# IBPS Clerk Mains Previous Year Paper 2023

**Directions (1-5): In the following passage there are blanks, each of which has been numbered and one word has been suggested alongside the blank. These numbers are printed below the passage and against each, five options are given. In four options, one word is suggested in each option. Find out the appropriate word which fits the blank appropriately. If the word written alongside the blank fits the passage, choose option "No replacement required" as the correct choice.**

**Q1.** Our world's surface is a jumble of _____1_____(**puzzle)** tectonic plates, with new ones emerging as others are pulled under. The ongoing cycle keeps our continents in motion and drives life on Earth. But what happens when a plate disappears into the planet's interior?
The question has long puzzled scientists because conventional wisdom said that sinking tectonic plates must _____2_____(**stabilize)** intact to keep pulling on the portion behind it, but according to geophysical evidence, they are destroyed.
Now, in a study published in Nature, scientists say they've found an answer that reconciles the two stories: Plates are significantly ____3_____(**improved)** as they sink but not so much that they break apart entirely.
The finding came after scientists put tectonic plates through a computer-generated gauntlet of destructive geologic forces. The model _____4_____ (**display)** that as the plate enters the mantle, it bends abruptly downward, cracking its cold, brittle back. At the same time, the _____5_____(**observing)** changes the fine grain structure of the rock along its underbelly, leaving it weakened. Combined, the stresses pinch the plate along its weak points, leaving it mostly intact but segmented like a slinky snake.
(a) friction
(b) overlapped
(c) jostling
(d) dividing
(e) No replacement required

**Q2.** Our world's surface is a jumble of _____1_____(**puzzle)** tectonic plates, with new ones emerging as others are pulled under. The ongoing cycle keeps our continents in motion and drives life on Earth. But what happens when a plate disappears into the planet's interior?
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(a) No replacement required
(b) routed
(c) makes
(d) endured
(e) remain

**Q3.** Our world's surface is a jumble of _____1_____(**puzzle)** tectonic plates, with new ones emerging as others are pulled under. The ongoing cycle keeps our continents in motion and drives life on Earth. But what happens when a plate disappears into the planet's interior?
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(a) weak
(b) weakened
(c) weaken
(d) No replacement required
(e) worse

**Q4.** Our world's surface is a jumble of _____1_____(**puzzle)** tectonic plates, with new ones emerging as others are pulled under. The ongoing cycle keeps our continents in motion and drives life on Earth. But what happens when a plate disappears into the planet's interior?
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(a) showed
(b) demonstrate
(c) No replacement required
(d) captured
(e) illustrate

**Q5.** Our world's surface is a jumble of _____1_____(**puzzle)** tectonic plates, with new ones emerging as others are pulled under. The ongoing cycle keeps our continents in motion and drives life on Earth. But what happens when a plate disappears into the planet's interior?
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(a) colliding
(b) bending
(c) replacing
(d) No replacement required
(e) molding

**Directions (6-9): Rearrange the following sentences to form a coherent paragraph and answer the given questions.**
**(A)** The book is not as fascinating as Harry Potter.
**(B)** However, it has sold _____ copies than any other books in the past decade.
**(C)** Even though this book does not feature magical elements, it _____ around aspirations and wishes.

**Q6. Which of the following sentence is the FIRST sentence in the sequence after rearrangement?**
(a) A
(b) B
(c) C
(d) Either (B) or (C)
(e) Either (A) or (B)

**Q7. Which of the following sentence is the LAST sentence in the sequence after rearrangement?**
(a) A
(b) B
(c) C
(d) Either (B) or (C)
(e) Either (A) or (B)

**Q8. Choose the most suitable word to fill in the statement (B).**
(a) few
(b) many
(c) more
(d) much
(e) little

**Q9. Choose the most suitable word to fill in the statement (C).**
(a) aspire
(b) conflicts
(c) captures
(d) revolves
(e) understands

**Directions (10-15): Read each sentence to find out whether there is any grammatical error in it. The error, if any, will be in one part of the sentence. The letter of that part is the answer. If the sentence is grammatically and contextually correct, then choose option "No error" as your answer choice. (Ignore the errors of punctuation, if any.)**

**Q10. The team of (A)/ researchers are conducting (B)/ experiments to (C)/ test their hypothesis. (D)**
(a) A
(b) B
(c) C
(d) D
(e) No error

**Q11. Hardly had the sun set (A)/ then the nocturnal creatures emerged, (B)/ filling the night (C)/ with their calls and activities. (D)**
(a) A
(b) B
(c) C
(d) D
(e) No error

**Q12. Each of the (A)/ students has (B)/submitted his/her (C)/ assignment on time. (D)**
(a) A
(b) B
(c) C
(d) D
(e) No error

**Q13. Not only she did complete (A)/ the project ahead of schedule, (B)/ but also did so (C)/ with exceptional attention to detail. (D)**
(a) A
(b) B
(c) C
(d) D
(e) No error

**Q14. After I had finished (A)/ my homework, (B)/ I had finally relaxed (C)/ and watched a movie. (D)**
(a) A
(b) B
(c) C
(d) D
(e) No error

**Q15. Underneath the twinkling stars, (A)/ the weary traveler (B)/ found solace in the (C)/ soothing melodies of nature. (D)**

(a) A
(b) B
(c) C
(d) D
(e) No error

**Directions (16-20): Given below are two statements in each question. Each statement has one blank which will be filled in with the same word. Select the combination of words that fits in appropriately in the blanks respectively to make both the sentences grammatically correct and contextually meaningful.**

**Q16.**
**(I) The university offers a _____ range of courses, allowing students to explore diverse academic disciplines.**
**(II) Before writing the essay, she decided to find a relevant _____ to add depth and insight to her argument.**
(a) broad, quote
(b) significant, adoption
(c) limited, caption
(d) variant, alacrity
(e) accepted, exception

**Q17.**
**(I) In the face of budget constraints, the team took a _____ approach, focusing on cost-effective solutions.**
**(II) Despite facing numerous challenges, the community proved to be _____, rebuilding and thriving after the natural disaster.**
(a) practical, outsourced
(b) plausible, moved
(c) pragmatic, resilient
(d) probable, entrench
(e) intolerable, competitive

**Q18.**
**(I) The task ahead was _____, requiring a combination of skill, determination, and strategic planning.**
**(II) The new medication helped _____ the patient's pain.**
(a) ambivalent, elevate
(b) destructive, postpone
(c) surreptitious, convey
(d) impediment, relocate
(e) formidable, alleviate

**Q19.**
**(I) The professor delivered a _____ lecture on the impact of technology on society.**
**(II) Solving the intricate puzzle required a _____ series of logical steps and careful analysis.**

(a) profound, complex
(b) crucial, sanguine
(c) irrelevant, lucid
(d) remarkable, capitulate
(e) trivial, ineffable

**Q20.**
**(I) After careful and _____ consideration, the committee reached a consensus on the proposed changes.**
**(II) The scientist studied the _____ structure of the cell, unraveling the complexities that govern life at the microscopic level.**
(a) analysis, sophisticated
(b) remorseful, complicated
(c) discussing, complex
(d) deliberate, intricate
(e) cautious, troubled

**Q21. In the following question, three sentences are given, each containing a highlighted word. Among the provided alternatives, select the word that serves as the most suitable antonym for the highlighted words.**
(A) Despite facing adversity, he chose to take the **noble** path, always prioritizing integrity and compassion in his actions.
(B) His **generous** offer to cover the expenses for the entire team's training workshop was greatly appreciated.
(C) With the **highest** score in the competition, she secured the top spot and a gold medal.
(a) righteous
(b) mean
(c) arrogant
(d) lowest
(e) unkind

**Q22. In the following question, three sentences are given, each containing a highlighted word. Among the provided alternatives, select the word that serves as the most similar meaning for the highlighted word.**
(A) The progress of the construction project **stalled** during the winter months due to adverse weather conditions.
(B) The negotiations between the parties **stalled**, leading to a temporary impasse.
(C) He tried to **stall** the meeting by bringing up unrelated topics.
(a) stayed
(b) vacation
(c) avoid
(d) delay
(e) abandon

**Directions (23-25): In each of the questions given below, a paragraph has been given which is either situational based or describes a scenario. Mark out the correct response that can be drawn regarding the person/ situation as your answer.**

**Q23.** In her water-scarce village, young Aisha observed the daily struggle for this precious resource. Troubled by the hardships faced by the villagers, especially the children, due to the scarcity of water, Aisha decided to take matters into her own hands. Despite the challenges, she remained focused to find a solution. Through research and relentless effort, Aisha explored ways to bring water to her community. Her commitment and concern for the well-being of her fellow villagers, particularly the children, became the driving force behind her unwavering pursuit of a sustainable water source for the village.
Thus, we can say that Aisha is not _____
(a) resilient
(b) determined
(c) empathetic
(d) cunning
(e) motivated

**Q24.** Rushing to the office, Mark realized he was late and had forgotten a crucial file for the day's meeting. Distressed, he confided in his friend Sarah and swiftly decided to go back home to retrieve the document. Despite the initial setbacks, the meeting proceeded well. However, by the end of the day, the exhaustion from the morning's chaos lingered, serving as a reminder of the unpredictable challenges workdays can bring.
Mark is _____.
(a) optimist
(b) frazzled
(c) cautious
(d) diligent
(e) hard working

**Q25.** Eagerly anticipating her first solo exhibition, Amelia faced an unexpected challenge when a sudden rainstorm threatened her vibrant artworks with a leaky gallery roof. Distressed but determined, she swiftly relocated her paintings with the help of gallery staff. The showcase continued successfully, showcasing her artistic talent.
Amelia can be described as _____.
(a) resilient
(b) opportunistic
(c) calculative
(d) careless
(e) struggler

**Directions (26-28): 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 rearrangement required' as your choice.**

**Q26.** The **performance (A)** melody of the violinist's **mesmerizing (B)** had the power to **attention (C)** the entire audience, holding them in rapt **captivate (D)** throughout the concert.
(a) ACBD
(b) DBAC
(c) BADC
(d)BCAD
(e) No rearrangement required

**Q27.** Sarah's **meticulous (A)** attention to detail was **evident (B)** in her beautifully crafted artwork, where every stroke and color choice **precise (C)** a deliberate and **reflected (D)** approach to her creative process.
(a) ABDC
(b) CBAD
(c) ACBD
(d) BCAD
(e) No rearrangement required

**Q28.** With **unwavering (A)** courage, she aimed to **conquer (B)** the challenges that lay **ahead (C)** and achieve her **ambitious (D)** goals.
(a) CABD
(b) BACD
(c) ADCB
(d) CBAD
(e) No rearrangement required

**Directions (29-34): Read the following passage and answer the given questions.**
**PARAGRAPH 1:**
The U.S. pharmaceutical industry stands as a cornerstone in the nation's healthcare system, renowned for its innovation and global impact. Home to major pharmaceutical companies, the sector covers a spectrum from drug discovery to distribution. "Big Pharma" giants lead in developing diverse medications, subject to stringent approval processes by the U.S. Food and Drug Administration (FDA). Beyond medical advancements, the industry significantly influences the country's economy, contributing billions and offering extensive employment. Continuous research addresses healthcare challenges, solidifying the U.S. as a global innovation hub. Yet, challenges persist, including debates on drug pricing and accessibility. The industry, balancing innovation and public health, symbolizes a dynamic force in advancing medical science, exemplifying the U.S.'s pivotal role in global pharmaceutical leadership.
**PARAGRAPH 2:**
More than 80% of South African pharmaceutical manufacturing and distribution revenue is from the private sector. State purchases of pharmaceuticals are declining, and manufacturers' margins are under pressure due to low regulated price increases for scheduled pharmaceuticals in a high inflation environment. In the retail sector, companies like Clicks and Dis-Chem have wholesale volume advantages and an ever-increasing footprint. Consumer spending patterns have forced consolidation in the retail sector, the growth of private label sales, growth in convenience formats, and diversification into new services and products. While almost 70% of pharmaceutical products used in South Africa are locally produced, almost all active pharmaceutical ingredients and various finished products are imported. South Africa has established the capacity and capabilities to formulate and supply products such as ARVs (to treat HIV) and radiopharmaceuticals. The pandemic highlighted the country's limited access to critical vaccines, and a flurry of investments have been announced to localise vaccine raw material and finished dose manufacturing, although the sustainability of these initiatives is far from secure.

**Q29. How do major pharmaceutical companies, often referred to as "Big Pharma," contribute to medical advancements?**
(a) By strictly following the rigorous approval procedures established by regulatory bodies like the U.S. Food and Drug Administration (FDA).
(b) These companies are at the forefront of undertaking initiatives, investing significantly in discovering new drugs and innovative treatments.

(c) Big Pharma contributes funds and resources to the U.S. Food and Drug Administration.
(d) Big Pharma collaborates with the FDA to guarantee the safety of drugs and generates funds to propel advancements in medical science.
(e) Both (a) and (b)

**Q30. Despite its contributions, what challenges does the U.S. pharmaceutical industry face?**
**(I)** The pharmaceutical industry faces challenges in building and maintaining public trust.
**(II)** High costs of certain medications raise concerns about affordability.
(III) Ensuring equitable access of essential medications
(IV) Competition from international pharmaceutical companies, along with the rise of generic drugs.
(a) Only (I) and (IV)
(b) Only (II) and (III)
(c) Only (III)
(d) Only (II), (III) and (I)
(e) All (I), (II), (III) and (IV)

**Q31. What is the significance of the U.S.'s role in global pharmaceutical leadership, as highlighted in the passage?**
(A) The industry's adeptness in balancing innovation and public health.
(B) The industry's dedication to advancing medical science, in conjunction with a focus on global public health
(C) The industry's expansion contributes significantly to the global economy, creating abundant employment opportunities worldwide.
(a) Only (A)
(b) Both (B) and (C)
(c) Only (B)
(d) Only (C)
(e) Both (A) and (B)

**Q32. What contributes to the challenge of maintaining profitable margins for pharmaceutical manufacturers?**
(a) Excessive government regulations leading to inflated production costs and reduced profit margins.
(b) Minimal regulated price increases for scheduled drugs amid high inflation.
(c) Fluctuating consumer demand and unpredictable market conditions impacting manufacturers' profitability.
(d) Limited access to raw materials and disruptions in the supply chain affecting the cost-effectiveness of pharmaceutical production.
(e) Growing competition from new entrants and generic drug manufacturers, placing downward pressure on profit margins.

**Q33. What has driven consolidation in the retail sector, according to the passage?**
**(I)** Sales of proprietary brands
**(II)** Adoption of convenient formats
(III) Patterns in consumer spending
(IV) Expansion into novel services and products
(a) Only (I) and (IV)
(b) Only (II) and (III)
(c) Only (III)

(d) Only (II), (III) and (I)
(e) All (I), (II), (III) and (IV)

**Q34. In the context of the passage, which statement(s) is/are FALSE?**
**(I)** State is buying fewer medicines, and the companies that make them are not making as much money.
**(II)** Big companies like Clicks and Dis-Chem have advantages because they trade in high volume.
(III) South Africa can make and supply special medicines like ARVs.
(IV) Along with 70% of drugs, most active pharmaceutical ingredients are produced locally
(a) Only (IV)
(b) Only (II) and (III)
(c) Only (I) and (IV)
(d) Only (II), (III) and (I)
(e) All (I), (II), (III) and (IV)

**Directions (35-40): Read the following passage and answer the given questions.**
Living in a warm, dry, and healthy home is declared by the Chief Human Rights Commissioner of New Zealand, Paul Hunt, to be as fundamental a human right as the presumption of innocence or freedom of expression. However, an alarming "accountability deficit" in ensuring the upkeep of such homes poses a threat to New Zealand's democratic ideals. Despite being ranked the second freest nation globally in 2021, issues arise from property being the primary source of wealth for New Zealanders, a widening equality gap, and the challenging living conditions for approximately 600,000 households residing in non-owned properties.
The disparity is evident in the poor state of many rental homes, with an estimated 30% to 50% of the rental stock being in suboptimal condition. To address this, the government introduced healthy homes standards in 2019, aiming to make rental properties warmer and drier. Landlords were given deadlines to comply, with significant penalties for non-compliance, reflecting a shift in the system from an unregulated environment to one with minimum standards. However, issues of accountability persist, with the compliance and investigations unit facing limitations in overseeing the vast rental property landscape.
The Human Rights Commission recommends urgent establishment of independent accountability mechanisms, such as a housing ombudsman or a statutory body, to rectify the current oversight gaps. The report emphasizes the need for effective, nimble, and equitable accountability grounded in Te Tiriti o Waitangi, benefiting both renters and homeowners. With tenants currently **shouldering** much of the responsibility for enforcing their rights, there is a call for a more balanced approach to ensure that New Zealand's housing standards align with democratic principles, _____ the human rights of all citizens.

**Q35. The passage discusses a dichotomy between the country's ranking and the challenges it confronts. What is this dichotomy referring to?**
(a) A harmonious relationship between New Zealand's global freedom ranking and the housing challenges it encounters.
(b) New Zealand's challenges being solely related to its global freedom ranking, with high impact from property wealth or living conditions.
(c) Despite stringent policies aimed at ensuring healthy homes, rental properties continue to be in suboptimal conditions.
(d) New Zealand's high global freedom ranking and the challenges it faces with property wealth, inequality, and living conditions.
(e) None of these

**Q36. Before the introduction of deadlines and penalties, what can be stated about the regulatory environment for landlord?**
(a) Landlords operated in an environment marked by a deficiency of regulation or established standards.
(b) Charges were imposed on landlords for providing subpar housing conditions to their tenants before the introduction of deadlines and penalties.
(c) Landlords resisted the strict regulations implemented by the government in the pre-penalty era.
(d) The regulatory framework did not foster compliance among landlords; instead, it encouraged non-compliance.
(e) The regulatory environment for landlords was stringent, with clearly defined regulations and standards in place.

**Q37. According to the passage, what is the meaning of "accountability deficit"?**
(a) The absence of state responsibility to appoint a housing ombudsman for dispute resolution.
(b) The joint responsibility of individuals and the state to formulate clear policies for ensuring the well-being of homes.
(c) Insufficiency in holding individuals or entities accountable for ensuring the well-being of homes and enforcing housing standards.
(d) Both (a) and (d)
(e) Uncertainty regarding the statutory body's liability for rules and regulations concerning the provision of healthy homes.

