



## Mock Test Series 1.0

### Mock Test – 10

#### VARC

**Directions (1–4): Read the following passage and answer the questions that follow:**

WASHINGTON — The World Bank warned that the coronavirus pandemic and Russia’s war in Ukraine have contributed to a decline in the global economy’s long-term growth potential, leading to what could be a “lost decade” that would mean more poverty and fewer resources to combat the impact of climate change.

The warning comes as the world has been dealing with overlapping crises — a pandemic that crippled economies and strained public health systems and Russia’s invasion of Ukraine, which disrupted global supply chains and hurt international trade ties. The threat of a more protracted slump coincides with new signs of stress in the world’s financial system as a series of banking crises threaten to undermine economic growth.

The World Bank projected in a new report that average potential global output is poised to fall to a 30-year low of 2.2 percent per year between 2023 and 2030. That represents a sharp decline from the first decade of this century, when average global output was 3.5 percent per year.

The falloff will be even more pronounced for developing economies, which grew at an average annual rate of 6 percent from 2000 to 2010; that rate could decline to 4 percent this decade.

“A lost decade could be in the making for the global economy,” said Indermit Gill, the World Bank’s chief economist and senior vice president for development economics. “The ongoing decline in potential growth has serious implications for the world’s ability to tackle the expanding array of challenges unique to our times — stubborn poverty, diverging incomes and climate change.” Officials at the World Bank said that the “golden era” of development appears to be coming to an end. They warned that policymakers would need to get more creative as they try to address global challenges without being able to rely on the rapid economic expansions of countries such as

China, which has long been an engine of worldwide growth. They suggested that international monetary and fiscal policy frameworks should be more closely aligned, and that world leaders need to find ways to reduce trade costs and increase their labor force participation. A return to faster growth, they said, will not be easy.

“It will take a herculean collective policy effort to restore growth in the next decade to the average of the previous one,” the World Bank said in the report.

The increasing frequency of global crises continues to weigh on output even as signs of an economic rebound emerge. Efforts by central banks to tame inflation by raising interest rates have fueled turmoil in the banking sector, leading to the failures of Silicon Valley Bank and Signature Bank in the United States this month and the rescue of Credit Suisse by UBS.

Top economic officials have been watching to see if the strain on the banking system will become a significant economic headwind that could tip the United States into a recession.

“It definitely brings us closer right now,” Neel Kashkari, president of the Federal Reserve Bank of Minneapolis, said of a recession on the CBS program “Face the Nation” on Sunday. “What’s unclear for us is how much of these banking stresses are leading to a widespread credit crunch.”

Kristalina Georgieva, the managing director of the International Monetary Fund, said on Sunday that “risks to financial stability have increased” and that given high levels of uncertainty, policymakers must remain vigilant. She noted that the recent turmoil could have implications for the I.M.F.’s global economic outlook and financial stability report, which will be released in the next few weeks.

“At a time of higher debt levels, the rapid transition from a prolonged period of low interest rates to much higher rates — necessary to fight inflation — inevitably generates stresses and vulnerabilities, as evidenced by recent developments in the banking sector in some advanced



economies," Ms. Georgieva said at the China Development Forum.

The I.M.F. said in January that it believed a global recession could be avoided as growth begins to rebound later this year. At the time, it projected that output would be more resilient than previously anticipated, and it upgraded its growth projections for 2023 and 2024, but it did warn that "financial stability risks remain elevated." World Bank officials said that if the current banking turmoil spirals into a financial crisis and recession, then global growth projections may be even weaker because of the associated losses of jobs and investment.

"However, you look at it, if the current situation gets worse and turns into a recession, especially a recession at the global level, that could have negative implications for long-term growth prospects," Ayhan Kose, director the World Bank's Prospects Group and the lead author of the report.

**1.** Which of the following statements best represents the essence of the passage?

- (a) The World Bank primarily attributes the global economic decline to the banking crises in the United States.
- (b) The World Bank expresses concern over the future of China's economy and its role as an engine of worldwide growth.
- (c) The ongoing crises like the pandemic and war in Ukraine have affected the global economy, creating potential for a "lost decade," and further hampering efforts against climate change and poverty.
- (d) The International Monetary Fund believes that a global recession can be entirely avoided despite the ongoing crises.

**2.** Based on the passage, we can infer that all of the following statements, if true, would weaken the World Bank's projections, EXCEPT:

- (a) The pandemic rapidly subsides, leading to a quicker-than-expected economic recovery.
- (b) Russia ends its war in Ukraine, leading to the normalization of global supply chains and international trade ties.

(c) The frequency of global crises significantly decreases in the near future.

(d) International cooperation improves leading to a decrease in trade costs and increase in labor force participation.

**3.** All of the following statements may be considered valid inferences from the passage, EXCEPT:

- (a) Policymakers will need to devise more innovative strategies to deal with global challenges.
- (b) The banking sector's instability may potentially push the United States into a recession.
- (c) A prolonged period of low interest rates is essential to fight inflation and ensure economic stability.
- (d) The coronavirus pandemic and Russia's war in Ukraine are contributing to the decline in the global economy's long-term growth potential.

**4.** Which one of the following scenarios, if false, could be seen as supporting the passage?

- (a) Global economic recovery is expected to be swift and smooth, with no major obstacles.
- (b) The frequency of global crises continues to increase, affecting worldwide economic output.
- (c) The coronavirus pandemic ceases to exist and has no long-term impact on global economies.
- (d) There's a sudden surge in the global output growth rate.

**Directions (5–8): Read the following passage and answer the questions that follow:**

Have you ever felt awe and exhilaration while contemplating a vista of jagged, snow-capped mountains? Or been fascinated but also a bit unsettled while beholding a thunderous waterfall such as Niagara? Or felt existentially insignificant but strangely exalted while gazing up at the clear, starry night sky? If so, then you've had an experience of what philosophers from the mid-18th century to the present call the sublime. It is an aesthetic experience that modern, Western philosophers often theorise about, as well as, more recently, experimental



psychologists and neuroscientists in the field of neuroaesthetics.

Responses to the sublime are puzzling. While the 18th century saw ‘the beautiful’ as a wholly pleasurable experience of typically delicate, harmonious, balanced, smooth and polished objects, the sublime was understood largely as its opposite: a mix of pain and pleasure, experienced in the presence of typically vast, formless, threatening, overwhelming natural environments or phenomena. Thus the philosopher Edmund Burke in 1756 describes sublime pleasure in oxymoronic terms as a ‘delightful horror’ and a ‘sort of tranquility tinged with terror’. Immanuel Kant in 1790 describes it as a ‘negative’ rather than a ‘positive pleasure’, in which ‘the mind is not merely attracted by the object, but is also always reciprocally repelled by it’. It became a problem to explain why the sublime should be experienced overall with positive affect and valued so highly, given that it was seen to also involve an element of pain. Deepening the sense of paradox is the view that the experience of the sublime is actually more profound and satisfying than that of the beautiful. Some believe such sublime aesthetic experiences constitute religious or spiritual experiences of God or a ‘numinous’ reality.

There are two kinds of response to the sublime: what I call the ‘thin’ and the ‘thick’ sublime. Burke’s physiological account understands the sublime as an immediate affective arousal, which is not a highly intellectual aesthetic response. This is the ‘thin sublime’. Kant and Arthur Schopenhauer meanwhile offer transcendental accounts – that is, accounts that involve putatively universal cognitive faculties – and understand the sublime as an emotional response in which intellectual reflection on ideas, especially ideas about humankind’s place in nature, play a significant role. This is the ‘thick sublime’.

Thin sublime, then, is akin to an immediate reaction of awe, and this bare cognitive appraisal that kind of stuns and overwhelms the appreciator might very well be the first moment in all sublime aesthetic responses. But when one lingers in that experience of awe, and the mind starts to reflect on the features of the awe-inspiring landscape or phenomenon, and the way it makes one feel, then this cognitive-affective engagement constitutes thick sublime experience.

5. A fundamental conclusion by the author is that:

- (a) The sublime is a universally positive experience.
- (b) The sublime is limited to natural environments.
- (c) The experience of the sublime is not solely an intellectual response.
- (d) The concept of the sublime is obsolete.

6. Had the passage continued, what would the author have logically discussed next?

- (a) A comparison of various philosophers' views on the sublime.
- (b) The role of culture in shaping experiences of the sublime.
- (c) An analysis of specific artworks inspired by the sublime.
- (d) A critique of the concept of beauty in art.

7. Which one of the following statements best reflects the main argument of the second paragraph of the passage?

- (a) The experience of the sublime involves an unresolved paradox.
- (b) The sublime is a mixture of pain and pleasure, a concept that is widely accepted by philosophers.
- (c) The sublime is a more profound experience than the beautiful, making it superior.
- (d) The experience of the sublime is primarily a spiritual or religious phenomenon.

8. The author lists all of the following as reasons for experiencing the sublime EXCEPT:

- (a) A sense of awe in response to vast, formless environments
- (b) A mixture of pain and pleasure
- (c) A feeling of existential insignificance
- (d) A preference for delicate and polished objects

**Directions (9–12): Read the following passage and answer the questions that follow:**

Turn on television in any state with a competitive Senate or gubernatorial race, and you’ll see that the criminal-justice reform agenda is under constant attack.

Republicans are pinning higher crime rates on Democrats who have expressed sympathy for almost any aspect of the movement to confront racial inequities in the criminal



justice system. In New York, a conservative super PAC opposing Democratic Governor Kathy Hochul is slamming her for defending “the state’s disastrous cashless bail experiment” and refusing to “remove liberal prosecutors, like [Manhattan’s] Alvin Bragg, who too often downgrade charges for dangerous criminals.” In Pennsylvania, the National Republican Senatorial Committee links John Fetterman to “sanctuary cities, weak prosecutors, crime skyrocketing—failed liberal policies, making us less safe.” In Wisconsin, Republican ads ominously ask, “What happens when criminals are released because bail is set dangerously low?” and accuse Mandela Barnes, the state’s lieutenant governor, of wanting to completely eliminate cash bail (not surprisingly, the full story is more complicated).

These attacks assume that the changes in criminal-justice policies that some states and many cities have pursued over the past few years are undermining public safety and fueling higher crime rates.

But an exhaustive new study released today by the Center for American Progress refutes that allegation. Conducted by a team of seven academic researchers, the study compares cities that have elected so-called progressive prosecutors with places whose district attorneys continue to pursue more traditional approaches.

Countering conventional wisdom, the study found that homicides over recent years increased less rapidly in cities with progressive prosecutors than in those with more traditional district attorneys. It also found no meaningful differences between cities with progressive or traditional DAs in the trends for larceny and robbery. “I think it’s really important to emphasize the extent to which we looked for a relationship and found none” between a prosecutors’ commitment to reform and crime rates, Todd Fogle-song, a fellow in residence at the University of Toronto and one of the co-authors, told me.

The data, from CAP, a liberal think tank and advocacy organization, reinforces the message from a study released earlier this year by Third Way, a centrist Democratic group. That report found that per capita murder rates in 2020 were 40 percent higher in states that voted for Donald Trump than in those that voted for President Joe Biden. The study found that eight of the 10 states with the highest per capita murder rates in 2020 have voted Republican in every presidential election in this century.

Progressive prosecutors have made major electoral gains since the mid-2010s, winning elections in New York City, Philadelphia, Boston, Chicago, San Francisco, and Los Angeles, among other big cities. In a recent interview, Larry Krasner, Philadelphia’s aggressively reform-minded DA, told me that about 20 percent of the nation’s population now lives in jurisdictions with a progressive prosecutor, compared with about 10 percent a little more than two years ago and essentially none 10 years ago. Fueled by the mass protests for racial equity that followed George Floyd’s murder in 2020, these prosecutors have pursued a range of common policies, including reducing reliance on cash bail, prosecuting fewer (or no) juveniles as adults, diverting more nonviolent offenders from prison to treatment programs, discouraging prosecution of quality-of-life violations associated with homelessness (such as public urination), and prosecuting more police misbehavior.

But rising crime rates—and, just as important, a sense of disorder linked to pervasive homelessness in multiple big cities—have forced the movement onto the defensive. San Francisco voters recalled Chesa Boudin, their progressive DA; polls showed that George Gascón, the like-minded Los Angeles district attorney, had a very good chance of being removed as well if opponents had collected enough valid signatures to qualify their recall effort. Meanwhile, the Republican-controlled state legislature in Pennsylvania, citing Philadelphia’s high homicide rate, is exploring whether to impeach Krasner (although he, and other legal scholars, say it lacks the legal authority to remove him).

Amid this storm, the CAP study represents probably the most comprehensive attempt yet to quantify the progressive prosecutors’ effect on crime rates. Looking at the period from 2015 to 2019, for instance, the study found that murder rates increased in a smaller share of cities with progressive prosecutors (56 percent) than in those with traditional prosecutors (68 percent) or prosecutors who fell in the middle (62 percent). (The study used a classification system for local DAs developed by a former federal prosecutor who is a critic of the progressive movement.) What’s more, the absolute number of murders increased by more in the cities with traditional and moderate prosecutors than in those with progressive ones. When homicide rates jumped from 2020 to 2021, the study



found, the increase was slightly lower in the cities with progressive prosecutors than in those with traditional prosecutors.

9. It can be inferred from the passage that the author is not likely to support the view that:

- (a) Progressive prosecutors are the primary cause of rising crime rates.
- (b) The criminal-justice reform movement has been successful in addressing racial inequities.
- (c) The Republican party tends to attribute higher crime rates to Democratic policies.
- (d) Public opinion on progressive prosecutors is largely negative.

10. Which one of the following, if true about the criminal-justice reform movement, would invalidate the purpose of the CAP study in the passage?

- (a) Crime rates in cities with progressive prosecutors have always been lower than in cities with traditional prosecutors.
- (b) The criminal-justice reform movement has not had any impact on racial inequities.
- (c) The CAP study was funded by a political organization with a vested interest in the outcome.
- (d) Public opinion on criminal-justice reform has shifted significantly in recent years.

11. On the basis of the information in the passage, all of the following are true about the criminal-justice reform movement EXCEPT that it:

- (a) has been fueled by mass protests for racial equity since George Floyd's murder.
- (b) has led to a significant increase in crime rates in cities with progressive prosecutors.
- (c) has been under constant attack in states with competitive Senate or gubernatorial races.
- (d) faces challenges due to rising crime rates and a sense of disorder linked to pervasive homelessness.

12. Which one of the following statements could be inferred as supporting the arguments of the passage?

- (a) Progressive prosecutors have not implemented any significant policy changes.
- (b) The criminal-justice reform movement has contributed to higher crime rates in cities.
- (c) Progressive prosecution policies do not necessarily lead to increased crime rates.
- (d) Cities with traditional district attorneys have seen a decrease in crime rates.

**Directions (13–16): Read the following passage and answer the questions that follow:**

Human culture has evolved significantly throughout the ages. The process of evolution is traditionally associated with primarily physical traits, but evolution has a significant effect on the social behavior of humans as well. The process of natural selection which happened over the years can explain many human traits and reactions. As social animals, humans developed a range of social skills which allowed them to increase their chances of prosperity and survival. There are many areas of human behavior and attitude which can be explained by evolution, and there are some which have a less clear link to natural selection.

One example of human bias produced by evolution is a traditional relationship between sexes. Women used to be extremely dependent on men for hunting and protecting, which males were more fit to do because of their relatively bigger size and physical strength. On the contrary, men were much more independent. In a more advanced society, this resulted in social norms which valued and gave the power almost exclusively to males. Today, women have much more freedom and influence, but stigma and stereotypes did not go away completely. Women are still expected to care for the children and stay at home, as it used to be at the very beginning of society. Taking into account recently acquired freedoms, some women still feel pressure to conform to traditional behavior due to existing barriers and disapproval from some members of society. There is also a ceiling on how high of a status a woman can have, as demonstrated by salary difference favoring males. Moreover, males tend to feel inferior in the work environments where females are in charge. "Sexual harassment can serve as an "equalizer" against women in



power, motivated more by control and domination than by sexual desire. Traditions evolved over generations may explain the motivations behind such types of harassment. Another instance of behavior which was defined by evolution is a tendency to violence. Men tend to be more competitive and more prone to take risks. Historically, there were many physical activities which people participated in: hunting to get food, protecting the group, and in-group struggle for power. Therefore, men who were larger, stronger and more willing to fight had an advantage and could attract healthier females and as a result passed on more genes than their weaker competitors. This tendency can explain why men tend to be more violent and aggressive. Additionally, it shows why women tend to be more attracted to more fit and masculine males.

