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استفاده از ماشین حساب مجاز نمی باشد.

PART A: Vocabulary

Directions: Choose the word or phrase (1), (2), (3), or (4) that best completes each sentence. Then mark the correct choice on your answer sheet.

- 1- When the meeting was over, the audience -----.
1) denoted 2) deformed 3) dispersed 4) delineated
- 2- Many countries ----- the killing of innocent people.
1) granted 2) deplored 3) detained 4) grounded
- 3- The regulations ----- that everything has to be based on safety standards.
1) rejoin 2) specify 3) perceive 4) materialize
- 4- UN officials ----- between the rebel fighters and government.
1) mediated 2) debated 3) persuaded 4) negotiated
- 5- We have the computer at our ----- for the whole month.
1) vacancy 2) disposal 3) treatment 4) maintenance
- 6- The ----- of the economic crisis was that many factories were closed down.
1) upshot 2) erosion 3) misconduct 4) circumstance
- 7- Many refugees crossed the ----- between Iraq and Turkey.
1) scratch 2) frontier 3) drawback 4) threshold
- 8- All the cars are tested for possible ----- before they leave the factory.
1) defects 2) factions 3) ingredients 4) diversities
- 9- Providing good service is ----- to a successful business.
1) exposed 2) intense 3) intrinsic 4) credulous
- 10- The old idea that language learning is not a matter of repetition is no longer -----.
1) proficient 2) analogous 3) constant 4) tenable

PART B: Cloze Test

Directions: Read the following passage and decide which choice (1), (2), (3), or (4) best fits each space. Then mark the correct choice on your answer sheet.

Ecology is the study of the relationship of plants and animals to their environment, and to one another. The word *ecology* (11) ----- the Greek word *oikos*, meaning house or place to live, and from the word *logos*, meaning science or study. The word was first promulgated by the German naturalist Ernst Haeckel in 1869 and used by Charles Darwin (12) -----, but it was in limited use even earlier as evidenced by the writings of the American naturalist and poet Henry David Thoreau.

Man pollutes the air he breathes and the water he drinks. His concern with the problem of pollution may be purely an environmental issue (13) ----- an ecological issue in that he wants clean, noncorrosive air and water and is concerned mainly with the quality of the physical environment. (14) ----- the focus of his concern becomes the plants and animals that are contaminated, then the issue (15) ----- he is dealing is ecological. Some of our current problems are primarily environmental, but the majority and by far the most complex of our problems are of an ecological nature.

- 11- 1) derives of 2) is derived of 3) is derived from 4) deriving from
- 12- 1) shortly late 2) short lately 3) short afterward 4) shortly thereafter
- 13- 1) rather 2) than it is 3) rather than 4) rather there is
- 14- 1) Although 2) If, however, 3) By contrast, 4) Nevertheless,
- 15- 1) in that 2) for which 3) from that 4) with which

PART C: Reading Comprehension

Directions: Read the following three passages and answer the questions by choosing the best choice (1), (2), (3), or (4). Then mark the correct choice on your answer sheet.

Passage 1:

If a supernova (the explosion of a massive star) triggered star formation from dense clouds of gas and dust, and if the most massive star to be formed from the cloud evolved into a supernova and triggered a new round of star formation, and so on, then a chain of star-forming regions would result. If many such chains were created in a differentially rotating galaxy, the distribution of stars would resemble the observed distribution in a spiral galaxy.

This line of reasoning underlies an exciting new theory of spiral-galaxy structure. A computer simulation based on this theory has reproduced the appearance of many spiral galaxies without assuming an underlying density wave, the hallmark of the most widely accepted theory of the large-scale structure of spiral galaxies. That theory maintains that a density wave of spiral form sweeps through the central plane of a galaxy, compressing clouds of gas and dust, which collapse into stars that form a spiral pattern.

- 16- **The primary purpose of the passage is to -----.**
- 1) describe what results when a supernova triggers the creation of chains of star-forming regions
 - 2) propose a modification in the most widely accepted theory of spiral-galaxy structure
 - 3) describe a new theory of spiral-galaxy structure and contrast it with the most widely accepted theory
 - 4) compare and contrast the roles of clouds of gas and dust in two theories of spiral-galaxy structure.
- 17- **The passage implies that, according to the new theory of spiral-galaxy structure, a spiral galaxy can be created by supernovas when the supernovas are -----.**
- 1) distributed in a spiral pattern
 - 2) affected by a density wave of spiral form
 - 3) located in the central plane of a galaxy
 - 4) located in a differentially rotating galaxy
- 18- **Which of the following, if true, would most discredit the new theory as described in the passage?**
- 1) The most massive stars formed from supernova explosions are unlikely to evolve into supernovas
 - 2) Chains of star-forming regions like those postulated in the new theory have been observed in the vicinity of dense clouds of gas and dust.
 - 3) Computer simulations of supernovas provide a poor picture of what occurs just before a supernova explosion.
 - 4) A density wave cannot compress clouds of gas and dust to a density high enough to create a star.
- 19- **The word "hallmark" in paragraph 2 is closest in meaning to -----.**
- 1) proof
 - 2) introduction
 - 3) amazing flaw
 - 4) distinguishing feature

