

## **VARC**

*Read the passage below and answer the questions that follow:*

Whether your experience of puberty was mostly positive, mostly negative, or somewhere in between, you probably remember undergoing both biological and social transformations. Your skin changed, you grew taller, and you developed sexual and physical characteristics. But perhaps you also experienced changes in mood and sleep, changes in your social life, your first romantic relationships and other grown-up roles.

Of course, even among kids who are the same age, there can be large developmental differences. Maybe you suddenly got taller one year, and your best friend stayed the same height. This reflects what scientists call 'pubertal timing' – how early or late one individual develops compared with others of the same age and sex. For girls, some of the physical developmental changes that take place can be especially visible, making certain girls look a lot older than others. The physical changes of puberty typically start to emerge between ages eight and 13 for girls, on average – driven by underlying increases in the body's hormone levels – and these changes unfold during the biggest period of neural development since infancy.

With their bodies, brains and lives in flux, some adolescents thrive while others experience a new set of social and psychological challenges. From puberty onwards, girls are two to three times more likely than boys to experience depression. And research has shown that, when girls or boys go through puberty earlier than their peers, they're at higher risk for depression and anxiety. This increased risk persists through adolescence, so those who started puberty earlier continue to be more likely to develop depression and anxiety than peers who started puberty later.

There are several theories about why early timing of puberty is linked to these negative mental health outcomes. These mechanisms might differ between boys and girls because girls have different experiences from boys, both socially and physically, during puberty. While pubertal processes are important for well-being in boys and gender-diverse adolescents – and further studies involving these understudied populations are critical – more research to date has focused on the reasons why earlier-developing girls are at increased risk for depression and anxiety. One theory is that increased levels of the hormones that skyrocket at puberty can affect the developing brain directly. Although it's mostly based on animal research, the idea is that the brain might be more sensitive to these hormonal changes at an earlier age, changing the brain in ways that make it more reactive to stressful experiences.

Yet early biological changes can affect adolescents' social lives, too. For example, some girls who develop earlier might have more negative feelings about their bodies because they don't look like their friends do. Also, girls who look a lot older than they are might be treated differently by peers or adults who overestimate how socially or cognitively mature they are. That could include, for instance, being treated as people who are ready for sexual experiences when they are not. In short, they might be receiving attention that affects them negatively.

*1. The passage most strongly suggests that the existing body of research on pubertal timing is insufficient because:*

- A. it relies too heavily on animal research to draw conclusions about the human brain.
- B. it cannot account for the large developmental differences among children of the same age.
- C. it has not adequately investigated the experiences of populations other than cisgender girls.
- D. it overemphasises social factors while neglecting the direct biological impact of hormones.

*2. The theory that social factors, such as being treated as older, contribute to the increased risk of depression in early-developing girls would be most weakened if which of the following were found to be true?*

- A. Early-developing girls who are home-schooled and have limited social interaction show the same elevated rates of depression as those in traditional schools.
- B. Early-developing boys, who also face social pressures, show a much lower increase in depression rates compared to girls.
- C. The hormonal changes associated with early puberty are found to be less intense than previously believed.
- D. In cultures where early physical development in girls is highly valued and celebrated, the link between early puberty and depression remains strong.

*3. Which of the following best describes the organizational structure of the passage?*

- A. It presents a universally acknowledged phenomenon, provides a series of personal anecdotes, and concludes with a call to action.
- B. It introduces a broad developmental stage, narrows the focus to a specific risk factor within it, establishes a correlation, and then explores competing theories to explain it.
- C. It outlines a problem, critiques the current research for its methodological flaws, and then proposes a new, more effective research agenda.
- D. It compares and contrasts the experiences of boys and girls during puberty, ultimately arguing that one group faces significantly more hardship.

4. All of the following statements about pubertal timing are supported by the passage except:

- A. Pubertal timing refers to how early or late one develops compared to peers
- B. Early puberty increases the risk of depression and anxiety in both boys and girls
- C. Hormonal changes at puberty may influence brain development
- D. Almost all adolescents experience puberty at the same age

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

Sentence: "The Dutch East India Company established a global trading empire that connected spices, textiles, and silver in new circuits of exchange."

Paragraph: The seventeenth century marked a turning point in global commerce. \_\_\_\_ (1) \_\_\_\_\_. New maritime routes shifted economic power from Mediterranean ports to northern Europe. \_\_\_\_ (2) \_\_\_\_\_. Merchants in Amsterdam, London, and Lisbon now commanded networks that stretched across oceans. \_\_\_\_ (3) \_\_\_\_\_. These changes laid the foundations for the world economy we inhabit today. \_\_\_\_ (4) \_\_\_\_\_.