As human society evolved, so did people's motivations. As soon as people realized that they are stronger when they work together, they started to develop traits which allowed for better cooperation with their peers. This process was intensified by competition with others, which led to the creation of identity associated with the group and allowed for the creation of norms, standards and notion of belonging to a particular community. Similarly, today people may feel very strongly about belonging to certain groups. This feeling creates a sense of division by nationality, religion, race, sex, and a multitude of other factors.

Social environment evolved dramatically through the course of human existence. Human interactions are different in this day and age. Old traits and automatic responses which allowed human ancestors to thrive, may instead bring hardships for the people of today. For instance, fight or flight response to stress, which triggers increased heart rate and readiness for confrontation or retreat, is often counterproductive in the current environment. Most of our stress today cannot be helped by running or fighting. Instead, we need to be calm and thoughtful and cooperate with others.

It is certain that evolution is responsible for some aspects of human behavior, but it is impossible to determine exactly in what areas and to what degree. For instance, there are human behaviours such as self-harm or suicidal ideation, which seem to be contradictory to evolutionary principles.

**13.** Which of the following statements about human behavior and evolution is NOT true?

- (a) Women have more freedom and influence today than they used to, but traditional gender roles and stereotypes still persist.
- (b) Men tend to be more competitive and aggressive than women, which can be explained by their historical role in activities like hunting and fighting.
- (c) The process of evolution led to the development of traits that allowed for better cooperation among humans.
- (d) Evolution is solely responsible for all human behaviors and attitudes.

**14.** Which of the following, if true, would best WEAKEN the argument that the development of humans has been greatly impacted by the process of evolution, particularly with regards to their social behavior?

- (a) Evolution has no significant impact on the physical traits of humans.
- (b) Evolution has a greater effect on the physical traits of humans than on their social behavior.
- (c) Evolution has no impact on the social behavior of humans.
- (d) Evolution has a lesser effect on the social behavior of humans than on their physical traits.

**15.** All of the following statements may be considered valid inferences from the passage, EXCEPT:

- (a) evolutionary traits that helped human ancestors may bring hardships for people in contemporary society.
- (b) feelings of strong identity associated with certain groups have evolutionary roots.
- (c) the greater physical strength and size of men is a direct result of societal norms.
- (d) evolutionary biases contribute to a gender-based wage gap.

**16.** A fundamental conclusion by the author is that:

- (a) women continue to be discriminated against due to historical evolutionary biases.



(b) men are naturally more aggressive and competitive due to evolutionary influences.

(c) evolution explains all aspects of human behavior without exception.

(d) evolution significantly impacts human behavior, but its influence has limits and exceptions.

17. There is a sentence that is missing in the paragraph below. Look at the paragraph and decide in which blank (option 1, 2, 3, or 4) the following sentence would best fit.

Sentence: This has led to a great deal of volatility and uncertainty in the global financial markets.

Paragraph: The unprecedented impact of the pandemic has severely affected global economies. Government responses have varied, with some implementing stimulus packages, while others chose austerity. (1) The resulting economic fallout has been far from uniform across different sectors and regions. (2) Yet, despite the challenges, some industries have demonstrated remarkable resilience and even growth during these trying times. (3) As such, we are starting to gain a clearer understanding of the long-term effects of the pandemic on global economies and what recovery might look like. (4)

(a) Option 1  
(b) Option 2  
(c) Option 3  
(d) Option 4

18. There is a sentence that is missing in the paragraph below. Look at the paragraph and decide in which blank (option 1, 2, 3, or 4) the following sentence would best fit.

Sentence: This has led to a significant shift in business strategies, requiring companies to adapt to new market conditions.

Paragraph: The rise of digital technology has been transforming business operations and models. Traditional methods are becoming obsolete as

digital innovation continues to evolve. (1) The adoption of digital technology is no longer just an option; it has become a necessity. (2) The ability to leverage these technologies has separated successful companies from those that are struggling. (3) This trend indicates that digital transformation is not just a buzzword, but a vital strategy for business survival and growth. (4)

(a) Option 1  
(b) Option 2  
(c) Option 3  
(d) Option 4

19. The four sentences (labelled 1, 2, 3 and 4) 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:

(a) To do so would foster a climate of understanding, rather than judgment, in the face of the vast complexity of human behaviour.

(b) Socrates' philosophy emphasises the importance of questioning our assumptions and beliefs.

(c) In practice, this means not being quick to judge others, but instead seeking to understand their perspectives and motivations.

(d) This process of questioning can lead to greater self-awareness and a deeper understanding of our place in the world.

20. The four sentences (labelled 1, 2, 3, and 4) 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:

(a) This shift in focus has led to a more holistic approach to addressing criminal behavior, recognizing that multiple factors contribute to criminality.

(b) Traditional criminology theories often focused on the individual's role in criminal behavior, often attributing it to inherent traits or personal choices.



(c) In recent years, however, there has been a growing emphasis on the social, economic, and environmental factors that can influence criminal behavior.

(d) By addressing these underlying factors, it is believed that crime rates can be reduced and communities can become safer.

21. The four sentences (labelled 1, 2, 3, and 4) 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:

(a) It's in these spaces that we often find the most authentic expressions of a community's history, values, and aspirations.

(b) Art and culture can play an important role in revitalizing neighborhoods, acting as a catalyst for community interaction and dialogue.

(c) This is not only about the beautification of physical spaces, but also about fostering a sense of identity and belonging among residents.

(d) Public spaces such as parks, squares, and streets are often transformed into open-air galleries, showcasing local talent and creativity.

22. Which of the following best summarizes the below passage?

Two hundred years ago, the poets and philosophers of the Romantic movement came to an intoxicating thought: art can express the otherwise inexpressible conditions that make everyday sense and experience possible. Art, the Romantics said, is our interface with the real patterns and relations that weave up the world of rational thought and perception. And, although most philosophers and artists today don't profess to taking this idea very literally, I believe that not much in our current way of caring about literature and music, film and painting, dance and sculpture, works without it. My purpose here is to show that today's first blushings of a mathematical viewpoint on pattern, mind and (human) world make the Romantic theory of art literally plausible. Many will find the thought of letting machine learning theory decide the fate of Romantic philosophy sinister or contrarian, if not a category error. To make real sense of the affordances of this encounter – and to learn that a mathematical-empirical account of mind was inside the Romantics all along – we need to start from the beginning.

(a) The Romantic theory of art, suggesting that art expresses inexpressible conditions, is plausible from a mathematical viewpoint.

(b) Machine learning theory is the future of Romantic philosophy and artistic interpretation.

(c) Art is our interface with the real patterns and relations that weave up the world of rational thought and perception.

(d) The Romantic movement's philosophers and poets had a mathematical-empirical account of mind.

23. Read the following passage and answer the question that follows:

Paris, France, 1933. The French newspaper Le Figaro reads: 'It's a wick to a barrel of powder' beneath the headline 'Hitler Is the New Master of Germany'. Terror sets in. The far-Right is growing. The economy is suffering. There is mass unemployment. There are workers' strikes. Fascism begins appealing to the middle classes. In Berlin, Stormtroopers are patrolling the streets. The Gestapo is detaining people and murdering them in cellars. Refugees from Germany arrive by train daily looking for asylum. Between 1933 and 1938, more than 80,000 politicians, philosophers, communists and liberals flee from Germany to France. There is anti-German sentiment. There are anti-immigrant protests. But intellectual life is flourishing in the cafés, institutes and academies,



as refugees forge community in exile. And at the École Pratique des Hautes Études, one of France's most prestigious research universities, Alexandre Kojève has taken over Alexandre Koyré's seminar on The Phenomenology of Spirit (1807) by G W F Hegel. Between 1933 and 1939, Raymond Aron, Georges Bataille, André Breton, Gaston Fessard, Jacques Lacan, Maurice Merleau-Ponty, Éric Weil, Hannah Arendt, Jean-Paul Sartre, Simone de Beauvoir, Frantz Fanon, Raymond Queneau, Emmanuel Levinas all come to hear his lectures. A collection of the most renowned thinkers of the day, who would come to lay the intellectual foundations for 20th-century philosophy, political thought, literature, criticism, psychology and history. It is said that Kojève's lectures were so intricate, so deft, that Arendt accused him of plagiarising. Bataille fell asleep. Sartre couldn't even remember being there. How is it that Kojève, this obscure figure of history, came to influence an entire generation of thinkers at this pivotal moment? How is it that his ideas continue to fuel political and cultural debates today around identity, individualism, liberal democracy and the end of history?

Which of the following best summarizes the passage?

- (a) Alexandre Kojève's lectures at the École Pratique des Hautes Études greatly influenced the intellectual foundations of 20th-century philosophy, political thought, literature, criticism, psychology, and history.
- (b) The rise of fascism and the mass arrival of German refugees in France greatly impacted the political and cultural landscape of the country during the 1930s.
- (c) Paris in the 1930s was a hub for intellectuals fleeing from Germany, with Alexandre Kojève's lectures at the École Pratique des Hautes Études being a focal point of this intellectual community.

- (d) The far-right's ascension, economic challenges, and anti-German sentiment in 1930s France resulted in a surge of intellectual activity, with Alexandre Kojève's lectures playing a significant role.

24.

Five sentences related to the 16th and 17th-century Mediterranean history are given below. Four of them can be put together to form a meaningful and coherent short paragraph. Identify the Odd One Out. Choose its number as your answer and key it in.

- (a) By the 16th century, the significant participation of European merchants in the Maghreb's local economy had led to the establishment of permanent residences and a vibrant exchange of cultural ideas.
- (b) Throughout the 17th and 18th centuries, the British maintained relatively stable diplomatic relationships with Maghrebi states, enduring until Europe's colonial expansions in the 19th century.
- (c) During the 15th century, an intense rivalry between the Venetians and the Ottomans led to sporadic conflicts disrupting trade in the Mediterranean.
- (d) Christian and Maghrebi corsairs were government licensed and imposed tax on their captures, with the trade of Muslim captives highly sought after due to their endurance in laborious tasks like manning the European galleys.
- (e) The trade of captives and ships was highly dependent on both sides of the Mediterranean's economic conditions, necessitating treaties of peace and trade between European powers and Maghrebi states.

## **LRDI**

**Directions (25–29): Read the following passage and answer the questions that follow:**

In a remote tribe residing within the depths of a Central Asian valley, a unique system of currency prevails. The



tribe employs seashells, gemstones, and feathers as their exclusive means of exchange. Each seashell is valued at a specific number of gemstones, and each gemstone holds a certain value in feathers. Any tribe member is permitted to trade any quantity of seashells, gemstones, or feathers for an equivalent number of other currencies. Remarkably, all transactions are conducted in whole units, with no division or subdivision of the currencies. Furthermore, the tribe has no access to any form of currency apart from seashells, gemstones, and feathers.

On a particular day, Xanar, a member of the tribe, possessed four seashells, three gemstones, and five feathers. Initially, he traded one seashell for one gemstone and three feathers. Subsequently, he exchanged three gemstones and one feather for two seashells.

25. This morning, Xi Meek, the sibling of Xanar, traded a single such currency and ultimately obtained an equal quantity of seashells, gemstones, and feathers. What is the smallest possible total number of such currencies they could have possessed before making the trade?

26. If immediately following Xanar's such currencies exchanges, he purchased a boat, what is the highest potential price of the boat in terms of such currency's equivalents?

- (a) 3 seashells, 3 gemstones, 8 feathers.
- (b) 5 seashells, 2 gemstones, 5 feathers.
- (c) 1 seashell, 9 gemstones, 4 feathers.
- (d) 4 seashells, 2 gemstones, 10 feathers.

27. Xavar, a member of this tribe, had with him 6 seashells, 11 gemstones, and 9 feathers. What is the total number of such currencies that he can exchange in order to be left with an equal number of seashells, gemstones, and feathers?

- (a) 3
- (b) 4
- (c) 5
- (d) More than one of the above

28. Lysia, a member of this tribe, had with her at least one such currency of each type. First, she exchanged two gemstones and then she exchanged two seashells. After this, she exchanged a certain number of feathers for exactly one seashell and she ended up with an equal number of seashells,

gemstones, and feathers. What is the minimum number of such currencies that she had with her after she exchanged such currencies?

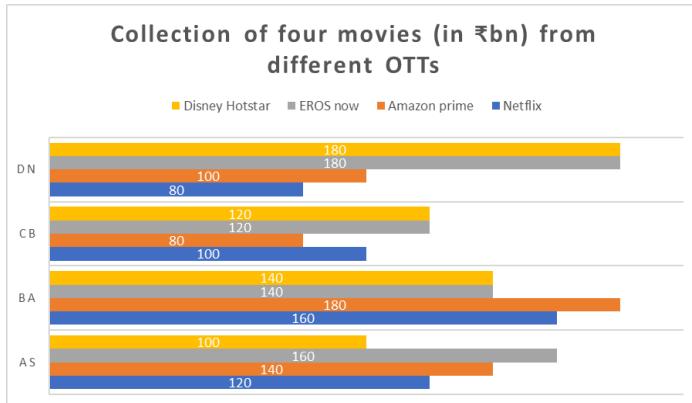
29. If Xi'in, a tribe of the Central Asian valley, has 57 numbers of feathers then in exchange what is the minimum combination of such currencies (in any combination) would he expect as equivalents?

- (a) 3 seashells, 3 gemstones, 4 feathers.
- (b) 5 seashells, 0 gemstones, 5 feathers.
- (c) 5 seashells, 3 gemstones, 2 feathers.
- (d) 6 seashells, 1 gemstone, 3 feathers.

**Directions (30–35):** Read the following passage and answer the questions that follow:

During a specific year, five movies, namely Agents of Shield (AS), Born Again (BA), Chhota Bheem (CB), Death Note (DN), and Eric & Jessie (EJ), were released on four different OTTs: Netflix, Disney Hotstar, Amazon Prime, and EROS Now. Each movie was ranked from 1 to 5 in each OTT based on their total collections, with higher ranks indicating higher collections. No two movies had the same total collections in any OTT. The first table displays the total collections of AS, BA, CB, and DN in each of the four OTTs, while the second table shows the sum of the ranks obtained by these movies across the four OTTs.

The below table gives data on the total collection from different OTTs in Billion Rupees (₹ bn): -



The below table provides the sum of the ranks obtained by these four movies in the four OTTs.

Movie	Sum of Ranks
AS	13
BA	10
CB	18



DN	10
----	----

**Directions (36–39):** Read the following passage and answer the questions that follow:

The following questions relate to a game to be played between Aman and Bhanu. The game consists of a  $4 \times 4$  board where each cell contains a positive number. Aman and Bhanu make moves alternatively. A move by any of the players consists of splitting the current board configuration into two equal halves and retaining one of them. In Aman's moves, he is allowed to split the board only vertically and to decide to retain either the left or the right half. Bhanu, in his moves, can split the board only horizontally and can retain either the lower or the upper

half. After two moves by each player a single cell will remain which can no longer be split and the number in that cell will be treated as the profit (in rupees) of the person who has started the game.

A sample game is shown below. By the end of the sample game, your gain is Re.1.

With the same initial board configuration as above and assuming that Aman has to make the first move, answer the questions that follow.

Initial Board:

2	1	2	4
5	1	6	7
9	1	3	2
6	1	8	4

After Aman's first move (he decides to retain the left half):

2	1	
5	1	
9	1	
6	1	

After Bhanu's first move (he decides to retain the upper half):

2	1	
5	1	

After Aman's second move (he decides to retain the right half):

	1	
	1	

After Bhanu's second move (he decides to retain the lower half):

1		



36. If Aman chooses (retain right) and (retain left) in his turns, the best move sequence for Bhanu to reduce Aman's gain to a minimum will be:

- (a) (retain upper) (retain lower)
- (b) (retain lower) (retain upper)
- (c) (retain upper) (retain upper)
- (d) (retain lower) (retain lower)

37. If both of the players select their moves intelligently then at the end of the game their gain will be:

- (a) Rs.4
- (b) Rs.3
- (c) Rs.2
- (d) None of these

38. If your first move is (retain right), then whatever moves your friend may select you can always force a gain of no less than

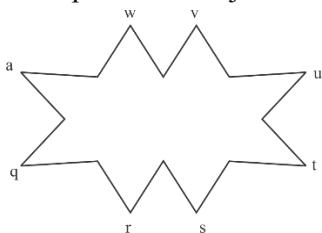
- (a) Rs.3
- (b) Rs.6
- (c) Rs.4
- (d) None of these

39. If Bhanu moves first and his moves are (retain lower) (retain lower), what should Aman's best move be to minimize the profit

- (a) (retain right) (retain right)
- (b) (retain left) (retain left)
- (c) (retain right) (retain left)
- (d) (retain left) (retain right)

**Directions (40–44): Answer the following question based on the information given below.**

- A, B, C, D, E, F, G and H, total eight people, sit around a table on the seats among- q, r, s, t, u, v, w and x, as given in the figure below, but not necessarily in the same order. All the people face towards the center of the table.
- Each person has a different number of cards, 1, 2, 3, 4, 5, 6, 7 and 8, however not in this particular order. No two persons with a name that starts with consecutive English alphabets sit adjacent to each other.



