VARC

Read the passage below and answer the questions that follow:

What makes a successful popular science book? One could not find a better paradigm than Richard Dawkins's 1976 best-selling classic The Selfish Gene. This book presented a quite widely, if not universally, accepted interpretation of the so-called "Modern Synthesis," the set of ideas that has constituted much evolutionary thinking since the mid-20th century. Because the theoretical science that drove the Modern Synthesis was population genetics, the mathematical study of the evolutionary trajectories of genes, it was natural to think of evolution as a theory about genes, and Dawkins took this view to a somewhat extreme conclusion, painting evolution as genes striving to replicate themselves— a.k.a. the gene's-eye perspective. Individual genes were seen as competing with one another to have the most positive effects on the organisms in which they resided, and thus to become more prevalent in the next generation.

This was an intriguing vision, and Dawkins presented and developed it in elegant and engaging prose, showing an exceptional talent for providing illuminating metaphors and vivid examples. The outcome was a spectacular success: over 48 years and a million copies later, Amazon tells me that it is currently the number three bestseller on the topic of evolution. As Dawkins has often told us, a well-adapted idea will tend to be selected and become more prevalent. The Selfish Gene was as well-adapted as a book can be, and it has illustrated this principle, though by deliberate print reproduction rather than biological reproduction. In the subsequent half-century, Dawkins has written several books that pretty much tell the same story as his first, and they have also been met with great success.

Dawkins's most recent book, this summer's The Genetic Book of the Dead: A Darwinian Reverie, is the latest iteration of these ideas. Since individual books are already indefinitely reproducible, a new version requires a new hook—a novel mutation?—and in this case, he provides it through the idea that an organism's genome is a kind of palimpsest, layers of which can be peeled away to reveal the history of the organism's lineage through the adaptive challenges that the genes evolved to address. The gene's-eye view, to put it another way, is backwards-looking. Though this is a pleasant enough conceit, it is in the end a fairly trivial permutation of the original vision from The Selfish Gene.

There are, of course, many new examples, and the illustrations by artist Jana Lenzová are a delightful enhancement. The book could serve well as an introduction to some basic evolutionary ideas such as the difference between homology and analogy. Each of these gets a chapter with many

entertaining examples. There are also chapters explicitly reiterating the main messages of The Selfish Gene and The Extended Phenotype; the book is appropriately palimpsest-like. The major problem is that the adaptive landscape has changed substantially since the 1970s, and Dawkins has failed to evolve. Or perhaps more disturbingly, and anticipating some similar reservations about the other new book reviewed here, Sara Imari Walker's Life as No One Knows It: The Physics of Life's Emergence, the niche for a popular science book is mainly to provide a good story, even if it is a bit simplistic and occasionally economical with the science.

1. The primary purpose of the passage is to:
A. Highlight how Dawkins's The Selfish Gene revolutionized evolutionary theory through mathematical genetics.
B. Explain why Dawkins's gene-centred view of evolution continues to dominate contemporary biology.
C. Review Dawkins's latest book while suggesting that it reiterates ideas from his earlier works with limited novelty.
D. Contrast Dawkins's The Selfish Gene with Sara Imari Walker's Life as No One Knows It in terms of scientific rigour.

2. The author's attitude toward The Genetic Book of the Dead is best described as:
A. scathingly dismissive of its recycled content and poor examples.
B. qualifiedly positive, appreciating its presentation but critical of its scientific relevance.
C. broadly neutral, viewing it as a competent introduction to basic evolutionary ideas.
D. enthusiastic, seeing it as a necessary and brilliant mutation of Dawkins's original thesis.

3. Which of the following, if true, would most seriously weaken the author's "major problem" with Dawkins?
A. A recent poll of evolutionary geneticists reveals that the "gene's-eye perspective" from the 1970s is still the undisputed, dominant model in the field.
B. The Genetic Book of the Dead receives overwhelmingly negative reviews from literary critics for its prose style.
C. Sara Imari Walker's book, Life as No One Knows It, is proven to be based on simplistic and outdated physics.
D. The Genetic Book of the Dead becomes a number one bestseller, outselling The Selfish Gene.

4. Which of the following book reviews would be most consistent with the author's "disturbing" reservation in the final sentence?