Passage 2:

The prospect of producing black holes on Earth may strike some as folly. How do we know that they would safely decay, as Hawking predicted, instead of continuing to grow, eventually consuming the entire planet? At first glance, this seems like a serious concern, especially given that some details of Hawking's original argument may be incorrect—specifically the claim that information is destroyed in black holes. But it turns out that general quantum reasoning implies that microscopic black holes cannot be stable and therefore are safe. Concentrations of mass energy, such as elementary particles, are stable only if a conservation law forbids their decay; examples include the conservation of electric charge and of baryon number (which, unless it is somehow violated, assures the stability of protons). There is no such conservation law to stabilize a small black hole. In quantum theory, anything not expressly forbidden is compulsory, so small black holes will rapidly decay, in accord with the second law of thermodynamics.

Indeed, an empirical argument corroborates that black hole factories would pose no danger. High-energy collisions such as those at the LHC have already taken place—for example, in the early universe and even now, when sufficiently high energy cosmic rays hit our atmosphere. So if collisions at LHC energies can make black holes, nature has already been harmlessly producing them right over our heads. Early estimates by Giddings and Thomas indicated that the highest-energy cosmic rays—protons or heavier atomic nuclei with energies of up to 109 TeV—could produce as many as 100 black holes in the atmosphere a year.

20- What does the passage mainly discuss?

- 1) Why black holes are harmless
- 2) Creating black holes on Earth
- 3) The threat black holes pose to our planet
- 4) How black holes might consume the whole earth

21- What does the author mean by "this" in line 3?

- 1) The fact that black holes would decay
- 2) The Earth being consumed by black hole produced on it
- 3) The prospect of producing black holes on Earth as being folly
- 4) Mistakes likely to occur in the process of creating black holes on Earth

22- The author states that the claim to the effect that information is destroyed in black holes is -----.

- 1) likely to erroneous
- 2) a matter of concern
- 3) in need of more evidence for verification
- 4) now as original as it was first initiated by Hawking

23- According paragraph 1, black holes can be predicted to be safe if -----.

- 1) there are concentrations of mass energy
- 2) Hawking's original argument is incorrect
- 3) they are not subject to change once produced
- 4) general quantum reasoning is valid

24- Concentrations of mass energy are not decayed if -----.

- 1) some conservation law concerning it does exist
- 2) examples such as the conservation of electric charge and of baryon number can be found
- 3) no conservation law can account for it
- 4) concentrations of mass energy, such as elementary particles, can be observed in the universe

25- The information in paragraph 2 ----- the main point in paragraph 1?

- 1) rejects
- 2) casts doubts on
- 3) modifies
- 4) supports

- 26- All of the following are true about black holes, as they are explained in paragraph 2, EXCEPT that they -----.
- 1) are impossible to occur in the universe nowadays
 - 2) can be created due to collision at LHC energies
 - 3) are not hazardous if produced under factory-like circumstances
 - 4) form any where but in the Earth's atmosphere

Passage 3:

Some things never change. Physicists call them the constants of nature. Such quantities as the velocity of light, c , Newton's constant of gravitation, G , and the mass of the electron, m_e are assumed to be the same at all places and times in the universe. They form the scaffolding around which the theories of physics are erected, and they define the fabric of our universe. Physics has progressed by making ever more accurate measurements of their values.

And yet, remarkably, no one has ever successfully predicted or explained any of the constants. Physicists have no idea why they take the special numerical values that they do. In SI units, c is 299,792,458; G is 6.673×10^{-11} ; and m_e is $9.10938188 \times 10^{-31}$; —numbers that follow no discernible pattern. The only thread running through the values is that if many of them were even slightly different, complex atomic structures such as living beings would not be possible. The desire to explain the constants has been one of the driving forces behind efforts to develop a complete unified description of nature, or "theory of everything."

Physicists have hoped that such a theory would show that each of the constants of nature could have only one logically possible value. It would reveal an underlying order to the seeming arbitrariness of nature.

- 27- What does the first paragraph mainly discuss?
- 1) The progress in the field of physics
 - 2) The way to measure the constants of nature
 - 3) The significance of the constants of nature
 - 4) Physicists' definition of the structure of the universe
- 28- The first line in paragraph 2 -----.
- 1) provides evidence in favor of an earlier stated hypothesis
 - 2) is an expression of surprise
 - 3) is an attempt to depict our rudimentary knowledge of physics
 - 4) questions the function of "constants" as the scaffolding around which the theories of physics are erected
- 29- According to Paragraph 2, human beings would not come into existence if -----.
- 1) complex atomic structures did not evolve
 - 2) the c , G and m_e values were a bit different
 - 3) the constants had no numerical values
 - 4) many of the values mentioned were similar
- 30- The word "arbitrariness" in line 15 is closest in meaning to -----.
- 1) vastness
 - 2) complexity
 - 3) wastefulness
 - 4) randomness

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