Note: The person who sits on the seat r, s and t are immediately right of q, second to the right of q and third to the right of q, respectively. Also, the person who sits on the seat x, w and v sits immediately to the left of q, second to the left of q and third to the left of q, respectively.

- Two people sit between B and F, who have 2 cards. The person, who sits immediately to the right of B, has 5 cards. E, who does not have a prime number of cards, sits immediately to the left of C. One person sits between D and A, who has 4 cards.
- D has a prime number of cards. The person, who sits immediately to the right of D, has more cards than D but not the maximum. H has more cards than G, who does not have 1 card. C has an odd number of cards. B has fewer cards than C.

40. If the positions of A and G are interchanged and the positions of D and H are interchanged, then which of the following statements is/are correct after the rearrangement?

Statement I: The one, who has 5 cards, sits fourth to the left of B.

Statement II: F sits immediately to the right of the one, who has 7 cards.

Statement III: The sum of the cards of the person, who sits immediately right of G and the person, who sits immediately left of D is 8.

- (a) Only statement I is true
- (b) Only statements II and III are true
- (c) Only statement III is true
- (d) Only statements I and III are true

41. . . ., who has \_\_\_\_\_ cards, sits \_\_\_\_\_ to the right of C.

(a) G, 7, second      (b) B, 6, fifth  
 (c) H, 6, fourth      (d) D, 5, third

42. Which of the following group of persons have sum of cards greater than 10?



QUANT

45. Let there be a chord of a circle named XY of length  $50\sqrt{3}$  cm. If F is the mid-point of XY such that the perpendiculars drawn from F on either side of the chord meet the circle at and D and E respectively. Further, it is also known that  $DF < FE$  and  $FE = 2\sqrt{6}$  cm. Find the value of DF (in cm.)?

(a)  $\frac{25\sqrt{3}}{2\sqrt{6}}$       (b)  $50\sqrt{3}$   
 (c)  $\frac{625\sqrt{2}}{2\sqrt{32}\sqrt{6}}$       (d)  $\frac{625\sqrt{3}}{2\sqrt{2}}$

47. A family consisted of 5 members including Lata, her parents, her younger brother Nikhil and a younger sister Divya. When Divya was born, the sum of the ages of Lata, her father and her mother was 60 years. The sum of the ages of four family members, at the time of Nikhil's birth, was twice the sum of ages of Lata's father and mother at the time of Lata's birth. If Divya is 5 years older than Nikhil, then find the difference in ages of Lata and Divya?

(a) 5 years 8 months    (b) 6 years 8 months

(c) 20 years 8 months (d) None of these

48. If  $x^2 - 54x + 153 = 0$ , then find the value of  $\frac{1}{(x-13)^2}$  ?

$(a) \frac{(1444^2 + 1)}{1444}$	$(b) \frac{(1728^2 + 1)}{1728}$
$(c) \frac{(1344^2 + 1)}{1344}$	$(d) \frac{(625^2 + 1)}{625}$

49. Due to engine failure of an Aircraft of ABC airlines, it got crashed into Malvana Sea waters. The pilot notices that the aircraft was 405 kilometers away from the shore and at the same time also notices a leak in the Aircraft which

admits  $8\frac{2}{3}$  tons of water in every  $3\frac{1}{4}$  minutes.

He immediately deploys the rescue team which can throw the water from the aircraft at the rate of 115 tons per hour. Find the speed at which it should keep moving such that when it begins to sink, a rescue ship moving towards the aircraft from the shore at the rate of 30 km/hr escapes the passengers of the aircraft if 540 tons of water is enough to sink the aircraft?

50. Find the number of digits in  $(2431)^{2431}$  provided  $\log_{10} 11 = 1.04$ ,  $\log_{10} 13 = 1.11$  and  $\log_{10} 17 = 1.23$ ?

51. A television set has 4 remotes, one each for all the family members. However, due to a certain defect in all of the remotes, they work at intervals of 25 seconds, 40 seconds, 55 seconds and 70 seconds respectively? If all the remotes start working together at this time, then how many times after this would they all work together in a duration of 77 hours?



52. Find the area of the region containing all the possible solutions of  $|a-8| < 7$  and  $|b-9| < 7$

53. Bank of Barbados invested two equal sums in two Schemes A and B. Scheme A offers Simple interest at 25% per annum while Scheme B offers Compound Interest compounded annually at the same rate of interest. If the difference between the interest amounts obtained from both the schemes after three years is Rs. 21,175. Find the total amount invested (in Rs.) rounded off to the nearest integer.

(a) 104246      (b) 263280  
 (c) 208492      (d) None of these

54. Three farmers Hemant, Ravi and Sandeep can plough a plot of land in 12, 18 and 48 hours respectively while working alone. On any given day, all the three farmers do not plough together. Also no farmer can work for more than two consecutive hours. What is the minimum number of hours in which the work can be completed?

(a) 9 hrs 18 min      (b) 18 hrs 9 min  
 (c) 16 hrs 9 min      (d) 10 hrs 18 min

55. Identify the rightmost non-zero digit of  $(60^{35})^{80} + (90^{25})^{112}$ ?

56. Let a line AB be such that it makes an angle of  $120^\circ$  with the X- axis. The sum of its intercepts on the coordinate axes is 8. Then, the intercepts on x and y axis respectively of such a line will be?

(a)  $2(\sqrt{3}-1)$  and  $4(\sqrt{3}+1)$   
 (b)  $(\sqrt{3}, 0)$   
 (c)  $4(\sqrt{3}-1)$  and  $4\sqrt{3}(\sqrt{3}-1)$   
 (d) None of these

57. If  $f(x) = \frac{\cos^{114}x}{\sin^{115}x} - \frac{\sin^{114}x}{\cos^{115}x}$  and  $g(x) = \frac{\sin^{115}x}{\cos^{114}x} - \frac{\cos^{115}x}{\sin^{114}x}$ , where  $0 < x < \frac{\pi}{4}$ , then which of the following describes the relation between  $f(x)$  and  $g(x)$ ?

(a)  $g(x) = f(x)$   
 (b)  $f(x) > g(x)$   
 (c)  $f(x) < g(x)$   
 (d) Data inadequate

58. If, the arithmetic mean of the series  $m_1, m_2, m_3, m_4, m_5, \dots, m_n$  is  $\frac{14k}{3}$  Then, find the arithmetic means of the series  $\frac{(5m_1+7)}{8}, \frac{(5m_2+7)}{8}, \dots, \frac{(5m_n+7)}{8}$ ,  
 (a)  $\frac{(70k+21)}{24}$       (b)  $\frac{(80k+21)}{24}$   
 (c)  $\frac{(90k+21)}{24}$       (d) None of these

59. If  $\frac{11}{x} - \frac{9}{y} = \frac{1}{6}$  Identify the number of ordered pairs of integers that would satisfy the given equation?

60. 'SIKE' a renowned footwear brand sells four varieties of shoes and four varieties of socks. The price of a set of one of each of the four varieties of shoes is Rs. 3000. The prices of a set of one of each of the four varieties of socks is Rs. 1200. The price of each of the cheapest socks is Rs. 200 and the combined price of three of the varieties of the shoes is exactly  $1 \frac{9}{20}$  times the combined price of the other three varieties of socks. What is the price (in Rs.) of each of the costliest shoes?



**VARC**

1. (c)	5. (c)	9. (a)	13. (d)	17. (b)	21. (2431)
2. (d)	6. (b)	10. (c)	14. (c)	18. (c)	22. (a)
3. (c)	7. (a)	11. (b)	15. (c)	19. (2431)	23. (c)
4. (a)	8. (a)	12. (c)	16. (d)	20. (2314)	24. (3)

**LRDI**

25. (6)	29. (c)	33. (a)	37. (b)	41. (c)
26. (d)	30. (9)	34. (a)	38. (a)	42. (d)
27. (b)	31. (1)	35. (15)	39. (d)	43. (a)
28. (6)	32. (c)	36. (c)	40. (d)	44. (c)

**QUANT**

45. (d)	51. (18)	57. (b)	63. (a)
46. (a)	52. (196)	58. (a)	64. (c)
47. (b)	53. (c)	59. (59)	65. (8000)
48. (a)	54. (a)	60. (Rs. 1550)	66. (d)
49. (b)	55. (7)	61. (d)	
50. (8217)	56. (c)	62. (b)	



## Hints & Solutions

### VARC

1. (c)

Explanation: The passage, in essence, discusses the World Bank's warning about potential long-term decline in the global economy due to the COVID-19 pandemic and Russia's war in Ukraine. The potential for a "lost decade" (a term implying a decade of economic stagnation) could have significant implications for global poverty levels and climate change efforts (Paragraph 1).

Option A is incorrect because, while the passage does mention banking crises, these are not presented as the primary cause of the global economic decline. Instead, they are seen as potential factors contributing to economic stress (Paragraph 7).

Option B is not correct because the passage only briefly mentions China as an example of past rapid growth, but it doesn't express specific concern about China's future (Paragraph 6).

Option D is false as the IMF does not assert that a global recession can be entirely avoided. It actually indicates uncertainty and calls for vigilance amidst rising financial stability risks (Paragraph 9).

2. (d)

Explanation: The World Bank's projections center around a "lost decade" due to the pandemic and the war in Ukraine. If the pandemic subsides rapidly (Option A), the war in Ukraine ends (Option B), or the frequency of global crises decreases (Option C), these would all weaken the World Bank's current pessimistic projections.

However, Option D would not weaken the World Bank's projections. The Bank itself suggests that policy frameworks should be more closely aligned and trade costs should be reduced to spur faster growth (Paragraph 6). Hence, if international

cooperation improves, it supports rather than weakens the World Bank's position.

3. (c)

Explanation: Option C is incorrect as it contradicts the IMF's stance mentioned in the passage. According to the passage, the IMF acknowledges that transitioning from a prolonged period of low interest rates to higher rates is a necessity to fight inflation, but this transition generates vulnerabilities (Paragraph 10).

Option A is consistent with the passage's mention of a need for policymakers to devise creative strategies to tackle global challenges without relying on rapid economic expansions of the past (Paragraph 6). Option B is supported by concerns expressed by Neel Kashkari, president of the Federal Reserve Bank of Minneapolis, about banking stresses potentially leading to a credit crunch and pushing the US into a recession (Paragraph 8).

Option D is directly stated in the first paragraph of the passage, confirming it as a valid inference.

4. (a)

Explanation: The passage warns of a potential "lost decade" due to ongoing crises, indicating that the economic recovery will likely not be swift or smooth (Paragraphs 1-2). Therefore, if the scenario in Option A, suggesting a rapid and obstacle-free recovery, were false, it would support the passage's argument.

Options B, C, and D, if false, would actually contradict the passage. The passage emphasizes the impact of the ongoing pandemic (Option C) and increasing global crises (Option B), and it predicts a decrease in global output growth rate (Option D).

5. (c)



A) The sublime is a universally positive experience - This option can be eliminated as it is extreme. The passage does not conclude that the sublime is always positive. Instead, it highlights the paradoxical nature of the sublime as a mix of pain and pleasure (refer to the passage: "the sublime was understood largely as its opposite: a mix of pain and pleasure").

B) The sublime is limited to natural environments - This option can be eliminated as it is narrow. While the passage predominantly discusses sublime experiences in relation to natural environments or phenomena, it does not assert that the sublime is limited to these settings.

C) The experience of the sublime is not solely an intellectual response - This option is supported by the passage. The author discusses two kinds of responses to the sublime: the 'thin' and the 'thick' sublime. The thin sublime is described as "an immediate affective arousal, which is not a highly intellectual aesthetic response," while the thick sublime involves intellectual reflection. The author's conclusion that the sublime experience is not solely intellectual is evident in the distinction between these two responses.

D) The concept of the sublime is obsolete - This option can be eliminated as well since it is not supported by the passage. The passage does not suggest that the concept of the sublime is outdated or irrelevant. Instead, it discusses the sublime as a topic of interest for modern philosophers, experimental psychologists, and neuroscientists. Using the BANE Theory, we can eliminate options A, B, and D as they do not accurately represent a fundamental conclusion made by the author. Option C is the correct answer, as the passage concludes that the experience of the sublime is not solely an intellectual response, highlighting the difference between the 'thin' and 'thick' sublime.

6.

(b)

A) A comparison of various philosophers' views on the sublime - This option can be eliminated as it is too Broad. The passage has already discussed the views of different philosophers, such as

Edmund Burke, Immanuel Kant, and Arthur Schopenhauer. It is unlikely that the author would continue to do so.

B) The role of culture in shaping experiences of the sublime - This option is plausible as it extends the discussion of the sublime by exploring how culture may influence one's experience of it. This topic is not explicitly mentioned in the passage, making it a logical continuation.

C) An analysis of specific artworks inspired by the sublime - This option can be eliminated as it is narrow. While the passage discusses the sublime as an aesthetic experience, it does not focus on specific artworks or artists. Introducing such a discussion would be a narrow shift in focus.

D) A critique of the concept of beauty in art - This option can be eliminated as it is not supported by the passage. Although the passage contrasts the beautiful with the sublime, the main focus is on the sublime. A discussion critiquing beauty in art would be an unrelated tangent from the main topic. Using the BANE Theory, we can eliminate options A, C, and D, as they do not accurately represent a logical continuation of the passage. Option B is the correct answer, as it extends the discussion of the sublime by introducing the role of culture in shaping experiences of the sublime, an aspect not explicitly mentioned in the passage.

7.

(a)

A) The experience of the sublime involves an unresolved paradox - This option captures the main argument of the second paragraph accurately. The passage states, "It became a problem to explain why the sublime should be experienced overall with positive affect and valued so highly, given that it was seen to also involve an element of pain." This option addresses the paradoxical nature of the sublime, as mentioned in the paragraph.

B) The sublime is a mixture of pain and pleasure, a concept that is widely accepted by philosophers - This option can be eliminated as it is too narrow. While it is true that the sublime is described as a mix of pain and pleasure, this option does not



encompass the main argument of the paragraph, which is the paradoxical nature of the sublime.

C) The sublime is a more profound experience than the beautiful, making it superior - This option can be eliminated as it does not support the passage. Although the passage mentions that some people view the sublime as more profound and satisfying than the beautiful, it is not the main argument of the paragraph.

D) The experience of the sublime is primarily a spiritual or religious phenomenon - This option can be eliminated as it is too extreme. The passage states that "some believe such sublime aesthetic experiences constitute religious or spiritual experiences," but it does not argue that this is the primary aspect of the sublime experience.

Using the BANE Theory, we can eliminate options B, C, and D, as they do not accurately represent the main argument of the second paragraph. Option A is the correct answer, as it captures the paradoxical nature of the sublime experience, which is the main focus of the paragraph.

8.

(a)

A) A sense of awe in response to vast, formless environments - This option is mentioned in the passage. The passage states, "the sublime was understood largely as its opposite: a mix of pain and pleasure, experienced in the presence of typically vast, formless, threatening, overwhelming natural environments or phenomena." Therefore, this cannot be the correct answer.

B) A mixture of pain and pleasure - This option is also mentioned in the passage. The passage states, "the sublime was understood largely as its opposite: a mix of pain and pleasure." So, this cannot be the correct answer.

C) A feeling of existential insignificance - This option is mentioned in the passage. The passage states, "Or felt existentially insignificant but strangely exalted while gazing up at the clear, starry night sky?" i.e., this cannot be the correct answer.

D) A preference for delicate and polished objects - This option can be identified as the correct answer using the Alien criterion of the BANE Theory. The passage describes the experience of the beautiful, not the sublime, as being associated with "delicate, harmonious, balanced, smooth and polished objects." This is not a reason for experiencing the sublime, as the sublime is described as the opposite of the beautiful.

Using the BANE Theory, we can eliminate options A, B, and C, as they are mentioned in the passage as reasons for experiencing the sublime. Option D is the correct answer, as it is not a reason for experiencing the sublime but instead describes the experience of the beautiful, which is considered the opposite of the sublime.

9.

(a)

A. The author cites an "exhaustive new study" by the Center for American Progress, which found that "homicides over recent years increased less rapidly in cities with progressive prosecutors than in those with more traditional district attorneys" (paragraph 4). This statement directly contradicts the idea that progressive prosecutors are the primary cause of rising crime rates. Therefore, the author is not likely to support this view.

B. This option may seem plausible, but the passage does not provide enough evidence to support the claim that the criminal-justice reform movement has been successful in addressing racial inequities. The focus of the passage is on the relationship between progressive prosecutors and crime rates, not the overall success of the movement. Hence, we cannot infer the author's stance on this issue (Broad).