A. "A failure. The author's narrative is compelling, but it glosses over the complex, modern science, which many readers will find disappointing."
B. "A dense, rigorous, and challenging read. It will likely only be read by specialists, as it makes no concessions to popular storytelling."
C. "This book's narrative is convoluted and its science is impenetrable. It has, deservingly, failed to find an audience."
D. "This book is a runaway success, and it's easy to see why. The author presents a grand, sweeping story of the cosmos that is easy to follow and deeply inspiring, despite its reliance on scientific theories that were largely superseded a decade ago."

5. There is a sentence that is missing in the paragraph below. Look at the paragraph and decide where (option 1, 2, 3, or 4) the following sentence would best fit.
Sentence: Ghana was the first to become independent, but only in 1957.
Paragraph: Most African leaders and scholars are also opposed to the universality of human rights because Africa had no adequate representation in 1948 when the UDHR was drafted, deliberated and subsequently adopted. ____(1)____. Africa was under-represented mainly because, except for Ethiopia, Liberia and South Africa, the whole of Sub-Saharan Africa was still under colonial rule. ____(2)____. For this reason, it is argued that human rights have no moral purchase in societies which "were not adequately represented in the meetings that defined them. ____(3)____. Consequently, it is said that these societies should not be bound by international human rights norms, since doing so amounts to subjugation to Western imperialism, the concept of which led to colonialism. ____(4)____. Furthermore, it is argued that the imposition of Western human rights values is an affront to the sovereignty of these new States because it negates the right of self-determination.
A. Option 1
B. Option 2
C. Option 3
D. Option 4

6. Five jumbled-up sentences (labelled 1, 2, 3, 4 and 5), related to a topic, are given below. Four of them can be put together to form a coherent paragraph. Identify the odd sentence and key in the number of that sentence as your answer.
1. The theory typically assumes fixed factor endowments (like labor, capital, technology) and unchanging production functions.
2. Countries often actively create new comparative advantages through investment in education, infrastructure, research and development, and industrial policy.
3. This specialization, the theory argues, leads to a more efficient allocation of global resources and mutual gains from trade for all participating countries.

4. However, economic development is inherently a dynamic process.
5. One major criticism targets the static nature of comparative advantage.

7. The four sentences (labelled 1, 2, 3 and 4) given below, when properly sequenced, would yield a coherent paragraph. Decide on the proper sequencing of the order of the sentences and key in the sequence of the four numbers as your answer.
1. The Himba tribe of Namibia, for instance, exhibits impressive skin repair, aided by natural ointments, a high-protein diet, and specific genetic traits.
2. While the movie is fictional, real-life cases do exist where individuals exhibit rapid wound healing.
3. Scientists attribute the Bajau's ability to genetic adaptations that enhance skin elasticity and repair capabilities, despite their extensive time in water.
4. Similarly, the Bajau community from Southeast Asia also displays remarkable healing properties.

8. The passage given below is followed by four alternate summaries. Choose the option that best captures the essence of the passage.
Water, in case you are not up to date on the science, is good for you. It helps to regulate your body temperature, lubricates and cushions your joints, and aids your digestive system in getting rid of waste. Not drinking enough can affect your mood and disrupt your physical and cognitive performance, but getting plenty of it might help you safely lose weight, by aiding appetite regulation and increasing your metabolic rate. There is even some evidence that glugging enough might help you perform better in exams – though, of course, there might be a correlation between the sort of people who tote their own water jugs and those who study hard. H_2O, in short, is great. But does it matter where you get it?
A. Water's dietary importance is well-established, but the debate continues about whether drinking water from different sources affects health and performance.
B. Drinking water is claimed to boost metabolism and mood, improve joint health and digestion, and directly enhance exam performance.
C. Adequate hydration supports various physiological and mental processes, and there is definitive proof of water causing improved academic outcomes.
D. Water is essential for bodily functions and cognitive performance, with potential benefits for weight loss and exam success, though the source of the water remains a question.

9. The four sentences (labelled 1, 2, 3 and 4) given below, when properly sequenced, would yield a coherent paragraph. Decide on the proper sequencing of the order of the sentences and key in the sequence of the four numbers as your answer.

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1. Their success, however, has been uneven due to challenges like ineffective implementation and resistance from landlords.
2. Post-independence, measures included abolishing exploitative systems and redistributing surplus land to the landless.
3. Land reforms in India were primarily initiated to address deep-rooted inequalities in land ownership and promote social justice.
4. These reforms aimed to empower marginalized communities and foster a more inclusive agrarian economy.