**Q38. Choose the most appropriate word to fill in the blank.**
(a) protecting
(b) rejuvenating
(c) reviving
(d) capturing
(e) enlightening

**Q39. In the context of the passage, which statement(s) is/are TRUE?**
(a) New Zealand was ranked the freest nation globally in 2021.
(b) In response to the suboptimal conditions of rental properties, the government introduced healthy homes standards in 2021.
(c) The compliance and investigations unit has successfully addressed accountability issues in overseeing the rental property landscape.
(d) The Human Rights Commission recommends the establishment of an independent housing ombudsman
(e) Currently, tenants bear only a little portion of the responsibility for enforcing their rights within the housing sector.

**Q40. Choose the most suitable word that can replace the highlighted word "shouldering" in the passage.**
(a) anticipating
(b) overtaking
(c) perplexing
(d) pushing
(e) diverting

**Directions (41-45): Study the following information carefully and answer the questions given below-**

There are 12 persons who born in 24 different months of 2 years i.e.,1998 and 1999. Only one person was born in a month in each year. The months are January to December. G was born in a month of 30 days after June and in 1999. B was born in November. B was born before G. There is a gap of 5 months between L and M. Both L and M were born in same year. There is a gap of 2 months between the person who born in June 1999 and M and both were born in same year. P was born immediately after L in the same year. J was born in March 1998 . As many months are there between the month in which Q and U were born is same as the number of months before J. Q, U and J were born in same year. U was born after Q. S is elder to Z. S and Z were born in same month but in different years. There are three months between U and S. S was not born in a month of 30 days, but not in August. H and B were born in immediate months but in different years. H is not the youngest. K is younger to L but older to Z. The number of months between B and U is same as between L and K. K and S were born in different years.

**Q41. In which month G was born?**

(a) August
(b) September
(c) October
(d) November
(e) December

**Q42. Who was born two months after L in the year 1998?**

(a) M
(b) P
(c) Q
(d) U
(e) S

**Q43. In which month and year Z was born?**

(a) June 1998
(b) July 1999
(c) August 1998
(d) December 1999
(e) October 1998

**Q44. How many months are there between J and U?**

(a) 2
(b) 3
(c) 4
(d) 5
(e) 6

**Q45. Who is the youngest among H, L, S and K?**

(a) H
(b) L
(c) K
(d) Cannot be determined
(e) S

**Directions (46-50): Read the given information carefully and answer the questions based on it:**
Thirteen houses are situated in a row and they are numbered 1 to 13 from west to east respectively. Nine persons live nine houses (one in each) and four houses are vacant in the row. Vacant houses are not adjacent to each other. All persons face north.
P lives in 7th house. Four houses are there between N and T. Number of houses to the right of R is one less than the number of houses to the left of M. R and Y live in adjacent houses. One person lives between M and J where J does not live at extreme ends. Three houses are in between M and P. N lives just right of J but not in adjacent house. Immediate neighboring houses of M are not vacant. T lives third to the right of S and to the left of K. S does not live at extreme end.

**Q46. What is the position of S with respect to R?**
(a) Third to the left
(b) Second to the left
(c) Immediate left
(d) Sixth to the left
(e) Second to the right

**Q47. How many persons live between Y and N?**
(a) Five
(b) Six
(c) Seven
(d) Three
(e) Four

**Q48. Which of the following person does not have any adjacent vacant house?**
(a) S
(b) P
(c) R
(d) K
(e) N

**Q49. Which of the following statement is correct?**
I. K does not live in house number 12
II. Even number of persons live between J and R
III. Three houses are in between Y and P
(a) Only II
(b) Only I
(c) Only II and III
(d) All I, II and III
(e) Only I and III

**Q50. What is the house number of that vacant house which is adjacent to T's house?**
(a) None of these
(b) 5
(c) 4
(d) 6
(e) 3

**Directions (51-53): Study the following information carefully and answer the questions given below-**

In alphabetical series A-Z each letter except vowels and consonants (M, N and P) is assigned a different number starting from 1 (for ex- B is coded as 1, C-2, D-3) and again those numbers get repeated (for ex- Q-1, R -2 and so on). Also, each consonant (M, N and P) is coded with different symbol viz. #, * and $ respectively.

**Conditions:**
I. If the number of letters in the word is even then first vowel from left end will be coded as + If the number of letters in the word is odd then first vowel from left end will be coded as @.
II. If the third letter from the left end of the word is vowel, then use A.
III. If word ends with the letters M, N and P then the code of first vowel will the code of that particular consonant (M, N and P).
IV. If there are two consonants after any vowel then the code of that vowel will be &.
V. If there are more than 3 vowels in a word then the code of all the vowels will be B.
VI. If there is no condition apply on vowel then particular vowel will be coded as >.
**(Condition is applied I – VI in the same order. If more than one condition is applied then condition I is applied first followed by the II and so on..)**

**Q51. What is the code of "Palm Tree"?**
(a) $&3# 12A>
(b) $+33 12AA
(c)1+33 33A>
(d) #+3$ A12>
(e) None of these

**Q52. What is the code of "Tourist Star"?**
(a) 1>A2&31 12A3
(b) 1@>2&31 31A2
(c) 1@A2&31 31A2
(d) 1>A3&21 31A2
(e) None of these

**Q53. What is the code of "Data Breach"?**
(a) 3+2>12$$2A
(b) 3+3>12$$&2
(c) 3+1> 32##23
(d) 3+1>12A&23
(e) None of these

**Directions (54-56): In each question given below, some statements are followed by some conclusions. You have to assume everything in the statements to be true even if they seem to be at variance with commonly known facts. You have to find out, which of the given conclusions logically follow from the statement, disregarding commonly known facts.**

**Q54. Statements**:
Only break is ice
Only a few break is cake
Some cake is milk
All milk is water
Some water is not bridge
**Conclusions**:
I. No bridge being ice is a possibility
II. Some break can never be milk
III. All milk being cake is a possibility
(a) Both II and III follows
(b) Both I and II follow
(c) None follows
(d) Only III follow
(e) Both I and III follow

**Q55. Statements**:
All lyrics are sound
No music is lyrics
Only a few instruments are music
Only a few instruments are pleasant
**Conclusions**:
I. All sound being music is not a possibility
II. Some music is not pleasant
III. All pleasant can be lyrics
(a) Either II or III follows
(b) Both I and II follow
(c) None follows
(d) Only III follow
(e) Both I and III follow

**Q56. Statements**:
All planets are universe
Only a few galaxy is universe
All earth is world
Only a few earth is galaxy
**Conclusions**:
I. All world can never galaxy
II. Some planets being earth is a possibility
III. No planets are world
(a) Either II or III follows
(b) Only I and II follow
(c) None follows
(d) Only III follow
(e) Only I and III follow

**Directions (57-61): Study the following information and answer the questions below:**

Ten persons- P, Q, R, S, T, U, V, W, X and Y are living in the five-floor building such that the ground floor is numbered as 1, the floor just above it is numbered as 2 and so on till the top most floor is numbered as 5 but not necessarily in the same order. Each floor has 2 flats in it i.e., flat A and flat B. Flat A of floor 2 is immediately above flat A of floor 1 and immediately below flat A of Floor 3 and so on. In the same way, Flat B of Floor 2 is immediately above flat B of floor 1 and immediately below flat B of Floor 3 and so on. Flat A is exactly to the west of Flat B.
Two floors gap between P and X and both live in different named flats. P lives on an even numbered floor. As many floors are above X as below W. V lives on an adjacent floor of W. Y lives to the south west of V and lives on an even numbered floor. Both Y and W live in the same named flats. S lives above T and below R. U lives on an odd numbered floor. No one lives to the west of T. S lives above Q. W and S live in different named flats.

**Q57. How many floor(s) gaps is/are between S and X?**
(a) Three
(b) Either two or three
(c) One
(d) Either one or two
(e) Two

**Q58.On which of the following floor and flat does Q live?**
(a) 5th floor, flat B
(b) 4th floor, flat A
(c) 2nd floor, flat B
(d) 3rd floor, flat A
(e) None of these

**Q59. Which among the following statement(s) is/are true?**
I. P and R live on the same floor
II. Q lives just below S's flat
III. R lives in flat B
(a) Both I and II
(b) Both II and III
(c) Only I
(d) Both I and III
(e) Only III

**Q60. Four of the following five are alike in a certain way and form a group. Who among the following person does not belong to the group?**
(a) W
(b) R
(c) T
(d) P
(e) X

**Q61. How many persons live to the south west of V?**
(a) One
(b) Two
(c) Four
(d) None
(e) Three

**Q62. In the word 'DECARBONATE' following conditions are applied:**
**I. All the letters which come before K in alphabetical order are changed to their immediate next letter and the letters which come after K in alphabetical order are changed to their 2nd previous consonant.**
**II. All the repeated letters are removed.**
**III. Remaining letters are arranged in alphabetical order from left to right.**
**(condition II is applied after condition I and condition III is applied after condition II)**
**Now find how many letters (according to alphabetical order) are there between 2nd letter from left end and 5th letter from right end in the new word formed after applying the conditions?**
(a) None
(b) One
(c) Two
(d) Three
(e) More than three

**Directions (63-65): Italian super - luxury sports car manufacturer Lamborghini has spread its wings in India. And it, has just opened a dealership in Bengaluru, the IT capital of the country. At a price tag of over Rs. 1 Crore, in addition high import duty barriers. Who will buy a Lamborghini car? Rather, what gives the Italian car maker the confidence to not only drive into India but also expand its presence? If super - luxury brand like Lamborghini is sensing an unfolding big opportunity in a New India, other traditional global luxury car makers have turned very ambitious with new launches.**

**Q63. Which of the following can be inferred from the given statement?**
(a) As IT capital, some of the Bengaluru person has the potential to buy Lamborghini car.
(b) People of India will reject other companies' car and will attracted towards sports car of Lamborghini.
(c) After India, Lamborghini will plan to launch in neighbouring countries of India.
(d) Both (a) and (c)
(e) Both (b) and (c)

**Q64. Which statement negates the Italian car maker confidence?**
(a) Two years back, BMW has launched their premium cars in India, and they faced huge loss.
(b) Before India, Lamborghini had launched their car in France, and they make a 800-million-dollar profit annually.
(c) After launch, there is a huge demand and query by Indian people.
(d) Both (a) and (c)
(e) Both (b) and (c)

**Q65. What may be the assumption of Lamborghini company to launch and expand their product in India?**
**(I)** The luxury car is a stipulated requirement or thriving people as it has been seen in Delhi, Mumbai and Bengaluru.
**(II)** The ability to afford high import duties by Indians who are living in rich metropolitan areas.
(III) The inclination of moneyed people towards sports car will potentially grow.
(a) Only I and III
(b) Only II
(c) Only I and II
(d) Only III
(e) Only II and III

**Directions (66-68): Each of the question below consists of a question and two statements numbered I and II given below it. You have to decide whether the data provided in the statements are sufficient to answer the question. Read both the statements and given answer:**

**Q66. In a three-generation family of six members, how is U related to M?**
I. H is child of U. B is only daughter of U's spouse. L is sister-in-law of B. M is child of L. R is the grandfather of B's niece.
II. U is sibling of H. L is parent of M. R is mother of H. M is brother-in-law of U. B is a married male.
(a) Only statement I is sufficient
(b) Only statement II is sufficient
(c) Either statement I or II is sufficient
(d) Neither statement I nor II is sufficient
(e) Both statement I and II is sufficient

**Q67. Seven persons go to a clinic on different days of week starting from Tuesday. Which person goes just after the one who goes on Friday?**
I. Three persons go between G and D. B goes just before G. B does not go on Saturday and Sunday. F goes two days after A but not on Monday. E goes before C but after Wednesday.
II. More than three persons go before D. Two persons go between D and A. F does not go on Tuesday. Equal number of persons go before C and after F. E goes just before B. G goes after B but not on Sunday.
(a) Only statement I is sufficient
(b) Only statement II is sufficient
(c) Either statement I or II is sufficient
(d) Neither statement I nor II is sufficient
(e) Both statement I and II is sufficient

**Q68. Six persons sit around a circular table facing inside. What is the position of M with respect to the one who sits immediate left of D?**
I. One person sits between N and K. D and N do not sit adjacent to each other.
II. L sits second to the left of P. M does not face the immediate neighbors of P. Equal number of persons do not sit between K and P (from the both side).
(a) Only statement I is sufficient
(b) Only statement II is sufficient
(c) Either statement I or II is sufficient
(d) Neither statement I nor II is sufficient
(e) Both statement I and II is sufficient

**Q69. B is 7m to the north of C. G is 4m to the south of E. I is 11m to the west of G. D is 3m to the east of H. F is 12m to the east of B. C is 6m to the west of E. D is 9m to the south of I. F is 10m to the north of A. Find the odd one out?**
(a) FC
(b) EI
(c) GH
(d) AD
(e) HE

**Q70. Statement: Use for 2 weeks, your face will get pimple free. It is 100% tested and there is no side effect-Advertisement by a face wash company Y.**
**Assumption:**
**(I)** Pimple on face is common people issue.
**(II)** People believe on tested products.
(III) Stock of face wash by company will be sold in a week.
(a) Only I and III
(b) Only II and III
(c) Only II
(d) Only I and II
(e) All of three

**Directions (71-75): Study the following information and answer the questions below:**

There are three stacks i.e. X, Y and Z from west to east respectively, which contains different number of boxes placed one above another. Each box has same heights.
Box U is kept to the just north-west of box E. Box Q is kept to the east of box E. At most two boxes are kept below box E. Three boxes are kept between box Q and the box which is kept to the east of box A in the same stack. At least two boxes are kept between box B and box E in the same stack. Box B is kept to the south-east of box A. Five boxes are kept between box A and box F in the same stack. Box F is kept to the west of box T which is kept just below box G in the same stack. Box H is kept to the south east of box E and to the just east of box G. As many boxes are kept between box A and box F is same as between box D and box T in the same stack. Box P is kept to the west of box R and kept above box S. No box is kept above box N which is kept to the east of box D. Box S is kept to the west of box Q. Box P is kept just below Box A.

**Q71. How many known boxes are kept in the stack Y?**
(a) Three
(b) Four
(c) Five
(d) Two
(e) Either two or three

**Q72. Which among the following boxes are kept to the south-west of box N?**
(a) Box U
(b) Box G
(c) Box H
(d) Box T
(e) All except box H

**Q73. Which among the following statement(s) is/are true?**
I. Box H is kept below box U
II. Box D and box S are kept in different stacks
III. Odd number of boxes are kept to the east of box A
(a) Only I
(b) Both I and II
(c) Only II
(d) Both II and III
(e) All I, II and III

**Q74. Four of the following five are alike in a certain way and hence form a group. Who among the following does not belong to that group?**
(a) Box N
(b) Box R
(c) The box which is kept to the east of box E
(d) Box F
(e) Box H

**Q75. How many total boxes are Kept between the box B and the box which is kept to the just east of box F in the same stack?**
(a) Four
(b) Three
(c) Five
(d) Six
(e) Two

**Directions (76-78): After 8 phases of election in Bengal, on 2nd May the 'khela' becomes over. TMC lead by Chief Minister Mamata Banerjee has got success to clean sweep Bengal election despite of strong opposition heavyweight Bhartiya Janata Party. Top Central Ministers and chief ministers of BJP ruled states also participated in rallies. While seated in a wheelchair Didi with her injured left foot, rallies could not have been easy. But Didi scored! And her supporters and TMC cheered.**

**Q76. What may be the reason for defeat of heavyweight Bhartiya Janata Party?**
(a) BJP did not get success to connect with common people and their basic needs.
(b) Rallies by Top central Minister and Chief ministers backfires the promotion strategy of BJP.
(c) Promotion by Didi with her injured left foot, seated on wheelchair help in gaining sympathy of Bengal people.
(d) Both (a) and (b)
(e) Both (a) and (c)

**Q77. What can be assumed from the given statement of election result?**
(a) Rallies by top ministers attract the voters to vote towards the party.
(b) Election commission takes a long duration of time to conduct election in Bengal.
(c) After Bengal, there will be election in two more states.
(d) Both (a) and (b)
(e) Both (b) and (c)

**Q78. I. TMC Party workers starts celebration and there is some news of violence between BJP & TMC workers.**
**II. Out of 292 seats, TMC has marked a major victory by winning 225 seats and BJP has not touched the triple figure.**
Give answer
(a) If Statement I is the cause and Statement II is its effect.
(b) If Statement II is the cause and Statement, I is its effect.
(c) If both the Statements I and II are independent causes.
(d) If both the Statements I and II are effects of independent causes.
(e) If both the Statement I and II are effects of some common causes.

**Directions (79-81): In the following questions, the symbols %, #, @, $, and & are used with the following meaning as illustrated below:**
P&Q means P is equal to Q
P%Q means P is either less than or equal to Q
P$Q means P is either greater than or equal to Q
P#Q means P is neither less than nor equal to Q
P@Q means P is neither greater than nor equal to Q
In each question, assuming the given statements to be true, find out which of the given conclusions below, is are definitely true as per the statement.

**Q79. Statements**:
D @ B % T, E # N @ M, T & R % M
**Conclusions**:
I. R # D
II. T @ M
III. B % N
(a) Only II is true
(b) Only I or III is true
(c) Only I is true
(d) Only II and III is true
(e) None is true

**Q80. Statements**:
C $ L # P & O, M $ S # P, B $ V % S
**Conclusions**:
I. P @ B
II. M # O
III. C $ V
(a) Only II is true
(b) Only III is true
(c) None is true
(d) Only I and II is true
(e) Either II or III is true

**Q81. Statements**:
A $ H $ S, T & N # Z @ U, H % T @ E

**Conclusions**:
I. Z @ E
II. N $ S
III. A # Z
(a) Only II is true
(b) All I, II and III are true
(c) Only I is true
(d) Only I and II is true
(e) Only I and III is true

**Directions (82-85): There are three rows given and to find out the resultant of a particular row we need to follow the following Conditions: -**
1. If an even number is followed by a perfect square number then the resultant will be the positive difference between both the numbers.
2. If an odd number is followed by an even number (not prime) which is not a perfect square number then the resultant will be addition of both the numbers.
3. If an even number is followed by an even number which is not a perfect square then the resultant will be the addition of positive difference between the two numbers with the greater number.
4. If an odd number is followed by an odd prime number then the resultant will be the positive difference between both the numbers.
5. If an odd number is followed by an even prime number then the resultant will be average of the two numbers.
6. If an even number is followed by an odd number which is not a perfect square number then the resultant will be the twice of the positive difference of the two numbers.
7. If an odd number is followed by an odd number (not prime) then the resultant will be positive difference between both the numbers.