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

6. Five jumbled-up sentences (labelled 1, 2, 3, 4 and 5), related to a topic, are given below. Four of them can be put together to form a coherent paragraph. Identify the odd sentence and key in the number of that sentence as your answer.

- 1. For example, Network Rail recently sent 200 workers to a meeting by road rather than rail because they deemed the train too expensive.
- 2. The mixed message sent is deeply demotivating for the general public, especially when getting people to behave differently is up against so much else.
- 3. Culturally, we are constantly and disproportionately prompted to behave primarily as self-absorbed consumers, and only remotely as engaged, publicly-minded citizens.
- 4. Almost the whole of economic policy is geared toward growth and promoting energy-intensive material consumption.
- 5. Economically, price signals don't work because they exclude climate costs.

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

The term 'narcissism' has become a household word. We've seen this 'me first' mentality evolve on social media, and we use the word to describe celebrities, politicians and even some of our coworkers and friends. We commonly say that someone is 'narcissistic' to mean they're selfish, manipulative or driven by ego. But there's a difference between everyday selfishness and real narcissism – and there's a distinction between a normal personality trait and the harmful, rare personality disorder. As the research around narcissism has evolved in recent years, psychologists and psychiatrists have learned more about these differences. For instance, we tend to think of narcissists as brash, flashy people who take over a conversation, but new studies have shown that insecure narcissists exist as well. They're still self-involved and self-focused but are more hidden from public view.

A. The common understanding of narcissism as simple selfishness is incomplete, as psychology distinguishes between a personality trait and a clinical disorder, and has identified less obvious, insecure types of narcissists.

B. Narcissism is a modern problem caused by social media, which makes people like celebrities and politicians become selfish, manipulative, and driven by ego.

C. Recent psychological studies have proven that all true narcissists are actually insecure and hidden, which contradicts the popular belief that they are brash and flashy.

D. The main difference between a normal person and a narcissist is that narcissists are always selfish and self-involved, making them easy to identify in social and professional settings.

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

Sentence: "The printing press democratized access to texts, undermining the monopoly of scribes and religious elites."

Paragraph: The fifteenth century witnessed one of the most revolutionary inventions in history. \_\_\_\_ (1) \_\_\_\_\_. Within decades of Gutenberg's press, books began to circulate in unprecedented numbers. \_\_\_\_ (2) \_\_\_\_\_. Scholars, merchants, and artisans could suddenly engage with written material. \_\_\_\_ (3) \_\_\_\_\_. This transformation reshaped culture, science, and politics across Europe. \_\_\_\_ (4) \_\_\_\_\_.

A. Option 1

B. Option 2

C. Option 3

D. Option 4

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

1. Relativity shattered this idea by showing that time depends on the observer's motion and position.
2. The result is a concept of time that is far stranger and less absolute than our everyday experience.
3. Quantum mechanics further complicated the picture, suggesting that time may emerge from deeper, timeless processes.
4. Physicists once assumed time was an objective backdrop against which events unfolded.

*10. Five jumbled-up sentences (labelled 1, 2, 3, 4 and 5), related to a topic, are given below. Four of them can be put together to form a coherent paragraph. Identify the odd sentence and key in the number of that sentence as your answer.*

1. This analysis implicated the axons (output connections) of neurons as well as parts of the cortex and deeper "subcortical" brain regions like the striatum, involved in movement.
2. These findings tally with brain-imaging studies suggesting dysfunction of some regions in insomnia, and with animal studies implicating these cells in sleep regulation.
3. It also tagged "medium spiny neurons," which occupy most of the striatum as well as neurons in other regions, including the hypothalamus.
4. The researchers then investigated which brain regions and cells these genes frequently turn up in.
5. In fact, it is probable that insomnia is not a singular condition but a cluster of symptoms grouped together, which can have a range of underlying causes.

MBA KARO

**DILR**

Seven employees of a company, Ajay, Bhanu, Chetan, Deepa, Ekta, Falguni and Garima retired in different months of different years. The months are among February, March, June, July, September, October and December and the years are from 2005 to 2011.

- Falguni retired in a year which is divisible by 3.
- Bhanu and Chetan retired in February and October respectively and one of them retired in a leap year.
- Four persons retired between the retirement years of Ajay and Deepa.
- Ekta retired in June in the year just after the year in which Chetan retired.
- Ajay retired in a month having 31 days while Garima retired in a month having 30 days.
- Bhanu retired before Garima but not immediately after Ajay.
- One of the persons retired in July 2005.

