Soru No: 54

Humans have long relied on nature for building materials- creating simple homes from living or once-living materials such as grass, wood, reeds, bamboo, and animal skins. These homes often followed the aesthetics of the natural landscape. Today, bioarchitects build on this tradition by using sustainable, natural materials! They may also mimic nature's form and function to achieve greater beauty and ecological value, regardless of whether the structure is built with natural materials. --- The end results take on many forms, including massive apartment complexes, towering office buildings, grand museums, and humble homes.

A) This modern approach takes nature-inspired building to new heights by re-purposing discarded materials and even relying on living organisms to supply power.

B) Earthwork mounds with living plants on the roofs sheltered settlers from wind and temperature extremes, while providing grazing for farm animals.

C) Bioarchitecture is rooted in the ancient human practice of building dwellings from natural materials, resulting in structures that blend into their surroundings.

D) To meet housing, energy, and sustainability goals, the methods and materials of bioarchitectural design must become more widely available.

E) To make a real impact on the quality of our lives and on the environment, bioarchitecture must become affordable so that more people can embrace it.

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İnsanlar uzun zamandır yapı malzemeleri için doğaya güvenmişler; ot, odun, kamış, bambu ve hayvan derileri gibi canlı veya bir zamanlar canlı olan malzemelerden basit evler inşa etmişlerdir. Bu evler genellikle doğal peyzajın estetiğini takip ediyordu. Günümüzde biyo-mimarlar, sürdürülebilir, doğal malzemeler kullanarak bu geleneği sürdürüyorlar! Yapı doğal malzemelerle inşa edilmiş olsun ya da olmasın, daha fazla güzellik ve ekolojik değer elde etmek için doğanın formunu ve işlevini de taklit edebilirler. ----- Nihai sonuçlar; devasa apartman kompleksleri, yükselen ofis binaları, büyük müzeler ve mütevazı evler dahil olmak üzere birçok form alır.

A) Bu modern yaklaşım, atılan malzemeleri yeniden değerlendirerek ve hatta güç sağlamak için canlı organizmalara güvenerek doğadan ilham alan yapıyı yeni zirvelere taşır.

B) Çatılarında canlı bitkiler bulunan toprak yığınları, çiftlik hayvanları için otlak sağlarken yerleşimcileri rüzgardan ve aşırı sıcaklıklardan korurdu.

C) Biyo-mimarlık, köklerini insanların doğal malzemelerden konut inşa etme şeklindeki eski uygulamasından alır ve çevresiyle uyum sağlayan yapılarla sonuçlanır.

D) Konut, enerji ve sürdürülebilirlik hedeflerine ulaşmak için biyo-mimari tasarımın yöntemleri ve malzemeleri daha yaygın olarak kullanılabilir hale gelmelidir.

E) Yaşam kalitemiz ve çevre üzerinde gerçek bir etki yaratmak için biyo-mimari, daha fazla insanın onu benimseyebilmesi için uygun fiyatlı hale gelmelidir.

Soru No: 55

Nanobiomedicine refers to the biomedical applications of natural or synthetic nanomaterials, biological nanodevices or nanomachines. This is an emerging scientific discipline which has great potential for imaging, early diagnosis, and targeted therapy of numerous diseases that are hard to control such as cancer. Nanomaterials may be the most important tools which have greatly improved the advancement of the biomedical areas. The most commonly used nanomaterials for biomedical applications include graphene-based nanoparticles, magnetic nanoparticles, gold nanostructures, etc. --- To illustrate, small nanoparticles have the ability to transport through biological barriers and, thus, can deliver the drug to the target site.

A) In hybrid nanoparticles, the sizes of the hybrids significantly increase, compared with those of the individual nanoparticles.

B) There are important parameters for these nanoparticles used in biomedical areas, one of them is having suitable particle size.

C) In recent years, nanocomposites containing different types of nanoparticles have been investigated in detail since they are multifunctional.

D) The biomedical applications of nanomaterials include reducing drug resistance, targeted drug delivery, and controlled drug release.

E) The great challenge of nanohybrid materials is that the functions of each nanoparticle may be reduced after being united.

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Nanobiyotıp; doğal veya sentetik nanomalzemelerin, biyolojik nanocihazların veya nanomakinelerin biyomedikal uygulamalarını ifade eder. Bu; kanser gibi kontrol edilmesi zor olan sayısız hastalığın görüntülenmesi, erken teşhisi ve hedeflenmiş tedavisi için büyük potansiyele sahip olan, gelişmekte olan bir bilimsel disiplindir. Nanomalzemeler, biyomedikal alanların ilerlemesini büyük ölçüde geliştiren en önemli araçlar olabilir. Biyomedikal uygulamalar için en yaygın kullanılan nanomalzemeler arasında grafen bazlı nanopartiküller, manyetik nanopartiküller, altın nanoyapılar vb. yer alır. ----. Örneklemek gerekirse, küçük nanopartiküller biyolojik bariyerleri aşma yeteneğine sahiptir ve bu sayede ilacı hedef bölgeye ulaştırabilir.

A) Hibrit nanopartiküllerde, hibritlerin boyutları tek tek nanopartiküllerinkine kıyasla önemli ölçüde artar.

B) Biyomedikal alanlarda kullanılan bu nanopartiküller için önemli parametreler vardır, bunlardan biri uygun parçacık boyutuna sahip olmaktır.

C) Son yıllarda, çok fonksiyonlu oldukları için farklı tipte nanopartiküller içeren nanokompozitler detaylı bir şekilde araştırılmıştır.

D) Nanomalzemelerin biyomedikal uygulamaları arasında ilaç direncinin azaltılması, hedeflenmiş ilaç dağıtımı ve kontrollü ilaç salınımı yer alır.

E) Nanohibrit malzemelerin en büyük zorluğu, her bir nanopartikülün işlevinin birleştikten sonra azalabilmesidir.

Soru No: 56

Fungi are a hidden earthly dimension scientists only now learning how to see. ---- For example, where plants have cell walls made of cellulose, fungi have chitin, a type of fibre also found in the exoskeletons of insects. And fungi are heterotrophs, that is, capable of eating other organisms, often breaking down wood and dead plant matter by releasing and reabsorbing enzymes. Without fungi, dead plants and animals would pile up on forest floors, and most trees would struggle to find the nutrients they need to survive.

A) They thrive in soil and grow edible stalks like plants, but many of their characteristics are distinctly unplantlike.

B) Our world has become more connected than ever, and fungi have embarked on countless global journeys.

C) Climate change is allowing these organisms to thrive in ecosystems that were once too cold and dry.

D) Fungi have evolved to live in specific environments, sometimes in partnership with just one other species.

E) Their reproductive traits make fungi uniquely adaptable, with climates and landscapes changing at a record pace.

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Soru No: 56

Mantarlar, bilim insanlarının ancak şimdi görmeyi öğrendiği gizli bir yeryüzü boyutudur. ----- Örneğin, bitkilerin selülozdan yapılmış hücre duvarları varken, mantarların böceklerin dış iskeletlerinde de bulunan bir lif türü olan kitini vardır. Ayrıca mantarlar heterotroftur, yani diğer organizmaları yiyebilirler; genellikle enzimleri serbest bırakıp tekrar emerek odun ve ölü bitki maddelerini parçalarlar. Mantarlar olmasaydı, ölü bitkiler ve hayvanlar orman zeminlerinde birikir ve çoğu ağaç hayatta kalmak için ihtiyaç duydukları besinleri bulmakta zorlanırdı.

A) Toprakta yetişirler ve bitkiler gibi yenilebilir saplar büyütürler, ancak özelliklerinin çoğu belirgin bir şekilde bitki gibi değildir.