**Q82. What is the resultant of row 1, if X is the resultant of row 2 and Y is the resultant of row3?**

| | | |
|---|---|---|
| R1: 14 | X | Y |
| R2: 33 | 23 | 20 |
| R3: 26 | 21 | 43 |

(a) 84
(b) 86
(c) 77
(d) 65
(e) 62

**Q83. What is the difference of resultant of row 2 and the sum of the resultants of row 1 and row 3?**

| | | |
|---|---|---|
| R1: 11 | 15 | 21 |
| R2: 10 | 36 | 13 |
| R3: 25 | 12 | 19 |

(a) 46
(b) 32
(c) 26
(d) 36
(e) 22

**Q84. What is the resultant of new row made by arranging the resultant of all three rows in ascending order from left to right?**

R1: 18 36 10
R2: 19 23 27
R3: 21 29 14

(a) 80
(b) 75
(c) 65
(d) 60
(e) 55

**Q85. What is the sum of the resultants of all the three rows?**

R1: 27 38 43
R2: 30 21 16
R3: 24 22 33

(a) 28
(b) 48
(c) 38
(d) 58
(e) 68

**Q86. Ten persons sit in two parallel rows and face each other. In row 1: A, B, C, D and E sit and all of them face south and in row 2: P, Q, R, S ad T sit and all of them face north. The consecutive alphabetical named persons didn't sit adjacent to each other. R sits second from one of the ends. Only one person sits between R and the one who faces B. C sits second to the right of E who faces the one who sits immediate left of S. Only one person sits between Q and P. Who among the following faces A?**

(a) The one who sits adjacent to Q
(b) The one who sits to the right of P
(c) P
(d) The one who sits immediate right of T
(e) None of these

**Directions (87-90): A number arrangement machine when given an input line of numbers rearranges them following a particular rule in each step. The following is an illustration of input and rearrangement.**

**Input: 532146 304536 541207 537894 263159 847312**

Step I: 532136 304536 541249 537816 263181 84734
Step II:82136 34536 91249 87816 83181 12734
Step III: 28163 34563 19294 78861 38181 12743
Step IV: 6166 1566 8298 1862 5182 1746
Step V: 49 144 36 144 100 289 81 64 36 100 64 100
Step V is the final step of given input.
Answer the following questions based on the following input: -

**Input: 142384 612385 393842 752403 540519 801517**

**Q87. What is the difference between the third number from the right end in step III and the fifth number from the left end in step II?**

(a) 78287
(b) 65422
(c) 56452
(d) 98532
(e) 84532

**Q88. What is the position of '1298' in the penultimate step of the given input?**
(a) 5th from the left
(b) 2nd from the left
(c) 3rd from the right
(d) 4th from the right
(e) None of these

**Q89. What is the sum of the odd numbers in step V?**
(a) 628
(b) 778
(c) 548
(d) 668
(e) 988

**Q90. What is the product of the numbers which are third from the right end in step V and third from the left end in step II?**
(a) 1346700
(b) 1238400
(c) 4312700
(d) 5431200
(e) 1298000

**Directions (91-92): Find the pattern of the given series and answer the following question given below.**
**Series:** ?, 8, 72, 4608, 2880000

**Q91. If the ratio of X to the missing term of the above series is 5:2, respectively, then find the value of 3X.**
(a) 12
(b) 30
(c) 21
(d) 9
(e) 15

**Q92. If X is 140% more than the missing term of the above series, then find the value of X.**
(a) 7.4
(b) 2.6
(c) 4.4
(d) 9.6
(e) 6.6

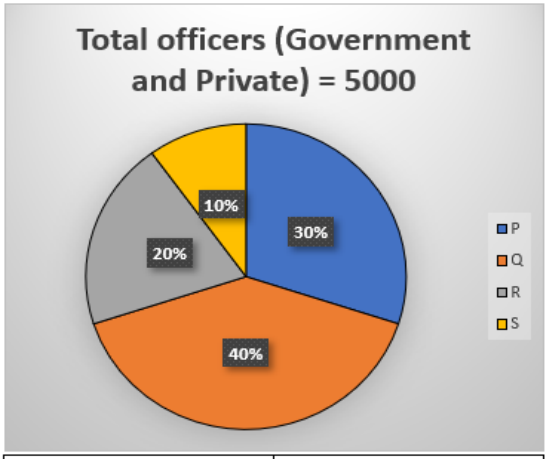
**Q93. If smallest root of equation $6x^2 + 11x + 4 = 0$ is 'a', then find the value of $64^a$.**
(a) 1/16
(b) 64
(c) 16
(d) 1/64
(e) 1/256

**Directions (94-95): Find the wrong number in the given series.**

**Q94.** 2.2, 30, 6.6, 16.5, 49.5, 173.25, 693
(a) 2.2
(b) 30
(c) 16.5
(d) 49.5
(e) 693

**Q95.** 82.2, 5.5, 71.5, 6.5, 58.5, $\frac{58.5}{7}$
(a) 6.5
(b) 71.5
(c) 5.5
(d) $\frac{58.5}{7}$
(e) 82.2

**Directions (96-101): The pie chart shows percentage distribution of total officers (Government and Private) working in four (P, Q, R and S) different cities. The table shows number of private officers working in these cities. Read the following pie chart and table carefully and answer the questions given below.**
**Note:** (i) Average number of private officers working in cities P, R and S is 400.
**(ii)** The ratio of number of private officers working in cities S and P is 3:7 respectively.




| Cities | Number of private officers |
|---|---|
| P | ---- |
| Q | 40% of the total officers in Q |
| R | 200 |
| S | ---- |

**Q96. If 25% of total officers from each city P, Q, R, and S are moved to city E, if the total number of officers is presented in the pie chart with degree distribution, then find the central angle representing the officers in city E.(Note: Initially there were no officer in city E)**
(a) $72^o$
(b) $90^o$
(c) $108^o$
(d) $180^o$
(e) $36^o$

**Q97. 45% of the private officers in S work 12 hours/day and the remaining 10 hours / day. While 50% of the government officers in S work 8 hours/day and the remaining 5 hours/day Find the sum of the total weekly working hours of all the government and private officers in S. (Note: One week = 7 days and no holiday in included)**
(a) 31990
(b) 39910
(c) 39190
(d) 30910
(e) 33990

**Q98. If total tax paid by each officer in the city given below, then find which of the following statement/s is/are correct.**
P = 2 lakh
Q = 1.2 lakh
R = 1.8 lakh
S = 1.5 lakh
I. Total tax paid by total officers in S is one- fifth of the total tax paid by total officers in Q.
II. Total tax paid by total officers in R is 75% of the total tax paid by total officers in Q.
III. Total tax paid by total officers in P and S together is less than the total tax paid by total officers in Q and R together.
(a) Both I & II
(b) Only III
(c) Both I & III
(d) Both II & III
(e) Only II

**Q99. Find the ratio between total government officers in Q to total private officers in S.**
(a) 4:1
(b) 3:2
(c) 5:4
(d) 2:5
(e) 1:3

**Q100. 80% of the total officers in P work in the banking sector, and 60% of the private officers in P work in the banking sector. Find the government officers working in the non-banking sector.**
(a) 30
(b) 25
(c) 20

(d) 10
(e) 15

**Q101. If 75% and 60% of the private and government officers in R are males respectively, then find the sum of private and government female officers in R.**
(a) 390
(b) 350
(c) 370
(d) 330
(e) 310

**Directions (102-106): Read the following information carefully and answer the questions given below.**
The information about athletes from three (P, Q, and R) different countries is selected from the Olympics in three (2010, 2014, and 2018) different years.
Athletes selected from P in 2014 are 2x+10, which is 10 more than the athletes selected from R in 2010. Athletes selected from Q in 2018 are half of the athletes selected from R in 2010, and athletes selected from R in 2014 were 20 more than those from R in 2010. The ratio of athletes selected from R in 2010 to 2018 is 9:13.
Athletes selected from P in 2010 were 18 more than athletes selected from R in 2010. The athletes selected from Q in 2010 and 2014 are 2a and 5a, respectively. Total athletes selected from P, Q, and R in all three years are 1150, 460, and 1260, respectively.

**Q102. Find the difference between athletes selected from Q in 2014 and athletes selected from R in 2018.**
(a) 290
(b) 250
(c) 350
(d) 240
(e) 320

**Q103. If the average number of athletes selected from P, Q, R, and S in 2010 was 340, then find the number of athletes selected from S in 2010**.
(a) 575
(b) 542
(c) 528
(d) 503
(e) 597

**Q104. If the athletes selected from R in 2022 are 25% less than the athletes selected from Q in 2010 and 2014 together, then find the athletes selected from R in 2022.**
(a) 185
(b) 225
(c) 210
(d) 190
(e) 205

**Q105. Find the difference between athletes selected from P in 2014 and 2018 together and the value of a.**
(a) 732
(b) 768
(c) 744
(d) 722
(e) 736

**Q106. 40% of the athletes selected from Q in 2018 participated in track and field games, 25% of the remaining participated in archery, and the remaining participated in board games. Find the total athletes who participated in board games and track & field games.**
(a) 158
(b) 153
(c) 156
(d) 151
(e) 155

**Directions (107-111): The table shows total students who opted two different courses (Traditional and Professional) in two (Amber and Dhara) different institute in three (2019, 2020 and 2021) different years. (Each student opted for only one course). Read the following table carefully and answer the questions given below.**
**Note:** Students who opted for professional courses in Dhara institute in 2019, 2020 and 2021 are 60, 85 and 40 respectively.

| Years | Total students in Amber and Dhara institute | Total students in Amber institute who opted for the traditional courses | Total students in Amber institute who opted for the professional courses | Total students in Dhara institute who opted for the traditional courses | Total students in Dhara institute who opted for the professional courses | Total students in Dhara institute |
|---|---|---|---|---|---|---|
| 2019 | 180 | ---- | 1.5x | ---- | 3x | 120 |
| 2020 | 240 | ---- | 3x | ---- | ---- | 150 |
| 2021 | 160 | ---- | 2.5x | ---- | ---- | 90 |

**Q107. Find the difference between the total students in Amber Institute who opted for the traditional courses in 2021 and the total students in Dhara Institute who opted for the professional courses in 2020.**
(a) 3x+5
(b) 2.5x+10
(c) 4.5x-15
(d) 4x+20
(e) 6x-20

**Q108. Find the average number of students who opted for the professional courses in 2021 from both Institute.**
(a) 50
(b) 45
(c) 25
(d) 40
(e) 65

**Q109. Find the ratio between students who opted for both the courses together from Amber institute in 2019 to the value of x.**
(a) 3:1
(b) 1:3
(c) 2:1
(d) 1:2
(e) 4:1

**Q110. Students who opted for traditional courses from Amber institute in 2021 is what percentage of total students from both institutes together in 2021?**
(a) 15%
(b) 16.67%
(c) 10%
(d) 8.33%
(e) 12.5%

**Q111. The difference between students who opted for traditional courses and professional courses from Amber Institute in 2020 is 'p'. The sum of the students who opted for professional courses from Dhara Institute in 2019 and 2021 together is 'q'. Find the 'p + q'.**
(a) 120
(b) 140
(c) 125
(d) 130
(e) 105

**Q112. P is $33\frac{1}{3}\%$ more efficient than Q and R together. Efficiency of P and Q together is 14.28% less than the efficiency of P, Q and R together. If Q can complete 60% of the work in 9.6 days, then find the time (in days) taken by P and R together to complete 175% of the total work.**
(a) 10.9
(b) 11.2
(c) 14.5
(d) 16.8
(e) 9.6

**Q113. A man invested Rs P for 'T' years at 14% p.a. in simple interest, while he invested Rs 'P+600' for two years at 20% p.a. in compound interest, such that the total interest received is Rs 1464. If he invested Rs P for 'T' years at 8% p.a. in simple interest and received interest of Rs 384, then find the amount (in Rs) received from compound interest.**

(a) 2652
(b) 2858
(c) 2664
(d) 2592
(e) 2904

**Q114. P and Q started a business with investments of Rs 8000 and Rs 10000 and after four months, Q withdrew half of his investment. After two more months, R joined with an investment of Rs 12000. If at the end of the year the difference between the profit share of P and R is Rs 900, then find the profit share of P and Q together, which is how much more than that of R (in Rs).**
(a) 2400
(b) 3200
(c) 3900
(d) 2900
(e) 3400

**Q115. Rs Y is distributed among four different people A, B, C, and D, such that the share of A is Rs 4000 and the ratio of the share of C to D is 3:1, respectively. The share of B is 125% of the share of C and D together. If the average share of B and D is Rs 4800, then find the value of Y.**
(a) 20800
(b) 22400
(c) 18400
(d) 21500
(e) 22800

**Q116. The ratio of the ages of P and Q five years ago was 7:5, respectively, while the ratio of the ages of P and Q after seven years will be 13:11, respectively. If the present ages of P and Q are 'a' years and 'b' years, respectively, and the present age of R is 20% more than that of Q, then find the age of R after 12 years.**
(a) a+b-8
(b) 2b-8
(c) 3a-b
(d) 3b-a
(e) 2a-8

**Q117. Boat P can cover some distance downstream in 'a-5' hours, and the same boat can cover the same distance upstream in 'a+5' hours. The speed of the boat P in still water is 12 km/hr. If the speed of the boat Q in still water is equal to the speed of the stream, which is equal to 7.5 km/hr, then find the distance (in km) covered by the boat Q downstream in 'a+4' hours. (Speed of stream for both the boat are same)**
(a) 120
(b) 180
(c) 150
(d) 160
(e) 140

**Q118. In a class, there are 'a+10' students whose average weight is 30 kg. If 'b' more students with an average weight of 64 kg are added, then the average weight of the class is increased by four kg. If 'b+3' students with an average weight of 38 kg are added, then the average weight of the class is increased by two kg. Find the value of 5 (a + b).**

(a) 20
(b) 50
(c) 45
(d) 35
(e) 25

**Q119. The sum of four consecutive even numbers is 'X+26' and there are four consecutive odd numbers, of which the 2nd lowest number is three more than the 2nd highest even number. If the sum of the lowest numbers in both series is 37, then find the value of X/2.**

(a) 25
(b) 50
(c) 75
(d) 20
(e) 40

**Q120. In the question, two equation (i) and (ii) are given. You have to solve both the equations and give answer.**

**(i)** $a^2 - 5\frac{1}{2}a + 7.5 = 0$

**(ii)** $\frac{1}{\frac{1}{b^2-2b+\frac{7}{4}}} = 2b - 2$

(a) If a>b
(b) If a≥b
(c) If a<b
(d) If a≤b
(e) If a = b or no relation can be established between a and b.

**Q121. In the question, two equation (i) and (ii) are given. You have to solve both the equations and give answer.**

**(i)** $(a-6)(2a-5)2w^p = 0$ (Note: p is the smallest whole number)
**(ii)** $b^3 = 343$

(a) If a>b
(b) If a≥b
(c) If a<b
(d) If a≤b
(e) If a = b or no relation can be established between a and b.

**Directions (122-125): What approximate value will come in place of question mark (?) in the following questions (You are not expected to calculate the exact value).**

**Q122.** $?^2 \times 29.98 - 218 = 9.02^3 + 133.09$
(a) 2
(b) 4
(c) 6
(d) 8
(e) 10

**Q123.** $39.99\%\ of\ 499.99 + 55.01\%\ of\ 299 = \sqrt{?} + (14.99 \times 20.12)$
(a) 4020
(b) 4250
(c) 4550
(d) 4025
(e) 4225

**Q124.** $58.12 \times 10.22 + 4.04 + 19.012^2 = ? \times 14.92$
(a) 65
(b) 61
(c) 67
(d) 63
(e) 68

**Q125.** $\sqrt{2916.21} \times 21.11 + \sqrt{(18.01 \times 4 + 3.10^2)} = ?$
(a) 1154
(b) 1143
(c) 1122
(d) 1139
(e) 1165

**Directions (126-129): In the given question, two quantities are given, one as 'Quantity I' and another as 'Quantity II'. You have to determine relationship between two quantities and choose the appropriate option.**

**Q126. The ratio of milk to water in mixture A1 is 7:9. 80 liters of the mixture are taken out & the remaining mixture becomes another mixture, A2. When 8 liters of water are added to A2, a new mixture, A3, is formed, in which the ratio of milk to water becomes 5:7.**
**Quantity I**. 60 liters
**Quantity II.** Find the quantity of milk in A2.
(a) Quantity I > Quantity II
(b) Quantity I < Quantity II
(c) Quantity I ≥ Quantity II
(d) Quantity I ≤ Quantity II
(e) Quantity I = Quantity II or no relation

**Q127. Quantity I**. If Area of a circle is more than or equal to the area of a rectangle of sides 16 cm and one cm, then find the area of the circle.
**Quantity II.** Find the area of a square whose area is equal to the area of a rectangle. The sum of one side of the square and the breadth of the rectangle is 10 cm more than the length of the rectangle, and the perimeter of the rectangle is 20 cm.
(a) Quantity I > Quantity II
(b) Quantity I < Quantity II
(c) Quantity I ≥ Quantity II
(d) Quantity I ≤ Quantity II
(e) Quantity I = Quantity II or no relation

**Q128. A man invests Rs. 1800 at rate of 5% and x% per annum in the ratio 4: 5 respectively. At the end of two years, the man received total simple interest of Rs 160**
**Quantity I:** Value of (x+12).
**Quantity II**: $y^2 = 256$
(a) Quantity I > Quantity II
(b) Quantity I < Quantity II
(c) Quantity I ≥ Quantity II
(d) Quantity I ≤ Quantity II
(e) Quantity I = Quantity II or no relation

**Q129. Quantity I:** A storekeeper has two types of shirts i.e., 15 yellow and 10 blue. If he sold 3 shirts, what is the probability that all these are of either yellow or blue.
**Quantity II**: 0.20
(a) Quantity I > Quantity II
(b) Quantity I < Quantity II
(c) Quantity I ≥ Quantity II
(d) Quantity I ≤ Quantity II
(e) Quantity I = Quantity II or no relation

**Directions (130-133): In the given questions, two statements are given Statement (I) and statement (II). You have to determine which statement/s is/are necessary/sufficient to find out the answer of the question.**

**Q130. The ratio of the marked price of article Q to the selling price of article P is 5:4, respectively. Find the profit (in Rs) earned after selling article P.**
**Statement I.** The profit percent earned on article Q is 16.67%, and the markup percentage on article Q is 66.67%.
**Statement II.** The discount percent on article P is 20% while total profit earned on both the articles together is 66.67%.
(a) Neither statement (I) nor statement (II) by itself is sufficient to answer the question.
(b) Statement (II) alone is sufficient to answer the question but statement (I) alone is not sufficient to answer the question.
(c) Either statement (I) or statement (II) by itself is sufficient to answer the question.
(d) Both the statements taken together are necessary to answer the questions, but neither of the statements alone is sufficient to answer the question.
(e) Statement (I) alone is sufficient to answer the question but statement (II) alone is not sufficient to answer the questions.

