SSC MTS 2025 Official Paper (Held On: 06 Feb, 2026 Shift 3) (Previous Year Paper)

SSC Multi-Tasking Staff (MTS) • 2025 • 90 questions • 90 minutes • Answer key and solutions

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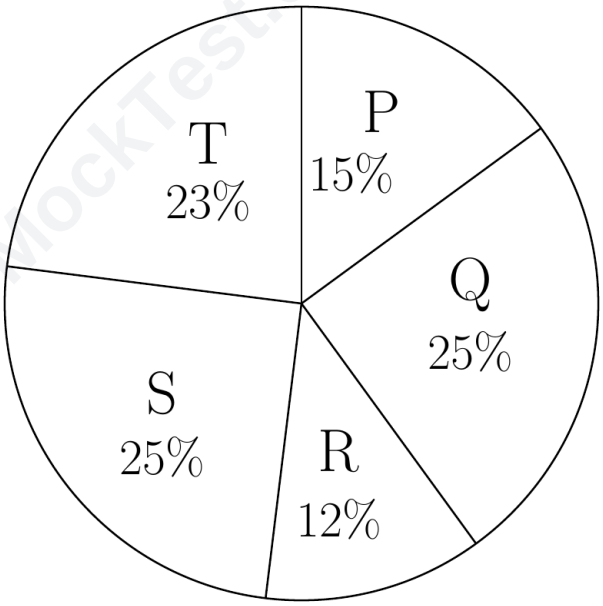
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SESSION 1

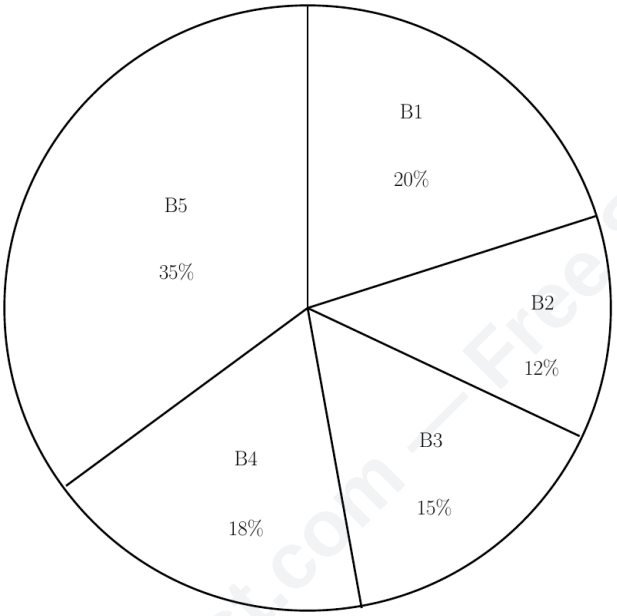
Q1. The pie chart given below shows the production of wheat by 5 factories. The data is presented in the terms of percent.



What is the ratio of production of wheat by P to the total production of wheat by Q and S?

(a) 2 : 7
(b) 3 : 10
(c) 5 : 11
(d) 6 : 11

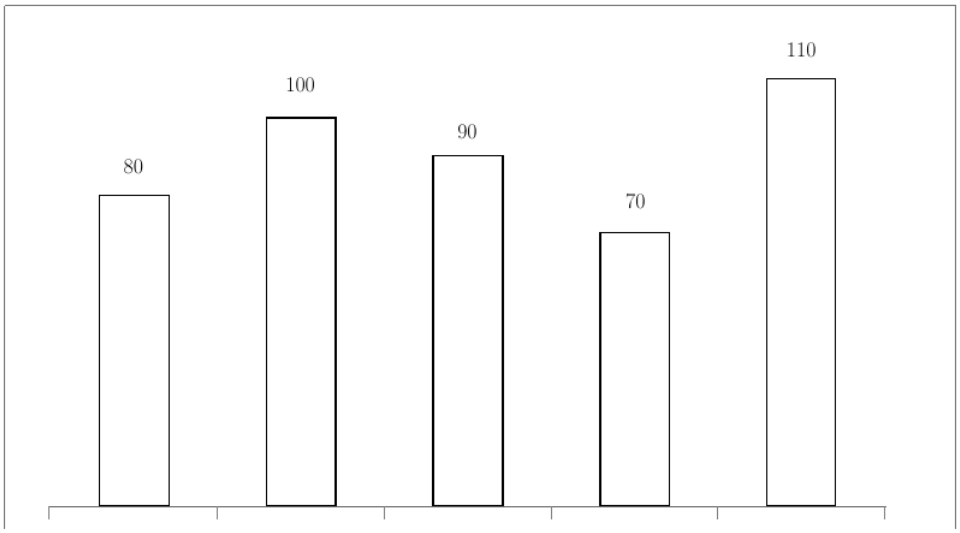
Q2. The pie chart given below shows the number of soldiers in 5 barracks. The data is presented in the terms of percent. Number of soldiers in B1 = 2340.



Number of soldiers in an another barrack B6 are 30 percent more than the total number of soldiers in B2 and B4. What are the number of soldiers in B6?

(a) 4387
(b) 4563
(c) 4184
(d) 4279

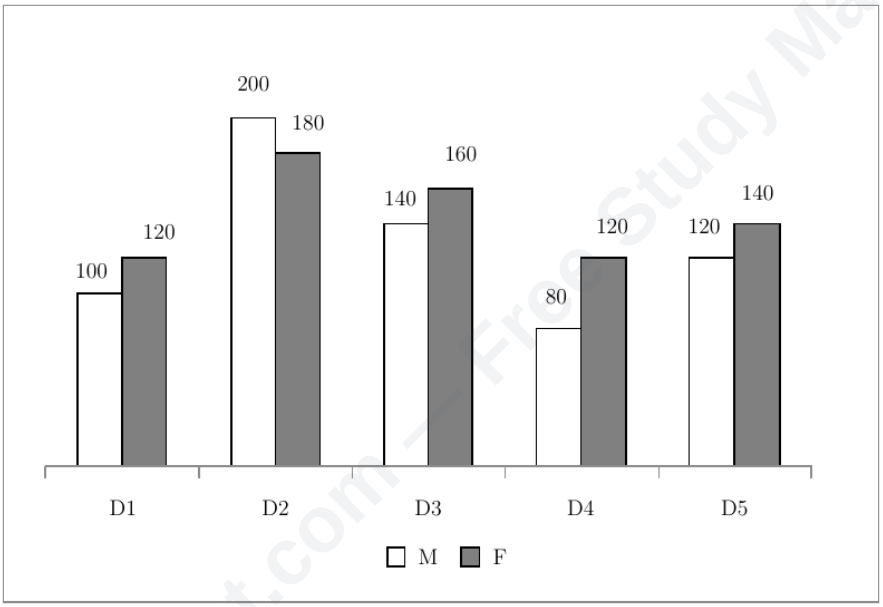
Q3. The bar graph given below shows the number of buses in the given 5 cities.



What is the difference between the maximum number of buses in a city among the given cities and the minimum number of buses in a city among the given cities?

(a) 30
(b) 40
(c) 50
(d) 60

Q4. The bar graph given below shows the number of males (M) and females (F) working in 5 departments of a company.



In which department total number of males and females together are maximum?

(a) D1
(b) D4
(c) D5
(d) D2

Q5. A can do a job in 20 days, B in 30 days. They work on alternate days, with A starting the job. In how many days is the job finished?

(a) 23
(b) 23.5
(c) 24
(d) 24.5

Q6. A chef prepares 100 litres of soup in which the ratio of tomato puree to water is 3:2. Later, 20 litres of this soup is removed and replaced with pure tomato puree. What is the new ratio of tomato puree to water?

