CBI ZBO Sample Question Paper

Directions (1-6): Read the passage carefully and answer the questions based on the passage.

Recent research in the field of nutrition has unveiled the significant impact of gut microbiota on overall health, extending far beyond traditional digestive functions. The study, conducted over several years and involving a diverse group of participants, reveals a complex interaction between dietary patterns, gut microbiota diversity, and the immune system. Researchers have found that a diet rich in fibers, such as fruits, vegetables, and whole grains, promotes a more diverse and stable gut microbiota, which in turn supports a stronger immune response and reduces inflammation.

Conversely, diets high in processed foods and sugars are linked to a less diverse gut microbiota, potentially leading to increased **susceptibility** to various diseases, including obesity, type 2 diabetes, and certain forms of cancer. The study also highlights the role of fermented foods in enhancing gut microbiota diversity and the potential of prebiotics and probiotics in maintaining gut health.

Moreover, the research underscores the rapid adaptability of the gut microbiota to dietary changes, suggesting that even short-term modifications in diet can lead to significant shifts in the composition of the gut microbiota. This adaptability points to the potential for dietary **interventions** to quickly impact health positively or negatively.

The study further explores the intricate relationships between gut microbiota diversity and the body's metabolism, immune function, and even mental health, suggesting a far-reaching influence of diet on well-being. It sheds light on how dietary fibers act as prebiotics, feeding beneficial bacteria in the gut, which produce short-chain fatty acids (SCFAs) upon digestion. These SCFAs are crucial for maintaining the integrity of the gut barrier, regulating inflammemation, and influencing the immune system.

This groundbreaking research suggests that simple dietary changes could have profound effects on health by modulating the gut microbiota. It opens new avenues for nutritional interventions in the prevention and management of chronic diseases, emphasizing the critical role of diet in health and disease. The findings advocate for a broader public health approach to dietary recommendations, one that considers the intricate web of interactions between diet, gut microbiota, and long-term health outcomes.

Q1. What potential health issues are associated with diets high in processed foods and sugars, as found in the study?
(a) They are associated with a reduced risk of developing obesity, type 2 diabetes, and certain cancers.
(b) They increase the production of beneficial short-chain fatty acids and enhance mental health.
(c) They enhance the immune system's strength and reduce the body's inflammatory responses.
(d) They stabilize the gut microbiota and prevent any rapid changes in its composition.
(e) They heighten the risk of diseases like obesity, type 2 diabetes, and certain cancers.

Q2. Which statement accurately reflects the passage's description of the effects of dietary fibers on the gut microbiota and overall health?
(a) Dietary fibers decrease the production of short-chain fatty acids (SCFAs), leading to weakened gut barrier integrity.
(b) The passage indicates that dietary fibers primarily promote the growth of harmful bacteria within the gut microbiota.
(c) Short-chain fatty acids produced by dietary fibers increase inflammation and negatively affect immune function.
(d) Dietary fibers act as prebiotics that nurture advantageous microbes, which synthesize SCFAs essential for intestinal health.
(e) Dietary fibers have no significant impact on the gut microbiota or the production of short-chain fatty acids.

Q3. According to the passage, which actions are suggested to enhance gut microbiota diversity and overall health?
(I) Increasing the intake of fermented foods
(II) Incorporating a wide variety of prebiotics and probiotics in the diet
(III) Emphasizing traditional digestive functions over dietary diversity
(a) Only (I)
(b) Both (III) and (II)
(c) Only (III)
(d) Both (I) and (III)
(e) Both (I) and (II)

Q4. What does the recent research suggest about the relationship between dietary fibers and gut microbiota?
(a) Dietary fibers, including fruits and vegetables, have been shown to reduce gut microbiota diversity and destabilize its composition.
(b) A diet lacking in fibers primarily from fruits and vegetables stabilizes gut microbiota but compromises the immune response.
(c) High fiber intakes from fruits, vegetables, and cereals promote a varied and equilibrium gut microbiota, bolstering immunological defenses and mitigating inflammation.
(d) Consuming a fiber-rich diet correlates with increased inflammation despite stabilizing the gut microbiota and boosting immune function.
(e) Fibers from processed foods rather than whole foods are more effective in promoting gut microbiota diversity and immune strength.

Q5. Which of the following statements is/are true based on the information given in the passage?
(I) A diet abundant in fibers fosters a more varied and robust gut microbiota, which bolsters improved immune efficacy.
(II) Long-term dietary alterations are the only way to achieve rapid changes in the composition of gut microbiota.
(III) Dietary modifications can quickly and substantially change the gut microbiota, possibly affecting health results.
(a) Only (I)
(b) Both (I) and (II)
(c) Only (III)
(d) Both (I) and (III)
(e) All (I), (II), and (III)

Q6. What conclusion does the passage draw about the role of dietary changes in public health?
(a) Simple dietary modifications are insufficient to impact health through the gut microbiota significantly.
(b) Nutritional interventions should focus exclusively on eliminating chronic diseases without considering gut microbiota.
(c) Robust public health frameworks should adopt dietary protocols that address the complex interaction between diet, gut microbiota, and health.
(d) The importance of dietary changes in managing chronic diseases is minimal and often overstated in scientific research.
(e) Public health recommendations should simplify dietary guidelines, ignoring the interactions between diet and gut microbiota.

Directions (7-9): In the following questions, sentence/passage is split into four parts and named A, B, C and D. These four parts are not given in their proper order. Read the sentence/passage and find out which of the four combinations is correct. If the sentence is correct in the given order as it is, then select option "No rearrangement required" as your answer choice.