C. The author clearly states that "Republicans are pinning higher crime rates on Democrats who have expressed sympathy for almost any aspect of the movement to confront racial inequities in the criminal justice system" (paragraph 1). This statement indicates that the author is aware of and acknowledges the Republican party's tendency to attribute higher crime rates to Democratic policies.



Therefore, the author is likely to support this view, making this option incorrect.

D. The passage does mention that rising crime rates and a sense of disorder have forced the criminal-justice reform movement onto the defensive (paragraph 9). It also highlights the recall of San Francisco's progressive DA, Chesa Boudin, and the potential recall of Los Angeles' George Gascón. However, the passage does not suggest that public opinion on progressive prosecutors is largely negative. Instead, it offers a more nuanced view by discussing electoral gains made by progressive prosecutors (paragraph 7) and mentioning the CAP study's findings that challenge conventional wisdom about progressive prosecutors' impact on crime rates (paragraph 4). Thus, this option can be eliminated (Extreme).

Option A is the correct answer, as it is the only option that the author is not likely to support based on the evidence provided in the passage.

10.

(c)

A. This option would not invalidate the purpose of the CAP study. The study aims to investigate the relationship between progressive prosecutors and crime rates (paragraph 4). If crime rates have always been lower in cities with progressive prosecutors, it would support the study's findings rather than invalidate its purpose (Broad).

B. The purpose of the CAP study is to investigate the relationship between progressive prosecutors and crime rates, not to examine the impact of the criminal-justice reform movement on racial inequities. Therefore, this option is unrelated to the purpose of the study (Alien).

C. If the CAP study were funded by a political organization with a vested interest in the outcome, it could call into question the study's impartiality and credibility. This situation would potentially invalidate the purpose of the study, as its findings may be biased or manipulated to serve a particular agenda. This option is a close contender and cannot be easily eliminated.

D. Public opinion on criminal-justice reform shifting significantly in recent years does not invalidate the purpose of the CAP study. The

study's focus is on the relationship between progressive prosecutors and crime rates, not public opinion (Narrow).

Option C is the correct answer, as it is the only option that, if true, would invalidate the purpose of the CAP study in the passage.

11.

(b)

A. The passage supports this statement in paragraph 6, stating that the criminal-justice reform movement has been "fueled by the mass protests for racial equity that followed George Floyd's murder in 2020." This option is not the exception and cannot be easily eliminated.

B. This statement is contradicted by the passage. Paragraph 4 indicates that the study found that "homicides over recent years increased less rapidly in cities with progressive prosecutors than in those with more traditional district attorneys" and no meaningful differences in trends for larceny and robbery. This option is the exception and is the correct answer.

C. The passage supports this statement in paragraph 1, which explains that the "criminal-justice reform agenda is under constant attack" in states with competitive Senate or gubernatorial races. This option is not the exception and cannot be easily eliminated.

D. The passage supports this statement in paragraph 7, mentioning that "rising crime rates—and, just as important, a sense of disorder linked to pervasive homelessness in multiple big cities—have forced the movement onto the defensive." This option is not the exception and cannot be easily eliminated.

Option B is the correct answer, as it is the only statement that is not supported by the information in the passage. The passage indicates that crime rates have not significantly increased in cities with progressive prosecutors, contrary to this statement.

12.

(c)

A. This statement can be easily eliminated using the Alien criterion, as it contradicts paragraph 6, which states that progressive prosecutors have



pursued a range of common policies, including reducing reliance on cash bail, prosecuting fewer juveniles as adults, and diverting nonviolent offenders to treatment programs.

B. This statement can be eliminated using the Extreme criterion. Paragraph 4 indicates that the study found that "homicides over recent years increased less rapidly in cities with progressive prosecutors than in those with more traditional district attorneys" and no meaningful differences in trends for larceny and robbery. This statement contradicts the passage's argument.

C. This statement is supported by the passage and cannot be easily eliminated. Paragraph 4 states that the study found no meaningful differences in crime rates between cities with progressive or traditional DAs, indicating that progressive prosecution policies do not necessarily lead to increased crime rates.

D. This statement can be eliminated using the Narrow criterion. The passage does not provide enough information to support the claim that cities with traditional district attorneys have seen a decrease in crime rates. In fact, paragraph 9 states that the absolute number of murders increased more in the cities with traditional and moderate prosecutors than in those with progressive ones.

Option C is the correct answer, as it is the only statement that could be inferred as supporting the arguments of the passage. The passage suggests that progressive prosecution policies do not necessarily lead to increased crime rates, which is consistent with the findings of the CAP study mentioned in the passage.

13.

(d)

A) Women have more freedom and influence today than they used to, but traditional gender roles and stereotypes still persist.

This statement is true and is explained in the passage as how women used to be dependent on men for survival and protection, and this led to social norms that gave almost exclusive power to males. Despite recent advancements, some women still face pressure to conform to traditional

behavior due to existing barriers and disapproval from some members of society. There is also a salary difference that favors males, which demonstrates a ceiling on how high of a status a woman can have.

B) Men tend to be more competitive and aggressive than women, which can be explained by their historical role in activities like hunting and fighting.

This statement is also true and is discussed in the passage as how men tend to be more violent and aggressive, which can be explained by their tendency to participate in physical activities like hunting and fighting for food, protection, and power. This tendency also explains why women tend to be more attracted to more fit and masculine males.

C) The process of evolution led to the development of traits that allowed for better cooperation among humans.

This statement is also true and is described in the passage as how people started to develop traits that allowed for better cooperation with their peers as soon as they realized that they are stronger when they work together. Competition with others intensified this process and led to the creation of identity associated with the group, which allowed for the creation of norms, standards, and a sense of belonging to a particular community.

D) Evolution is solely responsible for all human behaviors and attitudes.

This statement is false, as the passage clearly states that it is impossible to determine exactly in what areas and to what degree evolution is responsible for human behavior and attitudes. Some human behaviors, such as self-harm or suicidal ideation, seem to be contradictory to evolutionary principles and cannot be explained solely by evolution.

14.

(c)

Option C) states that evolution has no impact on the social behavior of humans, which would weaken the argument that the development of humans has been greatly impacted by the process



of evolution, particularly with regards to their social behavior. The argument made in the passage is that evolution has a significant impact on the social behavior of humans as well as on their physical traits. If it were true that evolution has no impact on the social behavior of humans, then the argument that evolution has a significant effect on the social behavior would be weakened.

Option A) states that evolution has no significant impact on the physical traits of humans, which is not relevant to the argument being made. The argument is that evolution has a significant effect on both the physical traits and the social behavior of humans, not just on their physical traits.

Option B) states that evolution has a greater effect on the physical traits of humans than on their social behavior. This option also weakens the argument that the development of humans has been greatly impacted by the process of evolution, particularly with regards to their social behavior, but not as effectively as option C) does. The argument in the passage is that evolution has a significant effect on both the physical traits and the social behavior of humans, not that one has a greater effect than the other.

Option D) states that evolution has a lesser effect on the social behavior of humans than on their physical traits, which is also not relevant to the argument being made. The argument in the passage is that evolution has a significant effect on both the physical traits and the social behavior of humans, not that one has a lesser effect than the other.

15.

(c)

Explanation: The passage suggests that evolutionary traits that were beneficial for human ancestors may bring hardships for people today (Option A), and this is explicitly stated in Paragraph 5. It also mentions that feelings of strong identity associated with certain groups have roots in evolution (Option B), as stated in Paragraph 4. The passage further implies that the evolutionary bias contributes to the gender wage gap (Option D), as discussed in Paragraph 2.

Option C, however, is incorrect. The passage actually suggests the opposite: societal norms evolved as a result of the physical attributes of men and women (as mentioned in Paragraph 2), not the other way around.

16.

(d)

Explanation: Throughout the passage, the author discusses the various ways evolution has shaped human behavior. However, the author also acknowledges that evolution doesn't explain all aspects of human behavior without exception (Option C). This is highlighted in the last paragraph where the author points out contradictory behaviors like self-harm or suicidal ideation. Therefore, option D best encapsulates the fundamental conclusion by the author.

While options A and B are elements discussed in the passage, they are not the primary or overall conclusion of the author. They represent individual observations within a broader context, and hence cannot be considered as the author's fundamental conclusion.

17.

(b)

The sentence would best fit in Blank 2 because it serves as a bridge between the differing effects of the pandemic on the global economy and the resilience and growth of some industries amidst these uncertainties.

In the first segment of the paragraph, the author discusses the varied impact of the pandemic on global economies and how government responses have differed. The given sentence, which talks about the volatility and uncertainty in the financial markets, aligns with these ideas and hence fits best in Blank 2.

Following Blank 2, the author shifts the focus to discuss the resilience and growth of certain industries despite the economic turmoil, a point which logically follows the sentence about financial market volatility and uncertainty.

Therefore, the correct answer is B.

18.

(c)



The sentence would best fit in Blank 3 because it bridges the discussion of the necessity of digital technology adoption and how successful companies are leveraging these technologies. It also provides the causative reason for this difference in success, suggesting that the shift in business strategies, in response to new market conditions, is what is separating these companies. In the first segment, the paragraph introduces the theme of digital transformation and its impact on traditional methods. Following this, the author discusses the imperative nature of digital technology adoption in the current business landscape. The provided sentence fits perfectly here, offering an explanation for the necessity of digital technology adoption, i.e., the significant shift in business strategies. After this, the discussion moves on to the effect of this shift, with successful companies leveraging technologies effectively.

Thus, the correct option is C.

19.

**(2431)**

A brief reading of the sentences suggests that the paragraph is about the philosophical ideas of Socrates and their implications for understanding human behaviour.

Statement 2 introduces Socrates' philosophy and its emphasis on questioning our assumptions and beliefs. This is the logical start of the paragraph. Statement 4 follows this idea by explaining the result of this process of questioning, leading to greater self-awareness and understanding. Thus, 2-4 forms a coherent pair.

Statement 3 extends this idea by explaining what this philosophy means in practice, particularly in the context of interactions with others. Statement 1 concludes the paragraph by describing the impact of applying this philosophy, fostering understanding rather than judgement.

Therefore, the correct sequence is 2-4-3-1.

20.

**(2314)**

A brief reading of the sentences suggests that the paragraph is about the evolution of criminology

theories and the shift in focus from individual factors to social, economic, and environmental factors.

Statement 2 introduces the topic by describing the traditional focus of criminology theories on individual traits and choices. This serves as the logical starting point for the paragraph. Statement 3 follows this by explaining the recent shift towards considering social, economic, and environmental factors that can influence criminal behavior. Thus, 2-3 forms a coherent pair.

Statement 1 extends this idea by explaining the result of this shift in focus, which is a more holistic approach to addressing criminal behavior. Statement 4 concludes the paragraph by discussing the potential benefits of addressing these underlying factors, such as reducing crime rates and creating safer communities.

Therefore, the correct sequence is 2-3-1-4.

21.

**(2431)**

The given sentences talk about the role of art and culture in the revitalization of neighborhoods and the fostering of community identity.

Statement 2 introduces the topic and sets the stage for the rest of the sentences by discussing the role of art and culture.

Statement 4 expands on this idea by providing an example of how art and culture can be incorporated into community spaces. Therefore, 2-4 form a logical pair.

Statement 3 elaborates on the consequences of this, emphasizing that it's not just about beautifying the environment, but also about creating a sense of identity and belonging.

Finally, Statement 1 concludes the paragraph by asserting the importance of these spaces in expressing the community's history, values, and aspirations.

Thus, the correct sequence of the sentences is 2-4-3-1.

22.

**(a)**

Option A is the correct answer. This passage discusses the Romantic theory of art and suggests



that it can be made plausible from a mathematical viewpoint. The author's objective is to show how the emerging mathematical perspective on pattern and mind can support the Romantic view of art. The option correctly encapsulates the main argument in the passage.

Option B is incorrect because, while the passage mentions machine learning theory, it doesn't claim that this theory is the future of Romantic philosophy and artistic interpretation. The passage uses machine learning theory as an analogy to explain the Romantic theory of art, rather than suggesting it as a replacement or future for the philosophy. This choice is therefore too broad and introduces a concept that is alien to the main argument of the passage.

Option C, while accurate as a statement within the passage, is too narrow to serve as a comprehensive summary. It highlights a part of the Romantic theory of art but does not address the main argument of the passage, which is about validating the Romantic theory of art from a mathematical viewpoint. It does not mention the role of a mathematical viewpoint in understanding the Romantic theory of art, which is the primary focus of the passage.

Option D is incorrect because it is misleading. While the passage does hint that the Romantics may have had a sort of mathematical-empirical understanding of the mind, it doesn't state outright that they did. The passage is more focused on how current mathematical viewpoints make the Romantic theory plausible rather than stating that the Romantics had a mathematical understanding of the mind. This option is therefore too extreme and misrepresents the main argument of the passage.

23.

(c)

Option A is too narrow. While the passage does mention Alexandre Kojève's influence on various intellectual disciplines, this doesn't fully encapsulate the broader context of the period, including the rise of fascism, mass unemployment, and the influx of refugees from Germany.

Option B is too broad and omits significant details. While it captures the socio-political climate of France in the 1930s, it does not mention the intellectual contributions of Alexandre Kojève and the community of thinkers that gathered around his lectures, which is a central theme of the passage.

Option C is the correct answer. It captures the key elements of the passage: the influx of intellectuals from Germany to France, the flourishing intellectual life in the cafés, institutes, and academies, and the pivotal role of Alexandre Kojève's lectures at the École Pratique des Hautes Études. It encapsulates the main points of the passage without being overly broad or excessively focused on one aspect.

Option D, while containing some correct elements, presents an extreme interpretation. It suggests that the socio-political challenges of the time were directly responsible for a surge in intellectual activity, a connection that the passage does not make. The passage does not argue that the rise of the far-right and the economic challenges were the direct causes of the surge in intellectual activity. It does mention these elements, but it doesn't establish a direct cause-effect relationship between them and the intellectual developments.

24.

(3)

Explanation: Statements 1-5 form a coherent narrative about the socio-political and economic interactions between European and Maghrebi entities during the 16th to the 19th centuries. Statement 1 talks about the influence of European merchants in the Maghrebi economy, leading to permanent residences and cultural exchanges. Statement 4 provides more details on the practices, specifically the licensed corsairs and the trade of captives. Statement 5 elaborates on the economic dependence that these trades had on the conditions of both sides of the Mediterranean, hence necessitating peace treaties and trade agreements. Statement 2 completes the narrative by discussing the British diplomatic relations with the Maghrebi states, carrying on into the 19th century until the colonial expansions.



In contrast, statement 3 refers to conflicts between Venetians and Ottomans in the 15th century, which is a different time period and does not align with the narrative established by the other four statements. Hence, statement 3 is the odd one out.

## LRDI

25.

(6)

Let S, F and G represent the number of seashells, feathers and gemstones.

From the first exchange,  $S = G + 3F$

From the second exchange,  $2S = 3G + F$

$$\Rightarrow 2G + 6F = 3G + F \quad [\text{for, } S = G + 3F; 2S = 2G + 6F]$$

$$\Rightarrow G = 5F$$

Therefore,  $S = 8F$

Xi'meek could not have exchanged one feather for any other such currencies. Hence, he must have exchanged either one seashell or one gemstone.

By exchanging one seashell, he would have ended up with 8 feathers OR 1 gemstone and 3 feathers.

Since we have to minimize the total number of such currencies with him, he would have exchanged one seashell for 1 gemstone and 3 feathers ( i.e.,  $S = G + 3F$ ; 4 currencies ). Therefore, he must have a minimum of 3 such currencies of each type after the exchange. Hence, before the exchange, he must have had 4 seashells, and 2 gemstones, i.e., a total of 6 such currencies.

So,  $4S + 2G = 3S + S + 2G$

$$\begin{aligned} &= 3S + G + 3F + 2G && [\text{as } S = G + 3F] \\ &= 3S + 3G + 3F \end{aligned}$$

The minimum possible number of such currencies that he could have had is 6.

26.

(d)

Let S, F and G represent the number of seashells, feathers, and gemstones.

From the first exchange,  $S + G = 2G + 3F$

$$\Rightarrow S = G + 3F$$

From the second exchange,  $2S = 3G + F$

$$\Rightarrow 2G + 6F = 3G + F$$

$$\Rightarrow G = 5F$$

Therefore,  $S = 8F$

As Xanar would have had the same value of such currencies before or after the exchange. Hence, the total number of such currencies that he has in terms of feathers =  $4 \times 8 + 3 \times 5 + 5 = 52$ , which is the maximum possible price that he can pay for the boat. Considering the worth of each choice in feathers, we find that the options A, B, C and D are worth 47, 55, 57 and 52 feathers respectively. Hence, the answer is option D.