B) Dünyamız her zamankinden daha bağlantılı hale geldi ve mantarlar sayısız küresel yolculuğa çıktı.

C) İklim değişikliği, bu organizmaların bir zamanlar çok soğuk ve kuru olan ekosistemlerde gelişmesine izin veriyor.

D) Mantarlar, bazen sadece başka bir türle ortaklık kurarak belirli ortamlarda yaşayacak şekilde evrimleşmişlerdir.

E) Üreme özellikleri, iklimlerin ve manzaraların rekor bir hızla değişmesiyle mantarları benzersiz bir şekilde uyumlu kılar.

Soru No: 57

Most historians consider Galileo Galilei as the first scientist of the Scientific Revolution. --- The observation that all bodies fall at the same speed in a vacuum is just one of Galileo's ideas that led to the laws of motion and eventually to relativity theory. Galileo also contributed to the study of mathematical infinity. His influence comes not only through his popular books about the solar system, kinematics, and materials, but also as a result of his inventions.

A) His greatest fame is for discoveries in astronomy, but his influence on physics is pervasive.

B) He was judged for his astronomical discoveries and asked to deny them.

C) He built his first telescope in 1609 and eventually obtained a magnification of about 30 power.

D) He was known to repeat experiments and analyses after they were initially conducted by earlier scientists.

E) His observations on the swinging time of lamps in the Cathedral of Pisa led to the creation of the pendulum-driven clock.

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Soru No: 57

Çoğu tarihçi, Galileo Galilei'yi Bilimsel Devrim'in ilk bilim insanı olarak kabul eder. -----Tüm cisimlerin bir vakumda aynı hızla düştüğü gözlemi, Galileo'nun hareket yasalarına ve nihayetinde görelilik teorisine yol açan fikirlerinden sadece biridir. Galileo aynı zamanda matematiksel sonsuzluk çalışmasına da katkıda bulunmuştur. Onun etkisi sadece güneş sistemi, kinematik ve malzemeler hakkındaki popüler kitaplarından değil, aynı zamanda icatlarının bir sonucu olarak da gelmektedir.

A) En büyük şöhreti astronomideki keşiflerinden gelse de, fizik üzerindeki etkisi yaygındır.

B) Astronomik keşifleri nedeniyle yargılandı ve bunları reddetmesi istendi.

C) İlk teleskobunu 1609'da yaptı ve sonunda yaklaşık 30 kat büyütme elde etti.

D) Daha önceki bilim insanları tarafından başlangıçta yapılan deneyleri ve analizleri tekrarlamasıyla biliniyordu.

E) Pisa Katedrali'ndeki lambaların sallanma süresi üzerine yaptığı gözlemler sarkaçlı saatin yaratılmasına yol açtı.

Soru No: 58

Our planet spins like a toy that turns round and round when its handle is moved up and down, during its long journey around the Sun. Rather than revolving about a vertical axis, however, the Earth has always been spinning about an axis that is tilted at 23.44 °. The amount of tilt is never constant, and displays natural short-term and long-term cycles. ------ And this is happening right now, on an extraordinary scale, due to us. As global heating drives the melting of the polar ice sheets, it causes enormous volumes of water to flow into the oceans. In a recent paper, scientists have revealed that this redistribution of mass is very slightly modifying the world's tilt.

A) In addition to modifying tilt, this movement of mass water has also slowed the planet's rotation.

B) The Earth's tilt can also be changed by shifting huge amounts of mass around the planet.

C) Scientists have found that using underground water impacts the Earth's tilt more than melting polar caps.

D) In itself, polar melting is not sufficient to account for all of the tilt change.

E) A tiny change in the Earth's rotation is not going to have an impact on the climate change.

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Gezegenimiz, Güneş etrafındaki uzun yolculuğu sırasında kolu yukarı aşağı hareket ettirildiğinde dönen bir oyuncak gibi kendi etrafında döner. Ancak Dünya, dikey bir eksen etrafında dönmek yerine her zaman $23,44^\circ$ eğik bir eksen etrafında dönmektedir. Eğiklik miktarı hiçbir zaman sabit değildir ve doğal kısa vadeli ve uzun vadeli döngüler sergiler. **----** Ve bu, bizim yüzümüzden olağanüstü bir ölçekte şu anda gerçekleşiyor. Küresel ısınma kutup buz tabakalarının erimesine neden olurken, devasa hacimlerdeki suyun okyanuslara akmasına neden olur. Yakın tarihli bir makalede bilim insanları, bu kütle yer değiştirmesinin dünyanın eğikliğini çok hafif bir şekilde değiştirdiğini ortaya koydular.

A) Kütlesel suyun bu hareketi, eğikliği değiştirmenin yanı sıra gezegenin dönüşünü de yavaşlattı.

B) Dünya'nın eğikliği, gezegenin etrafındaki büyük miktarda kütlenin yer değiştirmesiyle de değiştirilebilir.

C) Bilim insanları, yer altı suyu kullanımının Dünya'nın eğikliğini kutup buzullarının erimesinden daha fazla etkilediğini bulmuşlardır.

D) Kutup erimesi, eğiklik değişiminin tamamını açıklamak için tek başına yeterli değildir.

E) Dünya'nın dönüşündeki küçük bir değişiklik iklim değişikliği üzerinde bir etki yaratmayacaktır.

Soru No: 59

Although traditional clockwork clocks dominated for several centuries, it is quite likely that people do not have a single one in their home today. This is due to a discovery that was made early in the 20th century concerning a common mineral called 'quartz'. This discovery made it possible to construct timepieces that were at least ten times more accurate than the best traditional clocks. ---- This was because the electronic devices of those days were bulky and unreliable, and it was several decades before a later generation of miniaturised electronics made quartz clocks and watches a viable proposition.

A) The first mechanical clocks, with bells but no hands or dials, appeared in northern Italy and Germany.

B) Timepieces were gradually refined and improved with greater precision and greater practicality.

C) A major leap forward in accuracy came in the latter part of the 17th century, with the introduction of pendulum clocks.

D) The first such quartz clock was built in 1927, but it did not create an immediate revolution as expected.

E) They were the first devices to actually bear the name 'clock' deriving from the Latin word clocca, which means 'bell'.

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Soru No: 59

Geleneksel saat mekanizmalı saatler birkaç yüzyıl boyunca hüküm sürmüş olsa da, bugün insanların evlerinde bunlardan bir tane bile bulunmaması muhtemeldir. Bu durum, 20. yüzyılın başlarında 'kuvars' adı verilen yaygın bir mineralle ilgili yapılan bir keşiften kaynaklanmaktadır. Bu keşif, en iyi geleneksel saatlerden en az on kat daha doğru zaman ölçen cihazlar üretmeyi mümkün kıldı. **----** Bunun nedeni, o günlerin elektronik cihazlarının hantal ve güvenilmez olmasıydı ve daha sonraki bir nesil minyatürleştirilmiş elektroniğin kuvars saatleri uygulanabilir bir teklif haline getirmesi için birkaç on yıl geçmesi gerekiyordu.

A) İlk mekanik saatler, çanları olan ancak akrep-yelkovanı veya kadranı olmayan şekilde Kuzey İtalya ve Almanya'da ortaya çıktı.
B) Zaman ölçerler, daha fazla hassasiyet ve pratiklikle kademeli olarak rafine edildi ve geliştirildi.
C) Doğruluk konusundaki büyük sıçrama, 17. yüzyılın sonlarında sarkaçlı saatlerin piyasaya sürülmesiyle gerçekleşti.
D) İlk kuvars saat 1927'de yapıldı ancak beklendiği gibi anında bir devrim yaratmadı.
E) Bunlar, Latince 'çan' anlamına gelen 'clocca' kelimesinden türetilen 'saat' ismini gerçekten taşıyan ilk cihazlardı.

