VARC

Read the passage below and answer the questions that follow:

In most great debates, many possible stances are reduced to two options in a hurry. In American politics, we often frame all debates as "Democrats versus Republicans" and proceed to label every policy or action as belonging to one of those factions. Anybody else, particularly those in the middle, is quickly swept aside and forgotten. According to a new study, this tendency is not only common but is so ingrained in our thinking that you can make a formula to describe it. "We know what happens to people who stay in the middle of the road. They get run down." - Aneurin Bevan.

A team of researchers at the Santa Fe Institute studied the system using a commonly applied model to try to "solve" for where social boundaries appear on a political scale. The researchers added cognitive and social components — which often drive people into an "us vs. them" style of thinking — to the model's equations. They hypothesised that people would devise measurable camps of "us" and "them" which would appear in the models. Those who don't fit cleanly into these roles would tend to be overlooked. The model's results were compared to data from 1980s surveys, which included questions about respondents' feelings toward members of other political groups, to verify accuracy. Importantly, during that decade, many people were asked about political independents in the centre, deemed "inbetweeners" by the researchers, as well as about their stance on members of other parties.

Though one might suspect that people viewed those in the middle as potential allies, the tendency to divide the world into two buckets simply excludes those in the middle. The model predicted, and the surveys from the 80s confirmed, that both those on the left and right viewed centrists unfavourably. Lead author Vicky Chuqiao Yang explained the unfortunate situation of these centrists: "By being 'inbetweeners,' independents are viewed as unfavourably as the other party by both sides, and left out. So Independents get the worst of both worlds, and there are downstream consequences."

The authors speculate that this phenomenon could cause those in the middle to drift towards the extremes in hopes of avoiding the ills of being in the middle. Over time, this could lead to a highly polarised society, as nobody is left in the middle at all. These findings are not necessarily limited to politics. The model could be applied to how society views people of indeterminate race or who do not fit cleanly into categories of sexuality, for example. Additionally, because group labels evolve, we should see the formation of entirely new groups and in-betweeners. In the study, the authors note that the model was limited for exactly this reason and hope that future studies will expand on the concept.

CAT 50 Day Streak – Day 2

1. It can be reasonably inferred from the passage that if centrists continue to be marginalised, then:
A. Political debate will likely become more polarised over time.
B. Political systems will become more democratic and inclusive.
C. Centrist groups will eventually form a dominant third party.
D. The differences between the left and right will gradually dissolve.

2. Which of the following, if true, would most strengthen the claim that centrists are marginalised?
A. Data show the number of registered independents is steadily increasing.
B. Surveys reveal centrists enjoy greater trust from both sides of the spectrum.
C. Evidence indicates that many centrists hold extreme views privately.
D. Longitudinal studies show independents are less likely to be invited to political debates.

3. The study's framework could best explain which of the following non-political scenarios?
A. A society where bilingual people are celebrated as cultural bridges.
B. A workplace where hybrid employees are distrusted by both fully onsite and fully remote colleagues.
C. A school where students in the middle grades are given more opportunities than seniors or juniors.
D. A family where siblings share equal responsibility without conflict.

4. Which of the following statements best describes the relationship between the model's results and the 1980s survey data?
A. The model was developed to explain the observed patterns in the 1980s data; thus, the data served as the model's ultimate conclusion.
B. The 1980s data provided the initial hypothesis, and the model was subsequently built to predict its statistical components.
C. The model's predictions were confirmed by the observations found in the 1980s data, establishing the model's empirical validity.
D. The 1980s data introduced the variable of the "inbetweener," which the model then successfully incorporated into its cognitive equations.

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. Though the sack of Troy has been dated to 1184 BC, the Homeric epics were composed and perhaps written down in the eighth or seventh century.

2. With a few slips, he was, for instance, very careful not to impose iron on his Bronze Age heroes.
3. Such historical scrupulosity, however, misses the point.
4. Homer shows himself acutely aware of the gap between his own day and the period about which he was singing.
5. For most of them – Sarpedon, Patroclus, Achilles, Ajax – it was a death rendered still more grim by being met at a young age and far from home.

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 COVID-19 pandemic simply accelerated a trend: many of us are now more intimately connected to smartphones than to non-mediated relationships with people.
2. It is much easier, at least ostensibly, to live in isolation from other people.
3. Today, thanks mostly to our technologies, people are taking the second path through life much of the time.
4. Today, we are rapidly becoming 'tech-vexed' – my word for the gradual yet relentless seduction of computerised life.
5. The net result of this insular life is that relationships with ourselves and others take on a new hue.