**Q131. Set P and set Q contains four consecutives odd number and four consecutives even number respectively. Find the sum of the largest numbers from both the sets.**
**Statement I**. Largest number of set P is one less than the smallest number of set Q.
**Statement II.** The sum of the smallest number of both the sets together is 29.
(a) Neither statement (I) nor statement (II) by itself is sufficient to answer the question.
(b) Statement (II) alone is sufficient to answer the question but statement (I) alone is not sufficient to answer the question.
(c) Either statement (I) or statement (II) by itself is sufficient to answer the question.
(d) Both the statements taken together are necessary to answer the questions, but neither of the statements alone is sufficient to answer the question.
(e) Statement (I) alone is sufficient to answer the question but statement (II) alone is not sufficient to answer the questions.

**Q132. What is the length of platform**?
**Statement I**. Train 'A' can cross the platform in 20 seconds and it can cross another train 'B' coming from opposite direction in 12 seconds.
**Statement II**. Train 'B' can cross the same platform in 15 seconds and it can cross a man walking towards it in 4 seconds
(a) Neither statement (I) nor statement (II) by itself is sufficient to answer the question.
(b) Statement (II) alone is sufficient to answer the question but statement (I) alone is not sufficient to answer the question.
(c) Either statement (I) or statement (II) by itself is sufficient to answer the question.
(d) Both the statements taken together are necessary to answer the questions, but neither of the statements alone is sufficient to answer the question.
(e) Statement (I) alone is sufficient to answer the question but statement (II) alone is not sufficient to answer the questions.

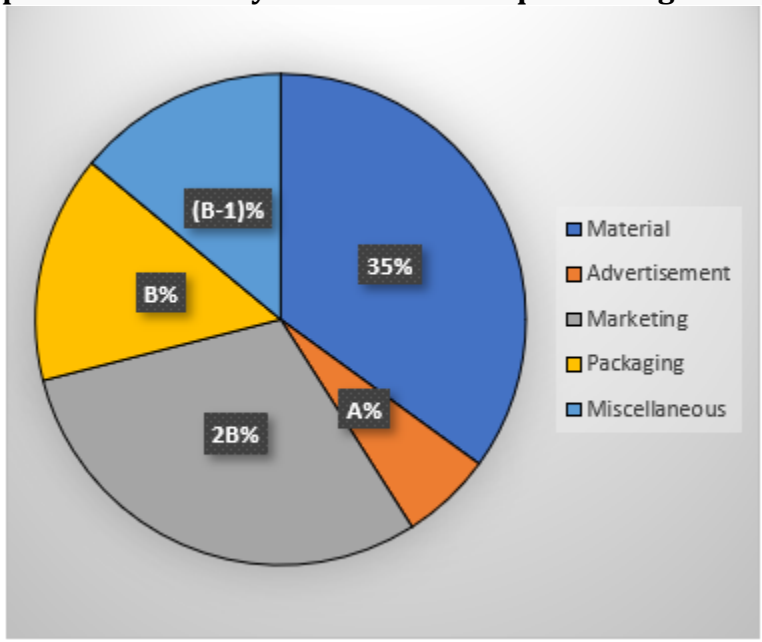
**Q133. Total 24 balls are in a bag. If one ball is drawn at random from the bag, then find the probability that drawn ball is of red color**?
**Statement I**. Probability of getting a ball that is not red is twice the probability of getting a red color ball.
**Statement II**. Blue balls in the bag is 6
(a) Neither statement (I) nor statement (II) by itself is sufficient to answer the question.
(b) Statement (II) alone is sufficient to answer the question but statement (I) alone is not sufficient to answer the question.
(c) Either statement (I) or statement (II) by itself is sufficient to answer the question.
(d) Both the statements taken together are necessary to answer the questions, but neither of the statements alone is sufficient to answer the question.
(e) Statement (I) alone is sufficient to answer the question but statement (II) alone is not sufficient to answer the questions.

**Q134. The area of the equilateral triangle is $36\sqrt{3}$ $cm^2$ and the side of the equilateral triangle is half of the radius of the cylinder. If the volume of the cylinder is 12672 $cm^3$, then find the height of the cylinder (in cm).**
(a) 17
(b) 5
(c) 12
(d) 10
(e) 7

**Q135. The X+150 meters long train can cross a pole in 16 seconds and speed of the train is 90 km/hr. If length of the bridge is X meters, then find the time taken by train to cross the bridge (in seconds).**
(a) 26
(b) 22
(c) 27
(d) 25
(e) 23

**Q136. A 120 liters mixture of milk and water is in the ratio of X : 11 respectively. If 40 liters of mixture are taken out and 16 liters of milk are added to the mixture, then ratio of milk to water becomes 13:11, respectively. Then find the value of X.**
(a) 11
(b) 9
(c) 10
(d) 12
(e) 13

**Directions (137-140): The pie chart shows the percentage distribution of total cost of a firm to make a unit of an article. The total revenue of the firm is Rs 78125 to sell all the articles. Read the following pie chart carefully and answer the questions given below.**




**Note: (i)** The information about one unit product is given:
(a) Net profit = Gross profit -Tax
(b) Tax = one -fifth of gross profit
(c) Net profit per unit = Rs 500
(d) Advertisement cost is Rs 25 more than the tax value.
**(ii)** Units sold = 25
**(iii)** Selling price is equal for all the units.

**Q137. Find the difference between total cost of 12 units and total advertisement cost of 18 units (in Rs).**

(a) 24200
(b) 22400
(c) 27300
(d) 28400
(e) 20200

**Q138. If no tax is deducted, then find the sum of the packaging cost of three-unit articles and net profit earned by selling those articles (in Rs).**
(a) 4250
(b) 4000
(c) 4500
(d) 5500
(e) 3000

**Q139. Manufacturing one unit of article required 15 kg of material which consists material X and material Y. If per kg of material X cost Rs 30 and total cost material X is Rs 300, then find the per kg cost of material Y (in Rs).**
(a) 150
(b) 115
(c) 105
(d) 125
(e) 145

**Q140. If selling price per unit is increased by 20% and gross profit remains same, then find the difference between new advertisement cost of four article and the previous advertisement cost of four articles (in Rs).**
(a) 30
(b) 25
(c) 35
(d) 37.5
(e) 40

## Solutions

**S1. Ans.(c)**
**Sol.** The term "jumble" implies a disorderly mixture or collection. In the context of tectonic plates, the idea is that they are not neatly arranged but rather in a state of disarray, akin to a puzzle. "Jostling" fits well here, meaning the plates are moving or pushing against each other in a chaotic manner.
(a) friction: The resistance that one surface or object encounters when moving over another.
(b) overlapped: To extend over and cover part of the same surface as something else.
(c) jostling: To push, elbow, or bump against (someone) roughly, typically in a crowd.
(d) dividing: To separate or be separated into parts.

**S2. Ans.(e)**
**Sol.** The word "stabilize" is incorrect in this context because it suggests a sense of maintaining stability or balance, which doesn't align with the idea that the plates are actually destroyed. The sentence talks about the conventional wisdom that suggests sinking tectonic plates must remain intact to keep pulling on the portion behind them. "Remain" fits the context, meaning to stay in a particular state, in this case, staying intact.
(b) routed: Defeated and forced to retreat or withdraw.

(c) makes: Causes to exist or happen.
(d) endured: Suffered (something painful or difficult) patiently.
(e) remain: To stay in a particular place or condition.

**S3. Ans.(b)**
**Sol.** The word "improved" doesn't fit the context of the sentence. In this context, the passage is discussing what happens to tectonic plates as they sink into the Earth's mantle. The idea is that the plates are undergoing changes, but "improved" suggests a positive enhancement, which doesn't align with the subsequent explanation that they are "not so much that they break apart entirely."
The sentence is discussing the condition of tectonic plates as they sink into the Earth's interior. The word "weakened" means to become less strong or powerful, which fits the context of the plates being changed but not breaking apart entirely.
(a) weak: Lacking the power to perform physically demanding tasks.
(b) weakened: Made less strong or powerful.
(c) weaken: To make or become weaker.
(e) worse: Of poorer quality or a lower standard; more unpleasant or unwelcome.

**S4. Ans.(a)**
**Sol.** The word "display" is incorrect in this context. When referring to a scientific or computational model, the appropriate term is "showed" or "illustrated." These terms convey the idea that the model presented certain information or results.
The sentence is about the results or presentation of a model that represents the behavior of tectonic plates. "Showed" is the appropriate term here, meaning to present or display.
(a) showed: Past tense of "show," meaning to present or display.
(b) demonstrate: To clearly show the existence or truth of something by giving proof or evidence.
(d) captured: Caught or arrested.
(e) illustrate: To provide visual representation or explanation; to make clear by using examples.

**S5. Ans.(b)**
**Sol.** The word "observing" is incorrect in this context. The correct term should describe an action that the model is performing on the rock's structure.
The sentence is describing the changes happening to the tectonic plate as it enters the mantle. "Bending" is the appropriate term, indicating a change in shape or structure, which aligns with the context of the sentence.
(a) colliding: Coming into violent contact with.
(b) bending: Changing or adjusting in shape; the act of becoming curved.
(c) replacing: Taking the place of something or someone.
(e) molding: Shaping or forming something, often using a mold.

**S6. Ans.(a)**
**Sol.** The first statement after the rearrangement is statement (A).
**Analysis:**
(A) "The book is not as fascinating as Harry Potter." This sentence sets the initial context by comparing the book to a well-known and fascinating work, Harry Potter.
(C) "Even though this book does not feature magical elements, it revolves around aspirations and wishes." This sentence provides additional information about the book's theme, emphasizing that while it may lack magical elements, it focuses on aspirations and wishes.
(B) "However, it has sold more copies than any other books in the past decade." This sentence introduces a surprising or contrasting fact about the book's commercial success, despite the initial comparison to Harry Potter and the theme mentioned earlier. It adds a layer of unexpected information, revealing the book's popularity in terms of sales.
So, the sequence (A) (C) (B) creates a coherent flow from the initial comparison to the book's theme and finally to its commercial success.

**S7. Ans.(b)**
**Sol.** The last statement after the rearrangement is statement (B).

**Analysis:**
(A) "The book is not as fascinating as Harry Potter." This sentence sets the initial context by comparing the book to a well-known and fascinating work, Harry Potter.
(C) "Even though this book does not feature magical elements, it revolves around aspirations and wishes." This sentence provides additional information about the book's theme, emphasizing that while it may lack magical elements, it focuses on aspirations and wishes.
(B) "However, it has sold more copies than any other books in the past decade." This sentence introduces a surprising or contrasting fact about the book's commercial success, despite the initial comparison to Harry Potter and the theme mentioned earlier. It adds a layer of unexpected information, revealing the book's popularity in terms of sales.
So, the sequence (A) (C) (B) creates a coherent flow from the initial comparison to the book's theme and finally to its commercial success.

**S8. Ans.(c)**
**Sol.** The most suitable word to fill in statement (B) is: (c) more
The correct sentence would be: "However, it has sold more copies than any other books in the past decade."
The word "more" is the suitable choice, as it conveys a comparative amount, emphasizing that the book has sold a greater number of copies than any other books in the past decade.
(a) few: This option is not suitable because "few" implies a small number, which would contradict the idea that the book has outsold other books.
(b) many: While "many" generally implies a large quantity, it is not the best fit in this context because it does not provide the necessary comparative aspect. The sentence is emphasizing that the book has sold more copies than any other books, not just a large number in absolute terms.
(d) much: "Much" is typically used with uncountable nouns, and since we are talking about the number of copies (which is countable), it is not the appropriate choice.
(e) little: "Little" implies a small amount and is not suitable in the context of comparing the book's sales to other books.
In summary, the word "more" is the most appropriate choice in this context as it conveys a comparative quantity, emphasizing that the book has sold a greater number of copies than any other books in the past decade.

**S9. Ans.(d)**
**Sol.** The most suitable word to fill in statement (C) is: "**revolves**"
The correct sentence would be: "Even though this book does not feature magical elements, it **revolves** around aspirations and wishes."
Explanation:
The word "revolves" is appropriate in this context to convey that the book centers or focuses on aspirations and wishes. It implies that these themes are central to the narrative, forming the core or main subject matter around which the book is structured.

**S10. Ans.(b)**
**Sol.** The error is in part (B) of the sentence:
Correction: "The team of researchers **is** conducting experiments to test their hypothesis."
Explanation:
The subject "team" is a collective noun, and when it is the subject of a sentence, it is treated as singular. Therefore, the correct verb form is "is" instead of "are."

**S11. Ans.(b)**
**Sol.** The error is in part (B) of the sentence:
Correction: "Hardly had the sun set **when** the nocturnal creatures emerged, filling the night with their calls and activities."
Explanation:
When using "hardly" in a sentence, it is followed by "when" rather than "then."

**S12. Ans.(e)**
**Sol.** The sentence is correct as it is. There is no grammatical error.
So, the correct answer is "No error".

**S13. Ans.(a)**
**Sol.** The error is in part (A) of the sentence:
Correction: "Not only **did she** complete the project ahead of schedule, but she also did so with exceptional attention to detail."
Explanation:
When using "Not only...but also" in a sentence, the auxiliary verb "did" should be placed before the subject "she" to maintain proper grammatical structure.

**S14. Ans.(c)**
**Sol.** The error is in part (C) of the sentence:
Correction: "After I had finished my homework, I **finally** relaxed and watched a movie."
Explanation:
The past perfect tense is used to express an action that happened before another action in the past. In this case, "had finished" is in the past perfect tense, indicating that the completion of homework occurred before the relaxation and movie-watching.

**S15. Ans.(e)**
**Sol.** The sentence is correct, and there is no error.

**S16. Ans.(a)**
**Sol.** The correct pair of words to fill the blanks is: "**broad, quote**".
The sentences would be:
**(I)** The university offers a **broad** range of courses, allowing students to explore diverse academic disciplines.
**(II)** Before writing the essay, she decided to find a relevant **quote** to add depth and insight to her argument.
Here are the meanings of the words:
**Broad:** Wide in range or extent; covering a large number of subjects or areas.
**Significant:** Important or noteworthy; having meaning or consequence.
**Adoption:** The act of choosing or taking up something, such as a method, idea, or practice.
**Limited:** Restricted or confined in range, quantity, or extent.
**Caption:** A title or brief explanation accompanying an illustration, photo, diagram, or similar item.
**Variant:** A form or version of something that differs in some respect from other forms of the same thing.
**Alacrity:** Eagerness or readiness to do something with cheerful promptness; liveliness.
**Accepted:** Generally approved or recognized as correct or suitable; acknowledged as valid.
**Exception:** An instance or case not conforming to the general rule; something that deviates from the norm.

**S17. Ans.(c)**
**Sol.** The correct pair of words to fill the blanks is: "**pragmatic, resilient**".
The sentences would be:
**(I)** In the face of budget constraints, the team took a **pragmatic** approach, focusing on cost-effective solutions.
**(II)** Despite facing numerous challenges, the community proved to be **resilient**, rebuilding and thriving after the natural disaster.
Here are the meanings of the words:
**Pragmatic:** Dealing with things sensibly and realistically; guided by practical considerations.
**Resilient:** Able to withstand or recover quickly from difficult conditions; able to spring back into shape or position after bending or stretching.
**Practical:** Concerned with actual use or practice; likely to be effective in real-life situations.
**Outsourced:** Obtained from an outside or external source; typically refers to contracting tasks to external companies or individuals.
**Plausible:** Seeming reasonable or probable; having an appearance of truth or credibility.
**Moved:** Stirred emotionally; affected with strong feelings or emotions.
**Probable:** Likely to happen or be true, though not certain.
**Entrench:** Establish (an attitude, habit, or belief) so firmly that change is very difficult or unlikely.
**Intolerable:** Unable to be endured or tolerated; unbearable.
**Competitive:** Having a strong desire to compete or succeed; characterized by rivalry or competition.

**S18. Ans.(e)**
**Sol.** The correct pair of words to fill the blanks is: "**formidable, alleviate**".
The sentences would be:
**(I)** The task ahead was **formidable**, requiring a combination of skill, determination, and strategic planning.
**(II)** The new medication helped **alleviate** the patient's pain.
Here are the meanings of the words:
**Ambivalent:** Having mixed feelings or contradictory ideas about someone or something.
**Elevate:** To raise or lift to a higher position.
**Destructive:** Causing great and irreparable harm or damage.
**Postpone:** To delay or reschedule an event or activity.
**Surreptitious:** Kept secret, especially because it would not be approved of.
**Convey:** To transport or carry to a place; to communicate or express.
**Impediment:** An obstacle or hindrance that prevents movement or progress.
**Relocate:** To move to a new place or position.
**Formidable:** Inspiring fear or respect through being impressively large, powerful, intense, or capable.
**Alleviate:** To make a situation or symptom less severe or more bearable.

**S19. Ans.(a)**
**Sol.** The correct pair of words to fill the blanks is: "**profound, complex**".
The sentences would be:
**(I)** The professor delivered a **profound** lecture on the impact of technology on society.
**(II)** Solving the intricate puzzle required a **complex** series of logical steps and careful analysis.
Here are the meanings of the words:
**Profound:** Having deep meaning or significance; intellectually deep or penetrating.
**Complex:** Composed of many interconnected parts; complicated or intricate.
**Crucial:** Decisive or critical, especially in the success or failure of something.
**Sanguine:** Optimistic, especially in a difficult situation; confident and hopeful.
**Irrelevant:** Not connected with or relevant to the subject or situation.
**Lucid:** Clear and easy to understand; mentally sound or rational.
**Remarkable:** Worthy of attention; extraordinary or exceptional.
**Capitulate:** To surrender or give in to demands; to cease resisting or fighting.
**Trivial:** Of little value or importance; insignificant or inconsequential.
**Ineffable:** Too great or extreme to be expressed or described in words; beyond expression.