27.

(b)

Let S, F and G represent the number of seashells, feathers and gemstones.

From the first exchange,  $S + G = 2G + 3F$

$$\Rightarrow S = G + 3F$$

From the second exchange,  $2S = 3G + F$

$$\Rightarrow 2G + 6F = 3G + F$$

$$\Rightarrow G = 5F$$

Therefore,  $S = 8F$

The total number of such currencies that Xavar had with him in terms of feathers =  $6 \times 8 + 11 \times 5 + 9 = 112$

After the exchange, if he had k such currencies of each type, then the value of these such currencies in terms of feathers =  $8k + 5k + k = 14k$

Since the two values must be the same,

$$k = \frac{112}{14} = 8$$

To get 8 such currencies of each type, he can exchange 3 gemstones and 1 feather for two seashells ( i.e.,  $8S + 8G + 8F$ , He must exchange,  $3G + F = 2S$  ). Hence, he has to exchange 4 such currencies in total.

28.

(6)

Let S, F and G represent the number of seashells, feathers and gemstones.

From the first exchange,  $S + G = 2G + 3F$

$$\Rightarrow S = G + 3F$$

From the second exchange,  $2S = 3G + F$

$$\Rightarrow 2G + 6F = 3G + F$$

$$\Rightarrow G = 5F$$

Therefore,  $S = 8F$

Let the number of seashells, gemstones, and feathers with her be S, G, and F.



Since she exchanged two gemstones, the number of gemstones with her will become  $G-2$ . With 2 gemstones, she can get 1 seashell and 2 feathers or 10 feathers.

Hence, the number of such currencies with her after the first exchange can be

Case (i):  $S + 1, G-2, F + 2$

Case (ii):  $S, G - 2, F + 10$ .

She also exchanged 2 seashells for gemstones and feathers. She can get 3 gemstones, 1 feather OR 2 gemstones 6 feathers OR 1 gemstone 11 feathers OR 16 feathers.

The following table provides the number of such currencies with her for case (1) and case (2):

CASE-1			CASE-2		
S-1	G+1	F+3	S-2	G+1	F+11
S-1	G	F+8	S-2	G	F+16
S-1	G-1	F+13	S-2	G-1	F+21
S-1	G-2	F+18	S-2	G-2	F+26

After this she exchanged 8 feathers for 1 seashell. The cases listed above will be modified as shown in the following table:

CASE-1			CASE-2		
S	G+1	F-5	S-1	G+1	F+3
S	G	F	S-1	G	F+8
S	G-1	F+5	S-1	G-1	F+13
S	G-2	F+10	S-1	G-2	F+18

For the cases highlighted in Grey, the number of feathers will be more than 6 (since there are at least  $F + 5$  feathers). Hence, the total number of such currencies will be at least 24.

For the cases in the first row of case (i) and case (ii),  $G$  should be at least 2 (since she exchanged 2 gemstones at the beginning). Therefore,  $G + 1$  will be 3. This implies that the number of such currencies after the exchanges should be 9 (3 of each type).

For the case in the second row of the case (i) [highlighted in yellow, it is our answer condition], the number of gemstones should be a minimum of 2. The number of such currencies after the exchanges will be 6 (2 such currencies of each type). Hence, this is the minimum number of such

currencies that she can have after the exchange.

29.

(c)

Let  $S$ ,  $F$  and  $G$  represent the number of seashells, feathers, and gemstones.

From the first exchange,  $S + G = 2G + 3F$

$$\Rightarrow S = G + 3F$$

From the second exchange,  $2S = 3G + F$

$$\Rightarrow 2G + 6F = 3G + F$$

$$\Rightarrow G = 5F$$

Therefore,  $S = 8F$

For option a)  $3S + 3G + 4F = 3 \times 8 + 3 \times 5 + 4 = 24 + 15 + 4 = 43$  (not matched)

For option b)  $5S + 5F = 5 \times 8 + 5 = 40 + 5 = 45$  (not matched)

For option c)  $5S + 3G + 2F = 5 \times 8 + 3 \times 5 + 2 = 40 + 15 + 2 = 57$  (matched)

For option d)  $6S + 1G + 3F = 6 \times 8 + 1 \times 5 + 3 = 48 + 5 + 3 = 56$  (not matched)

30.

(9)

Since the sum of the ranks for each movie is given, we should first rank the four movies in the bar graph in each OTT from 1 to 4, excluding EJ. Since we do not know the position of EJ, it can be in any position. Hence, the rank of each movie in each OTT can vary by 1 depending on the position of EJ.

Movie	AMAZON PRIME	DISNEY HOTSTAR	EROS NOW	NETFLIX
AS	2/3	4/5	2/3	2/3
BA	1/2	2/3	3/4	1/2
CB	4/5	3/4	4/5	3/4
DN	3/4	1/2	1/2	4/5

The following table provides the possible ranks:

The sums of the ranks of AS, BA, CB, and DN in the given table are 10, 7, 14, and 9 respectively. And also we know that in every OTT, the ranks of all the movies are from 1 to 5 so sum of all the ranks of movies in all the OTTs are  $1 + 2 + 3 + 4 + 5 = 15 \times 4 = 60$ . Sum of ranks of AS, BA, CB, DN =  $13 + 10 + 18 + 10 = 51$ . So the sum of the rank of 5th movie EJ will be  $60 - 51 = 9$ .

The sum of ranks of CB is given as 18. Hence, in each OTT, the rank of CB must increase by 1. Hence, CB's ranks must be 4, 5, 5, and 4 in



Netflix, Amazon Prime, EROS now, and Disney Hotstar respectively.

Since CB's rank in the Netflix is 4, DN's rank must be 5. Similarly, since CB's rank in the Disney Hotstar is 4, AS's rank in the Disney Hotstar must be 5.

DN's rank is 5 in the Netflix. Further, the sum of DN's ranks is 10. This is possible only if the ranks of DN in Amazon Prime, EROS now, and Disney Hotstar are 3, 1, and 1 respectively. Since the rank of DN in Amazon Prime is 3, AS's rank must be 2. The sum of the ranks of AS is 13. The sum of the ranks of AS in Amazon Prime and Disney Hotstar is 7. In the other two OTTs, the sum must be 6. From the available possibilities, the rank of AS in Netflix and EROS now must be 3 and 3 respectively.

Since the rank of AS in the EROS now is 3, the rank of BA in the EROS now must be 4. Hence, the rank of EJ in EROS now must be 2.

Since the rank of AS in Amazon Prime is 2, the rank of BA in Amazon Prime must be 1. Hence, EJ's rank in Amazon Prime must be 4.

The sum of BA's rank in the four OTTs is 10. The sum of BA's ranks in Amazon Prime and EROS now is 5. Hence, the sum of the ranks in Netflix and Disney Hotstar is 5. This is only possible if BA's ranks in Netflix and Disney Hotstar are 2 and 3 respectively. Hence, EJ's ranks in Netflix and Disney Hotstar are 1 and 2 respectively.

The following table provides the ranks of each movie in each OTT:

Movie	AMAZON PRIME	DISNEY HOTSTAR	EROS NOW	NETFLIX
AS	2	5	3	3
BA	1	3	4	2
CB	5	4	5	4
DN	3	1	1	5
EJ	4	2	2	1

The sum of the ranks of EJ is 9.

### 31. (1)

Since the sum of the ranks for each movie is given, we should first rank the four movies in the bar

graph in each OTT from 1 to 4, excluding EJ. Since we do not know the position of EJ, it can be in any position. Hence, the rank of each movie in each OTT can vary by 1 depending on the position of EJ.

Movie	AMAZON PRIME	DISNEY HOTSTAR	EROS NOW	NETFLIX
AS	2/3	4/5	2/3	2/3
BA	1/2	2/3	3/4	1/2
CB	4/5	3/4	4/5	3/4
DN	3/4	1/2	1/2	4/5

The following table provides the possible ranks: The sums of the ranks of AS, BA, CB, and DN in the given table are 10, 7, 14, and 9 respectively.

The sum of ranks of CB is given as 18. Hence, in each OTT, the rank of CB must increase by 1. Hence, CB's ranks must be 4, 5, 5, and 4 in Netflix, Amazon Prime, EROS now, and Disney Hotstar respectively.

Since CB's rank in Netflix is 4, DN's rank must be 5. Similarly, since CB's rank in the Disney Hotstar is 4, AS's rank in the Disney Hotstar must be 5.

DN's rank is 5 in the Netflix. Further, the sum of DN's ranks is 10. This is possible only if the ranks of DN in Amazon Prime, EROS now, and Disney Hotstar are 3, 1, and 1 respectively. Since the rank of DN in Amazon Prime is 3, AS's rank must be 2. The sum of the ranks of AS is 13. The sum of the ranks of AS in Amazon Prime and Disney Hotstar is 7. In the other two OTTs, the sum must be 6. From the available possibilities, the rank of AS in Netflix and EROS now must be 3 and 3 respectively.

Since the rank of AS in the EROS now is 3, the rank of BA in the EROS now must be 4. Hence, the rank of EJ in EROS now must be 2.

Since the rank of AS in Amazon Prime is 2, the rank of BA in Amazon Prime must be 1. Hence, EJ's rank in Amazon Prime must be 4.

The sum of BA's rank in the four OTTs is 10. The sum of BA's ranks in Amazon Prime and EROS now is 5. Hence, the sum of the ranks in Netflix and Disney Hotstar is 5. This is only possible if BA's ranks in Netflix and Disney Hotstar are 2 and



3 respectively. Hence, EJ's ranks in Netflix and Disney Hotstar are 1 and 2 respectively.

The following table provides the ranks of each movie in each OTT:

Movie	AMAZON PRIME	DISNEY HOTSTAR	EROS NOW	NETFLIX
AS	2	5	3	3
BA	1	3	4	2
CB	5	4	5	4
DN	3	1	1	5
EJ	4	2	2	1

Q17) BA was ranked better than EJ in one OTT (i.e., AMAZON PRIME).

32. (c)

Since the sum of the ranks for each movie is given, we should first rank the four movies in the bar graph in each OTT from 1 to 4, excluding EJ. Since we do not know the position of EJ, it can be in any position. Hence, the rank of each movie in each OTT can vary by 1 depending on the position of EJ.

Movie	AMAZON PRIME	DISNEY HOTSTAR	EROS NOW	NETFLIX
AS	2/3	4/5	2/3	2/3
BA	1/2	2/3	3/4	1/2
CB	4/5	3/4	4/5	3/4
DN	3/4	1/2	1/2	4/5

The following table provides the possible ranks:

The sums of the ranks of AS, BA, CB, and DN in the given table are 10, 7, 14, and 9 respectively.

The sum of ranks of CB is given as 18. Hence, in each OTT, the rank of CB must increase by 1. Hence, CB's ranks must be 4, 5, 5, and 4 in Netflix, Amazon Prime, EROS now, and Disney Hotstar respectively.

Since CB's rank in Netflix is 4, DN's rank must be 5. Similarly, since CB's rank in the Disney Hotstar is 4, AS's rank in the Disney Hotstar must be 5.

DN's rank is 5 in the Netflix. Further, the sum of DN's ranks is 10. This is possible only if the ranks of DN in Amazon Prime, EROS now, and Disney

Hotstar are 3, 1, and 1 respectively. Since the rank of DN in Amazon Prime is 3, AS's rank must be 2. The sum of the ranks of AS is 13. The sum of the ranks of AS in Amazon Prime and Disney Hotstar is 7. In the other two OTTs, the sum must be 6. From the available possibilities, the rank of AS in Netflix and EROS now must be 3 and 3 respectively.

Since the rank of AS in the EROS now is 3, the rank of BA in the EROS now must be 4. Hence, the rank of EJ in EROS now must be 2.

Since the rank of AS in Amazon Prime is 2, the rank of BA in Amazon Prime must be 1. Hence, EJ's rank in Amazon Prime must be 4.

The sum of BA's rank in the four OTTs is 10. The sum of BA's ranks in Amazon Prime and EROS now is 5. Hence, the sum of the ranks in Netflix and Disney Hotstar is 5. This is only possible if BA's ranks in Netflix and Disney Hotstar are 2 and 3 respectively. Hence, EJ's ranks in Netflix and Disney Hotstar are 1 and 2 respectively.

The following table provides the ranks of each movie in each OTT:

Movie	AMAZON PRIME	DISNEY HOTSTAR	EROS NOW	NETFLIX
AS	2	5	3	3
BA	1	3	4	2
CB	5	4	5	4
DN	3	1	1	5
EJ	4	2	2	1

Q18) In AMAZON PRIME, EJ was ranked 4. Hence, the collection of EJ must be between ₹80 bn and ₹100 bn (since DN and CB were ranked 3 and 5 respectively). In DISNEY HOTSTAR, EJ was ranked 2. Hence, the collection of EJ must be between ₹140 bn and ₹180 bn. Hence, the total collections of EJ must be between ₹220 bn and ₹280 bn. So, from the given options, only option (C) falls within this range.

33.

(a)

Since the sum of the ranks for each movie is given, we should first rank the four movies in the bar graph in each OTT from 1 to 4, excluding EJ. Since we do not know the position of EJ, it can be



in any position. Hence, the rank of each movie in each OTT can vary by 1 depending on the position of EJ.

Movie	AMAZON PRIME	DISNEY HOTSTAR	EROS NOW	NETFLIX
AS	2/3	4/5	2/3	2/3
BA	1/2	2/3	3/4	1/2
CB	4/5	3/4	4/5	3/4
DN	3/4	1/2	1/2	4/5

The following table provides the possible ranks:

The sums of the ranks of AS, BA, CB, and DN in the given table are 10, 7, 14, and 9 respectively.

The sum of ranks of CB is given as 18. Hence, in each OTT, the rank of CB must increase by 1. Hence, CB's ranks must be 4, 5, 5, and 4 in Netflix, Amazon Prime, EROS now, and Disney Hotstar respectively.

Since CB's rank in Netflix is 4, DN's rank must be 5. Similarly, since CB's rank in the Disney Hotstar is 4, AS's rank in the Disney Hotstar must be 5.

DN's rank is 5 in the Netflix. Further, the sum of DN's ranks is 10. This is possible only if the ranks of DN in Amazon Prime, EROS now, and Disney Hotstar are 3, 1, and 1 respectively. Since the rank of DN in Amazon Prime is 3, AS's rank must be 2. The sum of the ranks of AS is 13. The sum of the ranks of AS in Amazon Prime and Disney Hotstar is 7. In the other two OTTs, the sum must be 6. From the available possibilities, the rank of AS in Netflix and EROS now must be 3 and 3 respectively.

Since the rank of AS in the EROS now is 3, the rank of BA in the EROS now must be 4. Hence, the rank of EJ in EROS now must be 2.

Since the rank of AS in Amazon Prime is 2, the rank of BA in Amazon Prime must be 1. Hence, EJ's rank in Amazon Prime must be 4.

The sum of BA's rank in the four OTTs is 10. The sum of BA's ranks in Amazon Prime and EROS now is 5. Hence, the sum of the ranks in Netflix and Disney Hotstar is 5. This is only possible if BA's ranks in Netflix and Disney Hotstar are 2 and 3 respectively. Hence, EJ's ranks in Netflix and Disney Hotstar are 1 and 2 respectively.

The following table provides the ranks of each movie in each OTT:

Movie	AMAZON PRIME	DISNEY HOTSTAR	EROS NOW	NETFLIX
AS	2	5	3	3
BA	1	3	4	2
CB	5	4	5	4
DN	3	1	1	5
EJ	4	2	2	1

Q19) Since EJ's rank in NETFLIX is 1, the upper limit of EJ's collections cannot be defined. It only has to be greater than ₹160 bn.

In AMAZON PRIME, EJ's collections must lie between ₹80 bn and ₹100 bn.

In EROS NOW, EJ's collections must lie between ₹160 bn and ₹180 bn.

In DISNEY HOTSTAR, EJ's collections must lie between ₹140 bn and ₹180 bn.

Hence, we can only say that EJ's collection across the four OTTs must be greater than  $160 + 80 + 160 + 140 = ₹540$  bn. Therefore, option (A) is definitely true.

### 34.

#### (a)

Since the sum of the ranks for each movie is given, we should first rank the four movies in the bar graph in each OTT from 1 to 4, excluding EJ. Since we do not know the position of EJ, it can be in any position. Hence, the rank of each movie in each OTT can vary by 1 depending on the position of EJ.

