VARC

Read the passage below and answer the questions that follow:

Great apes seem to lack the physical development of the larynx, or the neural capability, to learn human speech. Scientists debate the matter. However, with well-evolved articulating hands and arms, gorillas, chimpanzees, orangutans, and bonobos can master complex gestures. Researchers have harnessed this capability to teach them various forms of sign language. Occasionally, non-signing forms of communication, like pointing at pictograms, have also been used.

Stories of ape sign language can feel shockingly human. Washoe was the first signing ape. When the chimp's handler disclosed that her baby had died, Washoe reportedly signed back cry. The bonobo Kanzi learned to point to various symbols that represented about 350 words. The Koko project released a video of the namesake gorilla delivering a message about climate change. The animals appear to form thoughts and express them in one of our languages to meaningfully convey their ideas to us. Among these experiments, the story of one researcher and his chimpanzee stands out.

That researcher is Herbert Terrace, a professor of psychology at Columbia University. Nim Chimpsky — the name is a pun referring to the prominent linguist Noam Chomsky, then known for his groundbreaking research on linguistics — was his personal research study subject. Nim was raised like a human baby in a Manhattan apartment. His foster mother, Terrace's student Stephanie LaFarge, taught him ASL. She also breastfed the chimp and supposedly taught him to smoke weed. One of Nim's handlers reported that the animal requested the substance. Nim was also taught more than 100 signs. Terrace rode the results of Project Nim to academic stardom in the 1970s. At the end of the study, he wrote a 1979 article in the prestigious journal Science. This paper became the seminal work in the field — and likely the source of its complete undoing.

Terrace carefully reviewed video footage of human-ape interactions. Specific frames and traced images from them are demonstrated in the paper. He noticed that the researchers prompted the apes by displaying signs to them, in English grammatical order, before recording the same signs repeated back by the ape. The animal was essentially mimicking the human's behavior. The ape was aping it.

What about the heart-warming stories of human-ape understanding? Human handlers interacted with the apes for thousands of hours, and occasionally the human interpretation of a string of signs would stand out as interesting. But, this makes the interesting sign combinations look more like generous interpretations of anecdotes that were cherry-picked,

or fed to the ape by human handlers, and not a conscious thinking pattern.

What's more, the meaning of the signs was very easy to over-interpret. Is water bird the intellectual combination of two concepts to indicate a waterfowl? Or is it just rote repetition that a lake and a bird are nearby, combined with generous and wishful human interpretation? Studies in the field generally focused on picking unusual instances out of thousands of hours footage, rather than systematically studying whether apes expressed meaningful ideas. When Terrace did this, he found that interesting sentences began to look like drops in the ocean.

1. The primary purpose of the passage is to:
A. trace the evolution of ape sign language research, from its promising anecdotes to a critical re-evaluation that exposed its fundamental flaws.
B. document the methodology and results of various ape language experiments, including those with Washoe, Kanzi, and Koko.
C. argue that Herbert Terrace's 1979 article in Science was the most significant linguistic discovery of the 20th century.
D. critique the ethics of raising wild animals like human children, as exemplified by the unstructured environment of Project Nim.

2. It can be reasonably inferred from the passage that, prior to Terrace's 1979 article, the handlers of apes like Washoe and Koko:
A. were aware of the apes' mimicry but concealed it to secure more research funding.
B. used systematic video analysis to verify the spontaneity of the apes' responses.
C. were more interested in the apes' physical, rather than cognitive, development.
D. were likely susceptible to wishful thinking and interpreting random gestures as meaningful communication.

3. The "water bird" example is used to illustrate the critical distinction between:
A. a researcher's prompt and an ape's unprompted, correct response.
B. a spontaneous, novel combination of concepts and a rote, associative repetition.
C. a gesture that is part of ASL and one that is a unique invention by an ape.
D. a consciously expressed thought and an unconscious emotional reaction.

4. Which of the following, if true, would most seriously weaken the conclusions drawn by Herbert Terrace as described in the passage?