Q7.
(A) diplomats fervently negotiate a precarious ceasefire,
(B) in the conflict-stricken region
(C) amidst escalating tensions,
(D) aiming to avert further calamity
(a) ADCB
(b) CADB
(c) CBDA
(d) BDCA
(e) No rearrangement required

Q8.
(A) the genetic intricacies of individual patients
(B) revolutionary breakthroughs in biotechnology
(C) promising treatments tailored to
(D) herald a new era of personalized medicine,
(a) BCDA
(b) CADB
(c) CDBA
(d) BDCA
(e) No rearrangement required

Q9.
(A) environmental advocates rally for urgent action,
(B) for future generations
(C) inaction on climate change
(D) highlighting the dire consequences of
(a) ADCB
(b) BCDA
(c) DBAC
(d) BDCA
(e) No rearrangement required

Directions (10-12): Read each sentence to find out whether there is any grammatical or idiomatic error in it. The error, if any, will be in one part of the sentence. The number of that part is the answer. If the sentence is grammatically and contextually correct, then mark 'No error', as your answer. (Ignore errors of punctuation, if any).

Q10. Despite having worked for over a decade (A)/ in the technology sector, she prefers (B)/ using a traditional notebook than (C)/ relying on digital devices for her daily planning. (D)
(a) A
(b) B
(c) C
(d) D
(e) No error

Q11. The council was divided on (A)/ whether the funds should be allocated (B)/ to the building of the new library, (C)/ or if they should be used for scholarships. (D)
(a) A
(b) B
(c) C
(d) D
(e) No error

Q12. The new regulations require that every member of the board (A)/, including the CEO, are (B)/ to submit a detailed report (C)/ of their activities each quarter. (D)
(a) A
(b) B
(c) C
(d) D
(e) No error

Directions (13-15): In each of the questions given below four words are given in bold. These four words may or may not be in their correct position. The sentence is then followed by options with the correct combination of words that should replace each other in order to make the sentence grammatically and contextually correct. Find the correct combination of the words that replace each other. If the sentence is correct as it is then select option "No interchange required" as your choice.

Q13. Individuals (A) worldwide **grapple (B)** with the **complexities (C)** of digital privacy, balancing national security interests with the rights of **governments (D)**
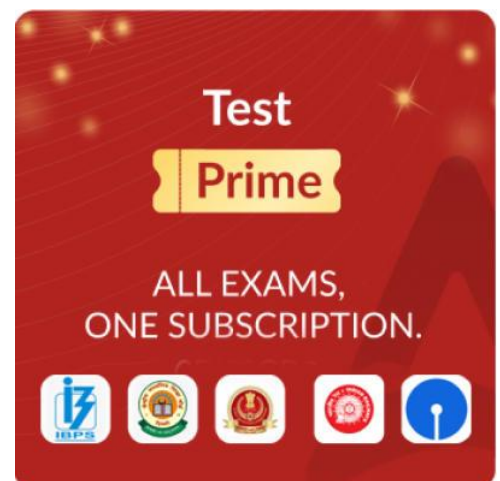(a) A-C
(b) C-D
(c) A-D
(d) B-C
(e) No interchange required

Q14. Urban **planners (A)** advocate for green infrastructure **projects (B)**, aiming to enhance **challenges (C)** and resilience against climate-induced **sustainability (D).**
(a) A-C
(b) C-D
(c) A-D
(d) B-C
(e) No interchange required

Q15. Conservationists celebrate a **census (A)** in the recovery of an **endangered (B)** species, as the latest **milestone (C)** reveals a doubling in their **population (D)** numbers.
(a) A-C
(b) C-D
(c) A-D
(d) B-C
(e) No interchange required

Q16. XML stands for ____.
(a) Extra Markup Language
(b) Excellent Markup Language
(c) Extensible Markup Language
(d) Extended Marking Links
(e) None of the above

Q17. A hacker that changes or forges information in an electronic resource is engaging in _____.
(a) Denial of service
(b) Sniffing
(c) Terrorism
(d) Data diddling
(e) None of the above

Q18. Which protocol does Ping use?
(a) TCP
(b) ARP
(c) ICMP
(d) BootP
(e) None of the above

Q19. Pressing CTRL + 9 in Excel ____.
(a) Prints 9
(b) Hides the current row
(c) Prints 9 followed by spaces
(d) Inserts 9 cells at the current location
(e) None of the above

Q20. The full form of VDA is ____.
(a) Virtual Desktop Access
(b) Visual Desktop Array
(c) Virtual Desktop Array
(d) Visual Desktop Access
(e) None of the above

Q21. Telnet is a ____ based computer protocol.
(a) Sound
(b) Image
(c) Text
(d) Animation
(e) Digits

Q22. CAD stands for ____.
(a) Computer Aided Design
(b) Computer Algorithm for Design
(c) Computer Application in Design
(d) All of the above
(e) None of the above

Q23. A _____ is a grid with labeled columns and rows.
(a) Dialog box
(b) Worksheet
(c) Clipboard
(d) Toolbar
(e) None of the above

Q24. The Indian Railways has launched which virtual server to optimize server usage and faster connectivity?
(a) RailCloud
(b) RailSagar
(c) RailSilver
(d) RailIndia
(e) RailBharat

Q25. After you've opened a window, the button that displays the window over the entire screen is _____.
(a) Scroll box
(b) Minimize
(c) Restore down
(d) Maximize
(e) None of the above

Q26. The digital telecommunications term ISDN is an abbreviation for _____.
(a) Integrated Standard Digital Networks
(b) Internet Services Data Network
(c) Interactive Standard Dynamic Networks
(d) Integrated Services Digital Network
(e) None of the above

Q27. A type of device used to connect a central processor and peripherals, which uses multiplexing, is known as ____.
(a) Modem
(b) Network
(c) Multiplexer
(d) Duplexer
(e) None of the above

Q28. Compatibility, with regard to computers, refers to ____.
(a) The software doing the right job for the user
(b) It being versatile enough to handle the job
(c) The software being able to run on the computer
(d) Software running with only other previously installed software
(e) Software permanently available in the computer

Q29. Firewalls are generally used to protect against _____-.
(a) Fire Attacks
(b) Data Driven Attacks
(c) Virus Attacks
(d) Unauthorized Access
(e) None of the above