Soru No: 60

(I) Defining the problem is the first and most critical step of problem analysis. **(II)** To best approach a solution, the problem must be well-understood and the guidelines or design considerations for a project must be clear. **(III)** In the creation of a new automobile, for example, the engineers must know if they should design for fuel economy or for brute power. **(IV)**Once a general design or technology is selected, the work is sub-divided and various team members assume specific responsibilities. **(V)** Many questions like this arise in every engineering project, and they must all be answered at the very beginning if the engineers are to work efficiently towards a solution.

A) I **B)** II **C)** III **D)** IV **E)** V

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Soru No: 60

(I) Sorunu tanımlamak, sorun analizinin ilk ve en kritik adımıdır. (II) Bir çözüme en iyi şekilde yaklaşmak için sorun iyi anlaşılmalı ve bir projenin yönergeleri veya tasarım hususları açık olmalıdır. (III) Örneğin yeni bir otomobilin yaratılmasında, mühendisler yakıt ekonomisi için mi yoksa kaba güç için mi tasarım yapmaları gerektiğini bilmelidirler. **(IV) Genel bir tasarım veya teknoloji seçildiğinde, iş alt bölümlere ayrılır ve çeşitli ekip üyeleri belirli sorumluluklar üstlenir.** (V) Her mühendislik projesinde bunun gibi pek çok soru ortaya çıkar ve eğer mühendisler bir çözüme doğru verimli bir şekilde çalışacaklarsa bunların hepsi en başta cevaplanmalıdır.

A) I **B)** II **C)** III **D)** IV **E)** V

Soru No: 61

(I) Designed to drive across alien terrain, robotic rovers are mobile science labs that hunt out interesting sites and conduct on-the-spot investigations. **(II)** With their own power supply, they are armed with scientific instruments, including cameras and rock analysis tools. **(III)** Mars is the only planet that robotic rovers have explored, with four rovers having successfully visited it. **(IV)** Ground controllers back on Earth decide where the rovers should go and what they should do. **(V)** Because of the extended distance between the two, the directions take a few minutes to get through, and the collected data is relayed directly to Earth.

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Milli ve Ilirici

Konu ve odak noktası belli olan bir parçada sonradan tanımlama olmaz.

Tanımlama X

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(I) Yabancı arazilerde sürülmek üzere tasarlanan robotik keşif araçları, ilginç alanları bulan ve yerinde incelemeler yapan mobil bilim laboratuvarlarıdır. (II) Kendi güç kaynaklarına sahip olan bu araçlar, kameralar ve kaya analiz araçları dahil olmak üzere bilimsel aletlerle donatılmışlardır. **(III) Mars, dört keşif aracının başarıyla ziyaret ettiği, robotik keşif araçlarının keşfettiği tek gezegendir.** (IV) Dünya'daki yer kontrolörleri, bu araçların nereye gitmesi ve ne yapması gerektiğine karar verirler. (V) İkisi arasındaki mesafenin uzak olması nedeniyle talimatların ulaşması birkaç dakika sürer ve toplanan veriler doğrudan Dünya'ya iletilir.

A) I **B)** II **C) III** **D)** IV **E)** V

Soru No: 62

(I) The first scientific society founded in the capital of Prussia was the Royal Society of Sciences in 1700 by Gottfried Wilhelm Leibniz under the patronage of the elector of Brandenburg, Frederick III. **(II)** The society was hampered by what was to become a permanent problem in 18th-century Berlin science: conflict between its French and German members. **(III)**Frederick hoped to make Prussia a centre of learning, an impulse that also led to the founding of the University of Halle and Prussia's shift to the Gregorian calendar. **(IV)** The society received a monopoly on the production, importation, and sale of almanacs and calendars in Prussia. **(V)** It was the first scientific society to be funded this way, setting an influential precedent.

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block
impede

A) I **B)** II **C)** III **D)** IV **E)** V

Soru No: 62

(I) Prusya'nın başkentinde kurulan ilk bilim topluluğu, 1700 yılında Brandenburg elektörü III. Frederick'in himayesinde Gottfried Wilhelm Leibniz tarafından kurulan Kraliyet Bilimler Cemiyeti'ydi. **(II) Topluluk, 18. yüzyıl Berlin biliminde kalıcı bir sorun haline gelecek olan Fransız ve Alman üyeleri arasındaki çatışma nedeniyle sekteye uğradı.** (III) Frederick, Prusya'yı bir bilim merkezi yapmayı umuyordu; bu dürtü aynı zamanda Halle Üniversitesi'nin kurulmasına ve Prusya'nın Gregoryen takvimine geçmesine yol açtı. (IV) Topluluk, Prusya'daki almanakların ve takvimlerin üretimi, ithalatı ve satışı üzerinde bir tekel hakkı elde etti. (V) Bu şekilde finanse edilen ilk bilim topluluğuydu ve etkili bir emsal oluşturdu.

A) I **B)** II **C)** III **D)** IV **E)** V

Soru No: 63

Generally /Usually /often,

(I) For most of us, time is experienced as a linear sequence of events that flow from the present into the past, while possible futures are laid out before us. **(II)**However, some cultures in different parts of the world find a cyclical view of time more useful. **(III)** For instance, nature watchers tend to be more attuned to circular time, where life and its rhythms are shaped by the flow of cycles and seasons. **(IV)** This apparent circular flow is what gives organisms a chance to return, reappraise and build on experience in order to pass adaptive traits along a spiral of life. **(V)** While some of the greatest minds have contemplated the concept of time for over a century, their theories do not always match up to our everyday experience of time.

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A) I **B)** II **C)** III **D)** IV **E) V**

Soru No: 63

(I) Çoğumuz için zaman, şimdiki zamandan geçmişe doğru akan, olası geleceklerin ise önümüzde serildiği doğrusal bir olaylar dizisi olarak deneyimlenir. (II) Ancak, dünyanın farklı bölgelerindeki bazı kültürler döngüsel bir zaman görüşünü daha yararlı bulurlar. (III) Örneğin, doğa gözlemcileri; yaşamın ve ritimlerinin döngülerin ve mevsimlerin akışıyla şekillendiği dairesel zamana daha uyumlu olma eğilimindedirler. (IV) Bu görünürdeki dairesel akış, organizmalara yaşam sarmalı boyunca adaptif özellikleri aktarmak amacıyla geri dönme, yeniden değerlendirme ve deneyim üzerine inşa etme şansı veren şeydir. **(V) En büyük zihinlerden bazıları bir yüzyılı aşkın süredir zaman kavramı üzerinde kafa yorarken, teorileri her zaman günlük zaman deneyimimizle örtüşmez.**

A) I **B)** II **C)** III **D)** IV **E) V**

Soru No: 64

(I) The genome of an organism consists of thousands of genes, and this entire genome must be replicated as new cells are produced. **(II)** However, this process is not perfect, and a few errors, known as mutations, are likely to occur each time the genome is replicated. **(III)**How cells control gene expression in ways that enable a complex organism to develop and function is a major focus of current biological research. **(IV)** They occur spontaneously; they can also be induced by outside factors, including chemicals and radiation. **(V)**Most of them are either harmful or have no effect, but occasionally a mutation improves the functioning of the organism under the environmental conditions it encounters.