*11. Who retired in 2006?*

- A. Bhanu
- B. Chetan
- C. Deepa
- D. Cannot be determined

*12. In which month did Ajay retire?*

- A. March
- B. July
- C. December
- D. Cannot be determined

*13. How many of the given persons retired before Garima?*

*14. Which of the following statements is definitely false?*

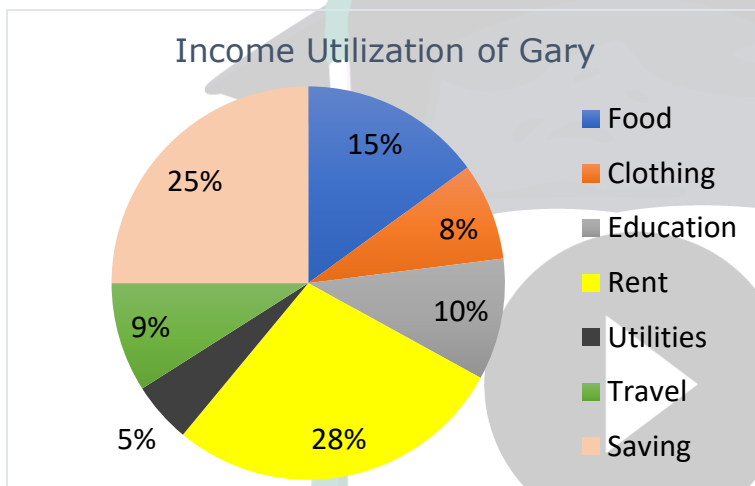
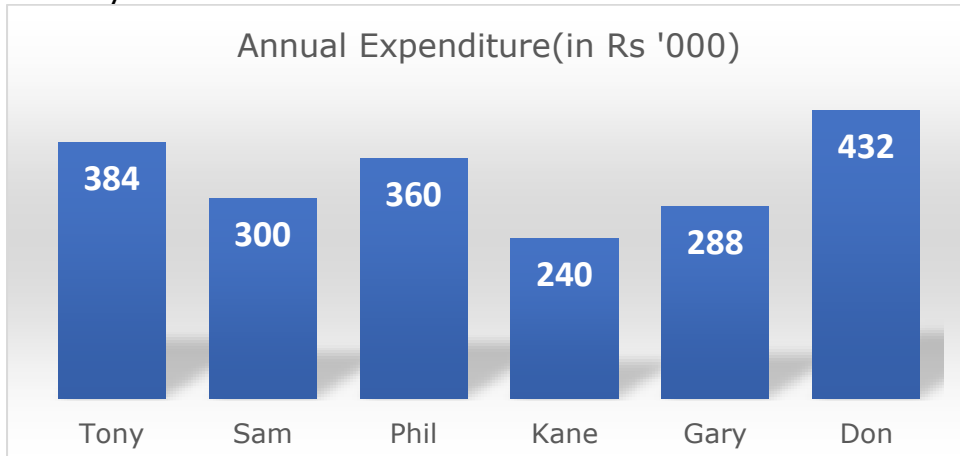
- A. The person who retired in 2010 retired in December
- B. Deepa was the first person to retire
- C. Three persons retired between Bhanu and Ekta
- D. Garima retired in the next year of Ajay's retirement

*15. If the difference between the time of retirement of the persons retiring in 2010 and 2011 is 18 months, what could be the difference between the time of retirement of the persons retiring in 2007 and 2008?*

- A. 8 months
- B. 10 months
- C. 14 months
- D. 17 months

## CAT 50 Day Streak – Day 4

Don, Gary, Kane, Phil, Sam, and Tony are 6 friends. The bar graph gives their annual expenditures, and the pie chart gives the income distribution of Gary.



Income = Expenditure + Salary

Assume the expenses are evenly distributed every month.

16. The ratio of expenses on education by Phil, Sam and Tony are in the ratio 5:7:8. If the total expense on education by these three is 5 times the expense on education by Gary, what percentage of his expense did Tony spend on education?

- A. 12.5%
- B. 15%
- C. 16.67%
- D. 20%

17. The rent expense by Phil is 25% more than that of Gary. His expenses on utilities are the same as those of Gary. Phil's expense on rent is how many times his expense on utilities?