Q30. To copy a cell, you would drag the cell border while simultaneously holding down the Ctrl key when _____.
(a) You have one more to copy.
(b) Only some of the cells are visible in the window.
(c) You don't want to refer to absolute references.
(d) The distance between cells is short, and they are both visible in the window.
(e) None of the above

Q31. As per the revised guidelines issued by the Finance Ministry, non-financial sector CPSEs must pay a minimum annual dividend of _____ of their net profit or _____ of their net worth, whichever is higher. (November 2024)
(a) 20%, 3%
(b) 25%, 5%
(c) 30%, 4%
(d) 35%, 6%
(e) 30%, 5%

Q32. According to the RBI's 'Master Direction' for Asset Reconstruction Companies (ARCs) released in April 2024, what is the minimum net owned fund (NOF) requirement for ARCs to be met by FY26?
(a) ₹100 crore
(b) ₹200 crore
(c) ₹300 crore
(d) ₹500 crore
(e) ₹1,000 crore

Q33. According to the IRDAI Annual Report 2022-23, what was the insurance penetration in India as a percentage of its GDP for FY23?
(a) 4.2%
(b) 4%
(c) 3.2%
(d) 6.8%
(e) 1%

Q34. What is the name of India's first government-funded multimodal large language model initiative, launched to promote social equity and cultural preservation in various Indian languages? (September 2024)
(a) BharatGPT
(b) BharatAI
(c) MultimodalGen
(d) IndiaAI
(e) BharatGen

Q35. Which of the following statements is/are correct regarding the NPS Vatsalya Scheme launched in September 2024?
1. The NPS Vatsalya account will be operated by the guardian until the minor attains 18 years.
2. A fresh KYC must be carried out within 6 months after the minor attains the majority.
3. Parents or guardians can make partial withdrawals up to 25% of the contributed amount after 3 years of joining the scheme.
4. The minimum contribution to the NPS Vatsalya Scheme is Rs.1,000 per annum with no maximum limit.

(a) Only 1 and 2
(b) Only 1, 3, and 4
(c) Only 2, 3, and 4
(d) Only 1 and 4
(e) All of the above

Q36. The Reserve Bank of India (RBI) has recently raised the limit for collateral-free agricultural loans to ₹2 lakh per borrower. What was the previous limit before this revision? (December2024)
(a) ₹1 lakh
(b) ₹1.2 lakh
(c) ₹1.6 lakh
(d) ₹1.8 lakh
(e) ₹1.9 lakh

Q37. Who is the chairperson of the reconstituted Supreme Court Gender Sensitisation and Internal Complaints Committee (June 2024)?
(a) Justice D.Y. Chandrachud
(b) Justice Hima Kohli
(c) Justice Indira Banerjee
(d) Justice R. Banumathi
(e) Justice B.V. Nagarathna

Q38. According to the Global Peace Index (GPI) 2024 published by the Institute for Economics & Peace, which of the following countries is not among the top 5 most peaceful countries?
(a) Iceland
(b) Ireland
(c) Austria
(d) New Zealand
(e) Finland

Q39. In the Union Budget 2024-25, Finance Minister Nirmala Sitharaman allocated how much towards a venture capital fund to support the growth of the space economy? (July 2024)
(a) Rs 500 crore
(b) Rs 750 crore
(c) Rs 1,000 crore
(d) Rs 1,500 crore
(e) Rs 2, 000 crore

Q40. NABARD has announced the Agri-SURE fund, with an initial corpus of ₹750 crore, for Start-Ups & Rural Enterprises. Which wholly-owned subsidiary of NABARD will manage this fund? (July 2024)
(a) NABVENTURES
(b) NABKISAN
(c) NABCONS
(d) NABSAMRUDDHI
(e) NABFINS Limited

Q41. Which of the following options are part of the Bima Trinity plan introduced by the Insurance Regulatory and Development Authority of India (IRDAI)?

(a) Bima Sugam, Bima Shield, Bima Mitra

(b) Bima Vistar, Bima Care, Bima Shakti

(c) Bima Sugam, Bima Vistar, Bima Vaahaks

(d) Bima Secure, Bima Health, Bima Vaahaks

(e) Bima Protect, Bima Suraksha, Bima Vistar

Q42. Life Insurance Corporation (LIC) recently appointed which company to lead its digital transformation by building a state-of-the-art NextGen Digital Platform to enhance customer, agent, and employee experiences? (September 2024)

(a) TCS

(b) Wipro

(c) Infosys

(d) HCL Technologies

(e) Tech Mahindra

Q43. India is poised to finalize a $3.1 billion deal for the acquisition of MQ-9B Predator drones from which country, a move aimed at significantly enhancing its defense capabilities across maritime and land operations?

(a) Russia

(b) France

(c) Israel

(d) United States

(e) Germany

Q44. Which one of the following is NOT one of the Central Recordkeeping Agencies (CRAs) appointed for the National Pension System (NPS) by the Pension Fund Regulatory and Development Authority (PFRDA)?

(a) Karvy Stock Broking Limited

(b) Protean eGov Technologies Limited

(c) CAMS (Computer Age Management Services)

(d) KFin Technologies Limited

(e) None of the above

Q45. Which institution has been conferred with the Nelson Mandela Award for Health Promotion for 2024 by the World Health Organization (WHO)?

(a) All India Institute of Medical Sciences (AIIMS), New Delhi

(b) Tata Memorial Hospital, Mumbai

(c) National Institute of Mental Health and Neuro Sciences (NIMHANS), Bengaluru

(d) Postgraduate Institute of Medical Education and Research (PGIMER), Chandigarh

(e) Christian Medical College (CMC), Vellore

S1. Ans. (e)
Sol. The correct answer to the question is:
(e) They heighten the risk of diseases like obesity, type 2 diabetes, and certain cancers.
This answer is directly supported by the lines in the passage that state: "**Conversely, diets high in processed foods and sugars are linked to a less diverse gut microbiota, potentially leading to increased susceptibility to various diseases, including obesity, type 2 diabetes, and certain forms of cancer**." This excerpt clearly indicates that a diet high in processed foods and sugars contributes to a less diverse gut microbiota, which is associated with a higher risk of developing the specified diseases.
Therefore, option (e) is the correct choice, as it accurately reflects the findings of the study described in the passage.

