A. While it may not be possible to completely age-proof our brains, a brave new world of anti-aging research shows that our gray matter may be far more flexible than we thought. So no one, no matter how old, has to lose their mind. The brain has often been called the three-pound universe. It's our most powerful and mysterious organ, the seat of the self, laced with as many billions of neurons as the galaxy has stars. No wonder the mere notion of an aging, failing brain—and the prospect of memory loss, confusion, and the unraveling of our personality—is so terrifying. As Mark Williams, M.D., author of The American Geriatrics Society's Complete Guide to Aging and Health, says, "The fear of dementia is stronger than the fear of death itself." Yet the degeneration of the brain is far from inevitable. " Its design features are such that it should continue to function for a lifetime," says Zaven Khachaturian, Ph.D., director of the Alzheimer1s Association1s Ronald and Nancy Reagan Research Institute. "There's no reason to expect it to deteriorate with age, even though many of us are living longer lives." In fact, scientists ' view of the brain1s potential is rapidly changing, according to Stanford University neuroscientist Robert Sapolsky, Ph.D.

"Thirty-five years ago we thought Alzheimer1 s disease was a dramatic version of normal aging. Now we realize it1s a disease with a distinct pathology. In fact, some people simply don't experience any mental decline, so we've begun to study them." Antonio Damasio, M.D., Ph.D., head of the Department of Neurology at the University of Iowa and author of Descartes' Error, concurs. "Older people can continue to have extremely rich and healthy mental lives.'

B. The seniors were tested in 1988 and again in 1991. Four factors were found to be related to their mental fitness: levels of education and physical activity, lung function, and feelings of self-efficacy "Each of these elements alters the way our

brain functions,“ says Marilyn Albert, Ph.D. , of Harvard Medical School, and colleagues from Yale, Duke, and Brandeis Universities and the Mt. Sinai School of Medicine, who hypothesizes that regular exercise may actually stimulate blood flow to the brain and nerve growth, both of which create more densely branched neurons, rendering the neurons stronger and better able to resist disease. Moderate aerobic exercise, including long brisk walks and frequently climbing stairs, will accomplish this.

C. Education also seems to enhance brain function. People who have challenged themselves with at least a college education may actually stimulate the neurons in their brains. Moreover, native intelligence may protect our brains. It’s possible that smart people begin life with a greater number of neurons, and therefore have a greater reserve to fall back on if some begin to fail. “If you have a lot of neurons and keep them busy, you may be able to tolerate more damage to your brain before it shows,” says Peter Davies, M.D., of the Albert Einstein College of Medicine in the Bronx, New York. Early linguistic ability also seems to help our brains later in life. A recent study in the New England Journal of Medicine looked at 93 elderly nuns and examined the autobiographies they had written 60 years earlier, just as they were joining a convent. The nuns whose essays were complex and dense with ideas remained sharp into their eighties and nineties.

D. Finally, personality seems to play an important role in protecting our mental prowess. A sense of self-efficacy may protect our brain, buffeting it from the harmful effects of stress. According to Albert, there’ s evidence that elevated levels of stress hormones may harm brain cells and cause the hippocampus—a small seahorse-shaped organ that1s a crucial moderator of memory—to atrophy. A sense that we can effectively chart our own course in the world may retard the

release of stress hormones and protect us as we age. “It’ s not a matter of whether you experience stress or not, ” Albert concludes, “it’s your attitude toward it. ” Reducing stress by meditating on a regular basis may buffer the brain as well. It also increases the activity of the brain’ s pineal gland, the source of the antioxidant hormone melatonin, which regulates sleep and may retard the aging process. Studies at the University of Massachusetts Medical Center and the University of Western Ontario found that people who meditated regularly had higher levels of melatonin than those who took 5-milligram supplements Another study, conducted jointly by Maharishi International University, Harvard University, and the University of Maryland, found that seniors who meditated for three months experienced dramatic improvements in their psychological well-being, compared to their non-meditative peers.

E. Animal studies confirm that both mental and physical activity boost brain fitness. At the Beckman Institute for Advanced Science and Technology in Urbana, Illinois， psychologist William Greenough, Ph. D., let some rats play with a profusion of toys. These rodents developed about 25 percent more connections between their neurons than did rats that didn’t get any mentally stimulating recreation. In addition, rats that exercised on a treadmill developed more capillaries in specific parts of their brains than did their sedentary counterparts. This increased the blood flow to their brains. “Clearly the message is to do as many different flyings as possible,” Greenough says.

F. It’s not just scientists who are catching the anti-aging fever. Walk into any health food store, and you111 find nutritional formulas —with names like Brainstorm and Smart ALEC—that claim to sharpen mental ability. The book Smart Drugs & Nutrients, by Ward Dean, M.D., and John Morgenthaler, was

self-published in 1990 and has sold over 120,000 copies worldwide. It has also spawned an underground network of people tweaking their own brain chemistry with nutrients and drugs—the latter sometimes obtained from Europe and Mexico. Sales of ginkgo —an extract from the leaves of the 200-million-year-old ginkgo tree, which has been shown in published studies to increase oxygen in the brain and ameliorate symptoms of Alzheimer‘ s disease—are up by 22 percent in the last six months alone, according to Paddy Spence, president of SPINS, a San Francisco-based market research firm. Indeed, products that increase and preserve mental performance are a small but emerging segment of the supplements industry, says Linda Gilbert, president of Health Focus, a company that researches consumer health trends. While neuroscientists like Khachaturian liken the use of these products to the superstition of tossing salt over your shoulder, the public is nevertheless gobbling up nutrients that promise cognitive enhancement.

Questions 28-31

Choose the Four correct letters among A-G.

Write your answers in boxes 28-31 on your answer sheet.

Which of the FOUR situations or conditions assisting the Brains’ function?

A. Preventive treatment against Alzheimer’s disease

B. Doing active aerobic exercise and frequently climbing stairs

C. High levels of education

D. Early verbal or language competence training

E. Having more supplements such as ginkgo tree

F. Participate in more physical activity involving in stimulating tasks

G. Personality and feelings of self-fulfillment

Questions 32-39

Use the information in the passage to match the people (listed A-G) with opinions or deeds below.

Write the appropriate letters A-G in boxes 32-39 on your answer sheet.

NB you may use any latter more than once

A. Zaven Khachaturian

B. William Greenough

C. Marilyn Albert

D. Robert Sapolsky

E. Linda Gilbert

F. Peter Davies

G. Paddy Spence

32. Alzheimer's was probably a kind of disease rather than a normal aging process.

33. Keeping neurons busy, people may be able to endure more harm to your brain

34. Regular exercises boost blood flow to the brain and increase anti-disease disability.

35. Significant increase of Sales of ginkgo has been shown.

36. More links between their neurons are found among stimulated animals.

37. Effectiveness of the use of brains supplements products can be of little scientific proof.

38. Heightened levels of stress may damage brain cells and cause part of brain to deteriorate.

39. Products that upgrade and preserve mental competence are still a newly developing industry.

Questions 40

Choose the correct letters among A-D.

Write your answers in box 40 on your answer sheet.

According to the passage, what is the most appropriate title for this passage?

A. Making our minds last a lifetime

B. amazing pills of the ginkgo

C. how to stay healthy in your old hood

D. more able a brain and neurons