A. A new linguistic analysis shows that apes' larynxes are physically capable of producing more human-like sounds than previously thought.
B. Subsequent studies found that chimpanzees raised in a "human baby" environment were more prone to psychological distress than those raised by their mothers.
C. A different research team analyzes the same Project Nim videos and finds thousands of instances where Nim signed before his human handlers did.
D. Researchers successfully teach a bonobo to use a 400-word pictogram-based language, exceeding Kanzi's 350-word vocabulary.

5. 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. While most surrenders during the American Civil War met a standard, on a few occasions officers surrendered prematurely or without cause.
2. Another noted that 'I have never seen ten thousand men all terribly angry in my life but this once'.
3. When Union Colonel Dixon Miles surrendered Harpers Ferry to Confederate General Stonewall Jackson in September 1862, many of his soldiers believed that they had not been given adequate opportunity to fight.
4. When under fire, one could surrender honourably once it became evident that continuing to fight would prove fruitless.
5. One soldier recalled that the indignation of Union men and officers at the surrender was terrible.

6. 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. But this epic journey is complicated for most salmon today, and especially for California's Central Valley Chinook, which travel through the nation's largest water delivery system.
2. They grow to maturity in the Pacific Ocean and then, as adults, use their sight, smell, and geomagnetic cues to return home.
3. A salmon's lifecycle is often described as heroic — their youthful adventure to the sea followed by a fateful return to spawn, and then die, at their place of birth.
4. Often born in hatcheries or in the shallows below dams, juvenile salmon swim through altered rivers and canals and are trucked around reservoirs and pumping plants on their way to the Sacramento-San Joaquin Delta and then San Francisco Bay.

7. 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: As a writer covering the latest research, however, I have noticed a shift in thinking, and I am now concluding that my mother's judgment was spot on.

Paragraph: ___(1)___. The ever-growing mass of wellness literature would seem to suggest that many others share my view. ___(2)___. Over the past 10 years, numerous studies have shown that our obsession with happiness and high personal confidence may be making us less content with our lives, and less effective at reaching our actual goals. ___(3)___. Indeed, we may often be happier when we stop focusing on happiness altogether. ___(4)___.

A. Option 1
B. Option 2
C. Option 3
D. Option 4

8. Sentences given in the question below, when properly sequenced, form a coherent paragraph. The first and last sentences are A and F, and the four in between are labelled 1, 2, 3, and 4. Choose the most logical order of these four sentences.

A. In 2017, Parliament passed The Enemy Property (Amendment and Validation) Bill, 2016, which amended the 1968 Act and The Public Premises (Eviction of Unauthorised Occupants) Act, 1971.

1. This amendment significantly expanded the definition of "enemy subject" and "enemy firm" to include legal heirs and successors, regardless of their nationality.

2. This ensures the property's status doesn't change due to a successor being an Indian citizen.

3. The amended law also stipulated that enemy property would remain vested in the Custodian, even if the original enemy changed nationality or died.

4. Uttar Pradesh holds the maximum number of such properties, with 4,991, followed by Bengal with 2,735, and Delhi with 487.

F. These changes aim to solidify the government's control over these assets.

9. 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. Young people themselves are aware of the limits, if not also the dangers, of A.I.

2. Hovaghimian, who is 17, felt as though a lot of adults were weighing in on A.I., but she wanted to know what her fellow teens thought about the technology.

3. We should aggressively discourage parents and children from using smart toys as replacements for human interaction.
4. "We're the first generation that's going to have to actually live with it," she told me.
5. After I wrote about what will happen to critical thinking if artificial intelligence is carelessly incorporated in K-12 schools, I heard from a rising high school senior in San Francisco named Fira Hovaghimian.