S2. Ans. (d)
Sol. The correct answer is: **(d) Dietary fibers act as prebiotics that nurture advantageous microbes, which synthesize SCFAs essential for intestinal health.**
This statement directly corresponds with the passage's description. It mentions, "**dietary fibers act as prebiotics, feeding beneficial bacteria in the gut, which produce short-chain fatty acids (SCFAs) upon digestion. These SCFAs are crucial for maintaining the integrity of the gut barrier, regulating inflammation, and influencing the immune system**."

S3. Ans. (e)
Sol. To answer this question, let's review each suggested action from the options provided and relate them to the passage:
(I) Increasing the intake of fermented foods
This action is explicitly mentioned in the passage as beneficial for enhancing gut microbiota diversity. The relevant line states: "**The study also highlights the role of fermented foods in enhancing gut microbiota diversity**," confirming that increasing the intake of fermented foods is recommended.
(II) Incorporating a wide variety of prebiotics and probiotics in the diet
This action is also directly supported by the passage. It discusses the potential of prebiotics and probiotics in maintaining gut health, as evidenced by the line: "**the potential of prebiotics and probiotics in maintaining gut health**." This suggests that incorporating a variety of these substances in the diet would enhance gut microbiota diversity and overall health.
(III) Emphasizing traditional digestive functions over dietary diversity
This action is not supported by the passage. In fact, the passage emphasizes the importance of dietary diversity for promoting a more diverse gut microbiota, which contrasts with the notion of prioritizing traditional digestive functions over dietary diversity.
Therefore, the correct answer is: **(e) Both (I) and (II)** - Both actions are recommended in the passage to enhance gut microbiota diversity and overall health, while action (III) is not suggested by the passage.

S4. Ans. (c)
Sol. The correct answer to the question is:
(c) High fiber intakes from fruits, vegetables, and cereals promote a varied and equilibrium gut microbiota, bolstering immunological defenses and mitigating inflammation.
This answer is supported by the lines in the passage that describe how a diet rich in fibers from fruits, vegetables, and whole grains encourages a more diverse and stable gut microbiota. Additionally, the passage indicates that this diversity and stability support a stronger immune response and reduce inflammation. Specifically, the passage states, "**Researchers have found that a diet rich in fibers, such as fruits, vegetables, and whole grains, promotes a more diverse and stable gut microbiota, which in turn supports a stronger immune response and reduces inflammation**."

Therefore, option (c) accurately summarizes these findings from the research, highlighting the positive effects of dietary fibers on gut microbiota diversity, immune function, and inflammation.

S5. Ans. (d)
Sol. To find which statements are true based on the passage, let's analyze each option:
(I) A diet abundant in fibers fosters a more varied and robust gut microbiota, which bolsters improved immune efficacy.
This statement is true as per the passage. It explicitly states, "**Researchers have found that a diet rich in fibers, such as fruits, vegetables, and whole grains, promotes a more diverse and stable gut microbiota, which in turn supports a stronger immune response and reduces inflammation**." Thus, it supports that a fiber-rich diet enhances gut microbiota diversity and immune function.

(II) Long-term dietary alterations are the only way to achieve rapid changes in the composition of gut microbiota.
This statement is false according to the passage. The passage suggests the opposite by noting the rapid adaptability of the gut microbiota to dietary changes, implying that even short-term modifications in diet can lead to significant shifts in its composition. The specific line states, "the research underscores the rapid adaptability of the gut microbiota to dietary changes, suggesting that even short-term modifications in diet can lead to significant shifts in the composition of the gut microbiota."

(III) Dietary modifications can quickly and substantially change the gut microbiota, possibly affecting health results.
This statement is true based on the passage. It aligns with the passage's mention of the gut microbiota's quick adaptability to dietary changes, which can significantly alter its composition and impact health outcomes quickly. The passage mentions, **"Moreover, the research underscores the rapid adaptability of the gut microbiota to dietary changes, suggesting that even short-term modifications in diet can lead to significant shifts in the composition of the gut microbiota."**

Therefore, the correct answer is: **(d) Both (I) and (III)** - These statements are supported by the passage, while statement (II) contradicts the information provided about the adaptability of the gut microbiota to dietary changes.

S6. Ans. (c)
Sol. The correct answer is: **(c) Robust public health frameworks should adopt dietary protocols that address the complex interaction between diet, gut microbiota, and health.**
This aligns closely with the passage, which advocates for a broader public health approach that considers the interactions between diet, gut microbiota, and health outcomes.

Relevant lines from the passage:
"This groundbreaking research suggests that simple dietary changes could have profound effects on health by modulating the gut microbiota."
"It opens new avenues for nutritional interventions in the prevention and management of chronic diseases, emphasizing the critical role of diet in health and disease."
"The findings advocate for a broader public health approach to dietary recommendations, one that considers the intricate web of interactions between diet, gut microbiota, and long-term health outcomes."

S7. Ans. (b)
Sol. The correct sequence is: CADB
"Amidst escalating tensions, diplomats fervently negotiate a precarious ceasefire, aiming to avert further calamity in the conflict-stricken region."

S8. Ans. (d)
Sol. The correct sequence is: BDCA
"Revolutionary breakthroughs in biotechnology herald a new era of personalized medicine, promising treatments tailored to the genetic intricacies of individual patients."

S9. Ans. (a)
Sol. The correct sequence is: ADCB
"Environmental advocates rally for urgent action, highlighting the dire consequences of inaction on climate change for future generations.

S10. Ans. (c)
Sol. The correct phrase should be "over a traditional notebook" instead of "using a traditional notebook than". The comparison should be made using "over" or "to" when expressing preference.

S11. Ans. (d)
Sol. The correct conjunction to use after "whether" is "or" not "or if". The sentence should maintain parallel structure by using "whether... or..."