10. Five jumbled-up sentences (labelled 1, 2, 3, 4 and 5), related to a topic, are given below. Four of them can be put together to form a coherent paragraph. Identify the odd sentence and key in the number of that sentence as your answer.
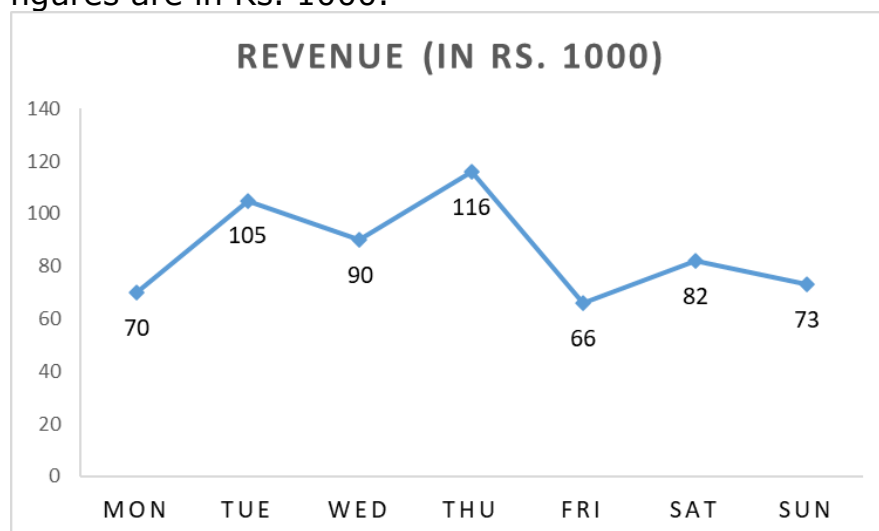
1. Socio-economic factors also play a crucial role; access to high-quality green space is often inequitably distributed, and community engagement is paramount for the long-term success of urban greening initiatives.
2. Ultimately, urban ecology calls for a holistic, adaptive management approach, where cities are viewed as living laboratories for exploring innovative ways to reconcile human development with ecological integrity.
3. Habitat fragmentation remains a primary obstacle, alongside the introduction of invasive species that can outcompete native flora and fauna.
4. However, the path to ecologically vibrant cities is fraught with challenges.
5. Effective urban ecological design emphasizes connectivity, recognizing that isolated green patches offer limited benefits.

DILR

MBA Karo is the best institute when it comes to MBA preparation for Indian MBA entrance exams. During the last week, it hosted the spectacular "Big Million Days" festival, offering its highly coveted NMAT course and mock tests at a discounted price. The prices of the course and mock tests, which were originally Rs. 8000 and Rs. 1500, respectively, were sold at Rs. 5000 and Rs. 1000, respectively.

The graph below shows the revenue during the seven days of the sale. All figures are in Rs. 1000.

REVENUE (IN RS. 1000)

MON: 70, TUE: 105, WED: 90, THU: 116, FRI: 66, SAT: 82, SUN: 73

The table shows the difference between the number of courses and mock tests sold on each of the days. It is known that a total of 100 courses were sold during the week.

Day	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Difference between Courses and Mocks sold	10	3	6	10	6	2	7

11. What is the total number of mock tests sold during this period?

12. What is the highest number of courses sold in a single day?

13. On how many days was the number of courses sold greater than the number of mock tests sold?
A. 3
B. 4
C. 5
D. Cannot be determined

14. How many courses were sold on Tuesday?
A. 17
B. 18
C. 17 or 18
D. 19

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15. If at least 10 mock tests were sold each day, what percent of revenue on Wednesday was from the sale of mock tests?
A. 11.11%
B. 16.67%
C. 20%
D. 22.22%

The chief minister of a state has to select 5 ministers in his cabinet out of Jatin, Kunal, Laxman, Mukesh, Raj, Suraj, Tarak and Uday. The age (in years) of each of these ministers is different among 36, 38, 39, 45, 48, 54, 57 and 59 years. From the eight ministers, the CM has to select at least one minister who is in his thirties, at least one minister who is in his forties and at least two ministers who are in their fifties. The CM must ensure the following additional conditions are also met:

▪ If Laxman is in the cabinet, Mukesh must not be in the cabinet.
▪ Suraj, who is in his fifties, will be in the cabinet only if Mukesh is in the cabinet.
▪ Raj is six years older than Laxman and if one of them is in the cabinet, the other must be in the cabinet.
▪ Kunal, who is in his thirties, will be in the cabinet only if Uday is not in the cabinet.
▪ Suraj is younger than Uday and Uday will be in the cabinet only if Jatin is in the cabinet.
▪ Tarak is three years younger than Jatin.
▪ If Raj is in the cabinet, Uday must be in the cabinet.