10. The passage given below is followed by four alternate summaries. Choose the option that best captures the essence of the passage.
The problem with wisdom is that it tends to come slowly, if it comes at all. As a species, we are not particularly skilled at making time-pressured, closely reasoned decisions about matters of life and death. The sociobiologist E. O. Wilson described the central problem of humanity this way: "We have Paleolithic emotions, medieval institutions, and godlike technology." The main challenge of the 80 years since the Trinity atomic test has been that we do not possess the cognitive, spiritual, and emotional capabilities necessary to successfully manage nuclear weapons without the risk of catastrophic failure. Khrushchev and Castro both made terrifying mistakes of analysis and interpretation during the missile crisis. So, too, did several of Kennedy's advisers, including General Curtis LeMay, the Air Force chief of staff, who argued that a naval blockade of Cuba, unaccompanied by the immediate bombing of missile sites, was "almost as bad as the appeasement at Munich."
A. The Cuban Missile Crisis could have been avoided if Kennedy had followed General LeMay's advice.
B. Advances in technology have always been matched by equal growth in human wisdom and emotional maturity.
C. Nuclear weapons have made global politics more stable by discouraging open conflict among major powers.
D. Humanity's emotional and institutional limitations make it dangerously unfit to manage technologies as powerful as nuclear weapons.

DILR

Charles, Adam, Robin, David and Shawn played a game of cards that consisted of six rounds. In each round, the first-ranked person got 10 points, the second got 7, the third got 5, the fourth got 2, and the fifth-ranked person got no points.
The table below gives the rank of the players based on the overall points scored in all the rounds till that round. It also gives the final score of the players. If two participants had the same total, both would get the same rank, with no one getting the next rank. For example, David and Shawn had the highest number of points at the end of the 5th round and were both ranked 1, and no one was ranked 2.

Player	R1	R2	R3	R4	R5	R6	Points after 6th round
Charles	2	1	1	2	3	2	30
Adam	4	3	2	5	3	4	28
Robin	1	2	3	3	5	5	20
David	5	5	4	1	1	3	29
Shawn	3	4	5	4	1	1	37

11. How many points did Adam get in the third round?

12. Which person did not win any of the rounds?
A. Charles
B. Adam
C. David
D. Shawn

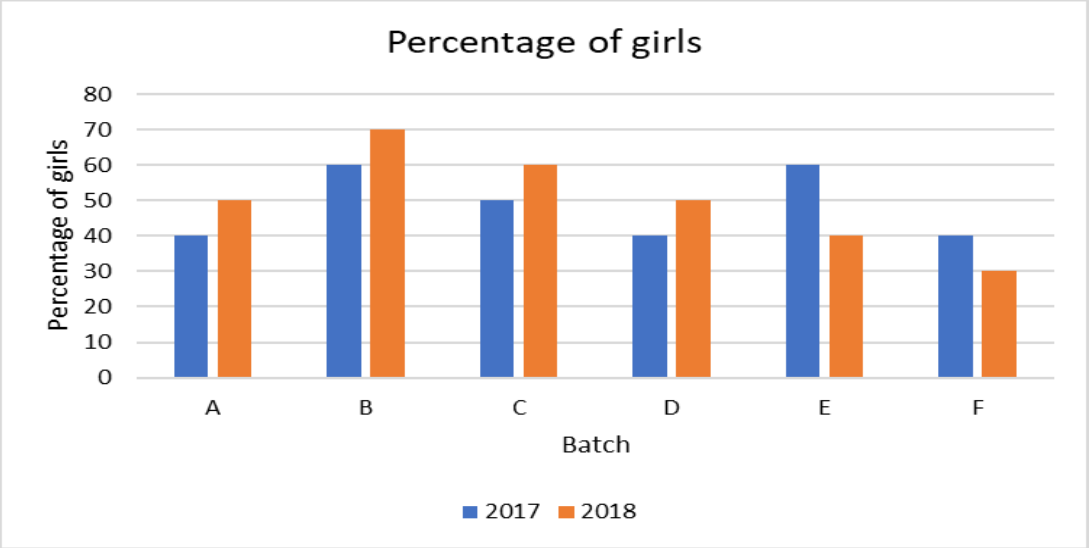
13. In how many rounds did Robin come 5th?