Movie	AMAZON PRIME	DISNEY HOTSTAR	EROS NOW	NETFLIX
AS	2/3	4/5	2/3	2/3
BA	1/2	2/3	3/4	1/2
CB	4/5	3/4	4/5	3/4
DN	3/4	1/2	1/2	4/5

The following table provides the possible ranks:

The sums of the ranks of AS, BA, CB, and DN in the given table are 10, 7, 14, and 9 respectively.

The sum of ranks of CB is given as 18. Hence, in each OTT, the rank of CB must increase by 1.



Hence, CB's ranks must be 4, 5, 5, and 4 in Netflix, Amazon Prime, EROS now, and Disney Hotstar respectively.

Since CB's rank in Netflix is 4, DN's rank must be 5. Similarly, since CB's rank in the Disney Hotstar is 4, AS's rank in the Disney Hotstar must be 5.

DN's rank is 5 in the Netflix. Further, the sum of DN's ranks is 10. This is possible only if the ranks of DN in Amazon Prime, EROS now, and Disney Hotstar are 3, 1, and 1 respectively. Since the rank of DN in Amazon Prime is 3, AS's rank must be 2. The sum of the ranks of AS is 13. The sum of the ranks of AS in Amazon Prime and Disney Hotstar is 7. In the other two OTTs, the sum must be 6. From the available possibilities, the rank of AS in Netflix and EROS now must be 3 and 3 respectively.

Since the rank of AS in the EROS now is 3, the rank of BA in the EROS now must be 4. Hence, the rank of EJ in EROS now must be 2.

Since the rank of AS in Amazon Prime is 2, the rank of BA in Amazon Prime must be 1. Hence, EJ's rank in Amazon Prime must be 4.

The sum of BA's rank in the four OTTs is 10. The sum of BA's ranks in Amazon Prime and EROS now is 5. Hence, the sum of the ranks in Netflix and Disney Hotstar is 5. This is only possible if BA's ranks in Netflix and Disney Hotstar are 2 and 3 respectively. Hence, EJ's ranks in Netflix and Disney Hotstar are 1 and 2 respectively.

The following table provides the ranks of each movie in each OTT:

Movie	AMAZON PRIME	DISNEY HOTSTAR	EROS NOW	NETFLIX
AS	2	5	3	3
BA	1	3	4	2
CB	5	4	5	4
DN	3	1	1	5
EJ	4	2	2	1

The rank of EJ in NETFLIX is 1. Hence, the Total collections must be greater than ₹160 bn. From the given options, the answer is option (A).

### 35. (15)

Since the sum of the ranks for each movie is given, we should first rank the four movies in the bar

graph in each OTT from 1 to 4, excluding EJ. Since we do not know the position of EJ, it can be in any position. Hence, the rank of each movie in each OTT can vary by 1 depending on the position of EJ.

Movie	AMAZON PRIME	DISNEY HOTSTAR	EROS NOW	NETFLIX
AS	2/3	4/5	2/3	2/3
BA	1/2	2/3	3/4	1/2
CB	4/5	3/4	4/5	3/4
DN	3/4	1/2	1/2	4/5

The following table provides the possible ranks:

The sums of the ranks of AS, BA, CB, and DN in the given table are 10, 7, 14, and 9 respectively.

The sum of ranks of CB is given as 18. Hence, in each OTT, the rank of CB must increase by 1. Hence, CB's ranks must be 4, 5, 5, and 4 in Netflix, Amazon Prime, EROS now, and Disney Hotstar respectively.

Since CB's rank in Netflix is 4, DN's rank must be 5. Similarly, since CB's rank in the Disney Hotstar is 4, AS's rank in the Disney Hotstar must be 5.

DN's rank is 5 in the Netflix. Further, the sum of DN's ranks is 10. This is possible only if the ranks of DN in Amazon Prime, EROS now, and Disney Hotstar are 3, 1, and 1 respectively. Since the rank of DN in Amazon Prime is 3, AS's rank must be 2. The sum of the ranks of AS is 13. The sum of the ranks of AS in Amazon Prime and Disney Hotstar is 7. In the other two OTTs, the sum must be 6. From the available possibilities, the rank of AS in Netflix and EROS now must be 3 and 3 respectively.

Since the rank of AS in the EROS now is 3, the rank of BA in the EROS now must be 4. Hence, the rank of EJ in EROS now must be 2.

Since the rank of AS in Amazon Prime is 2, the rank of BA in Amazon Prime must be 1. Hence, EJ's rank in Amazon Prime must be 4.

The sum of BA's rank in the four OTTs is 10. The sum of BA's ranks in Amazon Prime and EROS now is 5. Hence, the sum of the ranks in Netflix and Disney Hotstar is 5. This is only possible if BA's ranks in Netflix and Disney Hotstar are 2 and



3 respectively. Hence, EJ's ranks in Netflix and Disney Hotstar are 1 and 2 respectively.

The following table provides the ranks of each movie in each OTT:

Movie	AMAZON PRIME	DISNEY HOTSTAR	EROS NOW	NETFLIX
AS	2	5	3	3
BA	1	3	4	2
CB	5	4	5	4
DN	3	1	1	5
EJ	4	2	2	1

The sum of ranks of all the movies in all the Amazon prime OTT is 15.

36. (c)

When Aman chooses to (retain right) as his first move, Bhanu will go with (retain upper) as the upper-right quarter has lower values than the lower-right quarter. Next, Aman chooses to retain the left half. To minimize the profit, Bhanu's only move should be to retain the upper half.

Thus, the correct answer is (c) (retain upper) (retain upper)

37. (b)

After the second move in the game, Aman will have to choose from a quarter of the board to make a move. Since the left quarters have cells with values 1, it only makes sense for Aman to proceed with retaining the right half in his first move. Now for Bhanu's turn, he will choose to retain the lower half so as to limit Aman's choices to 2 or 3. Aman, in his second move, will choose to retain the left half of the quarter and finally, Bhanu will choose the upper half to minimize the profit for Aman.

Thus, the correct answer is Rs. 3.

38. (a)

After Aman retains the right half in the first move, Bhanu will have 2 quarters to choose in which minimum value is 2 and 3. If he retains the upper half, Aman will retain the right half in his next turn to maximize his profit to either 4 or 7. If Bhanu retains the lower half, Aman will retain the

left half to maximize his profit to either 3 or 8. Thus no matter what Bhanu retains, Aman won't have a profit less than 3.

The correct answer is Rs. 3.

39.

(d)

After Bhanu's first move to retain the lower half, Aman will choose the left quarter to minimize the profit.

After Bhanu's second move to again retain the lower half, Aman will choose the right half as his final move to limit Bhanu's profit to Re.1.

Thus, the correct answer is (retain left) (retain right).

40.

(d)

According to information-

Start with F and B to form a minimum number of cases.

Given:

1. Two people sit between B and F, who have 2 cards.
2. The person, who sits immediately to the right of B, has 5 cards.
3. E, who does not have a prime number of cards, sits immediately to the left of C.

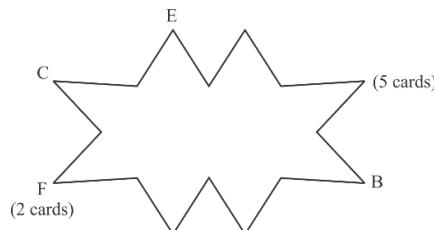
Conclude:

From clue 1, B either sits third to the right of F or third to the left of F.

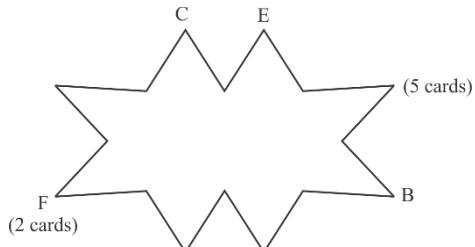
Case 1: B sits third to the right of F.

From clue 3, C sits immediately to the left of F or C sits second to the left of F.

Case 1.a: C sits immediate left of F

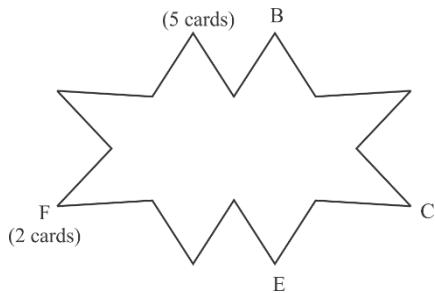


Case 1.b: C sits second to the left of F



Case 2: B sits third to the left of F.

From clue 3, C sits third to the right of F.



Given:

1. One person sits between D and A, who has 4 cards.
2. D has a prime number of cards.
3. The person, who sits immediately to the right of D, has more cards than D but not the maximum. He has more cards than G who does not have 1 card.

Conclude:

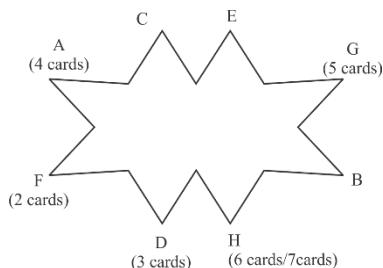
As, no two persons with name that starts with consecutive alphabets sit adjacent to each other, so, from clue 1, case 1.a can be rejected as there is no seat available for A and D.

From clue 2, D either has 3 cards or 7 cards.

Case 1.b:

A sits immediate left of F and thus D sits immediate right of F.

From clue 3, D has 3 cards. Also, G has 5 cards and H either has 6 cards or 7 cards.



Case 2:

A sits immediate right of F and thus D sits immediate left of F.

This case can be rejected as F, who has 2 cards, sits immediately right of D, which violates clue 3.

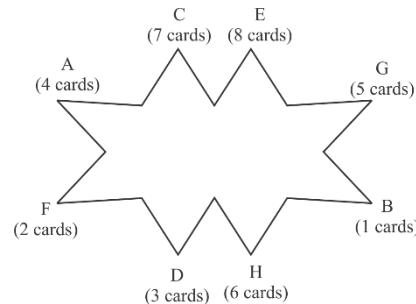
Given:

1. C has an odd number of cards.
2. B has fewer cards than C.

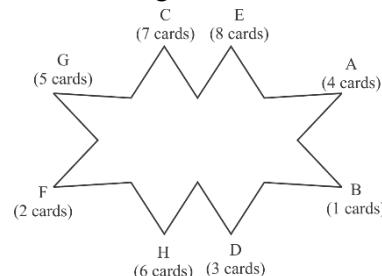
Conclude:

From clue 1 and clue 2, C has 7 cards and B has 1 card. Thus E has 8 cards.

The final arrangement is as follows:



After rearrangement,



Statement I: True

Statement II: False

Statement III: True

So, only statements I and III are true

Hence, option D.

41.

(c)

**According to information-**

Start with F and B to form a minimum number of cases.

Given:

1. Two people sit between B and F, who have 2 cards.
2. The person, who sits immediately to the right of B, has 5 cards.
3. E, who does not have a prime number of cards, sits immediately to the left of C.

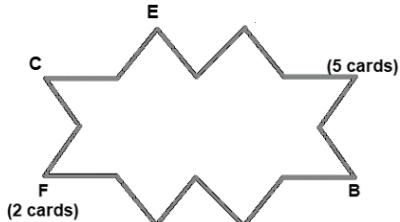
Conclude:

From clue 1, B either sits third to the right of F or third to the left of F.

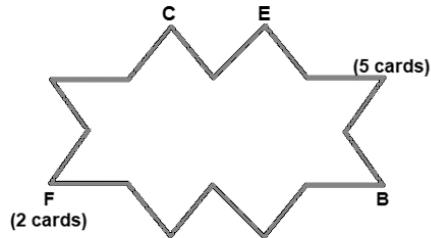
Case 1: B sits third to the right of F.

From clue 3, C sits immediately to the left of F or C sits second to the left of F.

Case 1.a: C sits immediate left of F

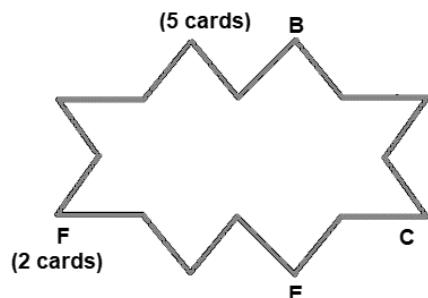


Case 1.b: C sits second to the left of F



Case 2: B sits third to the left of F.

From clue 3, C sits third to the right of F.



**Given:**

1. One person sits between D and A, who has 4 cards.
2. D has a prime number of cards.
3. The person, who sits immediately to the right of D, has more cards than D but not the maximum. He has more cards than G who does not have 1 card.

**Conclude:**

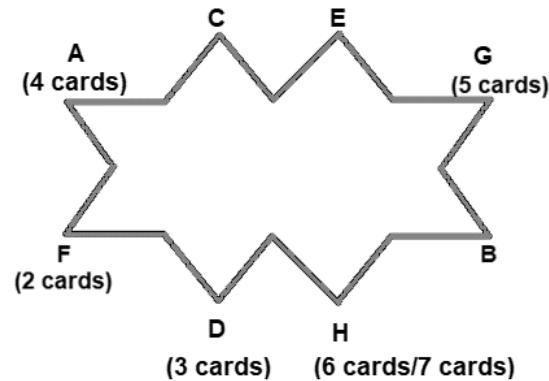
As, no two persons with name that starts with consecutive alphabets sit adjacent to each other, so, from clue 1, case 1.a can be rejected as there is no seat available for A and D.

From clue 2, D either has 3 cards or 7 cards.

Case 1.b:

A sits immediate left of F and thus D sits immediate right of F.

From clue 3, D has 3 cards. Also, G has 5 cards and H either has 6 cards or 7 cards.



Case 2:

A sits immediate right of F and thus D sits immediate left of F.

This case can be rejected as F, who has 2 cards, sits immediately right of D, which violates clue 3.

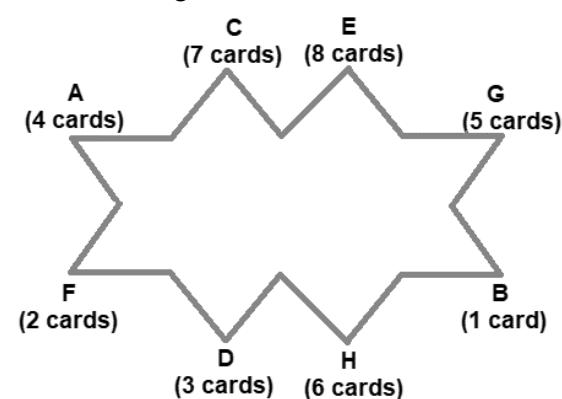
**Given:**

1. C has an odd number of cards.
2. B has fewer cards than C.

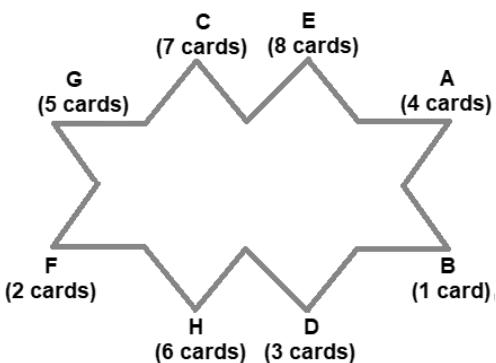
**Conclude:**

From clue 1 and clue 2, C has 7 cards and B has 1 card. Thus E has 8 cards.

The final arrangement is as follows:



After rearrangement,



H, who has 6 cards, sits fourth to the right of C.  
Hence, option C.

42.

(d)

**According to information-**

Start with F and B to form a minimum number of cases.

**Given:**

1. Two people sit between B and F, who have 2 cards.
2. The person, who sits immediately to the right of B, has 5 cards.
3. E, who does not have a prime number of cards, sits immediately to the left of C.

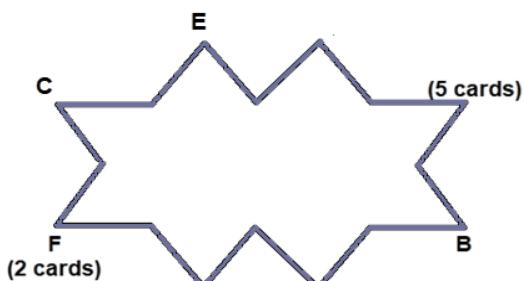
**Conclude:**

From clue 1, B either sits third to the right of F or third to the left of F.

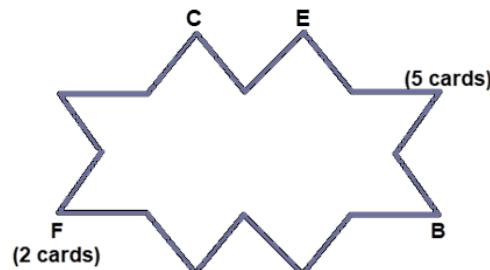
Case 1: B sits third to the right of F.

From clue 3, C sits immediately to the left of F or C sits second to the left of F.