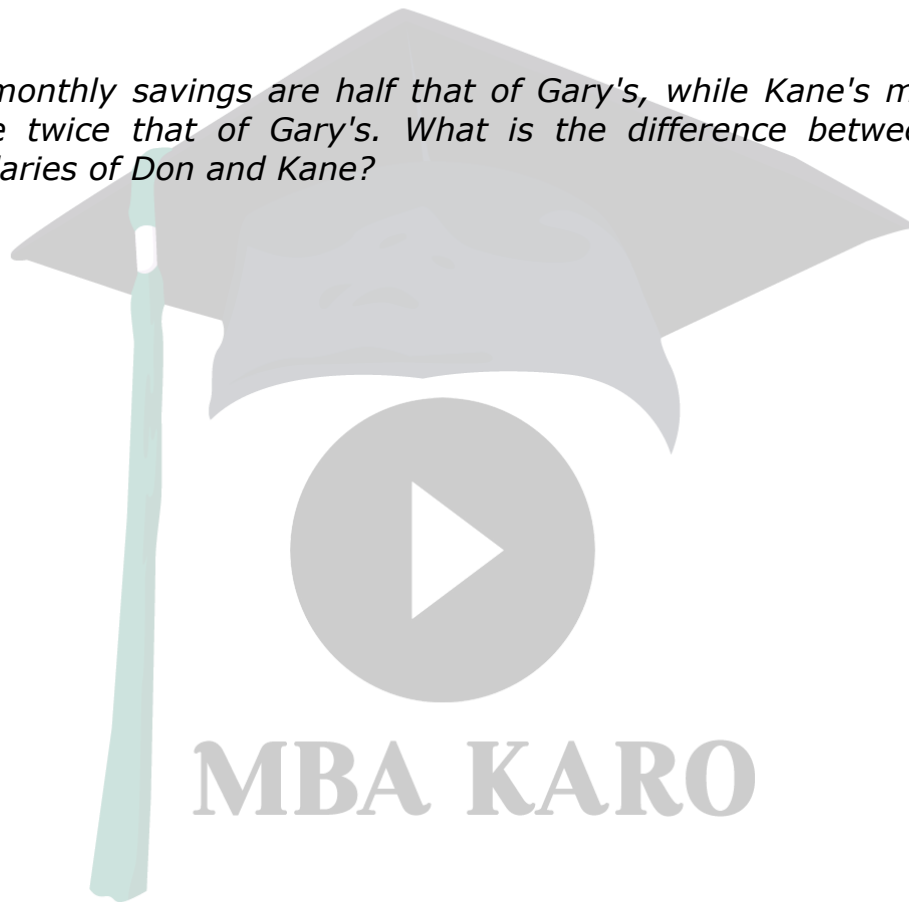
18. Tony's travel expense is 50% more than that of Gary. If the expense on travel by Tony is 12% of his income, what percentage of his income does he save?

- A. 11.11%
- B. 10%
- C. 12.5%
- D. 8.89%

19. The expenses on food by Kane, Phil and Sam are 25%, 20% and 15% more than those of Gary, respectively. What percentage of their total expense for these three is on food?

- A. 21.43%
- B. 22.22%
- C. 23.04%
- D. 24%

20. Don's monthly savings are half that of Gary's, while Kane's monthly savings are twice that of Gary's. What is the difference between the monthly salaries of Don and Kane?



**QA**

21. *B takes three times as long as A and C together to complete a task, while C takes four times as long as A and B together. If all three working together can finish the task in 45 days, how long will it take B and C together to complete it?*

22. *Three distinct integers  $a$ ,  $b$ , and  $c$  are in GP in that order, where  $a$  is the median among the three. If the absolute value of their sum is 42, and the common ratio is an integer too, then which of the following is not a possible value of  $b$ ?*

- A. 10
- B. 12
- C. 18
- D. 28

23. *A vessel is filled with liquid, 3 parts of which are water and 5 parts syrup. How much of the mixture must be drawn off and replaced with water so that the mixture may be half water and half syrup?*

- A.  $\frac{1}{3}$
- B.  $\frac{1}{4}$
- C.  $\frac{1}{5}$
- D.  $\frac{1}{6}$

24. *The sides  $AB$  and  $CD$  of a quadrilateral  $ABCD$  are parallel, such that the angle  $ADC$  is  $130^\circ$ , the angle  $BCD$  is  $140^\circ$ ,  $AB = 16$  and  $CD = 10$ . If  $P$  and  $Q$  are the midpoints of  $AB$  and  $CD$ , respectively, the length of  $PQ$  is*

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

25. *A college has fewer than 2000 students. If they are divided equally into teams of either 9 or 10 or 12 or 25 each, exactly 4 are always left out. If they are divided into teams of 11, no one is left out. How many students are there in the college?*