(a) 4:1
(b) 17:8
(c) 5:2
(d) 13:7

Q7. A dealer gives a 20% discount on the marked price of a book. If the selling price of the book is Rs. 840, what is its marked price?

(a) Rs. 950
(b) Rs. 980
(c) Rs. 1050
(d) Rs. 1080

Q8. X, Y, and Z invest Rs. 12,000, Rs. 15,000, and Rs. 18,000, respectively. X invests for 12 months, Y for 8 months, and Z for 10 months. If the total profit is Rs. 22,000, calculate Y's share.

(a) Rs. 5,085.65
(b) Rs. 5,525.55
(c) Rs. 5,945.95
(d) Rs. 5,125.25

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Q9. A mixture contains 15% of substance A and 85% of substance B. If you add more of A so that the new mixture contains 35% A, by what percentage did A increase?

(a) 155.13%
(b) 205.13%
(c) 185.13%
(d) 125.13%

Q10. Arrange the following values in descending order.

3 5/6, 25/6, 3 1/2, 22/6

(a) 25/6 > 3 5/6 > 3 1/2 > 22/6
(b) 25/6 > 3 5/6 > 22/6 > 3 1/2
(c) 25/6 > 22/6 > 3 5/6 > 3 1/2
(d) 3 1/2 > 22/6 > 3 5/6 > 25/6

Q11. The sum of square of two consecutive natural numbers is 313. What is the larger of the two numbers?

(a) 13
(b) 12
(c) 9
(d) 11

Q12. $1/(6 + \sqrt{3}) + 1/(6 - \sqrt{3}) = ?$

(a) 5/11
(b) 7/13
(c) 4/11
(d) 9/11

Q13. The product of the three consecutive odd numbers is 693. What is the sum of the largest and the smallest of the three numbers?

(a) 18
(b) 14
(c) 15
(d) 17

Q14. $(\sqrt{3} + \sqrt{2}) + 1/(\sqrt{3} - \sqrt{2}) = ?$

(a) $3/2(\sqrt{3} + \sqrt{2})$
(b) $5/2(\sqrt{3} + \sqrt{2})$
(c) $1/2(\sqrt{3} + \sqrt{2})$
(d) $2(\sqrt{3} + \sqrt{2})$

Q15. Which least number should be subtracted from 5678 to make it divisible by 6?

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

Q16. $11^2 + 12^2 + 13^2 + \ldots + 45^2 = ?$

(a) 31020
(b) 33030
(c) 32020
(d) 31010

Q17. The average of 10 numbers is X and one of these numbers is 54. If 54 is replaced with 20, then what will be the new average?

(a) X + 3
(b) X - 3.4

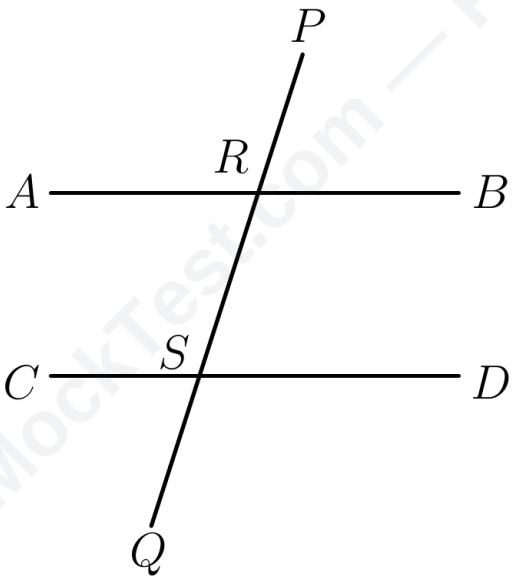
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(c) X - 4.2
(d) X + 2.8

Q18. What is the average of first 25 prime natural numbers?

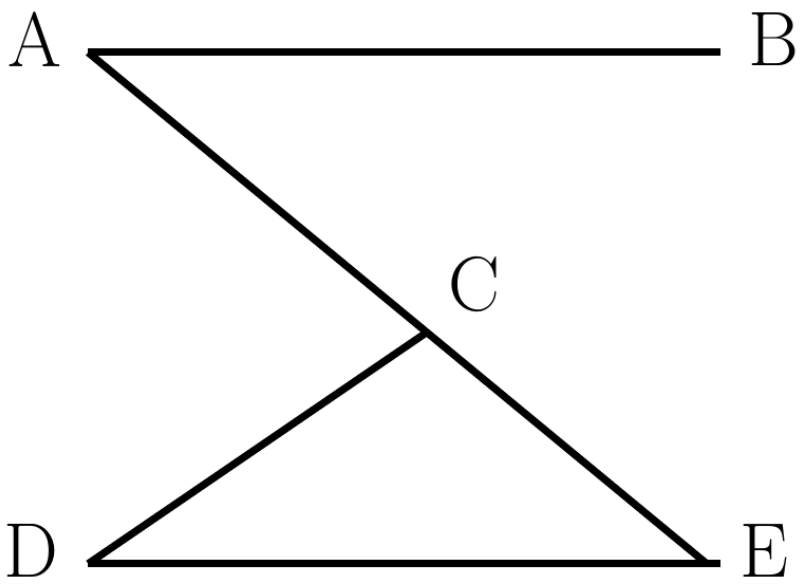
(a) 64.25
(b) 42.4
(c) 46.5
(d) 37.5

Q19. In the given figure, AB is parallel to CD. Angle PRB = 82 degrees. What is the value (in degrees) of angle QSC?



(a) 108
(b) 98
(c) 82
(d) 72

Q20. In the figure, AB is parallel to DE. Angle BAC = 32 degrees and angle CDE = 43 degrees. What is the value (in degrees) of angle ACD?



(a) 85
(b) 75
(c) 90

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(d) 95

Q21. A series is given with one term missing. Select the correct alternative from the given ones that will complete the series.

D, A, V, S, N, ?, F, C

(a) N
(b) K
(c) M
(d) J

Q22. Select the option that is related to the sixth letter cluster in the same way as the first letter cluster is related to the second letter cluster and third letter cluster is related to fourth letter cluster.

DPT : IUY :: ICR : NHW :: ? : SXP

(a) NSK
(b) IRZ
(c) KRY
(d) KUZ

Q23. A series is given with one term missing. Select the correct alternative from the given ones that will complete the series.

AM, XI, ?, RA, OW, LS, IO, FK

(a) RE
(b) UE
(c) XD
(d) UF

Q24. In the following question, set of letter clusters are given. The letter clusters of each set are related to the letter clusters of the same set by some Logic/Rule/Relation. From the given alternatives, select a group of letter clusters which follows the same Logic/Rule/Relation.

(KF, IC, GZ)

(FW, DT, BQ)

(a) (QY, OV, MS)
(b) (HR, FP, DM)
(c) (PI, NG, HD)
(d) (DV, BT, BQ)

Q25. What will be the sum of number of Sundays in the months of March and December of 2019?

(a) 9
(b) 7
(c) 10
(d) 8

Q26. In the year 1910, which of the following month had 5 Thursdays?

I. March

II. May

(a) Only I
(b) Only II
(c) Both I and II
(d) Neither I nor II

Q27. Height of 5 students J, K, L, M and N is compared. Height of no two students is same. Height of K is shorter than L but taller than J. Height of no one is shorter than N. L is not the tallest among them. How many students have height less than L but more than N?