S12. Ans. (b)
Sol. The subject "every member of the board, including the CEO" is singular, so the verb should be "is" not "are". The correct phrase is "is to submit".

S13. Ans. (c)
Sol. The correct interchange is: A-D. The switch between "Individuals" (A) and "governments" (D) clarifies that it is the governments that grapple with digital privacy complexities and balance these against the rights of individuals, making the sentence contextually accurate.
Governments (D) worldwide **grapple (B)** with the **complexities (C)** of digital privacy, balancing national security interests with the rights of **individuals (A)**.

S14. Ans. (b)
Sol. The correct interchange is: C-D. Swapping "challenges" (C) with "sustainability" (D) corrects the sentence to accurately reflect that the goal is to improve sustainability and resilience, not to enhance challenges.
Urban **planners (A)** advocate for green infrastructure **projects (B)**, aiming to enhance **sustainability (D)** and resilience against climate-induced **challenges (C)**.

S15. Ans. (a)
Sol. The correct interchange is: A-C. Swapping "a census" (A) with "a milestone" (C) makes the sentence logically coherent. The milestone (achievement) is celebrated in the recovery efforts, and the census provides the data (doubling of the population).
Conservationists celebrate a **milestone (C)** in the recovery of an **endangered (B)** species, as the latest **census (A)** reveals a doubling in their **population (D)** numbers.

S16. Ans.(c)
Sol. Extensible Markup Language (XML) is a markup language that defines rules for encoding documents in a format that is both human-readable and machine-readable. It is commonly used to store and transport data over the internet.
Important Key Points:
1. XML allows users to define their own tags, making it highly flexible.
2. It is platform-independent and widely used in web services and APIs.
3. Unlike HTML, XML focuses on data representation rather than presentation.

Knowledge Booster:
- **Extra Markup Language:** Incorrect, as XML is not referred to as "extra."
- **Excellent Markup Language:** Incorrect, as XML's purpose is not described as excellent.
- **Extended Marking Links:** Not related to the functionality of XML.

S17. Ans.(d)
Sol. Data diddling refers to the unauthorized alteration or manipulation of data at the point of input, during processing, or before output. This activity compromises the integrity of the information.
Important Key Points:
1. Data diddling is often carried out by insiders or attackers with access to the data entry points.
2. It is commonly seen in banking, payroll systems, and other critical areas where data integrity is essential.
3. Prevention measures include implementing stringent access controls and audit logs.

Knowledge Booster:
- **Denial of service:** Disrupts access to services but does not involve altering data.
- **Sniffing:** Involves capturing data packets but does not alter information.
- **Terrorism:** A broader term, not specific to data manipulation.

S18. Ans.(c)
Sol. Ping uses the **ICMP (Internet Control Message Protocol)** to send echo request messages and receive echo reply messages to check the reachability and status of a network host.
Important Key Points:
1. Ping is a diagnostic utility used to measure latency and packet loss in a network.
2. It works by sending ICMP echo requests to a destination and waiting for an ICMP echo reply.
3. ICMP is a network layer protocol designed to manage error messages and operational queries.

Knowledge Booster:
- **TCP:** Used for reliable data transmission but not for ping operations.
- **ARP:** Resolves IP addresses to MAC addresses; unrelated to ping.
- **BootP:** Used for bootstrapping devices; not for pinging.

S19. Ans.(b)
Sol4. The keyboard shortcut **CTRL + 9** in Microsoft Excel is used to hide the currently selected row(s). This is particularly useful for organizing large datasets without permanently deleting any information.
Important Key Points:
1. To **unhide** the hidden rows, you can use the shortcut **CTRL + SHIFT + 9** or access the "Unhide" option from the context menu.
2. Hiding rows does not delete the data or affect calculations; it simply makes them invisible in the worksheet.
3. This shortcut is part of Excel's powerful set of tools for data manipulation and presentation.

Knowledge Booster:
- **Prints 9:** Incorrect, as CTRL + 9 does not perform any printing function.
- **Prints 9 followed by spaces:** Not a valid function for CTRL + 9.
- **Inserts 9 cells at the current location:** CTRL + 9 does not insert cells.

S20. Ans.(a)
Sol. VDA (Virtual Desktop Access) refers to a licensing term or technology used to allow users to access virtual desktops hosted on remote servers. This concept is commonly associated with virtualization environments like **Citrix Virtual Apps and Desktops** or Microsoft's Virtual Desktop solutions.
Important Key Points:

1. VDA enables users to work on a desktop experience without being physically tied to specific hardware.
2. It allows remote access to computing resources, improving productivity and flexibility.
3. VDA is commonly used in environments with **Virtual Desktop Infrastructure (VDI)** setups.

Knowledge Booster:
- **Visual Desktop Array:** Not a valid term related to VDA.
- **Virtual Desktop Array:** Incorrect, as the term "array" is not relevant to VDA.
- **Visual Desktop Access:** A fabricated option, unrelated to VDA.

S21. Ans.(c)
Sol. Telnet is a text-based network protocol used to provide a command-line interface for communication with remote devices or servers. It allows users to log into a remote machine and execute commands as if they were physically present at the machine.
Important Key Points:
1. Telnet operates in plain text, meaning the data sent is not encrypted, making it less secure than modern protocols like SSH.
2. It is primarily used for testing, debugging, or configuring devices on a network.
3. Telnet was widely used before the advent of secure alternatives like Secure Shell (SSH).

Knowledge Booster:
- **Sound:** Telnet does not involve audio data.
- **Image:** Telnet does not transmit graphical data.
- **Animation:** Telnet is limited to text and does not support animations.
- **Digits:** While digits can be part of text, the protocol is not exclusively numeric.

S22. Ans.(a)
Sol. CAD (Computer Aided Design) refers to the use of computer software to assist in the creation, modification, analysis, or optimization of a design. CAD is widely used in engineering, architecture, and product design to improve the quality and efficiency of the design process.
Important Key Points:
1. CAD software enables designers to create precise 2D and 3D models.
2. It reduces the time required for manual drafting and allows for easier modifications.
3. Examples of CAD software include **AutoCAD**, **SolidWorks**, and **CATIA**.

