دستورزبان:

PART A. Structure

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

106- A sustainable land use and transport system does not endanger the opportunities of future generations to reach at least the same welfare level as ..... now.

1) those living
2) lived by those
3) the one people do
4) that of those are living

107- The study showed that in stimulating situations (such as an encounter with an unfamiliar monkey), firstborn infant monkeys produce up to twice ..... do their younger siblings.

1) much more than the hormone cortisol
2) more than the hormone cortisol that
3) as much of the hormone cortisol as
4) as much as the hormone cortisol

108- Expert navigation and advanced boat-building technology were not enough for humans to finally colonize the world's remotest islands— ..... .

1) with wind patterns shifting which played a part also
2) shifting wind patterns also played a part
3) that shifted wind patterns and played a part also
4) also playing a part in shifting the patterns of the wind

109- Last month, Yi-Yun Liu and his colleagues discovered a gene for resistance to colistin, the most common polymyxin, ... in livestock, meat and humans.

1) is found in microbes
2) which they found it in microbes of
3) microbes they have found
4) in microbes found

110- We use assessment for different reasons, in a variety of contexts and with multiple stakeholders. This ranges from supporting the learning of an individual pupil in the classroom ..... national standards against international performance.

1) to monitor
2) and monitor
3) to monitoring
4) and monitored

111- Regardless of your creative talents, ..., you will not be able to create many innovations if you are not functioning in a favorable situation.

1) however great your knowledge or skill
2) your great knowledge or skill, however,
3) however, your knowledge or skill is great
4) or your knowledge or skill, however, is great

112- Many organisms survive environmental stresses such as heat, cold and desiccation not by rapid rates of mitosis, but by producing specialized cells ..... in a dormant state in hostile environments.

1) and by designing and persisting
2) to design and persist
3) designed to persist
4) they design and persist

113- The refrigerant leaves the compressor as a hot, dense vapor and flows through a heat exchanger called the condenser, ...

1) thereby heat from the refrigerant and a body of air to be transferred
2) and a body of air through which is transferred the refrigerant
3) that heat from the refrigerant is transferred to a body of air
4) which transfers heat from the refrigerant to a body of air

114- We have found that, among many strains of rats, liver transplants are never rejected, ... a state of donor-specific unresponsiveness.

1) and that they even induce
2) and even induces
3) it itself induces even
4) and even induced

115- There can be great trash, ... there is bad high art.

1) similarly
2) in the same way
3) just as
4) likewise

116- It is possible to analyze a literary work to death, dissecting what should be a living experience ..... it were a laboratory specimen.

1) that is
2) as if
3) so that
4) no matter

117- The author is making highly negative comments, ones that go beyond being casually dismissive (indifferent or disapproving) to ..... .

1) be bluntly contemptuous (scornful)
2) and bluntly contemptuous (scornful) are
3) being bluntly contemptuous (scornful)
4) his bluntly contemptuous (scornful) ones

118- In Norway, ... , smoking is at least as prevalent among teenagers as it is in countries that do not ban such advertising.

1) tobacco advertizing was banned in 1975
2) tobacco advertizing having banned in 1975
3) from 1975 onwards advertizing of tobacco has been banned
4) where there has been a ban on tobacco advertizing since 1975

119- To explain this unfinished revolution in the status of women, historians have recently begun to emphasize the way ..... the kinds of work allocated to women.

1) a definition that prevails over femininity and often determining
2) a prevailing definition of femininity often determines
3) it prevails over and determines femininity of
4) to determine femininity prevailed over

120- In fact, privatization has not only rescued individual industries and a whole economy headed for disaster, ... the level of performance in every area.

1) but has also raised
2) it has also raised
3) also raising
4) but also has it raised

PART B. Written Expression

Direction: Each sentence contains either a single error or no error at all. No sentence contains more than one error. The error, if there is one, is underlined and numbered (1), (2), and (3). If the sentence contains an error, select the one underlined part that must be changed to make the sentence correct. If the sentence is correct, select (4), the NO ERROR part. Then mark the correct choice on your answer sheet.