**S20. Ans.(d)**
**Sol.** The correct pair of words to fill the blanks is: "**deliberate, intricate**".
The sentences would be:
**(I)** After careful and **deliberate** consideration, the committee reached a consensus on the proposed changes.
**(II)** The scientist studied the **intricate** structure of the cell, unraveling the complexities that govern life at the microscopic level.
Here are the meanings of the words:
**Analysis:** The process of examining something in detail to understand its nature or to determine its essential features.
**Sophisticated:** Highly developed or complex; having a refined or intricate quality.
**Remorseful:** Feeling deep regret or guilt for a wrong committed.
**Complicated:** Involving many different and confusing aspects; intricate or complex.
**Deliberate:** Done consciously and intentionally; carefully considered or planned.
**Intricate:** Very detailed or complex; having many interconnected parts or elements.
**Discussing:** Engaging in conversation or dialogue about a particular topic.
**Complex:** Composed of many interconnected parts; complicated or intricate.
**Cautious:** Showing careful consideration or awareness of potential risks; being wary or prudent.
**Troubled:** Disturbed or distressed; experiencing difficulty or worry.

**S21. Ans.(b)**
**Sol.** A suitable word that can serve as an antonym for all three highlighted words (noble, generous, highest) is "**mean**."

Let's understand the highlighted words:
(A) Despite facing adversity, he chose to take the **noble** path, always prioritizing integrity and compassion in his actions.
**Noble:** In this context, "noble" describes a moral quality or virtue. The sentence suggests that despite challenges, the person chose to follow a path characterized by high moral principles, integrity, and compassion. It reflects a commitment to doing what is morally right.
(B) His **generous** offer to cover the expenses for the entire team's training workshop was greatly appreciated.
**Generous:** "Generous" indicates a willingness to give, share, or provide more than is usual or expected. The sentence conveys that the person made a thoughtful and open-handed offer to cover the expenses of the team's training workshop, demonstrating kindness and a willingness to help others.
(C) With the **highest** score in the competition, she secured the top spot and a gold medal.
**Highest:** In this sentence, "highest" denotes the topmost position or score in the competition. It indicates that the person achieved the maximum or best score, securing the top spot and winning a gold medal. It reflects excellence and superiority in performance.
Let's analyze the meanings of the given words:
(a) **Righteous**:
Meaning: Morally right or justifiable; virtuous. Acting in accord with divine or moral law.
(b) **Mean**:
Meaning: Lacking in kindness or generosity; unkind. Showing a lack of sympathy or understanding.
Mean also means the average of the numerical values set.
(c) **Arrogant**:
Meaning: Having an exaggerated sense of one's own importance or abilities. Displaying a proud and disdainful manner.
(d) **Lowest**:
Meaning: The superlative form of low, indicating the least high or smallest in amount, extent, or degree. The bottommost or least elevated position.
(e) **Unkind**:
Meaning: Lacking in kindness or compassion; not considerate or friendly. Acting in a way that causes harm or distress to others.
Therefore, "mean" can be used as an antonym for "noble", "generous" and "highest".

**S22. Ans.(d)**
**Sol.** The correct answer is: "**delay**".
Let's analyze each highlighted word in the given sentences and identify the word with a similar meaning:
(A) The progress of the construction project stalled during the winter months due to adverse weather conditions.
Highlighted Word: Stalled
Similar Meaning: Delayed
Explanation: In this context, "stalled" means to come to a stop or to be delayed. The construction project's progress was delayed due to adverse weather conditions.
(B) The negotiations between the parties stalled, leading to a temporary impasse.
Highlighted Word: Stalled
Similar Meaning: Delayed
Explanation: In this context, "stalled" means to come to a standstill or to be delayed. The negotiations between the parties were delayed, leading to a temporary impasse or deadlock.
(C) He tried to stall the meeting by bringing up unrelated topics.
Highlighted Word: Stall
Similar Meaning: Delay
Explanation: In this context, "stall" means to intentionally cause a delay. The person tried to delay the meeting by introducing unrelated topics.
Now, let's look at the meanings of the words provided in the answer choices:
(a) **Stayed:** Remained in a place or position.
(b) **Vacation:** A period of time devoted to leisure or travel, typically for recreation.
(c) **Avoid:** Keep away from or stop oneself from doing something.
(d) **Delay:** Postpone or defer an action to a later time.
(e) **Abandon:** Cease to support or look after; desert or leave.
The word with a similar meaning to "stalled" is "delayed," making the correct answer (d) delay.

**S23. Ans.(d)**
**Sol.** The most suitable option to complete the sentence is: "**cunning**".
The sentence describes Aisha's admirable qualities such as resilience, determination, and empathy in addressing the water scarcity issue in her village. The blank is asking for a word that does not apply to Aisha. "Cunning" is the suitable choice as it implies deceit or cleverness in achieving personal goals, which is not a characteristic attributed to Aisha in the given context. I appreciate your understanding, and I apologize for any confusion caused by the initial mistake.

**S24. Ans.(b)**
**Sol.** The most appropriate term to complete the sentence is: "**frazzled**".
The paragraph depicts Mark in a state of distress and chaos. He is rushing to the office, realizing he is late and has forgotten an essential file for a meeting. The word "distressed" is already used in the paragraph to convey Mark's emotional state. "Frazzled" is an additional term that captures the idea of being extremely agitated or disheveled, often due to stress or confusion. In this scenario, Mark's forgetfulness, the urgency to retrieve the document, and the subsequent exhaustion at the end of the day contribute to the sense that he is indeed feeling frazzled. This term aligns well with the narrative of Mark experiencing unexpected challenges and setbacks throughout the day.

**S25. Ans.(a)**
**Sol.** Amelia can be described as "**resilient**" based on her response to the unexpected challenge during her first solo exhibition. Despite facing distress due to a sudden rainstorm and the threat it posed to her vibrant artworks, Amelia demonstrated resilience. Resilience refers to the ability to bounce back from difficulties, adapt to unexpected situations, and overcome adversity. In this case, Amelia's determination and swift action in relocating her paintings with the help of gallery staff exemplify her resilience in ensuring the success of her showcase despite the unforeseen obstacle.

**S26. Ans.(c)**
**Sol.** The correct sequence is BADC.
The sentence formed after rearranging the words is: "The **mesmerizing (B)** melody of the violinist's **performance (A)** had the power to **captivate (D)** the entire audience, holding them in rapt **attention (C)** throughout the concert."

**S27. Ans.(a)**
**Sol.** The correct sequence is ABDC.
The sentence formed after rearranging the words is: "Sarah's **meticulous (A)** attention to detail was **evident (B)** in her beautifully crafted artwork, where every stroke and color choice **reflected (D)** a deliberate and **precise (C)** approach to her creative process."

**S28. Ans.(e)**
**Sol.** The given sentence is correct and it does not require any rearrangement of the words.

**S29. Ans.(e)**
**Sol.** Refer to the lines, **"Big Pharma" giants lead in developing diverse medications, subject to stringent approval processes by the U.S. Food and Drug Administration (FDA).**"
(a) **By strictly following the rigorous approval procedures established by regulatory bodies like the U.S. Food and Drug Administration (FDA):**
This statement highlights how major pharmaceutical companies, or Big Pharma, contribute to medical advancements by adhering to strict regulatory approval procedures. This is a valid contribution to ensuring the safety and efficacy of drugs.
(b) **These companies are at the forefront of undertaking initiatives, investing significantly in discovering new drugs and innovative treatments:**
This statement emphasizes that Big Pharma takes the lead in initiating research and development activities, investing substantial resources in discovering new drugs and innovative treatments. This is also a valid and significant contribution to medical advancements.
Since both (a) and (b) individually represent valid and crucial ways in which Big Pharma contributes to medical advancements, option (e) correctly combines these aspects, stating that major pharmaceutical companies contribute both by adhering to regulatory approval procedures and by leading research initiatives and investments in new drugs.

**S30. Ans.(b)**
**Sol.** Refer to the lines, "**Yet, challenges persist, including debates on drug pricing and accessibility**."
Analysis:
**(I)** "**The pharmaceutical industry faces challenges in building and maintaining public trust**."
This statement is not explicitly mentioned in the passage.
**(II)** "**High costs of certain medications raise concerns about affordability**."
This statement is mentioned in the passage: "Debates on drug pricing and accessibility."
(III) "**Ensuring equitable access to essential medications remains a challenge**."
This statement is implied in the passage, especially in the context of debates on drug pricing and accessibility.
(IV) "**Competition from international pharmaceutical companies, along with the rise of generic drugs.**"
This statement is not explicitly mentioned in the passage.
Thus, only statements (II) and (III) are directly supported or implied by the information in the passage.

**S31. Ans.(e)**
**Sol.** Option (A) aligns with the statement, "**The industry, balancing innovation and public health, symbolizes a dynamic force in advancing medical science.**" This highlights the industry's ability to balance innovation and public health.
Option (B) corresponds to the idea of the industry's commitment to advancing medical science, coupled with a focus on public health.
Option (C) is not mentioned in the passage. The passage specifically states about the growth in country's economy and employment opportunities.
Therefore, both (A) and (B) capture essential aspects of the significance of the U.S.'s role in global pharmaceutical leadership, as highlighted in the passage.

**S32. Ans.(b)**
**Sol.** Refer to the lines, "**State purchases of pharmaceuticals are declining, and manufacturers' margins are under pressure due to low regulated price increases for scheduled pharmaceuticals in a high inflation environment**"
The main factor contributing to the challenge of maintaining profitable margins for pharmaceutical manufacturers in South Africa is (b) Minimal regulated price increases for scheduled drugs amid high inflation. Manufacturers face pressure on their margins due to the low regulated price increases for scheduled pharmaceuticals, particularly in an environment marked by high inflation. This situation makes it difficult for pharmaceutical companies to offset rising production costs and sustain healthy profit margins.
Let's analyze the other options:
(a) **Excessive government regulations leading to inflated production costs and reduced profit margins.**
This option suggests that excessive government regulations are the primary factor behind inflated production costs and reduced profit margins. While regulations can impact production costs, the passage doesn't provide explicit information about excessive regulations as the main contributor to the challenge.
(c) **Fluctuating consumer demand and unpredictable market conditions impacting manufacturers' profitability.**
The passage does mention consumer spending patterns and consolidation in the retail sector, but it doesn't emphasize fluctuating consumer demand or unpredictable market conditions as the primary challenge for pharmaceutical manufacturers' profitability.
(d) **Limited access to raw materials and disruptions in the supply chain affecting the cost-effectiveness of pharmaceutical production.**
The passage mentions limited access to critical vaccines and investments to localize vaccine raw material, but it doesn't explicitly state that limited access to raw materials and disruptions in the supply chain are the primary contributors to the challenge of maintaining profitable margins.
(e) **Growing competition from new entrants and generic drug manufacturers, placing downward pressure on profit margins.**
The passage discusses companies like Clicks and Dis-Chem in the retail sector and mentions consumer spending patterns, but it doesn't specifically highlight growing competition from new entrants and generic drug manufacturers as the main factor affecting profit margins for pharmaceutical manufacturers.

In summary, option (b) aligns most closely with the information provided in the passage regarding the challenge of maintaining profitable margins for pharmaceutical manufacturers in South Africa.

**S33. Ans.(c)**
**Sol.** The correct answer is:
(c) Only (III)
Refer to the lines, "**Consumer spending patterns have forced consolidation in the retail sector, the growth of private label sales, growth in convenience formats, and diversification into new services and products**."
Explanation:
According to the passage, consolidation in the retail sector in South Africa has been primarily driven by consumer spending patterns. The passage states that consumer spending patterns have forced consolidation in the retail sector, leading to the growth of private label sales, expansion into convenience formats, and diversification into new services and products. Therefore, the key driver mentioned in the passage is consumer spending patterns, making option (c) "Only (III)" the correct answer.

**S34. Ans.(a)**
**Sol.** Statement (IV) is false.
For statement (I) refer, "**State purchases of pharmaceuticals are declining, and manufacturers' margins are under pressure due to low regulated price increases for scheduled pharmaceuticals in a high inflation environment.**" Thus, statement (I) is true.
For statement (II) refer, "**In the retail sector, companies like Clicks and Dis-Chem have wholesale volume advantages and an ever-increasing footprint**" Thus, statement (II) is true.
For statement (III) refer, "**South Africa has established the capacity and capabilities to formulate and supply products such as ARVs (to treat HIV) and radiopharmaceuticals**." Thus statement (III) is true.
For statement (IV) refer, "**While almost 70% of pharmaceutical products used in South Africa are locally produced, almost all active pharmaceutical ingredients and various finished products are imported**." Hence, statement (IV) is False.

**S35. Ans.(d)**
**Sol.** Refer to the lines, "**Despite being ranked the second freest nation globally in 2021, issues arise from property being the primary source of wealth for New Zealanders, a widening equality gap, and the challenging living conditions for approximately 600,000 households residing in non-owned properties**."
Explanation:
The passage describes a dichotomy, which is a contrast or division, between New Zealand's high global freedom ranking and the challenges it confronts, such as issues related to property wealth, a widening equality gap, and challenging living conditions for a significant number of households. Option (d) accurately captures this dichotomy by mentioning both the high global freedom ranking and the challenges associated with property wealth, inequality, and living conditions, making it the correct choice. The other options either misrepresent the relationship as harmonious or focus solely on one aspect without acknowledging the comprehensive challenges outlined in the passage.

**S36. Ans.(a)**
**Sol.** The correct answer is: "**Landlords operated in an environment marked by a deficiency of regulation or established standards.**"
Refer to the lines, "**Landlords were given deadlines to comply, with significant penalties for non-compliance, reflecting a shift in the system from an unregulated environment to one with minimum standards**."
Explanation:
Option (a) accurately reflects the information presented in the passage. Before the introduction of deadlines and penalties, the regulatory environment for landlords was described as unregulated, lacking in specific regulations or standards. This aligns with the statement that there was a deficiency of regulation or established standards in place for landlords during that period.

**S37. Ans.(c)**
**Sol.** The correct answer is: "**Insufficiency in holding individuals or entities accountable for ensuring the well-being of homes and enforcing housing standards**."
Explanation:
(a) is incorrect because the passage doesn't suggest the absence of state responsibility but rather an inadequacy in accountability mechanisms.
(b) is incorrect because the passage doesn't imply a joint responsibility for formulating policies but emphasizes an issue with holding entities accountable.
(d) is incorrect because it combines options (a) and (d), neither of which accurately reflects the passage's meaning.
(e) is incorrect as it introduces a concept of uncertainty not explicitly mentioned in the passage. The passage highlights an inadequacy rather than uncertainty.

**S38. Ans.(a)**
**Sol.** The most appropriate word to fill in the blank is: "**protecting**".
Meanings of the words:
(a) **protecting:** Safeguarding or defending, ensuring the safety or well-being of something or someone.
(b) **rejuvenating:** Restoring to a more youthful or energetic state, renewing or revitalizing.
(c) **reviving:** Bringing back to life or consciousness, renewing interest or vitality.
(d) **capturing:** Taking control or gaining attention, seizing or holding something.
(e) **enlightening:** Providing insight, knowledge, or spiritual illumination, bringing understanding or clarity.

**S39. Ans.(d)**
**Sol.** The true statement is "**The Human Rights Commission recommends the establishment of an independent housing ombudsman**."
To validate the answer refer,
For (a), "Despite being ranked the second freest nation globally in 2021"
For (b), "To address this, the government introduced healthy homes standards in 2019,"
The government introduced healthy homes standards in 2019, not in 2021.
For (c), "However, issues of accountability persist, with the compliance and investigations unit facing limitations in overseeing the vast rental property landscape."
The passage indicates that issues of accountability persist, and the compliance and investigations unit faces limitations, suggesting that it has not successfully addressed all accountability issues.
For (d), "The Human Rights Commission recommends urgent establishment of independent accountability mechanisms, such as a housing ombudsman"
This statement is true. The passage mentions the Human Rights Commission recommending the establishment of an independent accountability mechanism, such as a housing ombudsman.
For (e), "With tenants currently shouldering much of the responsibility for enforcing their rights"
The passage does mention that tenants currently shoulder much of the responsibility for enforcing their rights in the housing sector, but it doesn't quantify the portion as "only a little."

**S40. Ans.(d)**
**Sol.** The most suitable word that can replace the highlighted word "shouldering" in the passage is: "**pushing**".
The meanings of the words:
(a) **anticipating:** Expecting or looking forward to something, foreseeing or predicting.
(b) **overtaking:** Passing or moving ahead of something or someone, usually in a race or competition.
(c) **perplexing:** Confusing or puzzling, making someone feel uncertain or baffled.
(d) **pushing:** Exerting force to move something forward, or in this context, taking on a responsibility or burden.
(e) **diverting:** Changing the course or direction, redirecting attention or resources.