7. The passage given below is followed by four alternate summaries. Choose the option that best captures the essence of the passage.

If you're coming at religion from a scientist's mindset, there's not much to say. There's really no evidence either way. We have neither verifiable testimony nor falsifiable claims. When you're entirely stuck on a physical plane, you cannot say much about the metaphysical one. As Sam Harris says, "I don't know what happens after the physical brain dies. I don't think anyone does know."
The only fact we do know is that we will die. And it's this fact that, for Bill Nye, is so important. Because we do not know what happens after death, and because we're faced with the possibility that it might be nothing, we turn to life with a kind of vital energy. Death's approach gives impetus to our mortal existence.
A. The lack of scientific evidence about the afterlife makes death the only certainty, and this uncertainty fuels a greater appreciation and urgency toward life.
B. Since science has disproven the existence of the afterlife, figures like Sam Harris and Bill Nye argue that religion has no role in shaping human life.

C. Religion and science agree that life after death is nothingness, which is why humans must rely solely on spiritual traditions to find meaning in existence.
D. Bill Nye and Sam Harris claim that science cannot fully explain what happens after death, proving that the metaphysical realm exists.

8. 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: Retail pricing wars never stop.
Paragraph: Customers today have extremely high expectations for prompt, thoughtful, and sympathetic responses. ___(1)___. Digital agents with natural language comprehension, context switching, and complex query resolution capabilities are made possible by agentic AI—all without transferring clients from one bot or agent to another. ___(2)___. They keep learning and getting better over time, which lowers support expenses and boosts client satisfaction. ___(3)___. By examining competitor behavior, inventory levels, purchase probability, and outside variables like seasonality or even popular social topics, agentic AI makes real-time repricing possible. ___(4)___. These agents can execute thousands of simulations and update prices in milliseconds to maximise profit and conversion, in contrast to static pricing algorithms.
A. Option 1
B. Option 2
C. Option 3
D. Option 4

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.

1. It looks, counterintuitively, as if the future is what determines the motion of the body in the past.
2. In classical mechanics, for example, there is something called the Lagrangian formulation, which holds that, when moving between two separate points, A and B, a physical body will take the most efficient path.
3. This does not look like the layer-cake model because, in order for the physical body to take the path of maximal efficiency, point B, which lies in the future, needs to be determined in advance.
4. In the case of general relativity, there are good reasons for doing this, but in other cases the challenge to the layer-cake model becomes harder to dismiss.

10. 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. H. floresiensis made stone tools and hunted diminutive elephants, whose own small size stands as another example of insular dwarfism.
2. In fact, its size conforms to the ecological principle of insular dwarfism, which predicts that animals reduce their body size when their population's range is limited to a small island environment.
3. The isolation of H. floresiensis likely contributed to its small brains and stature.
4. How H. floresiensis arrived at its namesake island is still unknown

DILR

Eleven people from five societies (Amrapali, Ekansh, Rangoli, Symphony, Trident) own cars of various brands (Honda, Skoda, Ford, Toyota). Each person belongs to one of these Societies. One person can have more than one car of any brand. The information about the vehicles owned by these 11 people is given in the table below.
The number of cars owned by these people, society-wise, is also given:

Persons	Honda	Skoda	Ford	Toyota
Ambuj	1	1	1	1
Bindu	2	0	0	1
Chetan	2	0	0	0
Dhanu	0	1	3	0
Edwin	0	1	1	2
Farhat	0	1	2	2
Geeta	0	1	0	1
Harry	0	0	2	1
Ishmeet	0	2	1	0
Jashn	2	0	1	0
Kanta	1	1	1	0

Society	Honda	Skoda	Ford	Toyota
Amrapali	3	2	4	1
Ekansh	2	1	3	2
Rangoli	1	3	2	1
Symphony	2	1	1	2
Trident	0	1	2	2

11. Chetan resides in which society?
A. Ekansh
B. Trident
C. Symphony
D. Cannot be determined

12. How many people are from Ekansh?
A. 2
B. 2 or 3
C. 3
D. 3 or 4

13. How many people are from Amrapali?

14. Which of the following is a resident of Rangoli?
A. Ambuj
B. Bindu
C. Edwin
D. Harry

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15. Which of the following statements may be correct, but not necessarily correct?
A. Geeta and Harry are from the same society
B. Farhat and Geeta are from different societies
C. Chetan and Dhanu are from the same society
D. Geeta and Jashn are from different societies