121- The ideal way for a government to protect employee interests is to force companies to maintain their share of a competitive market without government subsidies. NO ERROR

122- Advances in top-down nanofabrication techniques, such as electron- beam lithography (used extensively by my own research group), yields almost atomic-scale precision. NO ERROR

123- Many insomniacs feel they lack sufficient sleep, but evidence is mounting that they are getting at least as much as they require and possibly more. NO ERROR

124- Nutritionists do not suggest to eat more protein, because many sources of protein (red meat, for example) are also heavy in saturated fat. NO ERROR

125- Eating healthy food was extremely important to people of earlier eras, perhaps even more so as it is today. NO ERROR

126- Before we talk about how the Venus flytrap (Dionaea muscipula) digests its prey, it is important that everyone knows why it does so. NO ERROR

127- The theory of multiple intelligences (or MI theory, as it has come to be called) makes two strong claims, the first one of which is that all humans possess all these intelligences. NO ERROR

128- A Kcalorie (1) is the amount of energy needed (2) to raise the temperature of one kilogram of water for (3) 1 degree Celsius. NO ERROR (4)

129- Chemicals from the jellybean, called odorants, inhaled (1) through the mouth and exhaled through the nose, where (2) they interact with special receptor cells (3) that transmit information about smell. NO ERROR (4)

130- As improved health care (1), sanitation and nutrition became more available, we began to do (2) dramatic strides in thwarting (3) the forces that had traditionally shortened human existence. NO ERROR (4)

واژگان:

PART C. Vocabulary

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

131- Due to factors including population growth, economic development, urbanization and industrialization, global energy consumption is …….. to increase by around half from 2010 to 2035, reaching some 226 billion MWh.
1) intervened 2) projected
3) aggregated 4) propelled

132- Although the children continuously …….. him to make him agree to their small wishes, he remained quite calm and unperturbed.
1) implored 2) acceded to
3) badgered 4) alluded to

133- The …….. old man shouted at all the children playing near his garden and shooed them away.
1) bilious 2) extroverted
3) conventional 4) humdrum

134- He researched the topic so comprehensively that he left no part of it …….. .
1) impartial 2) feasible
3) dislocated 4) unexamined

135- There was a minor …….. in the report he submitted to me on the performance of the company, but I let it pass because the overall presentation of the report was excellent.
1) discrepancy 2) subversion
3) incompetence 4) candor

136- Man is …….. between a basic need for gregariousness—to coexist peaceably with his neighbors — and a pronounced tendency toward greediness.
1) set 2) torn
3) taken 4) fulfilled

137- As a result of ..... without proper nourishment, the land has now lost its fertility.
1) irrigation 2) intensification
3) affectation 4) exploitation

138- After marching for four hours in temperatures ..... ninety degrees, the band members were as soaked as if they had been marching through a rainstorm.
1) indicating 2) towering over
3) exceeding 4) impinging on

139- Classroom instruction would be most effective if the curriculum and computer lab exercises are ..... coordinated.
1) judiciously 2) controversially
3) bilaterally 4) divisively

140- He must be quite a ..... to make such negative statements about the future of mankind—he says that in the next thousand years, humans will become cannibals.
1) savant 2) pushover
3) misanthrope 4) psychic

141- Economists have sought to ..... in a scheme of philosophy the most worldly of man's activities: his drive for wealth.
1) repudiate 2) embrace
3) dilute 4) censure

142- The author had a very ..... style of writing in the first book he had written three years ago, but in his latest book released this month, he has remarkably altered his style by being pithy and direct.
1) aesthetic 2) eloquent
3) shadowy 4) prolix

143- For thousands of years, money, whether paper or coins, was a/an ..... object that people could keep in their pockets or purses or safely tucked under their mattresses.
1) affluent 2) grandiose
3) fictional 4) tangible

144- Having worked hard for two months, he then preferred to spend a weekend of ..... in a faraway place.
1) gratification 2) inspiration
3) solitude 4) equilibrium

145- As Ted was a very assiduous student at college, his classmates were surprised to learn that his friends at work found him rather ..... .
1) indolent 2) sympathetic
3) grumpy 4) capricious

146- With the pace of life in Indian metros getting faster by the day, many of the old Indian traditions have fallen into ..... and are no longer practiced.
1) ambivalence 2) abeyance
3) abasement 4) aberration

147- In 385 the Spartans seized a pretext to besiege and dismantle Mantineia and to ..... its inhabitants among four villages.
1) scatter 2) deter
3) abandon 4) coerce

148- The subject of the talk between the managers was announced a week in ..... .
1) retrospect 2) inspection
3) array 4) advance

149- A celebrated philosophy professor felt it was cruel to ..... any human being from human society, because they are social beings.
1) seclude 2) imprison
3) diminish 4) condemn

150- John knew that he had to exercise more and more to counter the harm of his ..... lifestyle.
1) apathetic 2) hesitant
3) sedentary 4) placid

151- After the rather malicious article about her, the actress has taken the extreme step of suing the magazine for ..... .
1) prejudice 2) slander
3) rhetoric 4) calamity

152- The terrible accident is said to have been caused by the ..... truck driver.
1) earnest 2) reckless
3) regrettable 4) rigid