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Soru No: 64

(I) Bir organizmanın genomu binlerce genden oluşur ve yeni hücreler üretildikçe bu tüm genomun kopyalanması gerekir. (II) Ancak bu süreç kusursuz değildir ve genom her kopyalandığında mutasyon olarak bilinen birkaç hatanın oluşması muhtemeldir. **(III) Karmaşık bir organizmanın gelişmesini ve işlev görmesini sağlayan yollarla hücrelerin gen ifadesini nasıl kontrol ettiği, güncel biyolojik araştırmaların temel odak noktalarından biridir.** (IV) Bunlar kendiliğinden meydana gelir; ayrıca kimyasallar ve radyasyon dahil olmak üzere dış faktörler tarafından da tetiklenebilirler. (V) Bunların çoğu ya zararlıdır ya da hiçbir etkisi yoktur, ancak bazen bir mutasyon, organizmanın karşılaştığı çevresel koşullar altındaki işleyişini iyileştirir.

A) I **B)** II **C) III** **D)** IV **E)** V

Soru No: 65

(I) The ways in which certain animals and plants interact have evolved in some cases to make them interdependent for nutrition, respiration, reproduction, or other aspects of survival. **(II)** However, ecology represents the organised body of knowledge that deals with the interactions between living organisms and their non-living environments. **(III)** A major example of animal-plant interactions involves the continual processes of photosynthesis and cellular respiration. **(IV)** In these processes, green plants are classified as 'ecological producers', having the unique ability, by photosynthesis, to take carbon dioxide and incorporate it into organic molecules. **(V)** Animals, on the other hand, are classified as 'consumers', taking the products of photosynthesis and chemically breaking them down at the cellular level to produce energy for life activities.

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Soru No: 65

(I) Belirli hayvanların ve bitkilerin etkileşim kurma yolları, bazı durumlarda onları beslenme, solunum, üreme veya hayatta kalmanın diğer yönleri için birbirine bağımlı hale getirecek şekilde evrimleşmiştir. **(II) Ancak ekoloji, canlı organizmalar ile onların canlı olmayan çevreleri arasındaki etkileşimleri ele alan organize bilgi birikimini temsil eder.**

(III)Hayvan-bitki etkileşimlerinin önemli bir örneği, sürekli fotosentez ve hücresel solunum süreçlerini içerir. (IV)Bu süreçlerde yeşil bitkiler, fotosentez yoluyla karbondioksiti alıp organik moleküllere dahil etme konusundaki benzersiz yetenekleriyle 'ekolojik üreticiler' olarak sınıflandırılırlar. (V) Öte yandan hayvanlar, fotosentez ürünlerini alıp yaşam faaliyetleri için enerji üretmek üzere hücresel düzeyde kimyasal olarak parçalayan 'tüketiciler' olarak sınıflandırılırlar.

A) I **B)** II **C)** III **D)** IV **E)** V

Over the past three decades, David Tilman has set up thousands of field experiments 70 km outside of Minneapolis, US, probing some of the most fundamental questions about prairie ecosystems, which are plain areas covered in grass. The ecologist never imagined he would undertake the considerably more practical task of developing new climate-friendly crops for biofuels - that is, until 2005, when he realised he had done it by pure chance, as part of a long-term ecological study. On one 11 m square plot was a healthy stand of switchgrass, an abundantly growing perennial (a plant that persists for several years) that the US government is promoting as an alternative to corn. Nearby was a plot of switchgrass mixed with 15 native perennial grasses, and they were analysed by Tilman and his colleagues because different species occupy different ecosystem niches to perform different functions which can boost biodiversity and replenish depleted soils. Neither plot received irrigation or fertiliser. Yet, when the researchers analysed 12 years' worth of data, they surprisingly found out that the mixed plots delivered more than twice the yearly biomass per hectare, suggesting a potentially much more efficient biofuel source with a much smaller carbon footprint.

Soru No: 66

Which of the following can be said about Tilman?

A) He has worked on thousands of experiments about energy sources.

B) He collaborated with the US government to promote switchgrass as an alternative to corn.

C) He found out an alternative biofuel crop just by coincidence.

D) He is an ecologist aiming to raise awareness about climate-friendly agriculture.

E) He failed in developing an ecologically-sound grass species despite 12 years' worth of data.

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Son otuz yıl boyunca David Tilman, ABD'nin Minneapolis şehrinin 70 km dışında, otlarla kaplı düz alanlar olan çayır ekosistemleri hakkındaki en temel sorulardan bazılarını araştıran binlerce saha deneyi kurdu. Ekolog, biyoyakıtlar için iklim dostu yeni mahsuller geliştirme gibi önemli ölçüde daha pratik bir görevi üstleneceğini asla hayal etmemişti; ta ki 2005 yılında, uzun vadeli bir ekolojik çalışmanın parçası olarak bunu tamamen tesadüfen yaptığını fark edene kadar.11 metrekarelik bir parselde, ABD hükümetinin mısıra alternatif olarak teşvik ettiği, bolca yetişen ve çok yıllık (birkaç yıl boyunca varlığını sürdüren) bir bitki olan şalter otunun (switchgrass) sağlıklı bir kümesi bulunuyordu. Yakınlarda ise 15 yerli çok yıllık otla karıştırılmış bir şalter otu parseli vardı; bu parsel Tilman ve meslektaşları tarafından analiz edildi çünkü farklı türler, biyoçeşitliliği artırabilen ve tükenmiş toprakları yenileyebilen farklı işlevleri yerine getirmek için farklı ekosistem nişlerini doldurur. Hiçbir parsel sulama veya gübre almadı. Yine de araştırmacılar 12 yıllık verileri analiz ettiklerinde, şaşırtıcı bir şekilde karışık parsellerin hektar başına yıllık iki kattan fazla biyokütle sağladığını buldular. Bu sonuç, çok daha küçük bir karbon ayak izine sahip, potansiyel olarak çok daha verimli bir biyoyakıt kaynağına işaret etmektedir.

Soru No: 66

Tilman hakkında aşağıdakilerden hangisi söylenebilir?

A) Enerji kaynakları hakkında binlerce deney üzerinde çalışmıştır.

B) Şalter otunu mısıra alternatif olarak teşvik etmek için ABD hükümetiyle iş birliği yapmıştır.

C) Tamamen tesadüf eseri alternatif bir biyoyakıt mahsulü bulmuştur.

D) İklim dostu tarım konusunda farkındalık yaratmayı amaçlayan bir ekologdur.

E) 12 yıllık veriye rağmen ekolojik açıdan sağlıklı bir ot türü geliştirmede başarısız olmuştur.

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What can be understood from the data collected by Tilman and his colleagues?

A) Mixing different native grasses in with switchgrass provides more biomass.

B) Switchgrass on its own is able to replenish depleted soils.

C) Plots which were given fertiliser grew far more than those which were not given any.

D) Mixed grasses were beneficial only when they were ecologically and functionally similar.

E) Plots including mixed native grasses may have higher levels of carbon footprint.

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Soru No: 67

Tilman ve meslektaşları tarafından toplanan verilerden ne anlaşılabilir?

A) Farklı yerli otların şalter otu ile karıştırılması daha fazla biyokütle sağlar.

B) Şalter otu tek başına tükenmiş toprakları yenileyebilir.

C) Gübre verilen parseller, hiç verilmeyenlere göre çok daha fazla büyümüştür.

D) Karışık otlar, yalnızca ekolojik ve işlevsel olarak benzer olduklarında faydalı olmuştur.

E) Karışık yerli otları içeren parseller daha yüksek karbon ayak izine sahip olabilir.

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Soru No: 68

Which could be understood from the passage?