(a) 3
(b) 2

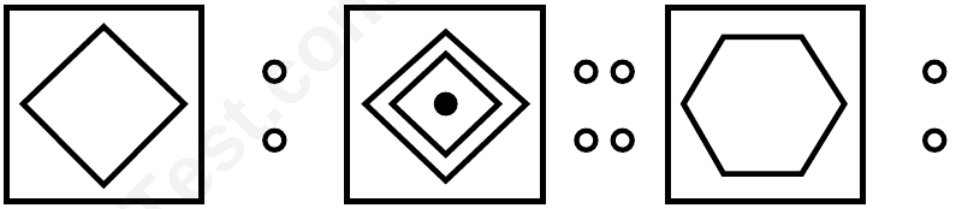
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(c) 1
(d) 0

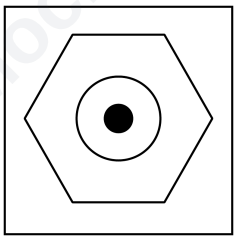
Q28. 7 girls G1, G2, G3, G4, G5, G6 and G7 are sitting around a circular table facing opposite to the centre (not necessarily in the same order). G4 is not next to G6. G2 is not next to G1. G6 is second to the left of G3. G1 is third to the right of G3. G7 is third to the right of G6. Considering towards left of G4, how many girls are sitting between G4 and G6?

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

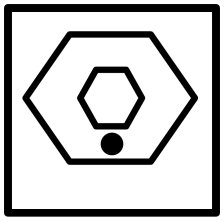
Q29. Two figures given on the left side of (::) are related with some logic/rule/relation. Select the missing figure on the right side of (::) from the given alternatives based on the same logic/rule/relation.



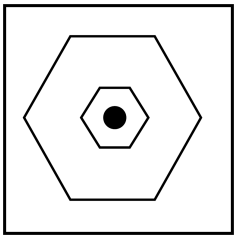
(a)



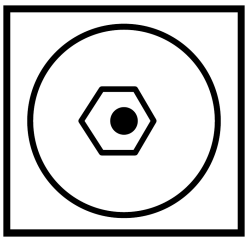
(b)



(c)

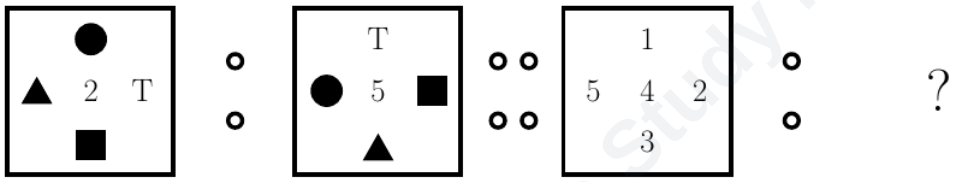


(d)

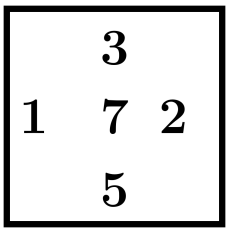


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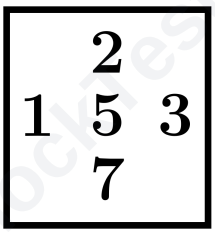
Q30. Two figures given on the left side of (::) are related with some logic/rule/relation. Select the missing figure on the right side of (::) from the given alternatives based on the same logic/rule/relation.



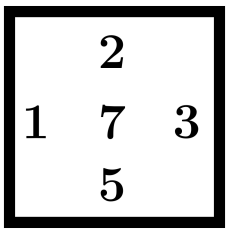
(a)



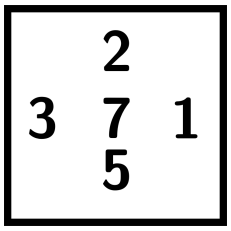
(b)



(c)



(d)



Q31. Select the option that is related to the fifth letter-number cluster in the same way as the second letter-number cluster is related to the first letter-number cluster and fourth letter-number cluster is related to third letter-number cluster.

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g.13 - Operations on 13 such as adding /subtracting /multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed)

QF20 : RH40 :: LX15 : MZ30 :: GP12 : ?

(a) HR24
(b) IQ24
(c) HS24
(d) HR14

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Q32. Select the option that is related to the fifth letter-number cluster in the same way as the second letter-number cluster is related to the first letter-number cluster and fourth letter-number cluster is related to third letter-number cluster.

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g.13 - Operations on 13 such as adding /subtracting /multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed)

ADJ120 : NHE280 :: RKI130 : MOV290 :: LVT160 : ?

(a) ZPX300
(b) PXZ340
(c) XZP320
(d) PZX320

Q33. Arrange the given words in the sequence in which they occur in the dictionary.

1. Discriminate
2. Discrepancy
3. Discreet
4. Discredit
5. Discuss

(a) 43251
(b) 12345
(c) 43215
(d) 43125

Q34. Select the option that is related to the third number in the same way as the second number is related to the first number and sixth number is related to fifth number.

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g.13 - Operations on 13 such as adding /subtracting /multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed)

5077 : 5034 :: 1558 : ? :: 3323 : 3280

(a) 1519
(b) 1510
(c) 1515
(d) 1514

Q35. Select the option that is related to the third number in the same way as the second number is related to the first number and sixth number is related to fifth number.

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g.13 - Operations on 13 such as adding /subtracting /multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed)

871 : 550 :: 397 : ? :: 630 : 309

(a) 84
(b) 56
(c) 76
(d) 61

Q36. In a certain coded language 'BUCK' is coded as 'DYZF' and 'FLOW' is coded as 'HPLR'. How will 'HANK' be coded in the same code language?

(a) IGJF
(b) HFKG
(c) IEJE
(d) JEKF

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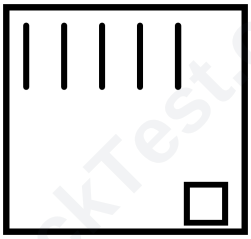
Q37. At what time (in PM), the angle between hour and minute hands of a clock will be 100 degrees?

(a) 6:15
(b) 1:55
(c) 7:20
(d) 3:00

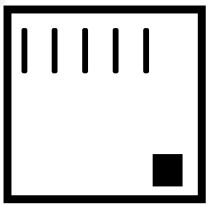
Q38. In the following figure series, select the figure which can be placed at the sign of question mark (?) from the given alternatives.



(a)



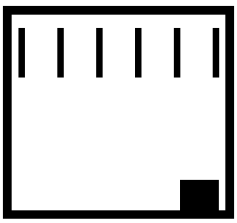
(b)



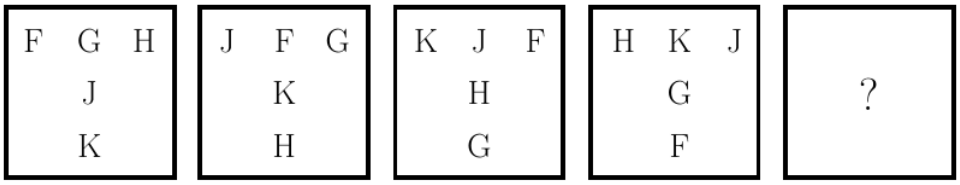
(c)



(d)

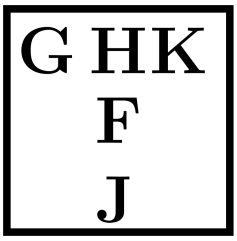


Q39. In the following figure series, select the figure which can be placed at the sign of question mark (?) from the given alternatives.