**S41. Ans.(d)**
**Sol.**

| Month | Year | |
|---|---|---|
| | 1998 | 1999 |
| January | | |
| February | | |
| March | J | L |
| April | | P |
| May | Q | |
| June | | K |
| July | | |
| August | U | |
| September | | M |
| October | | H |
| November | B | G |
| December | S | Z |

**S42. Ans.(c)**
**Sol.**

| Month | Year | |
|---|---|---|
| | 1998 | 1999 |
| January | | |
| February | | |
| March | J | L |
| April | | P |
| May | Q | |
| June | | K |
| July | | |
| August | U | |
| September | | M |
| October | | H |
| November | B | G |
| December | S | Z |

**S43. Ans.(d)**
**Sol.**

| Month | Year | |
|---|---|---|
| | 1998 | 1999 |
| January | | |
| February | | |
| March | J | L |
| April | | P |
| May | Q | |
| June | | K |
| July | | |
| August | U | |
| September | | M |
| October | | H |
| November | B | G |
| December | S | Z |

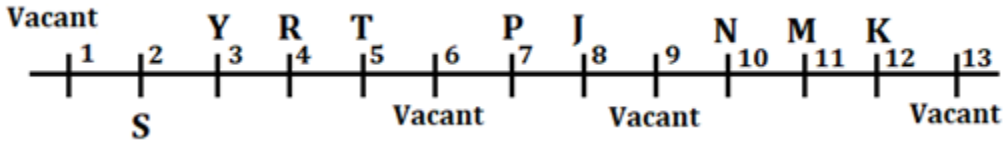
**S44. Ans.(c)**
**Sol.**

| Month | Year | |
|---|---|---|
| | 1998 | 1999 |
| January | | |
| February | | |
| March | J | L |
| April | | P |
| May | Q | |
| June | | K |
| July | | |
| August | U | |
| September | | M |
| October | | H |
| November | B | G |
| December | S | Z |

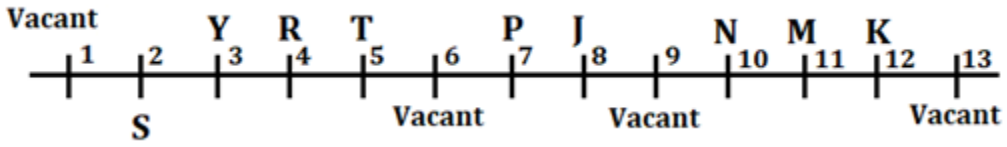
**S45. Ans.(e)**
**Sol.**

| Month | Year | |
|---|---|---|
| | 1998 | 1999 |
| January | | |
| February | | |
| March | J | L |
| April | | P |
| May | Q | |
| June | | K |
| July | | |
| August | U | |
| September | | M |
| October | | H |
| November | B | G |
| December | S | Z |

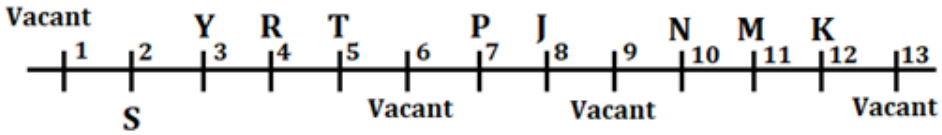
**S46. Ans.(b)**
**Sol.**



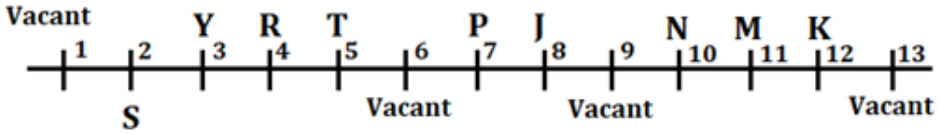

**S47. Ans.(e)**
**Sol.**



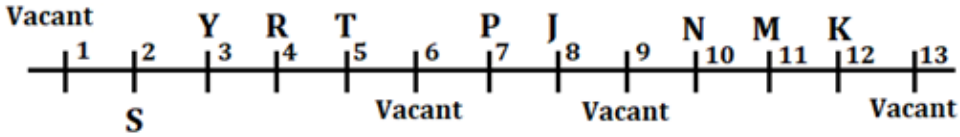
**S48. Ans.(c)**
**Sol.**




**S49. Ans.(c)**
**Sol.**




**S50. Ans.(d)**
**Sol.**




**S51. Ans.(a)**
**Sol.**

| Code | 1 | 2 | 3 |
|---|---|---|---|
| Letter | B | C | D |
| | F | G | H |
| | J | K | L |
| | Q | R | S |
| | T | V | W |
| | X | Y | Z |

M - #, N - *, P - $

**S52. Ans.(c)**
**Sol.**

| Code | 1 | 2 | 3 |
|---|---|---|---|
| Letter | B | C | D |
| | F | G | H |
| | J | K | L |
| | Q | R | S |
| | T | V | W |
| | X | Y | Z |

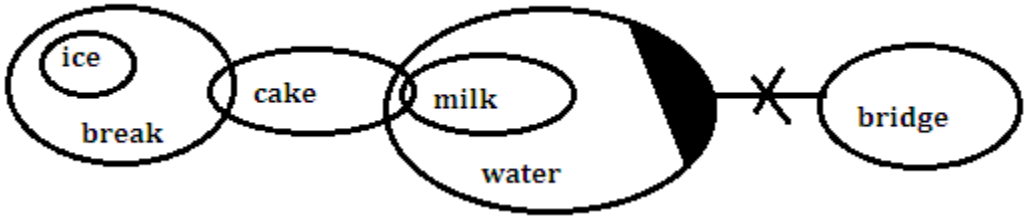
M - #, N - *, P - $

**S53. Ans.(d)**
**Sol.**

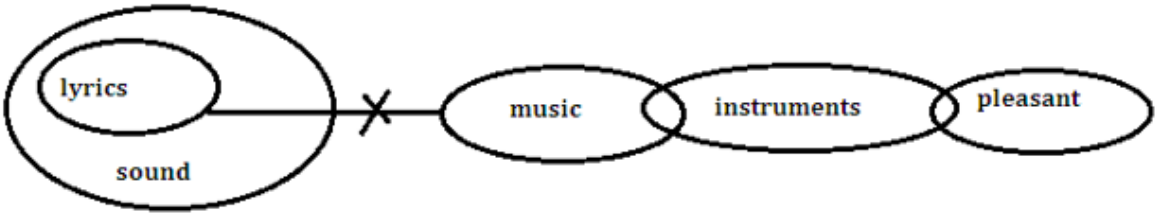
| Code | 1 | 2 | 3 |
|---|---|---|---|
| Letter | B | C | D |
| | F | G | H |
| | J | K | L |
| | Q | R | S |
| | T | V | W |
| | X | Y | Z |

M - #, N - *, P - $

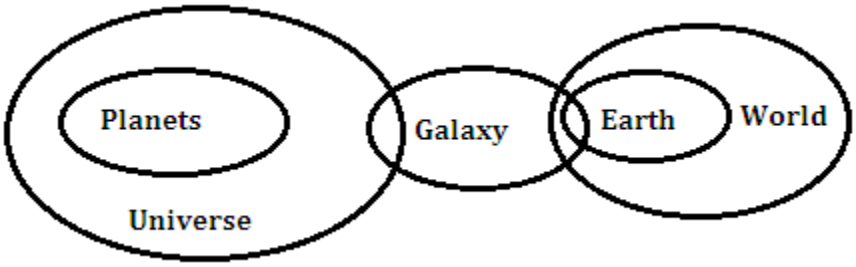
**S54. Ans.(a)**
**Sol.**




**S55. Ans.(e)**
**Sol.**




**S56. Ans.(b)**
**Sol.**




**S57. Ans.(c)**
**Sol. Final arrangement:**

| Floors | Flat A | Flat B |
|---|---|---|
| 5 | W | R |
| 4 | P | V |
| 3 | U | S |
| 2 | Y | Q |
| 1 | T | X |

**S58. Ans.(c)**
**Sol. Final arrangement:**

| Floors | Flat A | Flat B |
|---|---|---|
| 5 | W | R |
| 4 | P | V |
| 3 | U | S |
| 2 | Y | Q |
| 1 | T | X |

**S59. Ans.(b)**
**Sol. Final arrangement:**

| Floors | Flat A | Flat B |
|---|---|---|
| 5 | W | R |
| 4 | P | V |
| 3 | U | S |
| 2 | Y | Q |
| 1 | T | X |

**S60. Ans.(d)**
**Sol. Final arrangement:**

| Floors | Flat A | Flat B |
|---|---|---|
| 5 | W | R |
| 4 | P | V |
| 3 | U | S |
| 2 | Y | Q |
| 1 | T | X |

**S61. Ans.(e)**
**Sol. Final arrangement:**

| Floors | Flat A | Flat B |
|---|---|---|
| 5 | W | R |
| 4 | P | V |
| 3 | U | S |
| 2 | Y | Q |
| 1 | T | X |

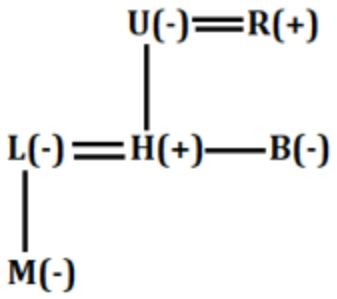
**S62. Ans.(a)**

**S63. Ans.(a)**
**Sol.** Statement (a)-True-Reason: As Bengaluru is an IT capital and Lamborghini has launched their car in Bengaluru not in another city. So, at least some Bengaluru people can purchase the car.
Statement (b)-False-Reason: It is not nowhere mentioned, and it cannot be inferred.
Statement (c)-False-Reason: In the given information, launch and expansion in India only is discussed. Nothing can be inferred about neighbouring countries.

**S64. Ans.(a)**
**Sol.** Only option (a) nullify the confidence of Italian car maker, other two statements support their confidence.

**S65. Ans.(e)**
**Sol.** Only II and III can be the assumption based on the given statement as nothing has been discussed about Mumbai and Bengaluru. And despite of high Import duty, Lamborghini has launched. So, option (II) and (III) can be assumed.

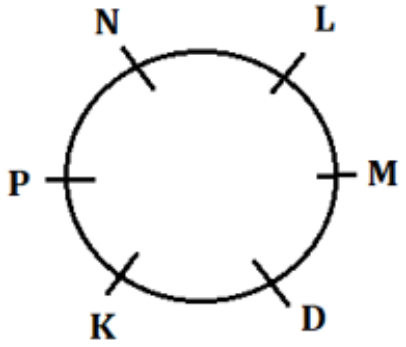
**S66. Ans.(a)**
**Sol.** U is grandmother of M.



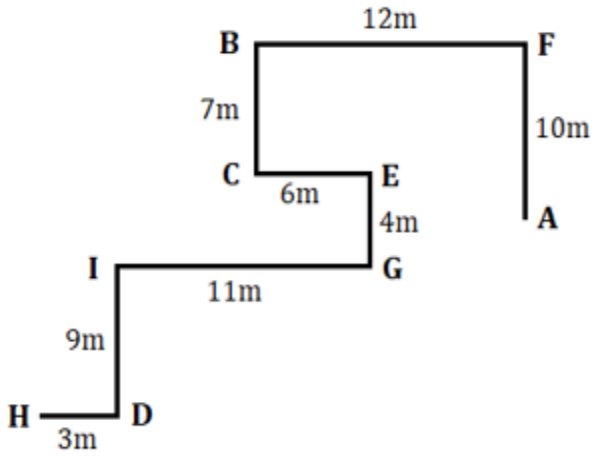

**S67. Ans.(a)**
**Sol.** F goes just after the one who goes on Friday.

| Days | Persons |
|---|---|
| Tuesday | B |
| Wednesday | G |
| Thursday | A |
| Friday | E |
| Saturday | F |
| Sunday | D |
| Monday | C |

**S68. Ans.(e)**
**Sol.**




**S69. Ans.(e)**
**Sol.**



**S70. Ans.(d)**
**Sol.** In an advertisement, it is focused on pimple and testing it means company has surely consider the common people issue. And people believe on tested product. Nothing can be considered for stock or sale of products.

**S71. Ans.(c)**
**Sol.**
**Final arrangement:**

| Stack X | Stack Y | Stack Z |
|---|---|---|
| A | D | N |
| P | B | R |
| | | |
| U | | |
| S | E | Q |
| | G | H |
| F | T | |

**S72. Ans.(e)**
**Sol.**
**Final arrangement:**

| Stack X | Stack Y | Stack Z |
|---|---|---|
| A | D | N |
| P | B | R |
| | | |
| U | | |
| S | E | Q |
| | G | H |
| F | T | |

**S73. Ans.(b)**
**Sol.**
**Final arrangement:**

| Stack X | Stack Y | Stack Z |
|---|---|---|
| A | D | N |
| P | B | R |
| | | |
| U | | |
| S | E | Q |
| | G | H |
| F | T | |

**S74. Ans.(d)**
**Sol.**

**Final arrangement:**

| Stack X | Stack Y | Stack Z |
|---|---|---|
| A | D | N |
| P | B | R |
| | | |
| U | | |
| S | E | Q |
| | G | H |
| F | T | |

**S75. Ans.(a)**
**Sol.**

**Final arrangement:**

| Stack X | Stack Y | Stack Z |
|---|---|---|
| A | D | N |
| P | B | R |
| | | |
| U | | |
| S | E | Q |
| | G | H |
| F | T | |

**S76. Ans.(e)**
**Sol.** Connection to common people and their basic needs is the most important tool to get success in election. So, it may be one of the reasons. Rallies by top ministers help in attracting voters. Promotion with injured left foot may help in gaining sympathy of Bengal people.

**S77. Ans.(d)**
**Sol.** By assuming that rallies by top ministers attract the voters to vote towards the party, BJP has entered the top ministers and chief ministers. In statement it is said that 8 phases of election, it means election commission takes a long duration of time to conduct election in Bengal. There is nothing discussed about election in two more states.

**S78. Ans.(b)**
**Sol.** Statement II is the cause and Statement, I is its effect as after a landslide victory of TMC, workers has started celebration and if there is celebration of winning by one party there will be some conflict with opposition.

**S79. Ans.(c)**
**Sol.** I. R # D (True)
II. T @ M (False)
III. B % N (False)

**S80. Ans.(a)**
**Sol.** I. P @ B (False)
II. M # O (True)
III. C $ V (False)

**S81. Ans.(d)**
**Sol.** I. Z @ E (True)
II. N $ S (True)
III. A # Z (False)

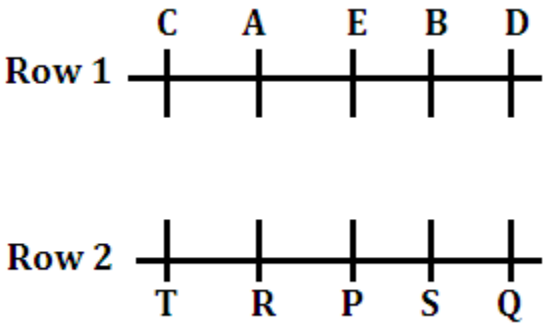
**S82. Ans.(b)**

**S83. Ans.(c)**

**S84. Ans.(d)**

**S85. Ans.(c)**

**S86. Ans.(d)**
**Sol.**




**S87. Ans.(a)**
**Sol.** Step I: Remove 5th digit and square of last digit in each number is taken
Step II: Addition of first and second digits in each number and the remaining digits remains same
Step III: The middle digit remains same whereas the first two digits are arranged in ascending order and the last two digits are arranged in descending order.
Step IV: Difference between first and second digits and twice of last digit in each number and middle digit will remain same.
Step V: Square of the sum of first and second digits and the square of the sum of third and fourth digits in each number are taken.
**Input: 142384 612385 393842 752403 540519 801517**
Step I: 142316 612325 39384 75249 540581 801549
Step II: 52316 72325 12384 12249 90581 81549
Step III: 25361 27352 12384 12294 09581 18594
Step IV: 3362 5354 1388 1298 9582 7598
Step V: 36 64 64 81 16 256 09 289 196 100 144 289

**S88. Ans.(c)**
**Sol.** Step I: Remove 5th digit and square of last digit in each number is taken
Step II: Addition of first and second digits in each number and the remaining digits remains same
Step III: The middle digit remains same whereas the first two digits are arranged in ascending order and the last two digits are arranged in descending order.
Step IV: Difference between first and second digits and twice of last digit in each number and middle digit will remain same.
Step V: Square of the sum of first and second digits and the square of the sum of third and fourth digits in each number are taken.

**Input: 142384 612385 393842 752403 540519 801517**
Step I: 142316 612325 39384 75249 540581 801549
Step II: 52316 72325 12384 12249 90581 81549
Step III: 25361 27352 12384 12294 09581 18594
Step IV: 3362 5354 1388 1298 9582 7598
Step V: 36 64 64 81 16 256 09 289 196 100 144 289

**S89. Ans.(d)**
**Sol.** Step I: Remove 5th digit and square of last digit in each number is taken
Step II: Addition of first and second digits in each number and the remaining digits remains same
Step III: The middle digit remains same whereas the first two digits are arranged in ascending order and the last two digits are arranged in descending order.
Step IV: Difference between first and second digits and twice of last digit in each number and middle digit will remain same.
Step V: Square of the sum of first and second digits and the square of the sum of third and fourth digits in each number are taken.
**Input: 142384 612385 393842 752403 540519 801517**
Step I: 142316 612325 39384 75249 540581 801549
Step II: 52316 72325 12384 12249 90581 81549
Step III: 25361 27352 12384 12294 09581 18594
Step IV: 3362 5354 1388 1298 9582 7598
Step V: 36 64 64 81 16 256 09 289 196 100 144 289

**S90. Ans.(b)**
**Sol.** Step I: Remove 5th digit and square of last digit in each number is taken
Step II: Addition of first and second digits in each number and the remaining digits remains same
Step III: The middle digit remains same whereas the first two digits are arranged in ascending order and the last two digits are arranged in descending order.
Step IV: Difference between first and second digits and twice of last digit in each number and middle digit will remain same.
Step V: Square of the sum of first and second digits and the square of the sum of third and fourth digits in each number are taken.
**Input: 142384 612385 393842 752403 540519 801517**
Step I: 142316 612325 39384 75249 540581 801549
Step II: 52316 72325 12384 12249 90581 81549
Step III: 25361 27352 12384 12294 09581 18594
Step IV: 3362 5354 1388 1298 9582 7598
Step V: 36 64 64 81 16 256 09 289 196 100 144 289

**S91. Ans.(b)**
**Sol.**
Pattern of the series:

| | | | | |
|---|---|---|---|---|
| ? = 4, | 8, | 72, | 4608, | 2880000 |
| | ×2 | × 9 | × 64 | × 625 |
| | $2^1$ | $3^2$ | $4^3$ | $5^4$ |

ATQ,

$\frac{X}{4} = \frac{5}{2}$

$X = 10$

Required value = 3X = 30

**S92. Ans.(d)**

**Sol.**

Pattern of the series:

? = 4, 8, 72, 4608, 2880000

$\times 2$ $\times 9$ $\times 64$ $\times 625$

$2^1$ $3^2$ $4^3$ $5^4$

Required value = $\frac{240}{100} \times 4 = 9.6$

**S93. Ans.(e)**

**Sol.**

$6x^2 + 11x + 4 = 0$

$6x^2 + 3x+8x + 4 = 0$

$3x(2x+1) + 4(2x+1) = 0$

$(2x+1)(3x+4) = 0$

$x = -\frac{4}{3}, -\frac{1}{2}$

Smallest root = $-\frac{4}{3}$

Required value = $64^{-\frac{4}{3}} = \frac{1}{64^{\frac{4}{3}}} = \frac{1}{256}$

**S94. Ans.(b)**

**Sol.**

Pattern of the series:

$2.2 \times 1.5 = \mathbf{3.3}$

$3.3 \times 2 = 6.6$

$6.6 \times 2.5 = 16.5$

$16.5 \times 3 = 49.5$

$49.5 \times 3.5 = 173.25$

$173.25 \times 4 = 693$

Wrong number = 30

**S95. Ans.(e)**
**Sol.**

Pattern of the series:

$\mathbf{82.5} \times \frac{1}{15} = 5.5$

$5.5 \times 13 = 71.5$

$71.5 \times \frac{1}{11} = 6.5$

$6.5 \times 9 = 58.5$

$58.5 \times \frac{1}{7} = \frac{58.5}{7}$

Wrong number = 82.2

**S96. Ans.(b)**
**Sol.**

Total officers in P = $5000 \times \frac{30}{100} = 1500$

Total officers in Q = $5000 \times \frac{40}{100} = 2000$

Total officers in R = $5000 \times \frac{20}{100} = 1000$

Total officers in S = $5000 \times \frac{10}{100} = 500$

Private officers in Q = $2000 \times \frac{40}{100} = 800$

Government officers in Q = $2000 - 800 = 1200$

Private officers in R = 200

Government officers in R = $1000 - 200 = 800$

Given, Total private officers in P, R and S = 1200

Total private officers in P and S = 1200 – 200 = 1000

Private officers in S = $1000 \times \frac{3}{10} = 300$

Private officers in P = $1000 \times \frac{7}{10} = 700$

Government officers in S = $500 - 300 = 200$

Government officers in P = $1500 - 700 = 800$

| Cities | Total number of officers | Number of private officers | Number of government officers |
|---|---|---|---|
| **P** | 1500 | 700 | 800 |
| **Q** | 2000 | 800 | 1200 |
| **R** | 1000 | 200 | 800 |
| **S** | 500 | 300 | 200 |

Total officers in city E = $5000 \times \frac{25}{100} = 1250$

Required degree = $\frac{360}{5000} \times 1250 = 90°$

**S97. Ans.(a)**
**Sol.**

Total officers in P = $5000 \times \frac{30}{100} = 1500$

Total officers in Q = $5000 \times \frac{40}{100} = 2000$

Total officers in R = $5000 \times \frac{20}{100} = 1000$

Total officers in S = $5000 \times \frac{10}{100} = 500$

Private officers in Q = $2000 \times \frac{40}{100} = 800$

Government officers in Q = $2000 - 800 = 1200$

Private officers in R = 200

Government officers in R = $1000 - 200 = 800$

Given, Total private officers in P, R and S = 1200

Total private officers in P and S = 1200 – 200 = 1000

Private officers in S = $1000 \times \frac{3}{10} = 300$

Private officers in P = $1000 \times \frac{7}{10} = 700$

Government officers in S = $500 - 300 = 200$

Government officers in P = $1500 - 700 = 800$

| Cities | Total number of officers | Number of private officers | Number of government officers |
|---|---|---|---|
| **P** | 1500 | 700 | 800 |
| **Q** | 2000 | 800 | 1200 |
| **R** | 1000 | 200 | 800 |
| **S** | 500 | 300 | 200 |

Required sum = $7 \times \left(300 \times \frac{45}{100} \times 12 + 300 \times \frac{55}{100} \times 10 + 200 \times \frac{1}{2} \times 8 + 200 \times \frac{1}{2} \times 5\right)$

$= 7 \times (1620 + 1650 + 800 + 500)$

$= 7 \times 4570$

$= 31990$

**S98. Ans.(d)**
**Sol.**

Total officers in P = $5000 \times \frac{30}{100} = 1500$

Total officers in Q = $5000 \times \frac{40}{100} = 2000$

Total officers in R = $5000 \times \frac{20}{100} = 1000$

Total officers in S = $5000 \times \frac{10}{100} = 500$

Private officers in Q = $2000 \times \frac{40}{100} = 800$

Government officers in Q = $2000 - 800 = 1200$

Private officers in R = 200

Government officers in R = $1000 - 200 = 800$

Given, Total private officers in P, R and S = 1200

Total private officers in P and S = 1200 – 200 = 1000

Private officers in S = $1000 \times \frac{3}{10} = 300$

Private officers in P = $1000 \times \frac{7}{10} = 700$

Government officers in S = $500 - 300 = 200$

Government officers in P = $1500 - 700 = 800$

| Cities | Total number of officers | Number of private officers | Number of government officers |
|---|---|---|---|
| **P** | 1500 | 700 | 800 |
| **Q** | 2000 | 800 | 1200 |
| **R** | 1000 | 200 | 800 |
| **S** | 500 | 300 | 200 |

Total tax paid by total officers in P = $1500 \times 2 = Rs.3000$ lakh

Total tax paid by total officers in Q = $2000 \times 1.2 = Rs.2400$ lakh

Total tax paid by total officers in R = $1000 \times 1.8 = Rs.1800$ lakh

Total tax paid by total officers in S = $500 \times 1.5 = Rs.750$ lakh

**From I.** Total tax paid by total officers in S = Rs 750 lakh

Total tax paid by total officers in Q = 2400 lakh

Total tax paid by total officers in S is not the one- fifth of the total tax paid by total officers in Q.

**From II.** Total tax paid by total officers in R =1800 lakh

Total tax paid by total officers in Q = 2400 lakh

Total tax paid by total officers in R is 75% of the total tax paid by total officers in Q.

**From III.** Total tax paid by total officers in P and S = 3000 + 750 = Rs. 3750 lakhs

Total tax paid by total officers in Q and R = 2400+1800 = Rs 4200 lakh

Total tax paid by total officers in P and S together is less than the total tax paid by total officers in Q and R together.

So, both II and III are correct.

**S99. Ans.(a)**
**Sol.**

Total officers in P = $5000 \times \frac{30}{100} = 1500$

Total officers in Q = $5000 \times \frac{40}{100} = 2000$

Total officers in R = $5000 \times \frac{20}{100} = 1000$

Total officers in S = $5000 \times \frac{10}{100} = 500$

Private officers in Q = $2000 \times \frac{40}{100} = 800$

Government officers in Q = $2000 - 800 = 1200$

Private officers in R = 200

Government officers in R = $1000 - 200 = 800$

Given, Total private officers in P, R and S = 1200

Total private officers in P and S = 1200 – 200 = 1000

Private officers in S = $1000 \times \frac{3}{10} = 300$

Private officers in P = $1000 \times \frac{7}{10} = 700$

Government officers in S = $500 - 300 = 200$

Government officers in P = $1500 - 700 = 800$

| Cities | Total number of officers | Number of private officers | Number of government officers |
|---|---|---|---|
| **P** | 1500 | 700 | 800 |
| **Q** | 2000 | 800 | 1200 |
| **R** | 1000 | 200 | 800 |
| **S** | 500 | 300 | 200 |

Required ratio = $1200 : 300 = 4 : 1$

**S100. Ans.(c)**
**Sol.**

Total officers in P = $5000 \times \frac{30}{100} = 1500$

Total officers in Q = $5000 \times \frac{40}{100} = 2000$

Total officers in R = $5000 \times \frac{20}{100} = 1000$

Total officers in S = $5000 \times \frac{10}{100} = 500$

Private officers in Q = $2000 \times \frac{40}{100} = 800$

Government officers in Q = $2000 - 800 = 1200$

Private officers in R = 200

Government officers in R = $1000 - 200 = 800$

Given, Total private officers in P, R and S = 1200

Total private officers in P and S = 1200 – 200 = 1000

Private officers in S = $1000 \times \frac{3}{10} = 300$

Private officers in P = $1000 \times \frac{7}{10} = 700$

Government officers in S = $500 - 300 = 200$

Government officers in P = $1500 - 700 = 800$

| Cities | Total number of officers | Number of private officers | Number of government officers |
|---|---|---|---|
| P | 1500 | 700 | 800 |
| Q | 2000 | 800 | 1200 |
| R | 1000 | 200 | 800 |
| S | 500 | 300 | 200 |

Total officers in P work in the non-banking sector = $1500 \times \frac{20}{100} = 300$

Private officers work in the non-banking sector = $700 \times \frac{40}{100} = 280$

Government officers work in the non-banking sector = $300 - 280 = 20$

**S101. Ans.(c)**

**Sol.**

Total officers in P = $5000 \times \frac{30}{100} = 1500$

Total officers in Q = $5000 \times \frac{40}{100} = 2000$

Total officers in R = $5000 \times \frac{20}{100} = 1000$

Total officers in S = $5000 \times \frac{10}{100} = 500$

Private officers in Q = $2000 \times \frac{40}{100} = 800$

Government officers in Q = $2000 - 800 = 1200$

Private officers in R = 200

Government officers in R = $1000 - 200 = 800$

Given, Total private officers in P, R and S = 1200

Total private officers in P and S = 1200 – 200 = 1000

Private officers in S = $1000 \times \frac{3}{10} = 300$

Private officers in P = $1000 \times \frac{7}{10} = 700$

Government officers in S = $500 - 300 = 200$

Government officers in P = $1500 - 700 = 800$

| Cities | Total number of officers | Number of private officers | Number of government officers |
|---|---|---|---|
| P | 1500 | 700 | 800 |
| Q | 2000 | 800 | 1200 |
| R | 1000 | 200 | 800 |
| S | 500 | 300 | 200 |

Required sum = $\frac{25}{100} \times 200 + \frac{40}{100} \times 800 = 50 + 320 = 370$

**S102. Ans.(e)**
**Sol.**

Athletes selected from P in 2014 = 2x+10

Athletes selected from R in 2010 = 2x

Athletes selected from Q in 2018 = x

Athletes selected from R in 2014 = 2x+20

Athletes selected from R in 2018 = $2x \times \frac{13}{9} = \frac{26x}{9}$

Athletes selected from P in 2010 = 2x+18

Athletes selected from Q in 2010 = 2a

Athletes selected from Q in 2014 = 5a

Given, $2x + 2x + 20 + \frac{26x}{9} = 1260$

$4x + \frac{26x}{9} = 1240$

$62x = 1240 \times 9$

$\boldsymbol{x = 180}$

x + 2a + 5a = 460

180 + 7a = 460

**a = 40**

| Countries/Years | 2010 | 2014 | 2018 | Total |
|---|---|---|---|---|
| P | 378 | 370 | 402 | 1150 |
| Q | 80 | 200 | 180 | 460 |
| R | 360 | 380 | 520 | 1260 |

Required difference = $520 - 200 = 320$

**S103. Ans.(b)**
**Sol.**

Athletes selected from P in 2014 = 2x+10

Athletes selected from R in 2010 = 2x

Athletes selected from Q in 2018 = x

Athletes selected from R in 2014 = 2x+20

Athletes selected from R in 2018 = $2x \times \frac{13}{9} = \frac{26x}{9}$

Athletes selected from P in 2010 = 2x+18

Athletes selected from Q in 2010 = 2a

Athletes selected from Q in 2014 = 5a

Given, $2x + 2x + 20 + \frac{26x}{9} = 1260$

$4x + \frac{26x}{9} = 1240$

$62x = 1240 \times 9$

$\boldsymbol{x = 180}$

x + 2a + 5a = 460

180 + 7a = 460

**a = 40**

| Countries/Years | 2010 | 2014 | 2018 | Total |
|---|---|---|---|---|
| **P** | 378 | 370 | 402 | 1150 |
| **Q** | 80 | 200 | 180 | 460 |
| **R** | 360 | 380 | 520 | 1260 |

Total number of athletes selected from P, Q, R, and S in 2010 = $340 \times 4 = 1360$

Number of athletes selected from S in 2010= $1360 - (378 + 80 + 360) = 542$

**S104. Ans.(c)**

**Sol.**

Athletes selected from P in 2014 = 2x+10

Athletes selected from R in 2010 = 2x

Athletes selected from Q in 2018 = x

Athletes selected from R in 2014 = 2x+20

Athletes selected from R in 2018 = $2x \times \frac{13}{9} = \frac{26x}{9}$

Athletes selected from P in 2010 = 2x+18

Athletes selected from Q in 2010 = 2a

Athletes selected from Q in 2014 = 5a

Given, $2x + 2x + 20 + \frac{26x}{9} = 1260$

$4x + \frac{26x}{9} = 1240$

$62x = 1240 \times 9$

$\boldsymbol{x = 180}$

x + 2a + 5a = 460

180 + 7a = 460

**a = 40**

| Countries/Years | 2010 | 2014 | 2018 | Total |
|---|---|---|---|---|
| **P** | 378 | 370 | 402 | 1150 |
| **Q** | 80 | 200 | 180 | 460 |
| **R** | 360 | 380 | 520 | 1260 |

Athletes selected from R in 2022 = $(80 + 200) \times \frac{75}{100} = 210$

**S105. Ans.(a)**

**Sol.**

Athletes selected from P in 2014 = 2x+10

Athletes selected from R in 2010 = 2x

Athletes selected from Q in 2018 = x

Athletes selected from R in 2014 = 2x+20

Athletes selected from R in 2018 = $2x \times \frac{13}{9} = \frac{26x}{9}$

Athletes selected from P in 2010 = 2x+18

Athletes selected from Q in 2010 = 2a

Athletes selected from Q in 2014 = 5a

Given, $2x + 2x + 20 + \frac{26x}{9} = 1260$

$4x + \frac{26x}{9} = 1240$

$62x = 1240 \times 9$

$\boldsymbol{x = 180}$

x + 2a + 5a = 460

180 + 7a = 460

**a = 40**

| Countries/Years | 2010 | 2014 | 2018 | Total |
|---|---|---|---|---|
| **P** | 378 | 370 | 402 | 1150 |
| **Q** | 80 | 200 | 180 | 460 |
| **R** | 360 | 380 | 520 | 1260 |

Value of a = $2a = 80$

$a = 40$

Required difference = $(370 + 402) - 40 = 732$

**S106. Ans.(b)**

**Sol.**

Athletes selected from P in 2014 = 2x+10

Athletes selected from R in 2010 = 2x

Athletes selected from Q in 2018 = x

Athletes selected from R in 2014 = 2x+20

Athletes selected from R in 2018 = $2x \times \frac{13}{9} = \frac{26x}{9}$

Athletes selected from P in 2010 = 2x+18

Athletes selected from Q in 2010 = 2a

Athletes selected from Q in 2014 = 5a

Given, $2x + 2x + 20 + \frac{26x}{9} = 1260$

$4x + \frac{26x}{9} = 1240$

$62x = 1240 \times 9$

$\boldsymbol{x = 180}$

x + 2a + 5a = 460

180 + 7a = 460

**a = 40**

| Countries/Years | 2010 | 2014 | 2018 | Total |
|---|---|---|---|---|
| **P** | 378 | 370 | 402 | 1150 |
| **Q** | 80 | 200 | 180 | 460 |
| **R** | 360 | 380 | 520 | 1260 |

Athletes selected from Q in 2018 participated in track and field games = $180 \times \frac{40}{100} = 72$

Athletes selected from Q in 2018 participated in archery = $(180 - 72) \times \frac{1}{4} = 27$

Athletes selected from Q in 2018 participated in board games = $180 - 72 - 27 = 81$

Required sum = $81 + 72 = 153$

**S107. Ans.(a)**

**Sol.** Given, 3x = 60

x = 20

Total students in Dhara institute who opted for the professional courses in 2019 = 60

Total students in Dhara institute who opted for the traditional courses in 2019 = 120-60=60

Total students in Dhara institute who opted for the professional courses in 2020 = 85

Total students in Dhara institute who opted for the traditional courses in 2020 = 150-85=65

Total students in Dhara institute who opted for the professional courses in 2021 = 40

Total students in Dhara institute who opted for the traditional courses in 2021 = 90-40=50

Total students in Amber institute who opted for the professional courses in 2019 = 1.5x=30

Total students in Amber institute who opted for the professional courses in 2020 = 3x = 60

Total students in Amber institute who opted for the professional courses in 2021 = 2.5x=50

Total students in Amber institute in 2019 = 180-120=60

Total students in Amber institute in 2020 = 240-150=90

Total students in Amber institute in 2021 = 160-90=70

Total students in Amber institute who opted for the traditional courses in 2019 = 60-30=30

Total students in Amber institute who opted for the traditional courses in 2020 = 90-60=30

Total students in Amber institute who opted for the traditional courses in 2021 = 70-50=20

Required difference = 85-20=65

**S108. Ans.(b)**
**Sol.** Given, 3x = 60
x = 20
Total students in Dhara institute who opted for the professional courses in 2019 = 60
Total students in Dhara institute who opted for the traditional courses in 2019
= 120-60=60
Total students in Dhara institute who opted for the professional courses in 2020 = 85
Total students in Dhara institute who opted for the traditional courses in 2020
= 150-85=65
Total students in Dhara institute who opted for the professional courses in 2021 = 40
Total students in Dhara institute who opted for the traditional courses in 2021
= 90-40=50
Total students in Amber institute who opted for the professional courses in 2019
= 1.5x=30
Total students in Amber institute who opted for the professional courses in 2020
= 3x = 60
Total students in Amber institute who opted for the professional courses in 2021
= 2.5x=50
Total students in Amber institute in 2019 = 180-120=60
Total students in Amber institute in 2020 = 240-150=90
Total students in Amber institute in 2021 = 160-90=70
Total students in Amber institute who opted for the traditional courses in 2019
= 60-30=30
Total students in Amber institute who opted for the traditional courses in 2020
= 90-60=30
Total students in Amber institute who opted for the traditional courses in 2021
= 70-50=20
Required average = $\frac{50+40}{2} = 45$

**S109. Ans.(a)**
**Sol.** Given, 3x = 60
x = 20
Total students in Dhara institute who opted for the professional courses in 2019 = 60
Total students in Dhara institute who opted for the traditional courses in 2019
= 120-60=60
Total students in Dhara institute who opted for the professional courses in 2020 = 85
Total students in Dhara institute who opted for the traditional courses in 2020
= 150-85=65
Total students in Dhara institute who opted for the professional courses in 2021 = 40
Total students in Dhara institute who opted for the traditional courses in 2021
= 90-40=50
Total students in Amber institute who opted for the professional courses in 2019
= 1.5x=30
Total students in Amber institute who opted for the professional courses in 2020
= 3x = 60
Total students in Amber institute who opted for the professional courses in 2021
= 2.5x=50

Total students in Amber institute in 2019 = 180-120=60
Total students in Amber institute in 2020 = 240-150=90
Total students in Amber institute in 2021 = 160-90=70
Total students in Amber institute who opted for the traditional courses in 2019
= 60-30=30
Total students in Amber institute who opted for the traditional courses in 2020
= 90-60=30
Total students in Amber institute who opted for the traditional courses in 2021
= 70-50=20
Required ratio = 60 :20=3:1