A) For an ecological study to be seen as successful, it needs to deliver unpredictable outcomes.

B) Ecologists need to irrigate and fertilise the plot they are going to study on as the first step.

C) Researchers should study with vegetation which are mixed as it will be more financially feasible.

D) The study conducted by Tilman and his colleagues yielded unexpected and promising results.

E) Switchgrass is the most commonly used source of biofuel in the US.

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Soru No: 68

Pasajdan aşağıdakilerden hangisi anlaşılabilir?

A) Bir ekolojik çalışmanın başarılı sayılabilmesi için öngörülemeyen sonuçlar vermesi gerekir.

B) Ekologların, üzerinde çalışacakları parseli ilk adım olarak sulamaları ve gübrelemeleri gerekir.

C) Araştırmacılar, daha az maliyetli olacağı için karışık bitki örtüsü ile çalışmalıdır.

D) Tilman ve meslektaşları tarafından yürütülen çalışma beklenmedik ve gelecek vaat eden sonuçlar vermiştir.

E) Şalter otu (switchgrass), ABD'de en yaygın kullanılan biyoyakıt kaynağıdır.

The idea of satellite-aided search and rescue can be traced back to a tragic accident that took place in 1970, when a plane carrying two US congressmen crashed in a remote region of Alaska. Despite a massive search and rescue work, no trace of the missing aircraft or its passengers has ever been found. In reaction to this tragedy, the US Congress mandated that all aircraft operated in the United States carry an Emergency Locator Transmitter (ELT). This device was designed to automatically activate after a crash and transmit a homing signal. Since space technology was still in its infancy, the frequency chosen for ELT transmissions was 121.5 MHz, the frequency used by international aircraft for distress signals. This system worked, but it had many technical limitations. After several years, these limitations began to outweigh the benefits. In addition, space technology had improved to the point that a satellite-aided search and rescue system had become practical. The space-based system would operate on a frequency (406 MHz) reserved exclusively for emergency radio beacons, it would have a digital signal that uniquely identified each registered beacon, and it would provide global search and rescue coverage.

Soru No: 69

Which of the following is true of the aircraft tragedy mentioned in the passage?

A) It was an unfortunate event for the passengers as the US government failed to put enough effort to find the wreckage.

B) It happened because the plane had not been fitted with the basic version of ELT.

C) It marked a turning point in technology-enhanced search and rescue in aircraft history.

D) It caused the US Congress to pass a law to overcome the limitations of ELT.

E) It involved some US statesmen who were working on safety equipment in aircraft.

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Uydu destekli arama ve kurtarma fikri, 1970 yılında iki ABD kongre üyesini taşıyan bir uçağın Alaska'nın uzak bir bölgesinde düşmesiyle meydana gelen trajik bir kazaya kadar uzanabilir. Devasa bir arama ve kurtarma çalışmasına rağmen, kayıp uçağın veya yolcularının izine hiçbir zaman rastlanamadı. Bu trajediye tepki olarak ABD Kongresi, Amerika Birleşik Devletleri'nde işletilen tüm uçakların bir Acil Durum Yer Belirleme Vericisi (ELT) taşımasını zorunlu kıldı. Bu cihaz, bir kazadan sonra otomatik olarak etkinleşecek ve bir yön bulma sinyali yayacak şekilde tasarlanmıştı. Uzay teknolojisi henüz başlangıç aşamasında olduğundan, ELT yayınları için seçilen frekans, uluslararası uçakların tehlike sinyalleri için kullandığı 121.5 MHz frekansıydı. Bu sistem işe yaradı ancak birçok teknik kısıtlaması vardı. Birkaç yıl sonra, bu kısıtlamalar sağlanan faydalardan daha ağır basmaya başladı. Ayrıca, uzay teknolojisi uydu destekli bir arama ve kurtarma sisteminin pratik hale geleceği noktaya kadar gelişmişti. Uzay tabanlı sistem, yalnızca acil durum radyo işaretçileri (beacons) için ayrılmış bir frekansta (406 MHz) çalışacak, her kayıtlı cihazı benzersiz şekilde tanımlayan dijital bir sinyale sahip olacak ve küresel bir arama-kurtarma kapsamı sağlayacaktı.

Soru No: 69

Pasajda bahsedilen uçak trajedisi ile ilgili aşağıdakilerden hangisi doğrudur?

A) ABD hükümeti enkazı bulmak için yeterli çaba göstermediği için yolcular adına talihsiz bir olaydı.

B) Uçakta ELT'nin temel versiyonu bulunmadığı için gerçekleşti.

C) Uçak tarihinde teknoloji destekli arama ve kurtarmada bir dönüm noktası oldu.

D) ABD Kongresi'nin ELT'nin kısıtlamalarının üstesinden gelmek için bir yasa çıkarmasına neden oldu.

E) Uçaklardaki güvenlik ekipmanları üzerinde çalışan bazı ABD devlet adamlarını içeriyordu.

The idea of satellite-aided search and rescue can be traced back to a tragic accident that took place in 1970, when a plane carrying two US congressmen crashed in a remote region of Alaska. Despite a massive search and rescue work, no trace of the missing aircraft or its passengers has ever been found. In reaction to this tragedy, the US Congress mandated that all aircraft operated in the United States carry an Emergency Locator Transmitter (ELT). This device was designed to automatically activate after a crash and transmit a homing signal. Since space technology was still in its infancy, the frequency chosen for ELT transmissions was 121.5 MHz, the frequency used by international aircraft for distress signals. This system worked, but it had many technical limitations. After several years, these limitations began to outweigh the benefits. In addition, space technology had improved to the point that a satellite-aided search and rescue system had become practical. The space-based system would operate on a frequency (406 MHz) reserved exclusively for emergency radio beacons, it would have a digital signal that uniquely identified each registered beacon, and it would provide global search and rescue coverage.

Soru No: 70

According to the passage the device called 'ELT' ----

A) was missing in the aircraft that got lost in a tragic accident although it was required by law

B) sometimes failed to work effectively as manual start up was essential to send signals

C) was intended to send signals from time to time to spot the location of aircraft while in flight

D) was invented in a period when space technology development became advanced

E) proved less useful over time as it had more limitations than benefits

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Soru No: 70

Pasaja göre 'ELT' olarak adlandırılan cihaz ------

A) Yasalarca zorunlu tutulmasına rağmen, trajik bir kazada kaybolan uçakta mevcut değildi.

B) Sinyal göndermek için manuel başlatma şart olduğundan bazen etkili bir şekilde çalışmıyordu.

C) Uçuş sırasında uçağın yerini tespit etmek amacıyla zaman zaman sinyal göndermek için tasarlanmıştı.

D) Uzay teknolojisi gelişiminin ileri bir seviyeye ulaştığı bir dönemde icat edildi.

E) Kısıtlamaları faydalarından daha fazla olduğu için zamanla daha az kullanışlı olduğu görüldü.

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Soru No: 71

What is the primary purpose of the author?

A) To give detailed information about a serious aircraft accident that occurred in 1970

B) To highlight the contributions of the US congress to the enhancement of aircraft safety

C) To exemplify the benefits and drawbacks of the Emergency Locator Transmitter

D) To explain how the satellite-aided search and rescue system came into being

E) To draw particular attention to the frequency on which the space-based system operates

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Soru No: 71

Yazarın temel amacı nedir?

A) 1970'te meydana gelen ciddi bir uçak kazası hakkında ayrıntılı bilgi vermek.

B) ABD Kongresi'nin uçak güvenliğinin artırılmasına yönelik katkılarını vurgulamak.