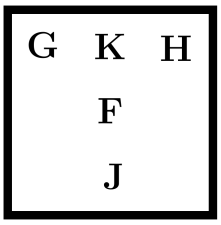


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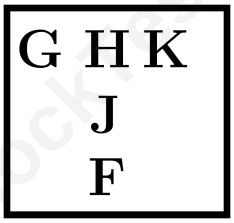
(a)



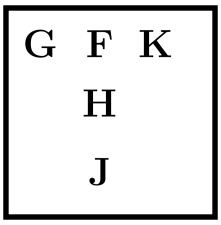
(b)



(c)



(d)



Q40. The present ages of A and B is 11 years and 15 years respectively. What was the ratio of ages of A and B, 6 years ago?

(a) 9 : 5
(b) 5 : 9
(c) 11 : 9
(d) 5 : 11

SESSION 2

Q41. Which of the following is an example of gas-solid foam type of colloid?

(a) Milk
(b) Mist
(c) Milk of magnesia
(d) Sponge

Q42. In India, what was the share of industrial sector in GDP in 1950-1951?

(a) 5%
(b) 11.8%
(c) 50%
(d) 65%

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Q43. Which one of the following pair is NOT correctly matched?

I. The Panchayat – Part X

II. Official Language – Part XVII

(a) Only I
(b) Only II
(c) Both I and II
(d) Neither I nor II

Q44. The Coriolis force is responsible for deflecting winds towards the right in the northern hemisphere and towards the left in the southern hemisphere, this is known as _____.

(a) Ferrel's Law
(b) Wagner's law
(c) Homes's law
(d) Davis's law

Q45. How many chambers are there in the heart of amphibians?

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

Q46. The term ‘Samyakcharitra’ in Jainism refers to ____.

(a) Right faith
(b) Right conduct
(c) Right meditation
(d) Right knowledge

Q47. Which of the following dances is traditionally performed in the state of Nagaland?

(a) Shon
(b) Leshalaptu
(c) Phulpati
(d) Lezim

Q48. Which of the following organ secretes adrenaline in animals?

(a) Pituitary gland
(b) Thyroid gland
(c) Adrenal gland
(d) Thymus gland

Q49. ‘Pushkar fair’ is held in which of the following Indian state?

(a) Rajasthan
(b) Kerala
(c) Punjab
(d) Bihar

Q50. In 1600, which English Queen granted a charter to the East India Company, giving it exclusive trading rights with the East?

(a) Queen Victoria
(b) Queen Mary
(c) Queen Anne
(d) Queen Elizabeth I

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Q51. In which Indian state is the 'Bushu' festival traditionally celebrated?

(a) Bihar
(b) Punjab
(c) Nagaland
(d) Karnataka

Q52. The Galaxies are spread over vast distances, which are measured in ____.

(a) light years
(b) kilometres
(c) metres
(d) nanometres

Q53. Which of the following incidents took place on 13 April 1919?

(a) Ahmedabad Mill Workers Movement
(b) Jallianwala Bagh Massacre
(c) Chauri-Chaura incident
(d) Champaran Satyagraha Movement

Q54. What is the name of the two spacecrafts involved in the Proba-3 mission?

(a) SunSat and EarthSat
(b) Proba-A and Proba-B
(c) Ocra and Nexus
(d) Coronagraph and Occulter

Q55. As per the 5th report of National Family Health Survey (2019-21) the sex ratio of total population of India (females per 1000 males) is _____.

(a) 1020
(b) 990
(c) 950
(d) 1080

Q56. The kinetic energy of an object increases with its _____.

(a) speed
(b) friction
(c) volume
(d) density

Q57. In March 2025, which country's government was accused of using a 'sonic weapon' against protestors, a device that emits painful sound waves?

(a) Serbia
(b) Egypt
(c) Greece
(d) Madagascar

Q58. India aims to increase its wind energy capacity from 42 GW to 140 GW by _____.

(a) 2030
(b) 2035
(c) 2040
(d) 2050

Q59. Which of the following port is located 105 Km downstream from Kolkata and has been constructed to reduce the congestion at Kolkata port?

(a) Paradip
(b) Kandla
(c) Jawaharlal Nehru

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(d) Haldia

Q60. Who is the author of the book ‘In the Footsteps of Mahatma... Gandhi and Sanitation’?

(a) Raja Rao
(b) Arun Shourie
(c) Sudarshan Iyengar
(d) Kamala Das

Q61. All branches of Vijaya Bank and Dena Bank started to function as branches of Bank of Baroda from April 1, _____.

(a) 2019
(b) 2021
(c) 2023
(d) 2017

Q62. According to the laws of table tennis, a player can win a game of table tennis by scoring _____ points (if there is no tie at 10-10).

(a) 11
(b) 9
(c) 12
(d) 15

Q63. Who built 'Dinpanah' on the mound of ancient Indraprastha?

(a) Bakhtiyar Khilji
(b) Akbar
(c) Humayun
(d) Mohammed Bin Tughlaq

Q64. Which of the following is a Tat Vadya?

(a) Para
(b) Dandia
(c) Dilruba
(d) Flute

Q65. Which country is ranked 1st in the Global Firepower Index 2025 with the lowest Power Index score of 0.0744?

(a) USA
(b) Russia
(c) China
(d) India

Q66. From the alternatives given below, select the correct meaning of the idiom.

Make one's toes curl.

(a) To be and remain active, alert, and focused
(b) To insult, offend, or upset someone, especially by involving oneself in that which is someone else's responsibility
(c) To cause one an acute feeling of disgust, shame, embarrassment, or anguish
(d) To tentatively begin or get involved in a new experience

Q67. Choose the correctly spelt word from the given options.

(a) Embarasment
(b) Embarrasment
(c) Embarassment
(d) Embarrassment

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Q68. Select the option with the correct spelling that can replace the underlined word in the given sentence. If the spelling in the given sentence is already correct, choose Option “No replacement required”.

His laconec response to the detailed question frustrated the interviewer, who expected more elaboration.

(a) laconic
(b) lakonic
(c) lacounic
(d) No replacement required

Q69. There are four underlined words in the sentence given below. One of them is misspelt. Choose the option with the misspelt word.

The central bank stressed the importance of prudance in fiscal policy to maintain stability and avoid unnecessary pressure on the national currency.

(a) stressed
(b) prudance
(c) fiscal
(d) currency

Q70. Choose the misspelt word from the given options.

(a) Critisism
(b) Optimism
(c) Pessimism
(d) Egotism

Q71. Choose the word that is most opposite in meaning to “cosy”.

(a) Uncomfortable
(b) Homely
(c) Comfortable
(d) Snug

Q72. Choose the word that is the antonym of Go on.

(a) Proceed
(b) Continue
(c) Persist
(d) Stop

Q73. Choose the correct word to complete the sentence.

The old castle was said to be haunted by a _____.

(a) night
(b) knight
(c) nigh
(d) knit

Q74. Choose the most suitable one-word substitution for the following.

A person who opposes war.

(a) Sadist
(b) Pacifist
(c) Terrorist
(d) Nihilist

Q75. Which of the following options is the most suitable conversion of the following sentence into Passive Voice?

They have built a new bridge across the river.

(a) A new bridge has been built across the river.
(b) A new bridge was being built across the river.
(c) A new bridge is built across the river.

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(d) A new bridge will be built across the river.

Q76. Which of the following options is the most suitable conversion of the following sentence into Passive Voice?

Couldn't the mechanic identify the problem?

(a) Can't the problem be identified by the mechanic?
(b) Couldn't the problem be identified by the mechanic?
(c) Couldn't the problem identified by the mechanic?
(d) Couldn't the problem be identify by the mechanic?