16. In how many ways can the cabinet be selected?

17. Who among the following will definitely be in the cabinet?
I. Jatin
II. Tarak
III. Uday
A. Only I and II
B. Only I and III
C. Only II and III
D. All of them

18. What is Mukesh's age?
A. 48 years
B. 45 years
C. 39 years
D. 38 years

19. Who among the following can never be in the cabinet?

A. Kunal
B. Laxman
C. Suraj
D. Tarak

20. If the second-oldest person is in the cabinet, who among them cannot be in the cabinet?
A. Jatin
B. Mukesh
C. Raj
D. Uday

QA

21. If $2^x = 5$ and $5^y = 64$, find $\frac{x}{x+1} + \frac{y}{y+6}$.

22. A circus tent is cylindrical up to a height of 4.2 m and conical above it. The common diameter of the base of the cylindrical and conical parts is 6 m. If the total height of the tent from the ground is 8.2 m, find the cost of canvas needed to make the tent at the rate of Rs 160 per m².
A. 20214
B. 20865
C. 19875
D. 18456

23. Two runners run a race of 7 km on a circular track of length 500 m in the same direction. The ratio of the speeds of the two athletes is 2:5. If they run in the same direction, how many times do they meet in the entire race?

24. A bookstore owner sells three kinds of books: fiction, non-fiction, and biographies. On a particular day, the owner sold the following number of books: 80 fiction books, 100 non-fiction books, and 130 biographies. If none of the customers bought more than two books of each type, what is the minimum number of buyers who have visited the shop that day?
A. 55
B. 60
C. 65
D. 70

25. If $28m - 20m^2 - 8mn - n^2 - 24 \geq 25$, find the product mn.
A. 49
B. -49
C. -35
D. 35

26. Bhanu, Jai, and Parv invested the money in the ratio 4:5:6 in a business at the beginning of the year, where Bhanu works as an active partner and receives 20% of the profit as a salary at the end of the year, and the remaining is distributed in their investment ratios. Find the total money earned by Bhanu if the difference between the money earned by Parv and that by Jai is Rs. 160000 at the end of the year.
A. Rs. 1200000
B. Rs. 1360000
C. Rs. 1150000
D. Rs. 1240000

27. A four-digit number is such that the first digit is half the fourth digit. The second digit is equal to the third digit. Also, the number formed by

the first and the second digit is half the number formed by the third and the fourth digit. What is the remainder when the number is divided by 23?
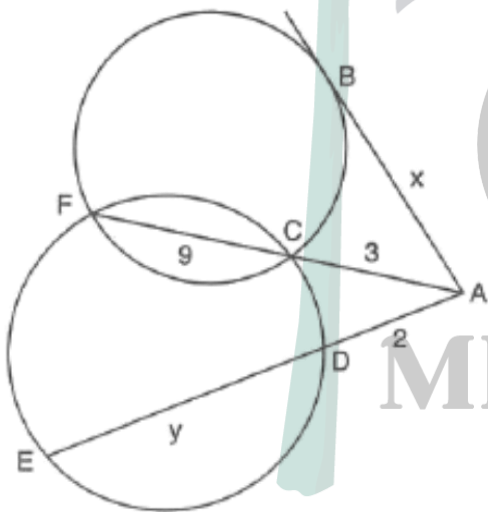
A. 1
B. 5
C. 7
D. 12

28. Find the number of real values of 'x', for which
$log_5 (log_5 (log_2 (x^2 – 8x – 208))) = 0$

29. An elevator can carry a maximum load of 810 kg. It is carrying a group of people whose weights are all distinct integers (in kg). The lightest person weighs 48 kg and the heaviest person weighs 75 kg. If the median weight of the five heaviest people is 68 kg, what is the maximum possible number of people that can be in the group?

A. 12
B. 13
C. 14
D. 15

30. In the given figure, find y-x.

A. 10
B. 12
C. 9
D. 8