**S110. Ans.(e)**
**Sol.** Given, 3x = 60
x = 20
Total students in Dhara institute who opted for the professional courses in 2019 = 60
Total students in Dhara institute who opted for the traditional courses in 2019
= 120-60=60
Total students in Dhara institute who opted for the professional courses in 2020 = 85
Total students in Dhara institute who opted for the traditional courses in 2020
= 150-85=65
Total students in Dhara institute who opted for the professional courses in 2021 = 40
Total students in Dhara institute who opted for the traditional courses in 2021
= 90-40=50
Total students in Amber institute who opted for the professional courses in 2019
= 1.5x=30
Total students in Amber institute who opted for the professional courses in 2020
= 3x = 60
Total students in Amber institute who opted for the professional courses in 2021
= 2.5x=50
Total students in Amber institute in 2019 = 180-120=60
Total students in Amber institute in 2020 = 240-150=90
Total students in Amber institute in 2021 = 160-90=70
Total students in Amber institute who opted for the traditional courses in 2019
= 60-30=30
Total students in Amber institute who opted for the traditional courses in 2020
= 90-60=30
Total students in Amber institute who opted for the traditional courses in 2021
= 70-50=20

Required percentage = $\frac{20}{160} \times 100 = 12.5\%$

**S111. Ans.(d)**
**Sol.** Given, 3x = 60
x = 20
Total students in Dhara institute who opted for the professional courses in 2019 = 60
Total students in Dhara institute who opted for the traditional courses in 2019
= 120-60=60

Total students in Dhara institute who opted for the professional courses in 2020 = 85
Total students in Dhara institute who opted for the traditional courses in 2020
= 150-85=65
Total students in Dhara institute who opted for the professional courses in 2021 = 40
Total students in Dhara institute who opted for the traditional courses in 2021
= 90-40=50
Total students in Amber institute who opted for the professional courses in 2019
= 1.5x=30
Total students in Amber institute who opted for the professional courses in 2020
= 3x = 60
Total students in Amber institute who opted for the professional courses in 2021
= 2.5x=50
Total students in Amber institute in 2019 = 180-120=60
Total students in Amber institute in 2020 = 240-150=90
Total students in Amber institute in 2021 = 160-90=70
Total students in Amber institute who opted for the traditional courses in 2019
= 60-30=30
Total students in Amber institute who opted for the traditional courses in 2020
= 90-60=30
Total students in Amber institute who opted for the traditional courses in 2021
= 70-50=20
p = 60-30=30
q = 60 + 40 = 100
Required sum = 100+30=130

**S112. Ans.(b)**
**Sol.**

Let efficiency of Q and R together be 3a unit/day

And efficiency of P = 4a units/day

Efficiency of P, Q and R together = 3a+4a=7a units/day

Efficiency of P and Q together 6a units/day

Efficiency of Q = 6a-4a=2a units/day

Efficiency of R =3a − 2a = 1a units/day

Total work = $9.6 \times \frac{100}{60} \times 2a = 32a$ units

Required time = $\frac{32a \times \frac{175}{100}}{4a+1a}$

$= \frac{56a}{5a}$

= 11.2 days

**S113. Ans.(d)**
**Sol.**

Composite compound interest for two years = $\left(20 + 20 + \frac{20\times20}{100}\right)\% = 44\%$

ATQ,

$$\frac{P \times T \times 14}{100} + \left((P + 600) \times \frac{44}{100}\right) = 1464$$

And

$$\frac{P \times T \times 8}{100} = 384$$

$P \times T = 4800$

$\frac{4800\times14}{100} + \left((P + 600) \times \frac{44}{100}\right) = 1464$ $\qquad (P \times T = 4800)$

$$\left((P + 600) \times \frac{44}{100}\right) = 792$$

P = 1200

Amount received from compound interest = $(1200 + 600)\times \frac{144}{100} = Rs.2592$

**S114. Ans.(c)**
**Sol.**

Profit sharing ratio of P, Q and R

$= 8000 \times 12 : 10000 \times 4 + 5000 \times 8 : 12000 \times 6$

$= 12 : 10 : 9$

Let profit share of P, Q and R be Rs 12a, Rs 10a and Rs 9a respectively.

ATQ, $12a - 9a = 900$

$3a = 900$

$a = 300$

Profit share of P and Q together = $12a + 10a = 22a = Rs\ 6600$

Profit share of R = 9a = Rs 2700

Required difference = $6600 - 2700 = Rs\ 3900$

**S115. Ans.(c)**
**Sol.**

Let the share of C and D is 3a and 1a respectively

The share of B = $\frac{125}{100} \times (3a + 1a) = 5a$

ATQ,

$1a + 5a = 4800 \times 2$

$6a = 9600$

$a = 1600$

Required value = Y = $4000 + (5a + 3a + 1a)$

$= 4000 + 9a$

$4000 + 14400 = 18400$

**S116. Ans.(e)**

**Sol.**

Let the present age of P and Q be '7x+5' years and '5x+5' years respectively.

ATQ,

$$\frac{7x+5+7}{5x+5+7}=\frac{13}{11}$$

$77x+132=65x+156$

$12x=24$

$x=2$

The present age of P and Q is 19 years and 15 years respectively.

a = 19, b=15

The present age of R = $\frac{120}{100}\times 15 = 18$ years

The age of R after 12 years = 18+12 = 30 years

**S117. Ans.(b)**

**Sol.**

The speed of the boat Q is 7.5 km/hr

The speed of the stream = 7.5 km/hr

ATQ,

(12 + 7.5)×(a-5)=(12 – 7.5)×(a+5)

$\frac{19.5}{4.5}=\frac{a+5}{a-5}$

13×(a-5) = 3×(a+5)

13a – 65 = 3a + 15

10a = 80

a = 8

Required distance = $(7.5+7.5)\times(a+4)$

$=(7.5+7.5)\times 12$

= 180 km

**S118. Ans.(d)**

**Sol.**

ATQ,

$$\frac{(a+10)\times 30+(b\times 64)}{a+10+b}=34$$

$30a+300+64b=340+34a+34b$

$30b=40+4a$

$15b-2a=20\ldots\ldots(i)$

And

$$\frac{(a+10)\times 30+\big((b+3)\times 38\big)}{a+10+b+3}=32$$

$30a+300+38b+114=416+32a+32b$

$6b=2a+2$

$3b-a=1\ldots\ldots(ii)$

From (i) & (ii)

$b=2, a=5$

Required value = $5(a+b)$

$=5(5+2)=35$

**S119. Ans.(a)**
**Sol.**

Let the four consecutives even number be a, a+2, a+4 and a+6 respectively

$2^{nd}$ lowest odd number = a+4+3=a+7

Four consecutives odd number = a+5, a+7, a+9 and a+11 respectively.

Given, $a + a + 5 = 37$

$2a = 32$

$a = 16$

ATQ,

$a + a + 2 + a + 4 + a + 6 = X + 26$

$4a + 12 = X + 26$

$64 + 12 - 26 = X$

$50 = X$

Required value = $\frac{X}{2} = \frac{50}{2} = 25$

**S120. Ans.(b)**
**Sol.**

(i) $a^2 - 5\frac{1}{2}a + 7.5 = 0$

$a^2 - \frac{11}{2}a + \frac{15}{2} = 0$

$2a^2 - 11a + 15 = 0$

$2a^2 - 6a - 5a + 15 = 0$

$a = 3, \frac{5}{2}$

(ii) $\frac{1}{\frac{1}{b^2-2b+\frac{7}{4}}} = 2b - 2$

$b^2 - 2b + \frac{7}{4} = 2b - 2$

$b^2 - 4b + \frac{15}{4} = 0$

$4b^2 - 16b + 15 = 0$

$4b^2 - 10b - 6b + 15 = 0$

$b = 2.5, 1.5$

So, a≥b

**S121. Ans.(c)**
**Sol.**

Smallest whole number = 0

(i) $(a - 6)(2a - 5)2w^0 = 0$

$(a - 6)(2a - 5) = 0$

$a = 6, \frac{5}{2}$

(ii) $b^3 = 343$

b = 7

So, a<b

**S122. Ans.(c)**
**Sol.**

$?^2 \times 30 - 218 = 9^3 + 133$

$?^2 \times 30 = 1080$

$?^2 = 36$

$? = 6$

**S123. Ans.(e)**
**Sol.**

$40\%\ of\ 500 + 55\%\ of\ 300 = \sqrt{?} + (15 \times 20)$

$200 + 165 = \sqrt{?} + 300$

$65 = \sqrt{?}$

$4225 = ?$

**S124. Ans.(d)**
**Sol.**

$58 \times 10 + 4 + 19^2 = ? \times 15$

$945 = ? \times 15$

$63 = ?$

**S125. Ans.(b)**
**Sol.**

$\sqrt{2916} \times 21 + \sqrt{(18 \times 4 + 3^2} = ?$

$1134 + 9 = ?$

$1143 = ?$

**S126. Ans.(b)**
**Sol.**

Let the quantity of milk and water be in A1 be 7a and 9a respectively.

The quantity of milk in A2 = $7a - 80 \times \frac{7}{16} = (7a - 35)$ litres

The quantity of water in A2 = $7a - 80 \times \frac{9}{16} = (7a - 45)$ liters

ATQ,

$$\frac{7a - 35}{9a - 45 + 8} = \frac{5}{7}$$

$49a - 245 = 45a - 185$

$4a = 60$

$a = 15$

**Quantity I.** 60 liters

**Quantity II.** Quantity of milk in A2 = $(7a - 35) = 70$ litres

So, **Quantity I < Quantity II**

**S127. Ans.(c)**
**Sol.**

**Quantity I.** Area of a circle ≥ Area of the rectangle

Area of a circle ≥ $16 \times 1$

Area of a circle ≥ $16\ cm^2$

**Quantity II.** Let the length and breadth of the rectangle be l cm and b cm respectively and side of the square be a cm.

$a^2 = l \times b$...(i)

$2(l + b) = 20$

$l + b = 10$....(ii)

And

$a + b = l + 10$

$a - 10 = l - b \ldots (iii)$

From (ii) & (iii)

$2l = a$

$l = \frac{a}{2}$

l value put in (ii)

$\frac{a}{2} + b = 10$

$b = 10 - \frac{a}{2}$

l and b value put in (i)

$a^2 = \frac{a}{2} \times \left(10 - \frac{a}{2}\right)$

$a^2 = \frac{a}{2} \times \frac{20-a}{2}$

$4a^2 = 20a - a^2$

$5a^2 = 20a$

$a = 4$

Required area = $4 \times 4 = 16\ cm^2$

So, **Quantity I ≥ Quantity II**

**S128. Ans.(c)**
**Sol.**

Part invested at 5% = $\frac{1800}{9} \times 4$ = Rs.800

Part invested at x% = $\frac{1800}{9} \times 5$ = Rs.1000

ATQ,

$\frac{800 \times 5 \times 2}{100} + \frac{1000 \times x \times 2}{100} = 160$

x= 4

**Quantity I:** Value of (x+12) = (4+12) = 16

**Quantity II**: $y^2 = 256$

$y = \pm 16$

So, **Quantity I ≥ Quantity II**

**S129. Ans.(a)**
**Sol.**

**Quantity I:** Required probability = $\frac{{}^{15}C_3+{}^{10}C_3}{{}^{25}C_3} = \frac{455+120}{2300} = \frac{1}{4}$ = 0.25

**Quantity II**: 0.20
So, **Quantity I > Quantity II**

**S130. Ans.(a)**
**Sol.**

Let marked price of article Q be Rs 5x
And selling price of the article P = Rs 4x
**From I.** The cost price of article Q = $\frac{5x}{5} \times 3 = Rs\ 3x$
And selling price of article Q = $3x \times \frac{7}{6} = Rs\ 3.5x$
**From II.** Marked price of the article P =$4x \times \frac{100}{80} = Rs\ 5x$
We have no exact value.
So, neither statement (I) nor statement (II) by itself is sufficient to answer

**S131. Ans.(b)**
**Sol.**

Let four consecutives odd number be a, a+2, a+4 and a+6 respectively.
Let four consecutives even number be b, b+2, b+4 and b+6 respectively.
**From I.** a+6 +1 = b
b – a = 7
**From II.** $a + b = 29$
Required sum = $a + 6 + b + 6$
$= a + b + 12$
$= 29 + 12 = 41$
Statement (II) alone is sufficient to answer the question but statement (I) alone is not sufficient to answer the question.

**S132. Ans.(a)**
**Sol.**

let length of train 'A' and train 'B' be x meter and y meter respectively.
Let length of platform be z meter.
Speed of train 'A' and train 'B' be a m/s and b m/s respectively
**From I,** $\frac{x+z}{a} = 20$
$\frac{x+y}{a+b} = 12$
value of z can't be calculated
**From II,** $\frac{y+z}{b} = 15$
No value of z can be determined,
Also, speed of man is unknown
Clearly, both statements together are not sufficient to answer

**S133. Ans.(e)**
**Sol.**
**From I:** Let the total red balls be x
Balls that are not red= 24 − x
ATQ
$\frac{2x}{24} = (\frac{24-x}{24})$
On solving, $x = 8$
Probability of getting a red ball = $\frac{8}{24} = \frac{1}{3}$
Hence Statement I alone is sufficient to answer the question.
**From II:** As we do not know the exact number of red balls so Statement II alone is not sufficient
**So,** Statement (I) alone is sufficient to answer the question

**S134. Ans.(e)**
**Sol.**
Let side of the equilateral triangle be 'a' cm
ATQ,
$\frac{\sqrt{3}}{4} \times a \times a = 36\sqrt{3}$
a = 12
Radius of the cylinder = $2 \times 12 = 24$ cm
Let height of the cylinder be h cm
$\frac{22}{7} \times 24 \times 24 \times h = 12672$
$h = 7$

**S135. Ans.(a)**
**Sol.**
ATQ, $\frac{X+150}{90\times\frac{5}{18}} = 16$
$X + 150 = 400$
$X = 250$
The length of the bridge = $X = 250$ meetrs
Required time = $\frac{250+150+250}{90\times\frac{5}{18}} = 26$ seconds

**S136. Ans.(b)**
**Sol.**
Total quantity (milk and water) in the final mixture = $(120 - 40 + 16) = 96\ liters$
Quantity of milk in the final mixture = $96 \times \frac{13}{24} = 52\ liters$
Quantity of water in the final mixture = $96 \times \frac{11}{24} = 44\ liters$
Quantity of milk before added 16 liters of milk = 52 – 16 = 36 liters
Ratio of milk to water = 36:44 = 9:11
X = 9

**S137. Ans.(c)**
**Sol.**

Selling price of one unit = $\frac{78125}{25} = Rs\ 3125$

Given, 500 = gross profit – $\frac{1}{5}$ gross profit

500 = $\frac{4}{5}$ gross profit

Gross profit = Rs 625

Cost price of one unit = $3125 - 625 = Rs\ 2500$

Tax = $\frac{1}{5} \times 625$

= Rs 125

Advertisement cost = 25+125=Rs 150

Percentage of advertisement = $\frac{150}{2500} \times 100$ =6%

A=6

$35 + 6 + 2B + B + (B - 1) = 100$

$4B = 60$

$B = 15$

Cost of material = $2500 \times \frac{35}{100} = Rs\ 875$

Cost of advertisement = $\frac{6}{100} \times 2500 = Rs\ 150$

Cost of marketing = $\frac{30}{100} \times 2500 = Rs\ 750$

Cost of packaging = $\frac{15}{100} \times 2500 = Rs\ 375$

Cost of miscellaneous = $\frac{14}{100} \times 2500 = Rs\ 350$

Required difference = $12 \times 2500 - 18 \times 150 = Rs\ 27300$

**S138. Ans.(e)**
**Sol.**

Selling price of one unit = $\frac{78125}{25} = Rs\ 3125$

Given, 500 = gross profit – $\frac{1}{5}$ gross profit

500 = $\frac{4}{5}$ gross profit

Gross profit = Rs 625

Cost price of one unit = $3125 - 625 = Rs\ 2500$

Tax = $\frac{1}{5} \times 625$

= Rs 125

Advertisement cost = 25+125=Rs 150

Percentage of advertisement = $\frac{150}{2500} \times 100$ =6%

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Cost of advertisement = $\frac{6}{100} \times 2500 = Rs\ 150$

Cost of marketing = $\frac{30}{100} \times 2500 = Rs\ 750$

Cost of packaging = $\frac{15}{100} \times 2500 = Rs\ 375$

Cost of miscellaneous = $\frac{14}{100} \times 2500 = Rs\ 350$

Required sum = $3 \times 25 \times 15 + 625 \times 3 = Rs\ 3000$

**S139. Ans.(b)**
**Sol.**

Selling price of one unit = $\frac{78125}{25} = Rs\ 3125$

Given, 500 = gross profit $-\frac{1}{5}$ gross profit

500 = $\frac{4}{5}$ gross profit

Gross profit = Rs 625

Cost price of one unit = $3125 - 625 = Rs\ 2500$

Tax = $\frac{1}{5} \times 625$

= Rs 125

Advertisement cost = 25+125=Rs 150

Percentage of advertisement = $\frac{150}{2500} \times 100$ =6%

A=6

$35 + 6 + 2B + B + (B - 1) = 100$

$4B = 60$

$B = 15$

Cost of material = $2500 \times \frac{35}{100} = Rs\ 875$

Cost of advertisement = $\frac{6}{100} \times 2500 = Rs\ 150$

Cost of marketing = $\frac{30}{100} \times 2500 = Rs\ 750$

Cost of packaging = $\frac{15}{100} \times 2500 = Rs\ 375$

Cost of miscellaneous = $\frac{14}{100} \times 2500 = Rs\ 350$

Let per kg cost of material Y be Rs d

ATQ,

$(30 \times 10 + d \times 5) = 35 \times 25$

$d = 115$

**S140. Ans.(d)**
**Sol.**

Selling price of one unit = $\frac{78125}{25} = Rs\ 3125$

Given, 500 = gross profit $-\frac{1}{5}$ gross profit

500 = $\frac{4}{5}$ gross profit

Gross profit = Rs 625

Cost price of one unit = $3125 - 625 = Rs\ 2500$

Tax = $\frac{1}{5} \times 625$

= Rs 125

Advertisement cost = 25+125=Rs 150

Percentage of advertisement = $\frac{150}{2500} \times 100$ =6%

A=6

$35 + 6 + 2B + B + (B - 1) = 100$

$4B = 60$

$B = 15$

Cost of material = $2500 \times \frac{35}{100} = Rs\ 875$

Cost of advertisement = $\frac{6}{100} \times 2500 = Rs\ 150$

Cost of marketing = $\frac{30}{100} \times 2500 = Rs\ 750$

Cost of packaging = $\frac{15}{100} \times 2500 = Rs\ 375$

Cost of miscellaneous = $\frac{14}{100} \times 2500 = Rs\ 350$

New selling price =$3125 \times \frac{120}{100} = Rs\ 3750$

New cost price = $3750 - 625 = Rs\ 3125$

Required difference = $(3125 - 2500) \times \frac{6}{100} = Rs\ 37.5$