Q77. Which of the following options is the most suitable conversion of the following sentence into active voice?

Had the concert tickets already been sold out by the event organisers?

(a) Have the event organisers already sold out the concert tickets?
(b) Did the event organisers already sell out the concert tickets?
(c) Were the event organisers already selling out the concert tickets?
(d) Had the event organisers already sold out the concert tickets?

Q78. In the given question, a sentence is divided into four parts and given in the alternatives (A), (B), (C), and (D). There is an error in one part. Choose the alternative containing that part of the sentence that has the error. Choosing the alternative with the error will be the answer.

I want to spend some time in the forest passing with trees and enjoying the natural beauty.

(a) I want to spend
(b) some time in the
(c) forest passing with trees
(d) and enjoying the natural beauty.

Q79. Which of the following options is the most suitable conversion of the following sentence into active voice?

When was the money transferred to you by her?

(a) When does she transfer the money to you?
(b) When did she transferred the money to you?
(c) When did she transfer the money to you?
(d) When was she transferring the money to you?

Q80. Select the correct alternative to fill in the blank with the correct preposition in the following sentence.

There is a sports car available _____ sale in Bapuji Nagar.

(a) on
(b) for
(c) to
(d) through

Q81. A part of the following sentence is underlined. Choose the option which can replace the underlined part to improve the sentence. In case Options A, B and C are not found suitable, choose Option D: “No Improvement Required.”

The review panel concluded that the policy was replete in inconsistencies and therefore required immediate revision.

(a) replete with inconsistencies and therefore required
(b) replete of inconsistencies and therefore requiring
(c) replete by inconsistencies and therefore requires
(d) No improvement required

Q82. Select the correct alternative to fill in the blank with the correct preposition in the following sentence.

The athlete has no chance _____ winning this match.

(a) on
(b) of
(c) for
(d) by

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Q83. Given below are six sentences taken from a paragraph. The first and the last sentences are numbered S1 and S2 and are placed in the first and last positions respectively. The other four sentences between the first and last sentences are jumbled up and are numbered A, B, C, and D. Rearrange the jumbled sentences in a logical sequence keeping the unity and coherence of the paragraph intact. Choose the correct alternative that best describes the sequence.

S1. He surveyed the way over to the terrace from which the archers had fired.

A. Going to the side of the bridge, he judged distances and how difficult it would be to reach that terrace, drew the Blades of Athena, and then leaped into space.

B. The archers had to be guarding something important.

C. That provided him as good a direction to explore as any.

D. And if he approached cautiously enough, he might find a way to declare his intentions of speaking with the Sisters of Fate so he would not have to fight his way through a phalanx of other guards.

S2. The blades dug into the ornate stonework facing the palace wall.

(a) ACBD
(b) BDAC
(c) DBAC
(d) CBDA

Q84. Given below are six sentences taken from a paragraph. The first and the last sentences are numbered S1 and S2 and are placed in the first and last positions respectively and are fixed in their positions. The other four sentences between the first and last sentences are jumbled up and are numbered A, B, C, and D. Rearrange the jumbled sentences in a logical sequence keeping the unity and coherence of the paragraph intact. Choose the correct alternative that best describes the sequence.

S1. Twilight was descending like a rain of gray ashes.

A. A minute later Lulu entered like a whirlwind, slamming doors, overturning chairs that she might hurry more.

B. It was the hour in which the Via Toledo becomes dangerous because of the great number of large and small carriages that pass up and down in a continuous stream.

C. Sofia, standing at the window that opened out onto the balcony, was gazing down into the crowded, noisy street.

D. Sofia seemed looking for someone; suddenly a vivid flush passed over her face, she bent her head slightly, then suddenly paled and turned back into the room.

S2. "What are you doing here, Donna Sofia Santangelo? Are you reading?"

(a) BDAC
(b) CBDA
(c) CBAD
(d) DACB

Q85. A part of the following sentence is underlined. Choose the option that can replace the underlined part to improve the sentence. If you feel Options A, B, or C do not improve the sentence, then choose Option D: "No improvement required."

The reason why I am confused is because they are giving me mixed signals.

(a) Why am I confused is because
(b) The reason for my confusion is because
(c) I am confused because
(d) No improvement required

Directions

Read the following passage carefully and answer the questions based on the passage:

Bertolt Brecht began writing plays in the 1920s, but they didn't gain recognition in the West until the mid-20th century, when people began rejecting Stanislavsky-oriented realism and the presentation of Well-made plays on stage. Epic theatre is based on the theories and practices developed by Brecht in the twenties. 'Epic theatre, German episches Theatre, a mode of instructive theatre showing a number of not so tightly knit scenes that refrained from creating an illusion and frequently broke the plot to talk to the spectators in a direct manner with analysis, argument, or evidence.'

It follows the episodic structure and didactic style of Expressionist drama directed by Erwin Piscator. In these plays, Brecht makes use of 'alienation effect' to dissuade the audience from empathizing with characters and focus objectively on the action

and argument and draw a conclusion. This theatre also shows Chinese theatre influence, as the actors kept a distance from the characters they impersonated on stage.

Q86. Why did Brecht's plays gain recognition in the West only in the mid-20th century?

(a) The audiences started to reject the realism of Stanislavsky and the well-made plays and looked for new theatrical forms.
(b) Brecht changed his style and began writing romantic dramas, which were easier to digest by the public.
(c) An explanation for this is that his plays were not allowed in Europe until the end of World War II.
(d) Another reason for this is that he deserted political matters and solely concentrated on entertainment.

Q87. What is the defining feature of Epic Theatre according to Brecht's theory?

(a) A plot that is closely woven together and thus conjures up a strong illusion of reality along with emotional identification
(b) An emphasis on melodrama and sentimental storytelling in order to evoke empathy
(c) A series of loosely connected scenes that break the illusion and encourage critical thinking
(d) The use of improvisation as the only means of comunication without any structured narrative.

Q88. Which theatrical technique did Brecht use to prevent audience empathy and maintain critical distance?

(a) Alienation effect, keeps the audience critical
(b) Catharsis, from Greek tragedy
(c) Stream-of-consciousness, from modernist fiction
(d) Method acting, by Stanislavsky

Q89. What was the factor that contributed to Brecht's concept that performers ought to maintain a certain amount of detachment from their roles?

(a) The realistic acting approach practiced by Stanislavsky
(b) The spontaneous methods used in the Italian commedia dell'arte
(c) The emotional truthfulness in Chekhov's plays
(d) The significant movements of the Chinese theatre, where players do not completely identify with their character

Q90. Which of the following best distinguishes Epic Theatre from traditional realist drama?

(a) It presents the story in an episodic manner and interacts with the audience directly to provoke their critical thinking
(b) It seeks to encourage the audience's emotional release by making the illusion of reality more convincing.
(c) It avoids addressing social issues and primarily explores internal psychological conflicts.
(d) It emphasizes ornate sets and costumes specifically to heighten the illusion of reality.