The annual incomes (in lakh Rs.) of six ladies - Gayatri, Heena, Ishani, Jyoti, Kavya and Lekha - are 3, 4, 6, 8, 10 and 16, in no particular order. Each of them saves a different percentage of her annual income among 10%, 20%, 25%, 35%, 40% and 60%, and invests it in a different scheme among Stocks, PPF, Mutual Funds, FOREX, NPS and Crypto, in no particular order. It is also known that,

- Ishani saves 25% of her annual income while Heena invests in NPS.
- The lady who saves 40% does not invest in PPF.
- The average annual incomes of Gayatri, Heena and Jyoti is Rs. 6 lakhs.
- The lady who earns the highest saves Rs. 5.6 lakhs and invests it in FOREX.
- The annual income of Kavya is the least among the six. She saves $1/12^{th}$ of the amount saved by the lady who invests in Mutual Funds.
- The sum of the annual incomes of the lady who invests in Stocks and the lady who saves 20% is equal to the sum of the annual incomes of Gayatri and the lady who saves 60%.

16. How much does Kavya save?

17. What percent of her salary does Gayatri save?
A. 20%
B. 40%
C. 60%
D. Cannot be determined

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18. In which scheme does Ishani invest?
A. PPF
B. Crypto
C. Stocks
D. Mutual Funds

19. What are the total savings of the six ladies put together?
A. Rs. 15 lakhs
B. Rs. 18 lakhs
C. Rs. 17 lakhs
D. Rs. 16 lakhs

20. How many ladies save more than the one who invests in Crypto?

QA

21. If $4^x = 125$ and $8^y = 5$, find the value of $\frac{2x - y}{y}$.

A. 5
B. 8
C. 9
D. 10

22. In the equation x + x + x + ... + x = 1260, let the number of x's be y. If x and y are natural numbers and x > 1, find the smallest possible value of y + x.

23. The sum of n terms of two arithmetic progressions is in the ratio (3n + 8):(7n + 15). The ratio of their 12^{th} term is:

A. 4:9
B. 3:7
C. 9:16
D. 7:16

24. The number of integers greater than 6000 that can be formed using the digits 3, 5, 6, 7, and 8 without repetition is:

25. An ice cream cone consists of a sphere of vanilla ice cream and a right circular cone that has the same diameter as the sphere. If the ice cream melts, it will exactly fill the cone. Assume that the melted ice cream occupies 75% of the volume of the frozen ice cream. What is the ratio of the cone's height to its radius?

A. 2:1
B. 3:1
C. 4:1
D. 16:3

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26. Alisa places 2.5 ounces of coffee into a 5-ounce cup and 2.5 ounces of cream into a second cup of the same size. She then pours half the coffee from the first cup to the second and, after stirring thoroughly, pours half the liquid in the second cup back to the first. What fraction of the liquid in the first cup is now cream?

A. 1/4
B. 1/3
C. 3/7
D. 2/5

27. A parallelogram ABCD has ∠ABC = 120°, AB = 16, and BC = 10. Extend CD through D to E so that DE = 4, and label as F the intersection of AD and BE. What is the value of DF?

A. 1
B. 1.5

C. 2
D. 2.5

28. Two factors of a number N are prime. If N^2 has 77 factors, find the number of factors of N.
A. 24
B. 28
C. 22
D. 18

29. Anshul invested a sum of money in a bank at 8% rate of interest, compounded annually. Amod also deposited the same amount in the bank. The manager, being a friend of Amod, offered him 10% interest and compounded semiannually. The amount received at the end of 1st year by Amod was Rs. 2700 more than that received by Anshul. What was the principal amount invested by each of them in the bank?
A. Rs 135000
B. Rs 120000
C. Rs 108000
D. Rs 90000

30. Maya's mother told her to eat no more than 10 chocolates per day. Also, if in one day she eats more than 7 chocolates, in the next two days she can't eat more than 5 chocolates. What is the maximum number of chocolates that Maya can eat over a period of 20 consecutive days, following the request of his mother?
A. 143
B. 142
C. 141
D. 140

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