26. *Charan set out on a motorcycle from point  $P$  towards point  $Q$ , which is 5 km away. At the same time, Dinesh started walking from  $P$  towards  $Q$ . When Charan reached the midpoint of  $PQ$ , Dinesh called him. Charan immediately turned back, picked up Dinesh, and the two continued towards  $Q$  on the motorcycle. Because of this detour, Charan took 1.6 times the time he would normally have taken to cover  $PQ$ , while Dinesh saved 40 minutes of walking. Find Dinesh's speed.*

- A. 4
- B. 4.5
- C. 6

D. 7.5

27. If  $x$  and  $y$  are two real numbers such that  $x^2 - 10x + y^2 + 16 = 0$ , find the maximum value of the ratio  $y/x$ .

- A.  $3/4$
- B.  $3/5$
- C.  $4/5$
- D.  $2/3$

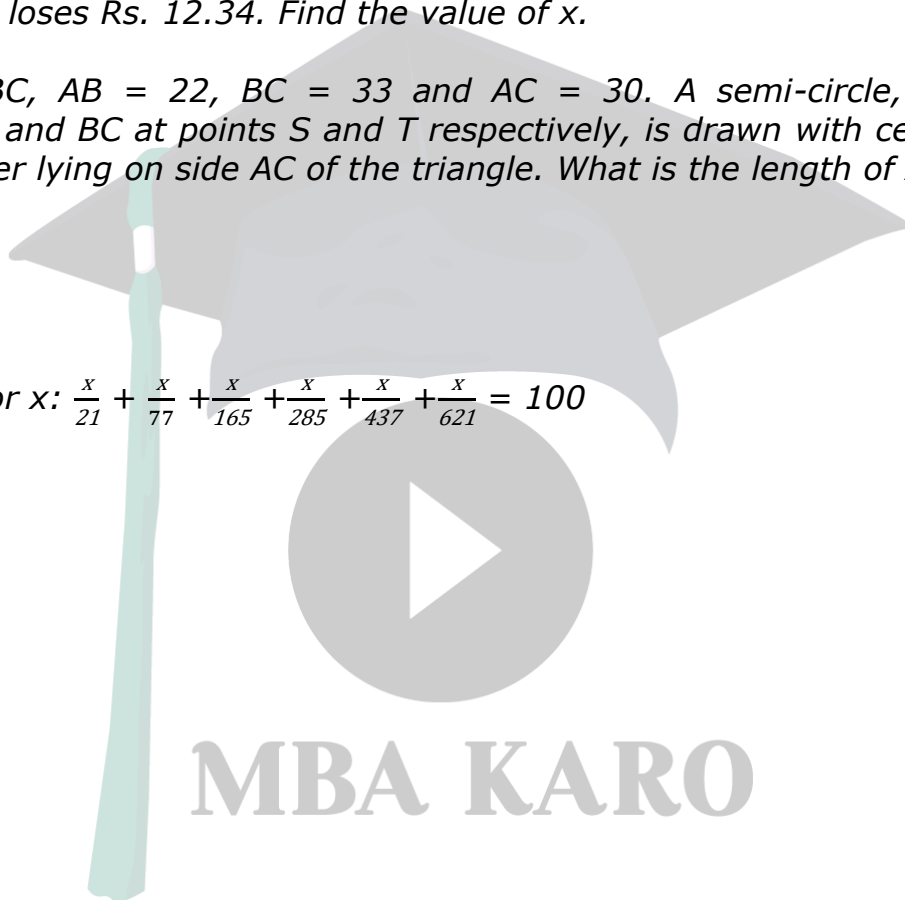
28. A shopkeeper marks the marked price of 25% more than the cost price, which is Rs. 1234. After giving two successive discounts of 12% and  $x\%$ , he loses Rs. 12.34. Find the value of  $x$ .

29. In  $\triangle ABC$ ,  $AB = 22$ ,  $BC = 33$  and  $AC = 30$ . A semi-circle, which touches  $AB$  and  $BC$  at points  $S$  and  $T$  respectively, is drawn with centre  $O$  and diameter lying on side  $AC$  of the triangle. What is the length of  $AO$ ?

- A. 9
- B. 10
- C. 11
- D. 12

30. Solve for  $x$ :  $\frac{x}{21} + \frac{x}{77} + \frac{x}{165} + \frac{x}{285} + \frac{x}{437} + \frac{x}{621} = 100$

- A. 1350
- B. 1250
- C. 1400
- D. 1200



MBA KARO