ANSWER KEY

1	b	2	b	3	b	4	d	5	c	6	b	7	c	8	c	9	b	10	b
11	a	12	c	13	a	14	d	15	d	16	d	17	b	18	b	19	c	20	b
21	b	22	a	23	b	24	a	25	c	26	a	27	b	28	c	29	c	30	c
31	a	32	c	33	c	34	c	35	c	36	d	37	c	38	a	39	a	40	b
41	d	42	b	43	a	44	a	45	b	46	b	47	b	48	c	49	a	50	d
51	c	52	a	53	b	54	d	55	a	56	a	57	a	58	a	59	d	60	c
61	a	62	a	63	c	64	c	65	a	66	c	67	d	68	a	69	b	70	a
71	a	72	d	73	b	74	b	75	a	76	b	77	d	78	c	79	c	80	b
81	a	82	b	83	d	84	b	85	c	86	a	87	c	88	a	89	d	90	a

SOLUTIONS

Q1. Answer: (b) 3 : 10

Given:

Factory	Production of Wheat (%)

P	15%
Q	25%
R	12%
S	25%
T	23%

Total Production of Wheat = 100%
Formula Used:
Ratio = Production of Factory P : (Production of Factory Q + Production of Factory S)
Calculation:
According to the pie chart,
=> Production of wheat by factory P = 15%
=> Production of wheat by factory Q = 25%
=> Production of wheat by factory S = 25%
=> Total production of wheat by Q and S = 25% + 25% = 50%
=> Required Ratio = 15% : 50%
=> Ratio = 15 : 50
=> Ratio = (15 ÷ 5) : (50 ÷ 5)
=> Ratio = 3 : 10
Therefore The correct answer is 3 : 10.

Q2. Answer: (b) 4563

Given:

Barrack	Percentage of Soldiers (%)
B1	20%
B2	12%
B3	15%
B4	18%
B5	35%

Number of soldiers in B1 = 2340
Soldiers in B6 = (Soldiers in B2 + B4) + 30% of (Soldiers in B2 + B4)
Formula Used:
Value of required part = (Known Value ÷ Known Percentage) × Required Percentage
Increased Value = Original Value × (100 + Increase %) ÷ 100
Calculation:
According to the pie chart,
=> Percentage of soldiers in B2 and B4 = 12% + 18% = 30%
Since 20% of the total soldiers (B1) = 2340,
=> Total soldiers in (B2 + B4) = (2340 ÷ 20) × 30
=> Total soldiers in (B2 + B4) = 117 × 30 = 3510
Now, calculate the number of soldiers in B6 (which is 30% more than 3510):
=> Soldiers in B6 = 3510 × (100 + 30) ÷ 100
=> Soldiers in B6 = 3510 × 1.3
=> Soldiers in B6 = 4563
Therefore The correct answer is 4563.

Q3. Answer: (b) 40

Given:

City (from left to right)	Number of Buses
City 1	80
City 2	100
City 3	90
City 4	70
City 5	110

Formula Used:
Difference = Maximum Value − Minimum Value
Calculation:
From the given data in the bar graph,
=> The maximum number of buses in a city = 110 (City 5)
=> The minimum number of buses in a city = 70 (City 4)
=> Required Difference = Maximum buses − Minimum buses
=> Required Difference = 110 − 70
=> Required Difference = 40
Therefore The correct answer is 40.

Q4. Answer: (d) D2

Given:

Department	Number of Males (M)	Number of Females (F)
D1	100	120
D2	200	180
D3	140	160
D4	80	120
D5	120	140

Formula Used:
Total number of males and females = Number of Males + Number of Females
Calculation:
According to the graph, we calculate the total count for each department:
=> Total in D1 = 100 + 120 = 220
=> Total in D2 = 200 + 180 = 380
=> Total in D3 = 140 + 160 = 300
=> Total in D4 = 80 + 120 = 200
=> Total in D5 = 120 + 140 = 260
Comparing the totals, we find:
=> 380 (D2) > 300 (D3) > 260 (D5) > 220 (D1) > 200 (D4)
=> The maximum total value is 380.
Therefore The correct answer is D2.

Q5. Answer: (c) 24

Shortcut Trick
Total Work = LCM(20, 30) = 60 units.
Efficiency: A = 3 units/day, B = 2 units/day.
Work done in 2-day cycle (A + B) = 3 + 2 = 5 units.
Total 2-day cycles required = 60 ÷ 5 = 12 cycles.
Total time taken = 12 × 2 = 24 days.
Therefore The correct answer is 24 days.
Alternate Method

Given: Time taken by A = 20 days, Time taken by B = 30 days.

Formula: Total Work = Efficiency × Time

Person	Days	Total Work	Efficiency
A	20	60	3
B	30	2	

=> Total Work = LCM(20, 30) = 60 units.

=> Efficiency of A = 60 ÷ 20 = 3 units/day.

=> Efficiency of B = 60 ÷ 30 = 2 units/day.

=> Work in 1st day (A starts) = 3 units.

=> Work in 2nd day (B works) = 2 units.

=> Work in one cycle (2 days) = 3 + 2 = 5 units.

=> Number of cycles to complete 60 units = 60 ÷ 5 = 12 cycles.

=> Total days = 12 × 2 = 24 days.

Therefore The correct answer is 24 days.

Additional Information

Work-Efficiency Relation

Efficiency is inversely proportional to time taken. If time ratio is x : y, efficiency ratio is y : x.

Alternate Day Remainder Rule

If work is not perfectly divisible by cycle work, calculate remaining work and time = Remainder ÷ Efficiency of the next person.

Work and Wages

Wages are distributed based on the actual work done by each individual, which is (Efficiency × Days Worked).

Q6. Answer: (b) 17:8

Shortcut Trick

Total volume = 100 L. Soup removed = 20 L. Remaining volume = 80 L.

In remaining 80 L, Tomato : Water = 3 : 2.

Water = (2/5) × 80 = 32 L.

New total volume = 100 L (after adding 20 L puree).

New Tomato = 100 − 32 = 68 L.

New Ratio = 68 : 32 = 17 : 8.

Therefore The correct answer is 17:8.

Alternate Method

Given: Total Soup = 100 L | Initial Ratio (T:W) = 3:2 | Removal = 20 L | Puree Added = 20 L.

=> Initial Tomato = (3/5) × 100 = 60 L

=> Initial Water = (2/5) × 100 = 40 L

=> Tomato in 20 L removed = (3/5) × 20 = 12 L

=> Water in 20 L removed = (2/5) × 20 = 8 L

=> New Tomato = (60 − 12) + 20 = 68 L

=> New Water = (40 − 8) = 32 L

=> Final Ratio = 68 : 32 = 17 : 8

Therefore The correct answer is 17:8.

Additional Information

Mixture Removal Property

When a portion of a mixture is removed, the concentration and the ratio of components in the remaining portion remains identical to the original mixture.

Replacement Formula

For a component being diluted: Final Quantity = Initial Quantity × $(1 - \text{Removed/Total})^n$, where n is the number of operations.

Alligation Cross Method

Used to find the ratio in which two mixtures are mixed to get a desired mean concentration: (Higher value − Mean) / (Mean − Lower value).

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Q7. Answer: (c) Rs. 1050

Shortcut Trick

Discount = 20% = 1/5

Ratio MP : SP = 5 : (5 − 1) = 5 : 4

Given 4 units = Rs. 840

1 unit = Rs. 840 ÷ 4 = Rs. 210

MP = 5 units = 5 × Rs. 210 = Rs. 1050

Therefore The correct answer is Rs. 1050.

Alternate Method

Given:

Selling Price (SP) = Rs. 840

Discount percentage = 20%

Formula Used:

Marked Price (MP) = SP × [100 ÷ (100 − Discount%)]

=> Let Marked Price be MP.

=> SP = MP × (100 − 20)%

=> 840 = MP × 80%

=> 840 = MP × (80 ÷ 100)

=> 840 = MP × 0.8

=> MP = 840 ÷ 0.8

=> MP = 1050

Therefore The correct answer is Rs. 1050.

Additional Information

Discount and Marked Price

Discount is the reduction offered on the Marked Price (MP) of an article. Discount = MP − SP.