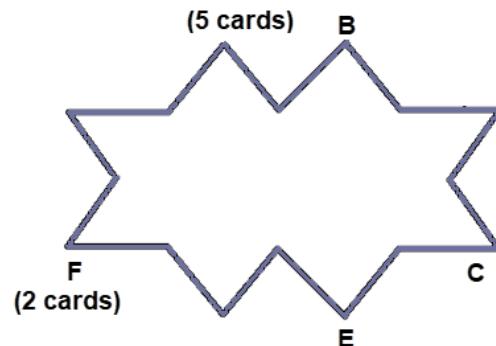
Case 1.a: C sits immediate left of F



Case 1.b: C sits second to the left of F



Case 2: B sits third to the left of F.  
From clue 3, C sits third to the right of F.

**Given:**

1. One person sits between D and A, who has 4 cards.
2. D has a prime number of cards.
3. The person, who sits immediately to the right of D, has more cards than D but not the maximum. He has more cards than G who does not have 1 card.

**Conclude:**

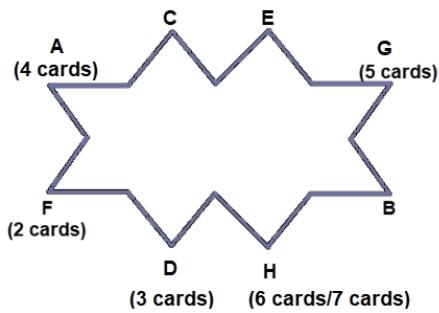
As, no two persons with name that starts with consecutive alphabets sit adjacent to each other, so, from clue 1, case 1.a can be rejected as there is no seat available for A and D.

From clue 2, D either has 3 cards or 7 cards.

Case 1.b:

A sits immediate left of F and thus D sits immediate right of F.

From clue 3, D has 3 cards. Also, G has 5 cards and H either has 6 cards or 7 cards.



Case 2:

A sits immediate right of F and thus D sits immediate left of F.

This case can be rejected as F, who has 2 cards, sits immediately right of D, which violates clue 3.

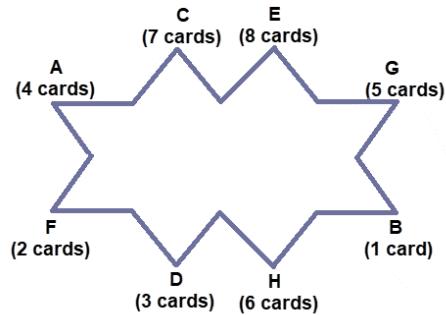
**Given:**

1. C has an odd number of cards.
2. B has fewer cards than C.

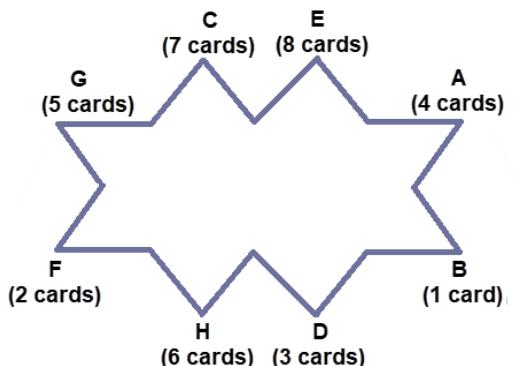
**Conclude:**

From clue 1 and clue 2, C has 7 cards and B has 1 card. Thus E has 8 cards.

The final arrangement is as follows:



After rearrangement,



I. G, H:  $5+6=11$  cards

II. H, D:  $6+3=9$  cards

III. B, G:  $1+5=6$  cards

IV. C, E:  $7+8=15$  cards

Hence, option D.

43.

(a)

**According to information-**

Start with F and B to form a minimum number of cases.

**Given:**

1. Two people sit between B and F, who have 2 cards.
2. The person, who sits immediately to the right of B, has 5 cards.
3. E, who does not have a prime number of cards, sits immediately to the left of C.

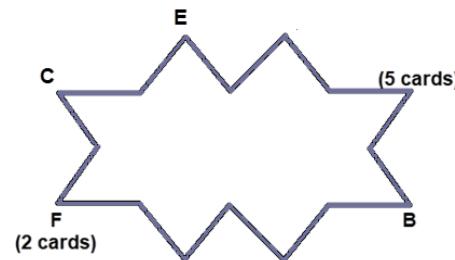
**Conclude:**

From clue 1, B either sits third to the right of F or third to the left of F.

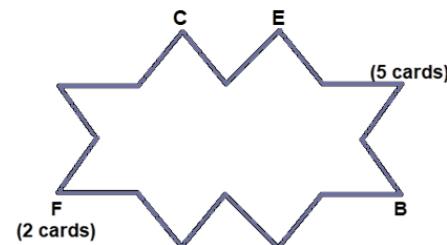
Case 1: B sits third to the right of F.

From clue 3, C sits immediately to the left of F or C sits second to the left of F.

Case 1.a: C sits immediate left of F

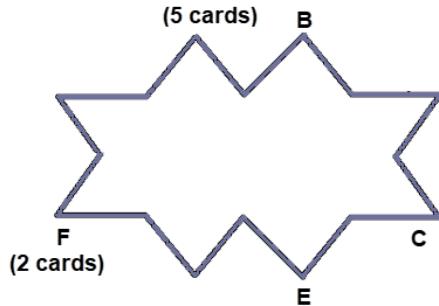


Case 1.b: C sits second to the left of F



Case 2: B sits third to the left of F.

From clue 3, C sits third to the right of F.


**Given:**

1. One person sits between D and A, who has 4 cards.
2. D has a prime number of cards.
3. The person, who sits immediately to the right of D, has more cards than D but not the maximum. He has more cards than G who does not have 1 card.

**Conclude:**

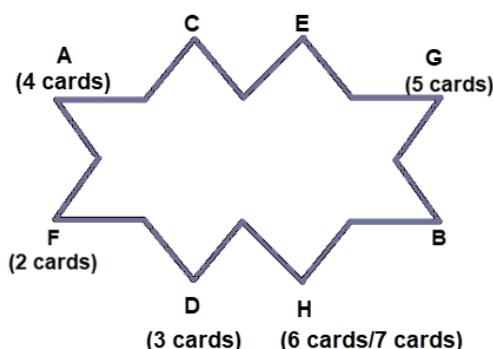
As, no two persons with name that starts with consecutive alphabets sit adjacent to each other, so, from clue 1, case 1.a can be rejected as there is no seat available for A and D.

From clue 2, D either has 3 cards or 7 cards.

Case 1.b:

A sits immediate left of F and thus D sits immediate right of F.

From clue 3, D has 3 cards. Also, G has 5 cards and H either has 6 cards or 7 cards.



Case 2:

A sits immediate right of F and thus D sits immediate left of F.

This case can be rejected as F, who has 2 cards, sits immediately right of D, which violates clue 3.

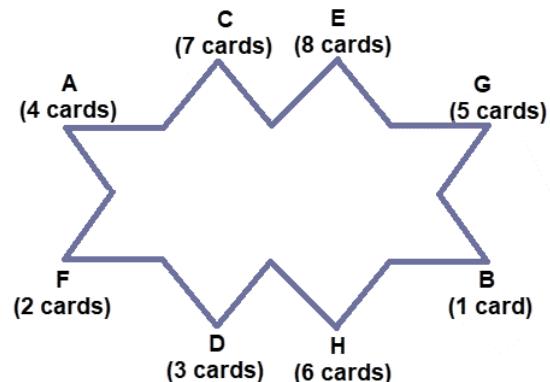
**Given:**

1. C has an odd number of cards.
2. B has fewer cards than C.

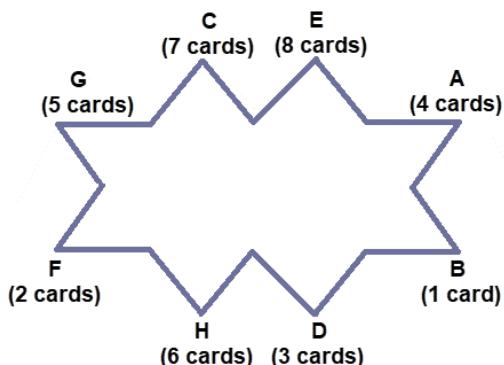
**Conclude:**

From clue 1 and clue 2, C has 7 cards and B has 1 card. Thus E has 8 cards.

The final arrangement is as follows:



After rearrangement,



A, who has 4 cards, sits second to the left of D.

F, who has 2 cards, sits third to the right of E.

Product of the number of cards with A and F is 8 cards.

Hence, option A.

44.

(c)

According to information-

Start with F and B to form a minimum number of cases.

Given:

1. Two people sit between B and F, who have 2 cards.
2. The person, who sits immediately to the right of B, has 5 cards.

3. E, who does not have a prime number of cards, sits immediately to the left of C.

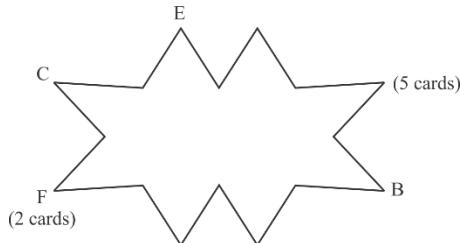
Conclude:

From clue 1, B either sits third to the right of F or third to the left of F.

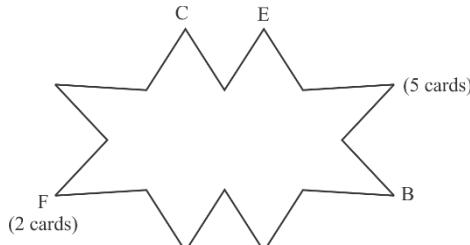
Case 1: B sits third to the right of F.

From clue 3, C sits immediately to the left of F or C sits second to the left of F.

Case 1.a: C sits immediate left of F

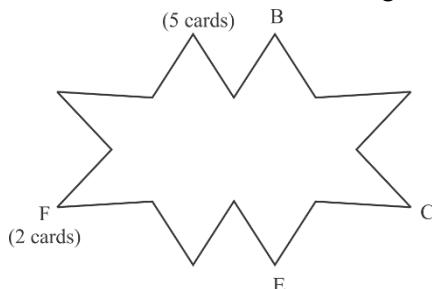


Case 1.b: C sits second to the left of F



Case 2: B sits third to the left of F.

From clue 3, C sits third to the right of F.



Given:

1. One person sits between D and A, who has 4 cards.
2. D has a prime number of cards.
3. The person, who sits immediately to the right of D, has more cards than D but not the maximum. He has more cards than G who does not have 1 card.

Conclude:

As, no two persons with name that starts with consecutive alphabets sit adjacent to each other,

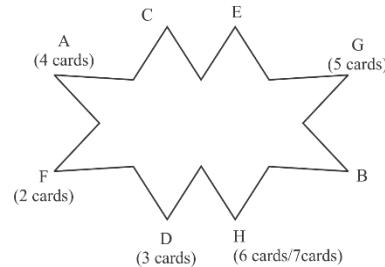
so, from clue 1, case 1.a can be rejected as there is no seat available for A and D.

From clue 2, D either has 3 cards or 7 cards.

Case 1.b:

A sits immediate left of F and thus D sits immediate right of F.

From clue 3, D has 3 cards. Also, G has 5 cards and H either has 6 cards or 7 cards.



Case 2:

A sits immediate right of F and thus D sits immediate left of F.

This case can be rejected as F, who has 2 cards, sits immediately right of D, which violates clue 3.

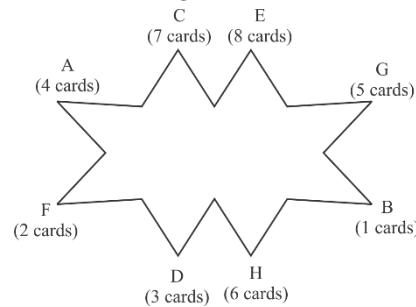
Given:

1. C has an odd number of cards.
2. B has fewer cards than C.

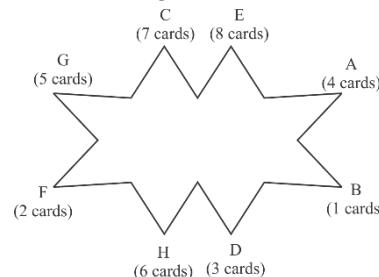
Conclude:

From clue 1 and clue 2, C has 7 cards and B has 1 card. Thus E has 8 cards.

The final arrangement is as follows:



After rearrangement,



I.  $G, A = 5 + 4 = 9$  cards

II.  $H, E = 6 + 8 = 14$  cards



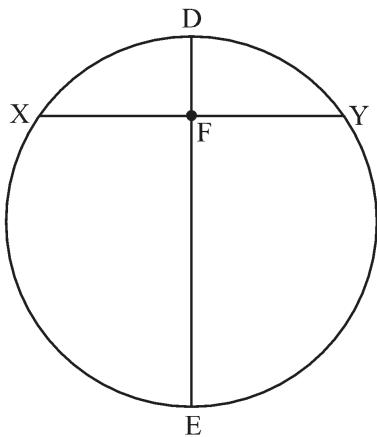
III.  $E, C = 8 + 7 = 15$  cards

IV.  $C, B = 7 + 1 = 8$  cards

Hence, option C.

## QUANT

45. (d)



Length of Chord XY is given as  $50\sqrt{3}$  cm and F is the mid-point of XY

Therefore,  $XF = FY = 25\sqrt{3}$  cm,

Further, it is also given that the length of

$$FE = 2\sqrt{6} \text{ cm}$$

Therefore, since the two chords XY and DE intersect each other inside the circle at F, we have

$$XF * FY = DF * FE$$

$$25\sqrt{3} * 25\sqrt{3} = DF * 2\sqrt{6}$$

$$DF = \frac{625\sqrt{3}}{2\sqrt{2}}$$

46. (a)

$$\text{Let } A = 4(m-2)^2 + 4(n-3)^2 - 2(m-3)^2$$

$$A = 4m^2 - 16m + 16 + 4n^2 - 24n + 36 - 2m^2 +$$

$$12m - 18$$

$$A = 2m^2 - 4m - 2 + 4n^2 - 24n + 36$$

$$A = 2m^2 - 4m + 4n^2 - 24n + 34$$

$$A = (2m^2 - 4m + 2) + (4n^2 - 24n + 36) + 34 - 2 - 36$$

$$A = 2(m^2 - 2m + 1) + (2n - 6)^2 - 4$$

$$A = 2(m - 1)^2 + (2n - 6)^2 - 4$$

Now, we know that squares are non-negative which means that the minimum value that they assume is 0

Therefore, minimum value of A would be

$$2(0) + 0 - 4$$

$$= -4$$

47. (b)

Let us represent the information provided in the question in a tabular form assuming the ages of Lata's Father and Mother at the time of her birth as F and M respectively. Also, let us assume that Divya was born 'x' years after Lata.

	Age of Father	Age of Mother	Age of Lata	Age of Divya	Age of Nikhil
When Lata was born	F	M	0	---	---
When Divya was born	$F + x$	$M + x$	x	0	---
When Nikhil was born	$F + x + 5$	$M + x + 5$	$x + 5$	5	0

Now, when Divya was born

$$F + x + M + x + x = 60$$

$$F + M = 60 - 3x$$

Now, when Nikhil was born

$$F + x + 5 + M + x + 5 + x + 5 + 5 = 2(F + M)$$

$$F + M + 3x + 20 = 2F + 2M$$

$$F + M = 3x + 20$$

$$60 - 3x = 3x + 20$$

$$x = \frac{20}{3}$$

years or 6 years and 8 months



48. (a)

let  $x-13 = a$ ,  $x = a + 13$ , then we have

$$(a+13)^2 - 54(a+13) + 153 = 0$$

$$a^2 + 26a + 169 - 54a - 702 + 153 = 0$$

$$a^2 - 28a - 380 = 0$$

$$a^2 - 2a(14) + 196 = 576$$

$$(a - 14)^2 = 576$$

$$a - 14 = 24$$

$$a = 38$$

We have to calculate

$$(x-13)^2 + \frac{1}{(x-13)^2} = a^2 + \frac{1}{a^2}$$

$$38^2 + \frac{1}{38^2}$$

$$= \frac{(1444^2 + 1)}{1444}$$

49. (b)

Rate of flow of water inside the aircraft is given at

$$\frac{26}{3} \text{ tons in every } \frac{13}{4} \text{ minutes,}$$

Therefore it would admit 160 tons of water inside in every 1 hour

Further, the rescue team deployed can throw water off the aircraft at the rate of 115 tons per hour

Therefore, Net volume of water that the Aircraft would admit in 1 hour =  $160 - 115 = 45$  tons per hour

Further, it is known that 540 tons of water is enough for the aircraft to sink, which means that

there is a total time of  $\frac{540}{45} = 12$  hours available before the Aircraft starts sinking

Further, a ship has also been deployed as part of rescue operations which is moving at the rate of 30 km/ hr, thus it would cover a total distance of 360 Kms. in 12 hours.