C) Acil Durum Yer Belirleme Vericisi'nin (ELT) faydalarını ve dezavantajlarını örneklendirmek.

D) Uydu destekli arama ve kurtarma sisteminin nasıl ortaya çıktığını açıklamak.

E) Uzay tabanlı sistemin üzerinde çalıştığı frekansa özel dikkat çekmek.

Science is a tool we use to understand the world and is subject to all the shortcomings of the human mind. Looking at the past, it appears that science has progressed in a rational and linear manner. However, if science was rational, it would progress from one stage to another in a single series of steps, in a linear fashion. Discovery A leads to B, to C, and so on, and we therefore end up with an understanding of atoms, or DNA, or the sequence of human genome. And certainly, there is plenty of apparent evidence for this phenomenon of linear advancement. However, this perspective is misleading; science is not linear and is not rational. If we could take a kind of general view of the history of scientific thought, we would be at once struck by its discontinuity, its abrupt changes of tempo and rhythm. For example, Archimedes discovered buoyancy with instinctive feelings, rather than rational thought, when he took a bath and noticed something, then he ran through the street exclaiming “Eureka!” The American philosopher of science Thomas Kuhn reviewed scientific discoveries and concluded that knowledge does not progress in a rational linear process, with small discoveries gathering evidence for new theories. Rather, he proposed that they move suddenly, with rapid development of new concepts. We can say there is only one principle that can be defended under all circumstances and in all stages of human development. It is the principle: ‘anything goes’. Therefore, our imagination in science should not be limited by preconceived ideas. What is important in science is problem-solving, not conforming to established modes of thought.

Soru No: 72

According to the passage Archimedes' discovery exemplifies ----.

A) the progress of science at a constant rate over time

B) the necessity of disciplined hard work to achieve success

C) the importance of intuition, which is a non-rational process

D) the critical role of human imagination in science

E) the major shortcomings of the human mind

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Bilim, dünyayı anlamak için kullandığımız bir araçtır ve insan zihninin tüm eksikliklerine tabidir. Geçmişe bakıldığında, bilimin rasyonel ve doğrusal bir şekilde ilerlediği görülmektedir. Ancak bilim rasyonel olsaydı, doğrusal bir şekilde bir aşamadan diğerine tek bir adım dizisi halinde ilerlerdi. A keşfi B'ye, B de C'ye yol açardı ve bu nedenle atomları, DNA'yı veya insan genomu dizilimini anlamaya ulaşırdık. Ve kuşkusuz, bu doğrusal ilerleme fenomeni için pek çok görünür kanıt vardır. Ancak bu bakış açısı yanıltıcıdır; bilim doğrusal değildir ve rasyonel değildir. Bilimsel düşünce tarihine genel bir bakış atabilseydik, onun süreksizliği, tempo ve ritmindeki ani değişiklikler karşısında hemen şaşırırdık. Örneğin Arşimet, suyun kaldırma kuvvetini rasyonel düşünceden ziyade içgüdüsel duygularla, banyo yaparken bir şey fark ettiğinde keşfetmiş ve ardından sokakta "Evreka!" diye bağırarak koşmuştur. Amerikalı bilim filozofu Thomas Kuhn, bilimsel keşifleri incelemiş ve bilginin, küçük keşiflerin yeni teoriler için kanıt topladığı rasyonel, doğrusal bir süreçte ilerlemediği sonucuna varmıştır. Aksine, bilginin yeni kavramların hızlı gelişimiyle aniden hareket ettiğini öne sürmüştür. İnsan gelişiminin her aşamasında ve her koşulda savunulabilecek tek bir ilke olduğunu söyleyebiliriz. O da şudur: "Her şey mübahtır". Bu nedenle bilimdeki hayal gücümüz önceden belirlenmiş fikirlerle sınırlanmamalıdır. Bilimde önemli olan problem çözmektir, yerleşik düşünce biçimlerine uymak değil.

Soru No: 72

Pasaja göre Arşimet'in keşfi ---- için bir örnektir.

A) Bilimin zaman içinde sabit bir hızla ilerlemesi

B) Başarıya ulaşmak için disiplinli ve sıkı çalışmanın gerekliliği

C) Rasyonel olmayan bir süreç olan sezginin önemi

D) Bilimde insan hayal gücünün kritik rolü

E) İnsan zihninin temel eksikliklerine

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Soru No: 73

Which of the following is implied in the passage?

A) It is completely misleading to say that science does not develop by precise rational steps.

B) The principle 'anything goes' fails to fit in all the branches of science.

C) All scientific work must connect with the previous advances and proceed by adding a novel perspective.

D) Great discoveries may not always result from just logical thought and gradual progression.

E) Scientists should share their discoveries with others so that science can advance in a holistic way.

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Soru No: 73

Pasajda aşağıdakilerden hangisi ima edilmektedir?

A) Bilimin kesin rasyonel adımlarla gelişmediğini söylemek tamamen yanıltıcıdır.

B) "Her şey mübahtır" ilkesi bilimin tüm dallarına uymakta başarısız olur.

C) Tüm bilimsel çalışmalar önceki ilerlemelerle bağlantı kurmalı ve yeni bir bakış açısı ekleyerek ilerlemelidir.

D) Büyük keşifler her zaman sadece mantıksal düşünce ve aşamalı ilerlemenin sonucu olmayabilir.

E) Bilimin bütünsel bir şekilde ilerleyebilmesi için bilim insanları keşiflerini başkalarıyla paylaşmalıdır.

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Soru No: 74

It can be understood from the passage that the principle of ‘anything goes’ can be associated with ----

A) the liberation of imagination in science from conventional norms

B) the inevitability of fixed rules for scientific developments

C) the existence of linear scientific discoveries

D) the acceptance of linear advancement

E) the requirement of concrete evidence for new theories

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C) the existence of linear scientific discoveries

D) the acceptance of linear advancement

E) the requirement of concrete evidence for new theories

Bilim, dünyayı anlamak için kullandığımız bir araçtır ve insan zihninin tüm eksikliklerine tabidir. Geçmişe bakıldığında, bilimin rasyonel ve doğrusal bir şekilde ilerlediği görülmektedir. Ancak bilim rasyonel olsaydı, doğrusal bir şekilde bir aşamadan diğerine tek bir adım dizisi halinde ilerlerdi. A keşfi B'ye, B de C'ye yol açardı ve bu nedenle atomları, DNA'yı veya insan genomu dizilimini anlamaya ulaşırdık. Ve kuşkusuz, bu doğrusal ilerleme fenomeni için pek çok görünür kanıt vardır. Ancak bu bakış açısı yanıltıcıdır; bilim doğrusal değildir ve rasyonel değildir. Bilimsel düşünce tarihine genel bir bakış atabilseydik, onun süreksizliği, tempo ve ritmindeki ani değişiklikler karşısında hemen şaşırırdık. Örneğin Arşimet, suyun kaldırma kuvvetini rasyonel düşünceden ziyade içgüdüsel duygularla, banyo yaparken bir şey fark ettiğinde keşfetmiş ve ardından sokakta "Evreka!" diye bağırarak koşmuştur. Amerikalı bilim filozofu Thomas Kuhn, bilimsel keşifleri incelemiş ve bilginin, küçük keşiflerin yeni teoriler için kanıt topladığı rasyonel, doğrusal bir süreçte ilerlemediği sonucuna varmıştır. Aksine, bilginin yeni kavramların hızlı gelişimiyle aniden hareket ettiğini öne sürmüştür. İnsan gelişiminin her aşamasında ve her koşulda savunulabilecek tek bir ilke olduğunu söyleyebiliriz. O da şudur: "Her şey mübahtır". Bu nedenle bilimdeki hayal gücümüz önceden belirlenmiş fikirlerle sınırlanmamalıdır. Bilimde önemli olan problem çözmektir, yerleşik düşünce biçimlerine uymak değil.