Profit and Loss in terms of MP

Relation between CP and MP: MP ÷ CP = (100 + Profit%) ÷ (100 − Discount%).

Successive Discounts

Single equivalent discount for two successive discounts x% and y% = (x + y − xy/100)%.

Q8. Answer: (c) Rs. 5,945.95

Shortcut Trick

Profit ratio (X : Y : Z) = (12,000 × 12) : (15,000 × 8) : (18,000 × 10)

Ratio = 144,000 : 120,000 : 180,000 = 144 : 120 : 180 = 12 : 10 : 15

Total units = 12 + 10 + 15 = 37 units

37 units = Rs. 22,000 => 1 unit = 22,000 ÷ 37

Y's share = 10 units = (22,000 ÷ 37) × 10 ≈ Rs. 5,945.95

Therefore The correct answer is Rs. 5,945.95.

Alternate Method

Given:

Investment of X = Rs. 12,000, Time = 12 months

Investment of Y = Rs. 15,000, Time = 8 months

Investment of Z = Rs. 18,000, Time = 10 months

Total Profit = Rs. 22,000

Formula Used:

Profit Ratio = (Capital_X × Time_X) : (Capital_Y × Time_Y) : (Capital_Z × Time_Z)

Calculations:

=> Profit share of X : Y : Z = (12,000 × 12) : (15,000 × 8) : (18,000 × 10)

=> X : Y : Z = 144,000 : 120,000 : 180,000

=> Simplifying the ratio (divide by 12,000): 12 : 10 : 15

=> Sum of ratio parts = 12 + 10 + 15 = 37

=> Share of Y = (Y's ratio ÷ Total ratio) × Total Profit

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=> Share of Y = (10 ÷ 37) × 22,000

=> Share of Y = 220,000 ÷ 37

=> Share of Y = Rs. 5,945.9459...

Therefore The correct answer is Rs. 5,945.95.

Additional Information

Partnership Profit Division

In a partnership, profit is always distributed in the ratio of the product of individual capitals and their respective time periods (P1 : P2 = C1T1 : C2T2).

Working vs. Sleeping Partner

A working partner manages the business and may receive a fixed salary or commission before the remaining profit is divided according to capital ratios.

Simple vs. Compound Partnership

In simple partnership, capitals are invested for the same time. In compound partnership, capitals are invested for different time durations.

Q9. Answer: (b) 205.13%

Shortcut Trick

Initial ratio of A to B = 15 : 85 = 3 : 17

Final ratio of A to B = 35 : 65 = 7 : 13

Equating B (constant) by multiplying initial by 13 and final by 17:

Initial A = 3 × 13 = 39 | Final A = 7 × 17 = 119

Percentage increase in A = (119 − 39) ÷ 39 × 100 = 80/39 × 100 ≈ 205.13%

Therefore The correct answer is 205.13%.

Alternate Method

Given:

Initial Mixture: A = 15%, B = 85%

Final Mixture: A = 35%, B = 65%

Formula:

Percentage Increase = (Change in quantity ÷ Original quantity) × 100

Let the initial total mixture be 100 units.

=> Initial quantity of A = 15 units, Initial quantity of B = 85 units.

=> After adding A, the quantity of B remains constant at 85 units.

=> In the new mixture, B represents 100% − 35% = 65%.

=> 65% of New Total Mixture = 85 units

=> New Total Mixture = 85 ÷ 0.65 = 130.769 units

=> New quantity of A = New Total − B = 130.769 − 85 = 45.769 units

=> Increase in quantity of A = 45.769 − 15 = 30.769 units

=> Percentage increase in A = (30.769 ÷ 15) × 100

=> Percentage increase in A ≈ 205.13%

Therefore The correct answer is 205.13%.

Additional Information

Mixture Constant Property

When only one component of a mixture is added or removed, the absolute quantity of the other component remains unchanged. Use this constant to find the new total volume.

Percentage Change Formula

Percentage Increase/Decrease = [(Final Value − Initial Value) ÷ Initial Value] × 100.

Ratio Balancing Method

To solve mixture problems quickly, represent components as ratios and multiply the ratios by suitable factors to keep the non-changing component at the same numerical value.

Q10. Answer: (b) 25/6 > 3 5/6 > 22/6 > 3 1/2

Shortcut Trick

Convert all values to fractions with a common denominator of 6.

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3 5/6 = 23/6, 25/6, 3 1/2 = 21/6, 22/6.

Now, compare the numerators: 25 > 23 > 22 > 21.

Arranging in descending order: 25/6 > 23/6 > 22/6 > 21/6.

Therefore The correct answer is 25/6 > 3 5/6 > 22/6 > 3 1/2.

Alternate Method

Given: 3 5/6, 25/6, 3 1/2, 22/6

Formula Used: Mixed fraction a b/c = (a × c + b) / c; Equivalent fractions.

=> 3 5/6 = (3 × 6 + 5) / 6 = 23/6

=> 25/6 = 25/6

=> 3 1/2 = (3 × 2 + 1) / 2 = 7/2

=> Convert 7/2 to denominator 6: (7 × 3) / (2 × 3) = 21/6

=> 22/6 = 22/6

=> Comparing all: 25/6, 23/6, 22/6, 21/6

=> Descending order: 25/6 > 23/6 > 22/6 > 21/6

=> Original values: 25/6 > 3 5/6 > 22/6 > 3 1/2

Therefore The correct answer is 25/6 > 3 5/6 > 22/6 > 3 1/2.

Additional Information

Comparison of Fractions

To compare fractions, convert them to like fractions (same denominator) using the LCM of their denominators, then compare the numerators.

Mixed to Improper Conversion

A mixed number a b/c is converted to an improper fraction as (a × c + b) / c.

Cross-Multiplication Method

For two fractions a/b and c/d, if a × d > b × c, then a/b > c/d.

Q11. Answer: (a) 13

Shortcut Trick

Estimate the middle value by dividing the sum by 2: 313 ÷ 2 = 156.5.

Identify perfect squares nearest to 156.5: 144 (12^2) and 169 (13^2).

Check their sum: 144 + 169 = 313. This matches the given condition.

The larger of the two consecutive numbers (12 and 13) is 13.

Therefore The correct answer is 13.

Alternate Method

Given: Sum of squares of two consecutive natural numbers = 313.

Method: Quadratic equation factorisation.

=> Let the two consecutive natural numbers be x and (x + 1).

=> $x^2 + (x + 1)^2 = 313$

=> $x^2 + (x^2 + 2x + 1) = 313$

=> $2x^2 + 2x + 1 - 313 = 0$

=> $2x^2 + 2x - 312 = 0$

=> $x^2 + x - 156 = 0$

=> $x^2 + 13x - 12x - 156 = 0$

=> $x(x + 13) - 12(x + 13) = 0$

=> $(x - 12)(x + 13) = 0$

=> $x = 12$ or $x = -13$

=> Since x is a natural number, x = 12.

=> Larger number = x + 1 = 12 + 1 = 13.

Therefore The correct answer is 13.

Additional Information

Consecutive Numbers

Numbers that follow each other continuously in order from smallest to largest. For natural numbers, the difference between consecutive terms is always 1.

Quadratic Roots Formula

For a quadratic equation $ax^2 + bx + c = 0$, roots can be found using $x = [-b \pm \sqrt{(b^2 - 4ac)}] \div 2a$.

Sum of Squares of First n Natural Numbers

The sum of the squares of the first n natural numbers is given by the formula: $[n(n + 1)(2n + 1)] \div 6$.

