavioral symptoms including depression, agitation, hallucinations, and sleep disturbances become concerns. Antianxiety drugs, antipsychotics, and antidepressants are sometimes used to alleviate symptoms, but effective behavioral strategies are much preferred.

The tone of the passage could best be described as?

- A. erudite
- B. gloomy
- C. intimate
- D. didactic

Correct Answer: D

Throughout the passage, the author attempts to eliminate misconceptions and myths about Alzheimer\'s disease while elucidating factual details about it. The author covers the public\'s views of the disease as well as its progression and the difficulties faced by those impacted by the disease. The passage as a whole is very instructive.

QUESTION 5

Which of the following fractions is halfway between $\frac{2}{5}$ and $\frac{4}{9}$?

- A. $\frac{2}{3}$
- B. $\frac{2}{20}$
- C. $\frac{17}{40}$
- D. $\frac{19}{45}$

Correct Answer: D

Find the common denominator for the two fractions so that you can compare them. You can use the common denominator of 45, as follows: $\frac{2}{5} = \frac{18}{45}$ $\frac{4}{9} = \frac{20}{45}$

Look at the numerators: 18 and 20. The number halfway between them is 19, so the answer is $\frac{19}{45}$