Soru No: 74

Pasajdan, 'her şey mübahtır' (anything goes) ilkesinin ---- ile ilişkilendirilebileceği anlaşılabilir.

A) Bilimdeki hayal gücünün geleneksel normlardan özgürleşmesi

B) Bilimsel gelişmeler için sabit kuralların kaçınılmazlığı

C) Doğrusal bilimsel keşiflerin varlığı

D) Doğrusal ilerlemenin kabul edilmesi

E) Yeni teoriler için somut kanıt gerekliliği

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Soru No: 75

According to the passage, Anders Celsius ----

A) suggested changing the measurements he originally offered for boiling and freezing water later in his life

B) was largely inspired by scientists who received prizes for their major contributions to scholarly discussions

C) put forward strong arguments to challenge the idea that air pressure can change the boiling point of water

D) combined his expertise in astronomy, physics, and mathematics to come up with the Centigrade scale

E) offered some key arguments in a study that has deeply impacted how thermometers operate today

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Soru No: 75

Pasaja göre Anders Celsius ----

A) Hayatının ilerleyen dönemlerinde, suyun kaynama ve donma noktaları için başlangıçta sunduğu ölçümleri değiştirmeyi önermiştir.

B) Büyük ölçüde, akademik tartışmalara yaptıkları önemli katkılardan dolayı ödül alan bilim insanlarından ilham almıştır.

C) Hava basıncının suyun kaynama noktasını değiştirebileceği fikrine karşı çıkmak için güçlü argümanlar ileri sürmüştür.

D) Santigrat ölçeğini ortaya koymak için astronomi, fizik ve matematik alanlarındaki uzmanlığını birleştirmiştir.

E) Günümüzde termometrelerin çalışma şeklini derinden etkileyen bir çalışmada bazı kilit argümanlar sunmuştur.

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Soru No: 76

Which of the following can be understood about the original scale offered by Celsius?

A) It suggested using different methods for boiling water under pressure and measuring its temperature.

B) It was based on the idea of identifying multiple points for both boiling and freezing water.

C) It was called 'degrees centigrade' by the Swedish Academy of Sciences because it used a fixed scale of 100 divisions.

D) It was built upon the knowledge that Celsius derived from the shortcomings of earlier scales and calibration methods.

E) It was subjected to a reverse in the way it measures temperature in 1948.

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Soru No: 76

Celsius tarafından sunulan orijinal ölçek hakkında aşağıdakilerden hangisi anlaşılabilir?

A) Basınç altında suyun kaynatılması ve sıcaklığının ölçülmesi için farklı yöntemler kullanılmasını önermiştir.

B) Hem suyun kaynaması hem de donması için birden fazla nokta belirleme fikrine dayanıyordu.

C) 100 bölmeli sabit bir ölçek kullandığı için İsveç Bilimler Akademisi tarafından 'derece santigrat' olarak adlandırılmıştır.

D) Celsius'un önceki ölçeklerin ve kalibrasyon yöntemlerinin eksikliklerinden çıkardığı bilgilere dayanarak oluşturulmuştur.

E) 1948 yılında sıcaklığı ölçme biçimi bakımından bir tersine çevrilmeye maruz kalmıştır.

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Soru No: 77

What is the main idea of this passage?

A) With the Ninth General Conference of Weights and Measures, Celsius' substantial contributions to measuring temperature have been publicised.

B) Celsius devoted his whole life to pinpointing serious mistakes and problems in measurements used across the world.

C) Celsius made it possible to measure the temperature of boiling and freezing water, yet the value of his work had hardly been recognised before his death.

D) The Swedish scientist Celsius successfully identified problems in measuring temperature and shaped today's understanding of it.

E) Despite studying mainly on physics, Celsius made outstanding contributions to various scholarly areas during his lifetime.

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Soru No: 77

Bu parçanın ana fikri nedir?

A) Dokuzuncu Genel Ölçü ve Ağırlık Konferansı ile Celsius'un sıcaklık ölçümüne yaptığı önemli katkılar kamuoyuna duyurulmuştur.

B) Celsius tüm hayatını dünya çapında kullanılan ölçümlerdeki ciddi hata ve sorunları tespit etmeye adamıştır.

C) Celsius kaynayan ve donan suyun sıcaklığının ölçülmesini mümkün kılmıştır, ancak çalışmasının değeri ölümünden önce neredeyse hiç anlaşılamamıştır.

D) İsveçli bilim insanı Celsius, sıcaklık ölçümündeki sorunları başarıyla tespit etmiş ve günümüzün sıcaklık anlayışını şekillendirmiştir.

E) Esas olarak fizik üzerine çalışmasına rağmen Celsius, yaşamı boyunca çeşitli akademik alanlara olağanüstü katkılarda bulunmuştur.

For most of human history, technology has resulted from a combination of trial and error. People discovered procedures by chance that led to new products or made old processes work better by trying variations and refinements. The modern age, with its competitive globalised economy, has a number of mechanisms available through which new techniques can spread rapidly, but none of these existed in classical antiquity. There is no question that all societies contain innovative individuals who are eager to challenge tradition and looking for a better way to make things and thus improve their life. Yet, the rate at which this type of advancement took place before 1750 was extremely slow by our standards. One reason for this was that even when improved techniques were tried and found to be feasible, they often disappeared because their owners kept them secret or the new technique simply was too localised and disappeared when its inventor died, before it could become widespread. In addition, most societies of the past were far more conservative and tradition-bound than those of today. Respect for the knowledge of past generations was prevalent in most societies, and an act of invention was always and everywhere an act of rebellion. This technological conservatism, however rational it may have seemed at the time, ensured that many new ideas remained just ideas.

Soru No: 78

It is stated in the passage that technological improvements ----

A) have faced continuous interventions in globalised countries due to competitions in the field
B) enjoyed a peak in 1750 due to the efforts carried out by innovative people around the World
C) have taken place in a cycle of experiment and failure throughout history
D) have changed the cultural dynamics of societies besides contributing to their economic growth
E) were historically based on the improvements of old processes due to the small number of innovative people

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İnsanlık tarihinin büyük bir bölümünde teknoloji, deneme ve yanılmanın bir kombinasyonu sonucunda ortaya çıkmıştır. İnsanlar, çeşitli varyasyonları ve iyileştirmeleri deneyerek yeni ürünlere yol açan veya eski süreçlerin daha iyi çalışmasını sağlayan yöntemleri tesadüfen keşfettiler. Rekabetçi ve küreselleşmiş ekonomisiyle modern çağ, yeni tekniklerin hızla yayılabileceği bir dizi mekanizmaya sahiptir; ancak bunların hiçbiri antik çağda mevcut değildi. Tüm toplumların, geleneğe meydan okumaya hevesli olan ve bir şeyleri yapmanın daha iyi bir yolunu arayarak hayatlarını iyileştirmek isteyen yenilikçi bireyler içerdiğine şüphe yoktur. Yine de, bu tür bir ilerlemenin 1750'den önce gerçekleşme hızı bizim standartlarımıza göre son derece yavaştı. Bunun bir nedeni, geliştirilmiş teknikler denenip uygulanabilir olduğu görülse bile, sahiplerinin bunları gizli tutması ya da yeni tekniğin çok yerel kalıp mucidi öldüğünde yaygınlaşamadan yok olması nedeniyle bu tekniklerin sık sık ortadan kaybolmasıydı. Ayrıca, geçmişteki toplumların çoğu bugünkülerden çok daha muhafazakâr ve geleneklerine bağlıydı. Geçmiş nesillerin bilgisine duyulan saygı çoğu toplumda yaygındı ve bir icat eylemi, her zaman ve her yerde bir isyan eylemi olarak görülürdü. Bu teknolojik muhafazakârlık, o zamanlar ne kadar rasyonel görünürse görünsün, birçok yeni fikrin sadece fikir olarak kalmasına neden oldu.