Knowledge Booster:
- **Computer Algorithm for Design:** Incorrect, as CAD does not specifically refer to algorithms.
- **Computer Application in Design:** A general term, not the standard full form of CAD.

S23. Ans.(b)
Sol. A **worksheet** is a grid-based interface commonly found in spreadsheet software like Microsoft Excel or Google Sheets. It consists of **rows** (labeled numerically) and **columns** (labeled alphabetically), allowing users to organize, calculate, and analyze data.
Important Key Points:
1. A worksheet consists of **cells**, which are intersections of rows and columns, each identified by a unique cell reference (e.g., A1, B2).
2. It allows users to perform operations like data entry, calculations, and creating charts.
3. Worksheets are part of a workbook, which can contain multiple worksheets.

Knowledge Booster:
- **Dialog box:** A small window prompting the user to make a decision or enter information, not a grid.
- **Clipboard:** A temporary storage area for data during copy-paste operations.
- **Toolbar:** A set of icons or buttons for performing actions, unrelated to grids.

S24. Ans.(a)
Sol. RailCloud is a virtual server launched by Indian Railways to enhance server usage efficiency and improve connectivity. It leverages cloud computing technology to integrate data across the railway system, streamline operations, and provide faster and more reliable services.
Important Key Points:
1. RailCloud aims to improve data management, reduce hardware costs, and optimize resource usage.
2. It supports various railway applications, such as passenger reservation systems and freight management.
3. The adoption of RailCloud enhances operational efficiency and reduces delays in server processing.
Knowledge Booster:
- **RailSagar:** Not an actual initiative by Indian Railways.
- **RailSilver:** No such virtual server exists under this name.
- **RailIndia:** Refers to the organization but not a virtual server.
- **RailBharat:** Not related to virtual server initiatives.

S25. Ans.(d)
Sol. The **Maximize button** is used to expand a window to cover the entire screen. It is commonly located in the top-right corner of most windows, alongside the minimize and close buttons.
Important Key Points:
1. **Maximize** allows better visibility by using the full screen for the selected window.
2. Clicking **Restore Down** after maximizing returns the window to its previous size.
3. This feature is available in most modern operating systems, including Windows, macOS, and Linux.
Knowledge Booster:
- **Scroll box:** Used for scrolling within a window, not resizing it.
- **Restore Down:** Reduces the size of a maximized window but does not maximize it.
- **Minimize:** Hides the window from the screen and sends it to the taskbar.

S26. Ans.(d)
Sol. ISDN (Integrated Services Digital Network) is a set of communication standards for digital transmission of voice, video, data, and other network services over traditional circuits of the public switched telephone network (PSTN).
Important Key Points:
1. ISDN allows the simultaneous transmission of voice, video, and data using a single network connection.
2. It provides higher data transfer speeds compared to traditional analog systems.
3. ISDN is commonly used for video conferencing, internet access, and telecommunication services.
Knowledge Booster:
- **Integrated Standard Digital Networks:** Incorrect, does not represent ISDN.
- **Internet Services Data Network:** Incorrect, unrelated to ISDN.
- **Interactive Standard Dynamic Networks:** Incorrect, not a valid term.

S27. Ans.(c)
Sol. A **multiplexer** is a device that allows multiple signals to share a single communication channel or resource. It uses **multiplexing** to efficiently manage data transmission between the central processor and multiple peripherals, enabling simultaneous data transfer.
Important Key Points:
1. A **multiplexer** combines multiple input signals into a single output signal for transmission.
2. It reduces the number of communication lines needed, making it efficient for connecting peripherals.
3. Multiplexing is commonly used in communication systems and computing to optimize resource usage.

Knowledge Booster:

- **Modem**: A device that modulates and demodulates signals for internet connectivity, not used for multiplexing.
- **Network**: A system of interconnected devices for communication but does not inherently perform multiplexing.
- **Duplexer**: A device used in communication systems to allow simultaneous transmission and reception on the same channel.
- **Multiplexing Types**:
  - **Time Division Multiplexing (TDM)**: Signals are transmitted in separate time slots.
  - **Frequency Division Multiplexing (FDM)**: Signals are transmitted using different frequencies.

S28. Ans.(c)

Sol. In computer terminology, **compatibility** refers to the ability of software or hardware to function properly on a specific system or platform. For software, it means that it can be installed, executed, and perform its tasks on a computer with the specified hardware and operating system configuration.

Important Key Points:

1. Software compatibility ensures smooth execution without errors on the target system.
2. Factors affecting compatibility include hardware specifications, operating system version, and required drivers.
3. Compatibility can also apply to hardware devices like printers or external drives working correctly with a computer.

Knowledge Booster:

- **The software doing the right job for the user:** Refers to functionality, not compatibility.
- **Being versatile enough to handle the job:** Refers to flexibility, not compatibility.
- **Software running with only other previously installed software:** This defines dependency, not compatibility.
- **Software permanently available in the computer:** Refers to built-in software, unrelated to compatibility.

S29. Ans.(d)

Sol. A **firewall** is a network security system that monitors and controls incoming and outgoing network traffic. It is primarily used to prevent **unauthorized access** to or from a private network by creating a barrier between a trusted internal network and untrusted external networks, such as the internet.

Important Key Points:

1. Firewalls enforce security rules based on predefined policies to block or allow specific traffic.
2. They protect against hacking attempts, unauthorized access, and data breaches.
3. Firewalls can be hardware-based, software-based, or a combination of both.

Knowledge Booster:

- **Fire Attacks:** Not related to network security; the term is unrelated.
- **Data Driven Attacks:** Firewalls can mitigate some forms of data-driven attacks, but their primary role is blocking unauthorized access.
- **Virus Attacks:** Firewalls can filter traffic to reduce risks, but antivirus software is more specific for this purpose.