14. Who scored 7 points in the 3rd round?
A. Adam
B. Charles
C. David
D. Robin

15. What was David's total after 4 rounds?
A. 19
B. 20
C. 21
D. 22

16. Who among the following did not come 5th in any round?
A. Adam
B. Shawn
C. David
D. Charles

A coaching institute has 6 batches of students: A through F. The bar graph below shows the percentage of girls among the students during the years 2017 and 2018.



17. The number of students in batch D increased by 50% from 2017 to 2018. The number of boys in batch D was what per cent of the number of students in the batch in the years 2017 and 2018 together?
A. 54%
B. 52%
C. 50%
D. 55%

18. If the number of students in each of the batches in 2018 was 180, which of the following statements is correct?
A. The average number of girls in the six batches was 89
B. The percentage of boys in 2018 was 50.56%
C. There were more girls than boys in 2018
D. The maximum difference between the number of boys and girls in any of the batches was 72.

19. If in 2017 the number of girls in each of the batches was equal, the number of boys in 2017 was what percent more than the number of girls in 2017?
A. 12.22%
B. 13.89%
C. 14.33%
D. 15.67%

20. In 2018, the number of students in batch E was 40% more than the number of students in batch F. Which of the following can be the difference between the total number of boys and girls in the two batches together in 2018?

A. 51
B. 85
C. 102
D. 132

QA

21. Kunal has a clothing store. He offers a discount of 20% on MRP. During the festive season, he introduced another discount scheme, 'Buy 6 and get 2 free' (of the same price). A customer purchased 16 shirts of the same price and availed the discount through the new scheme. If Kunal could make a profit of 25% in this transaction, then find the percentage markup.

A. 91.66%
B. 100%
C. 108.33%
D. 112.5%

22. Find the number of ordered pairs of positive integers (x, y) that satisfy the equation x + y + xy = 329.

A. 14
B. 16
C. 7
D. 8

23. Ramdeep and Sukhwinder are driving on a road. Their speeds are in the ratio of 6:7, respectively. If Ramdeep increases his speed by 50%, then he will need one hour less to cover a distance of 108 km. Find the time (in minutes) required by Sukhwinder to cover a distance of 84 km.

24. ABCD is a cyclic quadrilateral with ∠BCD = 90°. E is a point on CD such that AB = BE. If CE = 3 cm and DE = 2 cm. Find the length of AD.

A. 3 cm
B. 4 cm
C. 5 cm
D. 6 cm

25. Vasooli Bhai lent the same amount of money to Arjun and Bhavin at the same rate of interest for the same period of time. To Arjun, he lent money on which compound interest is calculated half-yearly for the first 2 years and then simple interest is calculated for the remaining period. However, to Bhavin, he lent money on which simple interest is calculated, and the amount gets tripled in 5 years. Find the total amount (in Rs.) lent to Arjun and Bhavin if the difference between the total interest earned from Arjun and Bhavin is Rs. 156192.

A. 250000
B. 180000
C. 240000
D. 200000

26. How many three-digit numbers with distinct digits are possible such that the digit at the hundreds place is less than the digit at the tens place, which is more than the digit at the units place?

27. On the occasion of Dhanteras, Tejasvita bought a pair of copper plates and some pairs of steel plates. The cost of a copper plate is twice that of the steel plate. When paying at the counter for the plates, she found that the shopkeeper had interchanged the copper and silver pairs by mistake while making the bill, which increased the bill by 75%. Find the ratio of the number of pairs of copper plates to that of steel plates initially.

A. 1:5
B. 2:7
C. 3:8
D. 1:10

28. Find the value of $\log_3 4 * \log_4 5 * \log_5 8 * \log_2 9 * \log_9 11 * \log_{11} 81$.

29. Find the remainder when 7^{123} is divided by 143.

A. 1
B. 94
C. 57
D. 49

30. Meghna walks completely around the boundary of a square whose sides are each 5 km long. From any point on her path, she can see exactly 1 km horizontally in all directions. What is the area of the region consisting of all points Meghna can see during her walk, expressed in square kilometres and rounded to the nearest whole number?

A. 28
B. 39
C. 42
D. 48