153- Being extremely jealous by nature, Sue tried her best to ..... the achievement of her younger sister in front of their parents.
1) constrain 2) shield
3) detest 4) belittle

154- Rather than adopting a conciliatory attitude, Rosemary met her critic's ..... with some angry words of her own.
1) fluctuation 2) flexibility
3) hostility 4) dismay

155- Exhausted in the battle which had now continued for over three months, the ..... soldiers went on fighting dauntlessly till the two nations decided to call a truce.
1) valiant 2) simplistic
3) inadvertent 4) sluggish

درک مطلب:

PART D. Reading Comprehension

Direction: Read the following two passages and select the choice (1), (2), (3), or (4) that best answers each question. Then mark the correct choice on your answer sheet.

Passage 1:

Another planet in the solar system is Jupiter, which is the fifth planet from the Sun. It is a giant planet with a mass one-thousandth that of the Sun, but two and a half times that of all the other planets in the Solar System combined. Jupiter is a gas giant, along with Saturn. (Uranus and Neptune are ice giants.) Jupiter was known to astronomers of ancient times. When viewed from Earth, Jupiter can reach an apparent magnitude of −2.94, bright enough for its reflected light to cast shadows, and making it on average the third-brightest object in the night sky after the Moon and Venus.

Jupiter is primarily composed of hydrogen with a quarter of its mass being helium, though helium comprises only about a tenth of the number of molecules. It may also have a rocky core of heavier elements, but like the other giant planets, Jupiter lacks a well-defined solid surface. Because of its rapid rotation, the planet's shape is that of an oblate spheroid (it has a slight but noticeable bulge around the equator). The outer atmosphere is visibly segregated into several bands at different latitudes, resulting in turbulence and storms along their interacting boundaries. A prominent result is the Great Red Spot, a giant storm that is known to have existed since at least the 17th century when it was first seen by telescope. Surrounding Jupiter is a faint planetary ring system and a powerful magnetosphere. Jupiter has at least 67 moons, including the four large Galilean moons discovered by Galileo Galilei in 1610. Ganymede, the largest of these, has a diameter greater than that of the planet Mercury.

Jupiter has been explored on several occasions by robotic spacecraft, most notably during the early *Pioneer* and *Voyager* flyby missions and later by the *Galileo* orbiter. Jupiter was most recently visited by a probe in late February 2007, when *New Horizons* used Jupiter's gravity to increase its speed and bend its trajectory en route to Pluto. The next probe to visit the planet will be *Juno*, which is expected to arrive in July 2016. Future targets for exploration in the Jupiter system include the probable ice-covered liquid ocean of its moon Europa.

156- What is the main rhetorical function of the first two paragraphs?
1) Function description
2) Process description
3) Physical description
4) Classification

157- According to the passage, Jupiter's mass is ……..
1) less than that of the planet Earth
2) far less than that which characterizes the only star in the solar system
3) seems to have been perpetually changing since ancient times
4) equal to the total mass of all the planets in the solar system

158- The word "it" in paragraph 1 refers to ……..
1) light
2) object
3) magnitude
4) Jupiter

159- The passage mentions all of the following about Jupiter EXCEPT that ……..
1) it is more similar to Uranus and Neptune than to any other planets
2) people in ancient times detected it with the naked eye
3) its shape is affected by the speed of its rotation
4) there exists a bulge around its equator

160- Which of the following is TRUE about Jupiter's moons?
1) They together help create a faint planetary ring.
2) Their exact number is yet to be determined.
3) Their diameter is greater than that of Mercury.
4) They were first seen in the late seventeenth century.

161- The passage provides sufficient information to answer which of the following questions?
1) What has triggered the coming into being of the Great Red Spot?
2) What makes the Moon and Venus more conspicuous than Jupiter?
3) Why is that it can be claimed with certitude that Jupiter's core is rocky?
4) Why have scientists not yet been able to account for Jupiter's lack of a solid surface?

162- For which of the following words of paragraph 3 there is a synonym in the very same paragraph?

1) Europa
2) Trajectory
3) Probe
4) Mission

163- It could be inferred from the passage that without Jupiter's gravity .....

1) space missions to explore Jupiter would have not been impossible
2) the mission of *New Horizons* had to be planned a bit differently
3) it would not have the same mass as it does today
4) it would have had a different speed and orbit

164- What does the paragraph preceding this passage most probably discuss?

1) The discovery of Jupiter
2) A planet other than Jupiter
3) Common features of planets
4) The formation of planets in the solar system

165- The tone of the passage can best be described as .....