S30. Ans.(d)

Sol. Dragging the **cell border while holding down the Ctrl key** is a quick and effective method to copy a cell or range of cells in Excel when the **distance between the cells is short** and both cells are visible within the current window. This method avoids the need for multiple steps, such as copying and pasting, and is useful for small adjustments.

Important Key Points:
1. This method works well for visible cells in the same or nearby regions of the worksheet.
2. It eliminates the need to use the clipboard or additional copy/paste steps.
3. Holding **Ctrl** ensures that the original content remains intact while creating a copy.

Knowledge Booster:
- **You have one more to copy:** This does not determine the need for this method.
- **Only some cells are visible in the window:** Visibility of cells might affect ease but is not a prerequisite.
- **You don't want to refer to absolute references:** Absolute referencing is unrelated to this specific action.

S31. Ans. (c)
Sol. As per the revised guidelines issued by the Finance Ministry, non-financial sector CPSEs must pay a minimum annual dividend of **30% of their net profit or 4% of their net worth, whichever is higher.**
Details-
- **Financial Sector CPSEs:** Entities like NBFCs are required to pay a minimum dividend of 30% of profit after tax (PAT), subject to legal provisions.
- **Changes from 2016 Guidelines:** Earlier, the requirement was 30% of PAT or 5% of net worth, without specific provisions for financial sector CPSEs.
- **Objective:** The revision aims to optimize capital restructuring while ensuring regular and higher dividend payouts from CPSEs to the government.

S32. Ans. (c)
Sol. The Reserve Bank of India (RBI) has mandated that ARCs must maintain a minimum net owned fund (NOF) of **₹300 crore by FY26**.
Details:
Effective Date: The Master Direction came into effect on April 24, 2024.
Minimum NOF Requirements:
₹300 crore by March 31, 2026.
Eligibility as Resolution Applicants (IBC): ARCs with a **minimum NOF of ₹1,000 crore** are eligible to function **as Resolution Applicants** under the Insolvency and Bankruptcy Code (IBC).
ARC's Functions: ARCs are restricted to securitisation and asset reconstruction activities as per Section 10 of the Securitisation and Reconstruction of Financial Assets and Enforcement of Security Interest (SARFAESI) Act.

S33. Ans. (b)
Sol. The insurance penetration in India was **4% of its GDP** for FY23.
Decline in penetration: The insurance penetration decreased from 4.2% in FY22 to 4% in FY23.
Segment-wise details:
- Life insurance penetration decreased from 3.2% to 3%.
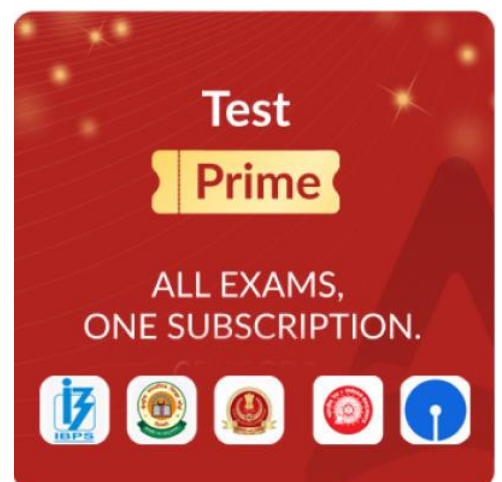- Non-life insurance penetration remained flat at 1%.

Global comparison: India's penetration is lower than the global average of 6.8%.
Insurance penetration definition: It refers to the percentage of insurance premiums to GDP.

S34. Ans. (e)
Sol. India's first government-funded multimodal large language model initiative is named **BharatGen**, launched on September 30, 2024.
- **Launch Details:**
  o Spearheaded by IIT Bombay under the National Mission on Interdisciplinary Cyber-Physical Systems (NM-ICPS).
  o Inaugurated in New Delhi by Dr. Jitendra Singh.

- **Key Objectives:**
  - Development of **generative AI systems** in various Indian languages to promote **social equity and cultural preservation**.
  - Focus on creating **multilingual and multimodal models** for text, speech, and computer vision.
- **Bhartiya Dataset:**
  - AI systems trained on India-centric datasets.
- **Open-Source Ecosystem:**
  - Promotes an open-source platform for generative AI research.
- **Collaborators:**
  - Implemented by the TIH Foundation for IoT and IOE at IIT Bombay, with contributions from institutions like IIIT Hyderabad and IIM Indore.

S35. Ans. (b)
Sol. Statement 2 is incorrect: A fresh KYC must be done **within 3 months, not 6 months**, after the minor attains the majority.

Statement 1 is correct: The NPS Vatsalya account will be operated by the guardian for the minor's benefit until they attain 18 years.

Statement 3 is correct: Parents or guardians can withdraw up to 25% of the contributed amount after 3 years of joining NPS.

Statement 4 is correct: The minimum contribution is Rs.1,000 per annum, with no maximum limit.

S36. Ans. (c)
Sol. The previous limit for collateral-free agricultural loans was **₹1.6 lakh** before being revised to ₹2 lakh.
Details:
- **New Limit**: The Reserve Bank of India (RBI) has raised the limit for collateral-free agricultural loans to ₹2 lakh per borrower.
- **Applicability**: The revised rule came into effect from **January 2025**.
- **Reason for Revision**:
  - To align with current inflation levels.
  - To meet the credit requirements of the farm sector.
- **Previous Limit**: The earlier limit for such loans was ₹1.6 lakh, which, in some cases, required margin deposits.
- **Advisory Details**:
  - The RBI directed all commercial and cooperative banks to waive **collateral security** and **margin requirements** for agricultural loans, including those for **allied activities** up to ₹2 lakh per borrower.

S37. Ans.(b)
Sol. The chairperson of the reconstituted Supreme Court Gender Sensitisation and Internal Complaints Committee is Justice **Hima Kohli**.

