PART 3

Read the text below and answer questions 27–40.

DIGITAL TECHNOLOGY AND THE DEVELOPING BRAIN

A

Digital technology now forms a near-continuous backdrop to childhood and adolescence. Smartphones, streaming services, messaging platforms and online games structure how young people socialise, seek information and manage leisure. The central scientific question is therefore not whether screens are intrinsically beneficial or harmful, but how particular patterns of use interact with neuroplasticity during sensitive developmental periods. Brain systems involved in attention, reward learning, sleep timing and emotion regulation are still being calibrated across childhood and the teenage years, and the digital environment may amplify—or dampen—these trajectories depending on timing, content and context.

B

A consistent finding across the literature is that effects are highly context-dependent. “Screen time” is an aggregate measure that conceals crucial variation: passive scrolling late at night differs from collaborative messaging, and both differ from using digital tools to compose music, code, or edit video. For some adolescents, online spaces provide social connection and a sense of belonging; for others, the same platforms heighten rumination or displacement of offline activities. Individual differences matter as much as content. Temperament, parental routines, peer support and baseline mental health can determine whether the same digital activity proves helpful or harmful, which is why broad generalisations tend to mislead.

C

Methodological limitations further complicate interpretation. Much evidence relies on self-reported screen exposure, yet recall is noisy and categories are vague, producing measurement error. Studies can also confuse correlation with causation because confounding variables are pervasive: family stress, school pressure, or pre-existing mood differences may influence both device use and wellbeing. In particular, anxious adolescents may spend more time online as a coping strategy, meaning anxiety can precede screen use rather than result from it. To address bidirectional causality, researchers increasingly call for longitudinal cohorts, repeated measures over time, and objective indicators such as device logs that capture actual behaviour instead of estimates.

D

Concerns about attention often focus on how platform design interacts with dopaminergic pathways. Many apps implement variable rewards—unpredictable likes, intermittent notifications and endless feeds—that exploit reinforcement learning and encourage frequent checking. For developing brains, repeated micro-rewards can strengthen habits of distraction and reduce tolerance for boredom, making sustained concentration feel effortful by comparison. Yet the same learning principles can be recruited for constructive ends. Well-designed educational tools can use feedback schedules to reinforce practice, provided they support deep engagement rather than rapid switching, again showing that design features and user goals matter.

E

Social development is another contested domain. Online interaction can maintain friendships, expand communities and provide support for isolated teenagers, especially when offline environments are limiting. However, heavy reliance on mediated communication may reduce practice in reading facial cues, negotiating conflict in person, and tolerating uncomfortable silences—skills that typically mature through repeated offline exposure. Moreover, cyberbullying and algorithm-driven social comparison can intensify stress, particularly when identity formation and peer status are unstable. These effects are not uniform: they depend on group norms, platform affordances and the presence of protective relationships beyond the screen.

F

Sleep and memory have become a major focus because technology can disrupt both physiology and routine. Blue light exposure in the evening may suppress melatonin and delay circadian timing, contributing to circadian misalignment. Psychological arousal—competitive gaming, emotionally charged messaging, or late-night doom-scrolling—can also delay sleep onset by keeping the body in an activated state. Poor sleep then affects consolidation, mood regulation and impulse control, creating spillover into academic performance and emotional resilience. For this reason, many researchers emphasise sleep-protective routines such as device-free periods before bed and consistent bedtimes, rather than blanket bans that ignore why and how devices are being used.

G

Educational policy responses mirror the complexity of the evidence. Some schools restrict phones to reduce distraction and social conflict in classrooms, while others integrate tablets, adaptive platforms and learning analytics. Outcomes are mixed: technology can support active instruction when teachers are trained to use it, when tasks require meaningful problem-solving, and when classroom management prevents off-task

switching. Conversely, devices may simply digitise worksheets or replace discussion with passive consumption, yielding little learning gain. The limiting factor is often not the device itself but the teaching conditions that determine whether technology supplements or displaces effective pedagogy.

H

Equity concerns suggest that “screen exposure” often reflects broader social realities. The digital divide is not only about access but about the capacity to curate content, supervise use and provide enriching offline alternatives. Families with resources may set routines, model balanced habits and offer safe spaces for sport, libraries or extracurricular learning. Others may rely on screens for childcare, lack secure outdoor environments, or experience irregular work schedules that make supervision difficult. In this sense, digital technology functions as an environment shaped by timing, content, design and social context. The most credible guidance therefore emphasises using technology intentionally, protecting sleep, and maintaining balanced routines—while recognising that patterns of use are embedded in socioeconomic constraints.

Questions 27–31

Choose the correct heading for each paragraph.

List of Headings

i How platform design can encourage repeated checking and distraction

ii Why protecting sleep may be more effective than banning screens

iii Difficulties in measuring use and separating cause from effect

iv Online interaction as both support and a source of social pressure

v Why impact depends on the user and the way technology is used

vi The limits of classroom technology when teaching conditions vary

vii How family circumstances influence digital habits and opportunities

27 Paragraph **B**

28 Paragraph **C**

29 Paragraph **D**

30 Paragraph **E**

31 Paragraph **F**

Questions 32–36

Choose **TRUE** if the statement agrees with the information given in the text, choose **FALSE** if the statement contradicts the information, or choose **NOT GIVEN** if there is no information on this.

32 The passage suggests that the same digital activity may have different effects on different children.

33 The passage implies that higher levels of screen use necessarily cause anxiety in adolescents.

34 The passage states that some apps use variable rewards to encourage frequent checking.

35 The passage suggests that school policies on technology differ, and evidence of learning benefits is not consistent.

36 The passage indicates that children from low-income families use educational apps more often than children from wealthier families.

Questions 37–40

Complete the sentences below. Choose **ONE WORD ONLY** from the text for each answer.

37 Researchers increasingly call for objective measures such as device .....

38 Some teenagers may experience increased ..... due to cyberbullying and social comparison.

39 Poor sleep can affect consolidation and mood .....

40 The guidance recommends using technology ..... while also protecting sleep and maintaining balanced routines.

Answer Key

27. v
28. iii
29. i
30. iv
31. ii
32. TRUE

33. FALSE
34. TRUE
35. TRUE
36. NOT GIVEN
37. logs
38. stress
39. regulation
40. intentionally