1) disinterested and objective
2) enthusiastic and supportive
3) scholarly and concerned
4) skeptical and questioning

Passage 2:

So long, robot pals—and robot overlords. Sentient machines may never exist, according to a variation on a leading mathematical model of how our brains create consciousness. Over the past decade, Giulio Tononi at the University of Wisconsin-Madison and his colleagues have developed a mathematical framework for consciousness that has become one of the most influential theories in the field. According to their model, the ability to integrate information is a key property of consciousness.

But there is a catch, argues Phil Maguire at the National University of Ireland in Maynooth. He points to a computational device called the XOR logic gate, which involves two inputs, A and B. The output of the gate is "1" if A and B are the same and "0" if A and B are different. In this scenario, it is impossible to predict the output based on A or B alone—you need both.

Crucially, this type of integration requires loss of information, says Maguire: "You have put in two bits, and you get one out. If the brain integrated information in this fashion, it would have to be continuously haemorrhaging information."

Maguire and his colleagues say the brain is unlikely to do this, because repeated retrieval of memories would eventually destroy them. Instead, they define integration in terms of how difficult information is to edit.

Consider a digital album of photographs. The pictures are compiled but not integrated, so deleting or modifying individual images is easy. But when we create memories, we integrate those snapshots of information into our bank of earlier memories. This makes it extremely difficult to selectively edit out one scene from the "album" in our brain.

Based on this definition, Maguire and his team have shown mathematically that computers can't handle any process that integrates information completely. If you accept that consciousness is based on total integration, then computers can't be conscious.

"It doesn't necessarily mean that there is some magic going on in the brain that involves some forces that can't be explained physically," says Maguire. "It is just so complex that it's beyond our abilities to reverse it and decompose it."

Disappointed? Take comfort we may not get Rosie the robot maid, but equally we won't have to worry about the world conquered by robots, as it is depicted in some movies.

Neuroscientist Anil Seth at the University of Sussex, UK, applauds the team for exploring consciousness mathematically. But he is not convinced that brains do not lose information. "Brains are open systems with a continual turnover of physical and informational components," he says. "Not many neuroscientists would claim that conscious contents require lossless memory."

Maguire acknowledges that their proof would not hold up if information integration in the brain is reversible. "Maybe, if you had a very clever algorithm, you could still break down peoples' memories and edit them."

166- The passage supports which of the following contentions about human consciousness?

1) The mathematical approach taken to study it is unlikely to lead to any tangible outcome.
2) Its very nature is paradoxical and thus impossible to operationally define.
3) There is no consensus concerning the validity of its existence.
4) Our current state of knowledge about it is far from complete.

167- What does paragraph 2 mainly discuss?

1) A drawback of a particular model
2) A key feature of consciousness
3) The process of consciousness development
4) The component parts of what you know as consciousness

168- Why does the author mention robots in paragraph 1?

1) To use a known example to introduce a new phenomenon.
2) To refer to the only human creation which might surpass humans in consciousness.
3) To indicate that such robots are impossible to emerge given the gaps that still exist in what we need to know to make them sentient.
4) To show that the same mathematical model used to invent a human-like machine can be used to probe the human mind.

169- Which of the following best reveals Maguire's attitude towards the information integration model adduced by Giulio Tononi?

1) Highly adulatory
2) Great skepticism
3) Shocking indifference
4) Tentative acceptance

170- The word "haemorrhaging" in paragraph 3 could best be replaced by ..... .

1) editing
2) distorting
3) integrating
4) losing

171- Which of the following is the main rhetorical technique used in paragraph 5 to develop the concerned topic?

1) Steps in a process
2) Comparison and contrast
3) Cause and effect
4) Chronological time order

172- From the way Maguire and his colleagues define information integration in the mind, it can be concluded that producing machines whose consciousness matches that of humans is ..... .

1) out of the question
2) simply on the horizon
3) possible only in the remote future
4) an interdisciplinary enterprise

173- It can be inferred from paragraph 8 (where "movies" are mentioned) that ..... .

1) people's fear of robots is in part due to the misconception relayed to them by movies
2) what is a reality today has already been stuff for imagination only
3) some movies actually depict robots we cannot yet produce
4) robots can be programmed to do household chores

174- The last two paragraphs in the passage provide information supporting which of the following statements?

I. Anil Seth's claim supplements the one proposed by Maguire.
II. There are some neuroscientists who do not endorse the view that conscious contents require lossless memory.
III. Maguire contends that we cannot yet separate an integrated memory to modify it.

1) Only I and II
2) Only II
3) Only II and III
4) I, II, III

175- The word "turnover" in paragraph 9 is more related to ..... .

1) accumulation
2) investment
3) mutation
4) change