Therefore, the Aircraft would have to cover the remaining  $405 - 360 = 45$  Kms. in 12 hours so that it does not sink

45

Therefore, required speed =  $\frac{45}{12} = 3.75$  Km/hour.

50.

(8217)

Let  $N = (2431)^{2431}$

$\log_{10} N = 2431 \log_{10} 2431$  (Taking Log on both sides and  $\log(m^n) = n \log m$ )

$$\log_{10} N = 2431 \log_{10} (11 * 13 * 17)$$

$$\log_{10} N = 2431 (\log_{10} 11 + \log_{10} 13 + \log_{10} 17) \quad (\text{As } \log(a*b*c) = \log a + \log b + \log c)$$

Now, putting the values of logs given in the question part, we have

$$\log_{10} N = 2431 (1.04 + 1.11 + 1.23)$$

$$\log_{10} N = 2431 (3.38)$$

$$\log_{10} N = 8216.78$$

Therefore, the number of digits in N would be Characteristic part + 1

Hence, the number of digits in N = 8217

51.

(18)

All the remotes would again work together in  $\text{LCM}(25, 40, 55, 70) = 15400$  seconds

Therefore in a total duration of 77 hours, the remotes would work together for a total of

$$\frac{60}{77 * 60 * 15400} \text{ times}$$

$$= 18 \text{ times}$$

52.

(196)

There will be two cases each for both the expressions

(i) If  $a-8 > 0$ , then  $a-8 < 7$  or  $a < 15$

(ii) If  $a-8 < 0$ , then  $8-a < 7$  or  $a > 1$

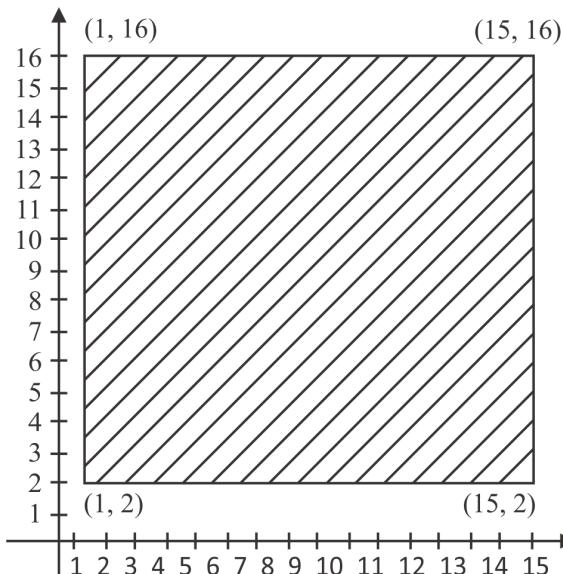
Solving the other expression for b, we have

(i) If  $b-9 > 0$ , then  $b-9 < 7$  or  $b < 16$

(ii) If  $b-9 < 0$ , then  $9-b < 7$  or  $b > 2$

$$a > 1 \quad b > 2$$

$$a < 15 \quad b < 16$$



Therefore, all the possible solutions of the given expressions would be inside the shaded area having vertices (1,2), (15,2), (1,16), (15,16)

So, the required area  $14 * 14 = 196$

53.

(c)

The difference between compound interest and simple interest is given by the formula

$$\frac{PR^2}{100^2} \frac{(300+R)}{100} \quad \text{where P is the Principal amount}$$

and R is the rate of interest

Therefore putting the value of R as 25 and equating the same with the difference amount given, we have

$$21175 = P * \frac{25^2}{100^2} * \frac{325}{100}$$

$$P = 1,04,246.15$$

Therefore, total amount invested would be  $2P$  rounded off to the nearest integer we have

$$= \text{Rs. } 2,08,492$$

54.

(a)

Let the total work required to be done be LCM  $(12, 18, 48) = 144$  units

Therefore, individual efficiencies of Hemant, Ravi and Sandeep would be 12, 8 and 3 units respectively.

As we know that they work in groups of two, their combined efficiencies in descending order would be

Hemant and Ravi – 20 units

Hemant and Sandeep – 15 units

Ravi and Sandeep – 11 units

Therefore, in 3 hours total work completed would be  $20 + 15 + 11 = 46$  units in any particular order that they work

This implies that in 9 hours total work completed would be 138 units

Remaining work to be done is  $144 - 138 = 6$  units

Now, in order to minimize the total time taken, the remaining work should be completed by the group with the greatest combined efficiency

Therefore, if Hemant and Ravi completed the remaining part of work, they would require

$\frac{6}{20}$

hrs or 18 minutes to complete the remaining work

Therefore, as per the given work criteria, minimum time required would be 9 hours and 18 minutes.

55.

(7)

$$(60^{35})^{80} + (90^{25})^{112} = 60^{2800} + 90^{2800}$$

$$= 10^{2800} (6^{2800} + 9^{2800})$$

$= (6^{2800} + 9^{2800})$  followed by 2800 zeroes

Therefore, the right most non-zero digit will come from  $(6^{2800} + 9^{2800})$

Unit digit of  $6^{2800}$  will be 6 (as  $6^x$  always ends in 6)

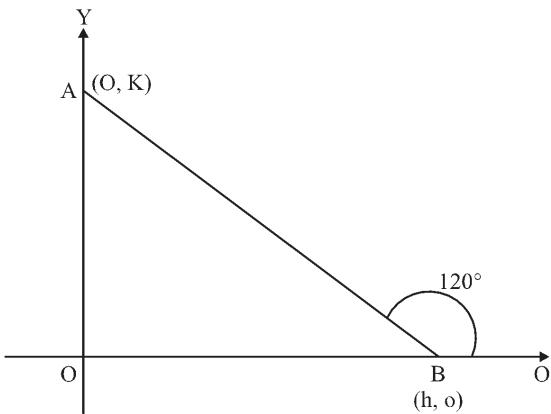
Unit digits of  $9^{2800}$  will be 1 (as the powers of 9 follow the cycle of 2, as 2800 is even the unit digit will be 1)

Unit digit of  $6^{2800} + 9^{2800} = 7$

Therefore, the rightmost non-zero digit of  $(60^{35})^{80} + (90^{25})^{112}$  will be 7.

56.

(c)



Let AB intersect the Y- axis at A (0,k) and X- axis at B (h,0) thus forming an angle of  $120^\circ$  with the X- axis.

Therefore, Gradient of the line would be

$$= \tan 120^\circ = -\sqrt{3}$$

$$\text{Further, Gradient of the line} = \frac{(k-0)}{0-h} = \frac{-k}{h}$$

$$\text{Therefore, } = \frac{-k}{h} = -\sqrt{3}$$

$$\text{or } k = \sqrt{3}h$$

Further, sum of the intercepts is given as 8

$$\text{Therefore, } k + h = 8$$

$$\sqrt{3}h + h = 8$$

$$h = \frac{8}{\sqrt{3} + 1} = 4(\sqrt{3} - 1)$$

$$k = \sqrt{3}h = 4\sqrt{3}(\sqrt{3} - 1)$$

57. (b)

$$f(x) = \frac{\cos^{114} x}{\sin^{115} x} - \frac{\sin^{114} x}{\cos^{115} x}$$

$$= \frac{(\cos^{229} x - \sin^{229} x)}{\sin^{115} x \cdot \cos^{115} x}$$

$$\text{Further, } g(x) = \frac{\sin^{115} x}{\cos^{114} x} - \frac{\cos^{115} x}{\sin^{114} x}$$

$$= \frac{(\sin^{229} x - \cos^{229} x)}{\sin^{114} x \cdot \cos^{114} x}$$

We know that as x increases from 0 to  $\frac{\pi}{2}$ ,  $\sin x$  increases from 0 to 1 and  $\cos x$  decreases from 1 to 0. Further, equality occurs at

$$x = \frac{\pi}{4}$$

where both  $\sin x$  and  $\cos x$  are equal to  $\frac{1}{\sqrt{2}}$

Therefore for  $0 < x < \frac{\pi}{4}$ ,  $\cos x > \sin x$

This means that  $\cos^{229} x > \sin^{229} x$

Now, let us see

$$f(x) = \frac{(\cos^{229} x - \sin^{229} x)}{\sin^{115} x \cdot \cos^{115} x}$$

= Positive value/Positive value

$$= \frac{A}{g(x)} = \frac{(\sin^{229} x - \cos^{229} x)}{\sin^{114} x \cdot \cos^{114} x}$$

$$= \frac{\text{Negative value}}{\text{Positive value}}$$

= A negative value

This means that  $f(x) > g(x)$ .

58.

(a)

Given, AM  $(m_1, m_2, m_3, m_4, m_5, \dots, m_n) = \frac{14k}{3}$

We have been asked to find AM  $\left\{ \frac{(5m_1 + 7)}{8}, \frac{(5m_2 + 7)}{8}, \frac{(5m_3 + 7)}{8}, \dots, \frac{(5m_n + 7)}{8} \right\}$

$$\left. \frac{(5m_n + 7)}{8} \right\}$$

$$= \text{AM} \left( \frac{5m_1}{8}, \frac{5m_2}{8}, \frac{5m_3}{8}, \dots, \frac{5m_n}{8} \right) +$$



$$\text{AM} \left( \frac{7}{8}, \frac{7}{8}, \frac{7}{8}, \dots, n \text{ times} \right)$$

$$= \frac{5}{8} \{ \text{AM}(m_1, m_2, m_3, m_4, m_5, \dots, m_n) \} + \frac{7}{8}$$

$$= \frac{5}{8} * \frac{14k}{3} + \frac{7}{8}$$

$$= \frac{(70k + 21)}{24}$$

59. (59)

$$\frac{11}{x} - \frac{9}{y} = \frac{1}{6}$$

Given,

$$6(11y - 9x) = xy$$

$$66y - 54x - xy = 0$$

$$y(66-x) - 54x = 0$$

$y(x-66) + 54x = 0$  (Multiplying -1 on both the sides of the equation)

Adding 54 (-66) on both the sides of the equation, we have,

$$y(x - 66) + 54x + 54(-66) = 54(-66)$$

$$y(x - 66) + 54(x - 66) = -2 \cdot 3^3 \cdot (2 \cdot 3 \cdot 11)$$

$$(x - 66)(y + 54) = -2^2 \cdot 3^4 \cdot 11^1$$

Therefore, the number on the RHS has 30 positive factors i.e. 60 integral factors

But x and y can not be equal to 0, Therefore, we can say that

Except for 1 ordered pair which is  $(x - 66) = -66$  and  $(y + 54) = 54$ , 59 ordered pairs would satisfy the

given equation such that upon assigning any of the values of the 59 integral factors to  $(x - 66)$ , the corresponding integral factor would be assigned to  $(y + 54)$ .

60. (Rs. 1550)

Let the prices of each of the varieties of the shoes be  $S_1, S_2, S_3$  and  $S_4$  such that  $S_1 > S_2, S_3, S_4$

Further, let the prices of each of the varieties of socks be  $S_5, S_6, S_7, S_8$  such that  $S_8 < S_5, S_6, S_7$

We have,  $S_1 + S_2 + S_3 + S_4 = 3000$  and

$S_5 + S_6 + S_7 + S_8 = 1200$ , Also it is given that  $S_8 = 200$

Therefore,  $S_5 + S_6 + S_7 = 1000$

Further, we have been given that the combined

price of three of the varieties is  $\frac{29}{20} * \text{combined}$

prices of other three varieties of socks =  $\frac{29}{20} * 1000 = 1450$

Now, if  $S_1$  is included in one of the three varieties of shoes, it would make the price of the fourth variety =  $3000 - 1450 = 1550$  which would contradict our assumption  $S_1 > S_2, S_3, S_4$

Therefore, the only condition possible here is  $S_2 + S_3 + S_4 = 1450$

61.

(d)

Let 'x' be the quantity of Ethanol drawn out in the fourth iteration, then we have

Final Quantity = Initial Quantity \*

$$\left( 1 - \frac{\text{quantity removed}}{\text{quantity after replacement}} \right)$$

$$* \left( 1 - \frac{\text{quantity removed}}{\text{quantity after replacement}} \right)$$

$$114 = 450$$

$$\left( 1 - \frac{22.5}{450} \right) \left( 1 - \frac{45}{450} \right) \left( 1 - \frac{90}{450} \right) \left( 1 - \frac{x}{450} \right)$$

$$114 = 450 \left( \frac{95}{100} \right) \left( \frac{9}{10} \right) \left( \frac{4}{5} \right) \left\{ \frac{(450-x)}{450} \right\}$$

$$x = 283.34 \text{ litres}$$

62.

(b)

$$\left| \frac{x-24}{x-30} \right| \geq 3 \text{ implies that}$$

$$\frac{x-24}{x-30} \geq 3 \text{ or } \frac{x-24}{x-30} \leq -3 \quad (\because |x| \geq a \text{ implies } x \geq a \text{ or } x \leq -a)$$

$$(i) \quad \text{If } \frac{x-24}{x-30} \geq 3$$



$$\left( \frac{x-24}{x-30} \right) - 3 \geq 0$$

$$\frac{66-2x}{x-30} \geq 0$$

$$(66-2x) * (x-30) \geq 0 \text{ and } x \neq 30$$

$$30 < x \leq 33$$

$$(ii) \text{ If } \frac{x-24}{x-30} \leq -3$$

$$\frac{x-24}{x-30} + 3 \leq 0$$

$$\frac{4x-114}{x-30} \leq 0$$

$$(4x-114) * (x-30) \leq 0 \text{ and } x \neq 30$$

$$\frac{57}{2} \leq x < 30$$

$$\text{Therefore, } x \in [57/2, 30) \cup (30, 33]$$

63.

(a)

The probability of taking out 5 packets of Sunfeast Biscuits and 3 packets of Britannia Biscuits from a lot of 6 packets of Sunfeast Biscuits and 8 packets of Britannia Biscuits is given by

= Number of ways of selecting 5 packets of Sunfeast Biscuits from 6 packets of Sunfeast Biscuits

\* Number of ways of selecting 3 packets of Britannia Biscuits from 8 packets of Britannia Biscuits / Total Number of ways of selecting 8 packets of biscuits from 14 packets of biscuits

$$= \frac{^6C_5 * ^8C_3}{^{14}C_8}$$

$$\left\{ \frac{6!}{(5!*1!)} * \frac{8!}{(3!*5!)} \right\} \frac{14!}{(8!*6!)} = 16/143$$

64.

(c)

Let the distance covered by lion in 8 leaps = distance covered by deer in 3 leaps =  $24a$   
Therefore, the distance covered by the lion in 1 leap =  $3a$

and the distance covered by the deer in 1 leap =  $8a$

$\frac{\text{Distance}}{\text{Time}}$   
As time here, is constant and Speed =  $\frac{\text{Distance}}{\text{Time}}$ ,

Therefore, the ratio of the distances covered will be the ratio of their speeds Distance covered by the lion in 7 leaps =  $3a * 7 = 21a$

Distance covered by the deer in 11 leaps =  $8a * 11 = 88a$  Therefore, the ratio of their speeds would be  $21:88$

65.

(8000)

Let the total number of males and females in the company be  $100x$  and  $100y$  respectively,

Therefore number of males and females present yesterday would be  $83x$  and  $77y$  respectively, Further, the number of males and females present today would be  $84x$  and  $56y$  respectively.

But, we have been given that the number of males present today is equal to the number of females present today,

$$\frac{x}{y} = 2:3$$

$$\text{But, it is also known that } 83x + 77y = 6352$$

Substituting the value of one variable in terms of the other, we have  $x = 32$  and  $y = 48$

Therefore, total strength of the company would be  $100(x+y) = 100 * 80 = 8000$

66.

(d)

Let the price of 1 kg sugar be  $100x$  Therefore, it is given that he sells it at  $130x$

Further, it is also given that he weighs only 948 gm/kg of sugar, therefore, his actual cost price would only be  $94.8x$



As he had to give discount to his regular customer,

he would have sold it for  $\frac{4}{5} * 130x = 104x$  Now the value of  $104x$  is given as 78, Therefore on

equating  $104x = 78$ , we get  $x = \frac{3}{4}$  Therefore his

cost price would be  $94.8 * \frac{3}{4} = \text{Rs. } 71.1$

Therefore, the profit he earned was  $78 - 71.1 = \text{Rs. } 6.9$

6.9 His profit percentage would be  $\frac{6.9}{71.1} * 100 = 9.70\%$



PW Web/App - <https://smart.link/7wwosivoicqd4>

Library- <https://smart.link/sdfez8ejd80if>