Brief Information about the Supreme Court Gender Sensitisation and Internal Complaints Committee:
- **Establishment:** The committee was established under the Gender Sensitisation and Sexual Harassment of Women at the Supreme Court of India (Prevention, Prohibition and Redressal) Regulations, 2013.
- **Purpose:** The committee aims to address complaints of sexual harassment and promote gender sensitization within the Supreme Court premises.
- **Composition:** The 12-member committee includes both judicial and non-judicial members, reflecting diverse perspectives to ensure fair and effective handling of complaints.
- **Authority:** The committee operates under the authority of the Chief Justice of India, who has the power to constitute or reconstitute its membership as needed.

S38. Ans.(e)

Sol. According to the Global Peace Index (GPI) 2024, the top 5 most peaceful countries are Iceland, Ireland, Austria, New Zealand, and Singapore. **Finland** is not among the top 5 most peaceful countries in this ranking.

<u>**Brief Information about Global Peace Index 2024:**</u>

Publisher: Institute for Economics & Peace (IEP)

Assessment: The index evaluates the level of peacefulness in 163 independent states and territories.

Top 5 Most Peaceful Countries in 2024:

1. Iceland: Remains the most peaceful country since 2008.

2. Ireland

3. Austria

4. New Zealand

5. Singapore

Least Peaceful Countries in 2024:

1. Yemen: The least peaceful country.

2. Sudan

3. South Sudan

4. Afghanistan

5. Ukraine

S39. Ans. (c)

Sol. The finance minister announced a venture capital fund worth **Rs 1,000 crore** aimed at fostering the growth of the space economy.

Details-

Government Goal: India aims to increase its share in the global commercial space economy to 10% by 2030, up from the current 2%.

Long-Term Vision: By 2047, India targets to capture 15% of the global space market.

Strategic Focus: This initiative is aligned with the government's broader goal of accelerating the growth of India's space sector, with the ambition of a five-fold increase over the next decade.

S40. Ans. (a)

Sol. The Agri-SURE fund will be managed by **NABVENTURES**, a wholly owned subsidiary of NABARD.

Nabventures Overview:

- NABVENTURES is a venture growth equity fund with a focus on sectors such as agriculture, food, rural businesses, and agri/rural financial services.
- It targets early to mid-stage start-ups that leverage innovation and technology.

Investment Strategy:

NABVENTURES invests in asset-light business models that provide innovative solutions to challenges in agriculture, food, and rural development.

Additional Details:

- NABVENTURES also manages NABVENTURES Fund I, with a target corpus of ₹500 crore.
- The entity holds a Category II Alternative Investment Fund (AIF) certificate from SEBI.

S41. Ans. (c)

Sol. The components that are part of the Bima Trinity plan introduced by the IRDAI are **Bima Sugam, Bima Vistar, and Bima Vaahaks**.

Bima Sugam: A digital one-stop shop platform designed to bring together insurers and distributors, making it easier for customers to purchase insurance policies, handle service requests, and settle claims.

Bima Vistar: A comprehensive bundled insurance product that covers various risks including life, health, property, and accidents. It provides defined benefits for each risk, ensuring quick and clear claim settlements.

Bima Vaahaks: A women-centric workforce initiative that focuses on educating women, especially at the grassroots level, about the benefits of insurance products like Bima Vistar. Their role is crucial in promoting insurance awareness and empowering women financially.

S42. Ans. (c)

Sol. Life Insurance Corporation (LIC) has appointed **Infosys** to lead its digital transformation through the NextGen Digital Platform.

Key Details:

Omnichannel Experience: The platform will offer seamless services across multiple channels for customers, agents, and employees.

Technological Innovation: The platform will be modular, flexible, and cloud-native, allowing LIC to adopt innovative technologies quickly.

Scope: It will cover business lifecycle management, operational activities for sales intermediaries, and digital tools for branch employees.

Future-Ready: It will also enable the creation of high-value business applications like Customer & Sales Super Apps, Portals, and Digital Branch.

S43. Ans. (d)

Sol. India is poised to finalize a $3.1 billion MQ-9B Predator drone deal with the **United States**.

- **Deal Overview**: India plans to purchase 31 MQ-9B Predator drones from US-based General Atomics.
- **Defence Acquisition Council Approval**: The Defence Acquisition Council (DAC) approved the acquisition on July 30.
- **Next Steps**: The deal is pending expenditure approval from the Finance Ministry and final authorization from the Cabinet Committee on Security (CCS).
- **Military Distribution**: 16 drones for the Navy, 8 for the Army, and 8 for the Air Force.
- **Strategic Importance**: Enhances India's defense capabilities in both maritime and land operations.

S44. Ans. (a)

Sol. **Karvy Stock Broking Limited** is **not** one of the Central Recordkeeping Agencies (CRAs) appointed for the National Pension System (NPS).

Key Points:

- **Current CRAs for NPS:**
  - **KFin Technologies Limited**.
  - **Protean eGov Technologies Limited** (formerly NSDL e-Governance).
  - **CAMS (Computer Age Management Services)**.
- **Role of CRAs:**
  - Manage recordkeeping, administration, and customer service functions for NPS subscribers.
  - Provide a Permanent Retirement Account Number (PRAN) and maintain NPS transaction records.
- **Exclusion:**
  - Karvy Stock Broking Limited is unrelated to CRA functions under NPS. Its primary focus is on stock market operations.

S45. Ans.(c)

Sol. The **National Institute of Mental Health and Neuro Sciences (NIMHANS), Bengaluru,** has been conferred with the Nelson Mandela Award for Health Promotion for 2024 by the World Health Organization (WHO).

NIMHANS, the country's premier mental health institution, has been recognized for its remarkable contributions to health promotion.

Nelson Mandela Award for Health Promotion:
Establishment: The Nelson Mandela Award for Health Promotion was established by the World Health Organization (WHO) in 2019.
Purpose: The award recognizes individuals, institutions, and/or governmental or non-governmental organizations that have demonstrated remarkable contributions to health promotion.
Significance: It aims to honor those who have made significant efforts in promoting health and well-being, inspired by the legacy of Nelson Mandela's commitment to social justice and health equity.