Soru No: 78

Pasajda teknolojik gelişmelerin ---- olduğu belirtilmektedir.

A) Sahadaki rekabetler nedeniyle küreselleşmiş ülkelerde sürekli müdahalelerle karşı karşıya kalmıştır.

B) Dünyanın dört bir yanındaki yenilikçi insanların çabaları sayesinde 1750 yılında zirveye ulaşmıştır.

C) Tarih boyunca bir deneme ve yanılma (başarısızlık) döngüsü içinde gerçekleşmiştir.

D) Ekonomik büyümelerine katkıda bulunmanın yanı sıra toplumların kültürel dinamiklerini de değiştirmiştir.

E) Yenilikçi insan sayısının az olması nedeniyle tarihsel olarak eski süreçlerin iyileştirilmesine dayanmıştır.

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Soru No: 79

Which of the following is not mentioned about the reasons for the delay in scientific advances in the past?

A) Ancient societies were more conventional and old-fashioned than modern societies.

B) Although new techniques were available, they could not gain recognition as their owners did not publicise them.

C) New techniques were developed in a limited area where the rest of the world was unaware of such discoveries.

D) Cultural norms hindered the abandonment of old methods and the introduction of new ones.

E) There was a lot of competition among innovative individuals, which postponed the agreements on scientific truths.

For most of human history, technology has resulted from a combination of trial and error. People discovered procedures by chance that led to new products or made old processes work better by trying variations and refinements. The modern age, with its competitive globalised economy, has a number of mechanisms available through which new techniques can spread rapidly, but none of these existed in classical antiquity. There is no question that all societies contain innovative individuals who are eager to challenge tradition and looking for a better way to make things and thus improve their life. Yet, the rate at which this type of advancement took place before 1750 was extremely slow by our standards. One reason for this was that even when improved techniques were tried and found to be feasible, they often disappeared because their owners kept them secret or the new technique simply was too localised and disappeared when its inventor died, before it could become widespread. In addition, most societies of the past were far more conservative and tradition-bound than those of today. Respect for the knowledge of past generations was prevalent in most societies, and an act of invention was always and everywhere an act of rebellion. This technological conservatism, however rational it may have seemed at the time, ensured that many new ideas remained just ideas.

Soru No: 79

Which of the following is not mentioned about the reasons for the delay in scientific advances in the past?

A) Ancient societies were more conventional and old-fashioned than modern societies.

B) Although new techniques were available, they could not gain recognition as their owners did not publicise them.

C) New techniques were developed in a limited area where the rest of the world was unaware of such discoveries.

D) Cultural norms hindered the abandonment of old methods and the introduction of new ones.

E) There was a lot of competition among innovative individuals, which postponed the agreements on scientific truths.

İnsanlık tarihinin büyük bir bölümünde teknoloji, deneme ve yanılmanın bir kombinasyonu sonucunda ortaya çıkmıştır. İnsanlar, çeşitli varyasyonları ve iyileştirmeleri deneyerek yeni ürünlere yol açan veya eski süreçlerin daha iyi çalışmasını sağlayan yöntemleri tesadüfen keşfettiler. Rekabetçi ve küreselleşmiş ekonomisiyle modern çağ, yeni tekniklerin hızla yayılabileceği bir dizi mekanizmaya sahiptir; ancak bunların hiçbiri antik çağda mevcut değildi. Tüm toplumların, geleneğe meydan okumaya hevesli olan ve bir şeyleri yapmanın daha iyi bir yolunu arayarak hayatlarını iyileştirmek isteyen yenilikçi bireyler içerdiğine şüphe yoktur. Yine de, bu tür bir ilerlemenin 1750'den önce gerçekleşme hızı bizim standartlarımıza göre son derece yavaştı. Bunun bir nedeni, geliştirilmiş teknikler denenip uygulanabilir olduğu görülse bile, sahiplerinin bunları gizli tutması ya da yeni tekniğin çok yerel kalıp mucidi öldüğünde yaygınlaşamadan yok olması nedeniyle bu tekniklerin sık sık ortadan kaybolmasıydı. Ayrıca, geçmişteki toplumların çoğu bugünkülerden çok daha muhafazakâr ve geleneklerine bağlıydı. Geçmiş nesillerin bilgisine duyulan saygı çoğu toplumda yaygındı ve bir icat eylemi, her zaman ve her yerde bir isyan eylemi olarak görülürdü. Bu teknolojik muhafazakârlık, o zamanlar ne kadar rasyonel görünürse görünsün, birçok yeni fikrin sadece fikir olarak kalmasına neden oldu.

Soru No: 79

Geçmişteki bilimsel ilerlemelerin gecikme nedenleri arasında aşağıdakilerden hangisinden bahsedilmemiştir?

A) Antik toplumlar modern toplumlara göre daha geleneksel ve eski moda idi.

B) Yeni teknikler mevcut olmasına rağmen, sahipleri bunları ilan etmediği için tanınamadılar.

C) Yeni teknikler, dünyanın geri kalanının bu tür keşiflerden habersiz olduğu sınırlı bir alanda geliştirildi.

D) Kültürel normlar eski yöntemlerin terk edilmesini ve yenilerinin tanıtılmasını engelledi.

E) Yenilikçi bireyler arasında, bilimsel gerçekler üzerindeki anlaşmaları erteleyen çok fazla rekabet vardı.

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Soru No: 80

What could be the best title for this passage?

A) Why Technology Developed So Slowly in the Past

B) How Previous Technological Advances Contributed to Modern Science

C) From Trial and Error to Mastery: Modern Technology

D) The Scientific Breakthroughs That Took Place in Antiquity

E) The Significance of Innovative Spirits in the Advancement of Science

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Soru No: 80

Bu parça için en uygun başlık aşağıdakilerden hangisi olabilir?

A) Geçmişte Teknoloji Neden Bu Kadar Yavaş Gelişti?

B) Önceki Teknolojik Gelişmeler Modern Bilime Nasıl Katkıda Bulundu?

C) Deneme Yanılmadan Ustalığa: Modern Teknoloji

D) Antik Çağda Gerçekleşen Bilimsel Atılımlar

E) Bilimin İlerlemesinde Yenilikçi Ruhların Önemi

2025 Temmuz YÖKDİL / Fen Bilimleri

ANSWER KEY

1 B	21 E	41 A	61 C
2 B	22 D	42 E	62 B
3 C	23 C	43 B	63 E
4 B	24 B	44 A	64 C
5 A	25 A	45 A	65 B
6 C	26 B	46 C	66 C
7 C	27 A	47 A	67 A
8 E	28 A	48 C	68 D
9 C	29 D	49 B	69 C
10 D	30 B	50 B	70 E
11 A	31 B	51 D	71 D
12 A	32 A	52 E	72 C
13 C	33 D	53 A	73 D
14 C	34 B	54 A	74 A
15 D	35 A	55 B	75 E
16 A	36 E	56 A	76 D
17 A	37 C	57 A	77 D
18 B	38 A	58 B	78 C
19 C	39 A	59 D	79 E
20 A	40 D	60 D	80 A

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