Q12. Answer: (c) 4/11

Shortcut Trick

For an expression of type $1/(a + \sqrt{b}) + 1/(a - \sqrt{b})$, the result is always $2a / (a^2 - b)$.

Here, $a = 6$ and $\sqrt{b} = \sqrt{3} \Rightarrow b = 3$.

Applying the formula: $2 \times 6 / (6^2 - 3) = 12 / (36 - 3)$.

Result = $12 / 33 = 4/11$.

Therefore The correct answer is 4/11.

Alternate Method

Given:

Expression: $1/(6 + \sqrt{3}) + 1/(6 - \sqrt{3})$

Formula Used:

Addition of fractions: $(1/A) + (1/B) = (A + B) / (AB)$

Algebraic Identity: $(a + b)(a - b) = a^2 - b^2$

Calculations:

$\Rightarrow [(6 - \sqrt{3}) + (6 + \sqrt{3})] / [(6 + \sqrt{3}) \times (6 - \sqrt{3})]$

$\Rightarrow (6 + 6 - \sqrt{3} + \sqrt{3}) / [6^2 - (\sqrt{3})^2]$

$\Rightarrow 12 / (36 - 3)$

$\Rightarrow 12 / 33$

$\Rightarrow (4 \times 3) / (11 \times 3)$

$\Rightarrow 4/11$

Therefore The correct answer is 4/11.

Additional Information

Rationalization of Denominator

To rationalize $1/(a + \sqrt{b})$, multiply numerator and denominator by the conjugate $(a - \sqrt{b})$.

Difference of Squares

The product of sum and difference of two terms is $(a + b)(a - b) = a^2 - b^2$, which eliminates the square root in surds.

Conjugate Surds

$(a + \sqrt{b})$ and $(a - \sqrt{b})$ are called conjugate pairs; their sum and product are always rational numbers.

Q13. Answer: (a) 18

Shortcut Trick

Approximate the cube root of the product: $\sqrt[3]{693}$ is between 8 and 9 (since $8^3 = 512$ and $9^3 = 729$).

Test consecutive odd numbers around 9: 7, 9, and 11.

Verification: $7 \times 9 \times 11 = 63 \times 11 = 693$ (Matches given product).

Smallest = 7, Largest = 11. Sum = 7 + 11 = 18.

Therefore The correct answer is 18.

Alternate Method

Given:

Product of three consecutive odd numbers = 693

Method: Factorization

$\Rightarrow$ Let the numbers be x, x+2, and x+4.

$\Rightarrow x(x+2)(x+4) = 693$

$\Rightarrow$ Perform prime factorization of 693:

$\Rightarrow 693 = 3 \times 231$

$\Rightarrow 693 = 3 \times 3 \times 77$

$\Rightarrow 693 = 3 \times 3 \times 7 \times 11$

$\Rightarrow 693 = 9 \times 7 \times 11$

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=> The consecutive odd numbers are 7, 9, and 11.

=> Smallest number = 7

=> Largest number = 11

=> Sum = 7 + 11 = 18

Therefore The correct answer is 18.

Additional Information

Consecutive Odd Numbers

Consecutive odd numbers always have a common difference of 2 and can be represented as n, n+2, n+4...

Estimation Trick for Products

For three consecutive numbers with mean 'm', their product is approximately m^3. Thus, $\sqrt[3]{}$(Product) gives a quick estimate of the middle number.

Arithmetic Progression Properties

The sum of any number of terms in an AP is given by $S_n = n/2 \times$ (first term + last term).

Q14. Answer: (d) $2(\sqrt{3} + \sqrt{2})$

Shortcut Trick

If the difference between the numbers under the square roots is 1, the reciprocal of $(\sqrt{a} - \sqrt{b})$ is simply $(\sqrt{a} + \sqrt{b})$.

Since $3 - 2 = 1$, then $1/(\sqrt{3} - \sqrt{2}) = \sqrt{3} + \sqrt{2}$.

Expression = $(\sqrt{3} + \sqrt{2}) + (\sqrt{3} + \sqrt{2}) = 2(\sqrt{3} + \sqrt{2})$.

Therefore The correct answer is $2(\sqrt{3} + \sqrt{2})$.

Alternate Method

Given: $(\sqrt{3} + \sqrt{2}) + 1/(\sqrt{3} - \sqrt{2})$

Formula used: $(a - b)(a + b) = a^2 - b^2$

=> Expression = $(\sqrt{3} + \sqrt{2}) + [1 \times (\sqrt{3} + \sqrt{2})] / [(\sqrt{3} - \sqrt{2}) \times (\sqrt{3} + \sqrt{2})]$

=> Expression = $(\sqrt{3} + \sqrt{2}) + (\sqrt{3} + \sqrt{2}) / [(\sqrt{3})^2 - (\sqrt{2})^2]$

=> Expression = $(\sqrt{3} + \sqrt{2}) + (\sqrt{3} + \sqrt{2}) / (3 - 2)$

=> Expression = $(\sqrt{3} + \sqrt{2}) + (\sqrt{3} + \sqrt{2}) / 1$

=> Expression = $2 \times (\sqrt{3} + \sqrt{2})$

Therefore The correct answer is $2(\sqrt{3} + \sqrt{2})$.

Additional Information

Rationalization of Surds

To rationalize a denominator of the form $(\sqrt{a} \pm \sqrt{b})$, multiply both the numerator and the denominator by its conjugate $(\sqrt{a}$ -/+ $\sqrt{b})$.

Conjugate Property

When the product of two irrational numbers is a rational number, they are called conjugates of each other, satisfying $(a - \sqrt{b})(a + \sqrt{b}) = a^2 - b$.

Reciprocal Rule

For any surds where $a - b = 1$, the reciprocal of the difference is the sum: $1/(\sqrt{a} - \sqrt{b}) = \sqrt{a} + \sqrt{b}$.

Q15. Answer: (d) 2

Shortcut Trick

A number is divisible by 6 if it is divisible by both 2 and 3.

5678 is even, so it is already divisible by 2.

Sum of digits of 5678 = 5 + 6 + 7 + 8 = 26.

Nearest multiple of 3 less than 26 is 24.

Least number to subtract = 26 − 24 = 2.

Therefore The correct answer is 2.

Alternate Method

Given: Number = 5678, Divisor = 6

Formula: Dividend = (Divisor × Quotient) + Remainder

=> 5678 ÷ 6

=> 56 ÷ 6 = 9 with remainder 2

=> 27 ÷ 6 = 4 with remainder 3

=> 38 ÷ 6 = 6 with remainder 2

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=> Remainder = 2
=> The least number to be subtracted is the remainder itself.
Therefore The correct answer is 2.
Additional Information
Divisibility Rule of 3
A number is divisible by 3 if the sum of all its digits is divisible by 3.
Divisibility Rule of 6
A number is divisible by 6 if it is divisible by both 2 (even number) and 3 (sum of digits rule).
Subtraction vs Addition for Divisibility
To make a number divisible, subtract the Remainder or add (Divisor − Remainder).

Q16. Answer: (d) 31010

Shortcut Trick
Sum of squares formula = n(n+1)(2n+1) ÷ 6
Required Sum = (Sum from 1 to 45) − (Sum from 1 to 10)
Sum = [(45 × 46 × 91) ÷ 6] − [(10 × 11 × 21) ÷ 6]
Sum = 31395 − 385 = 31010
Therefore The correct answer is 31010.
Alternate Method
Given:
Series: $11^2 + 12^2 + 13^2 + ... + 45^2$
Formula Used:
Sum of squares of first n natural numbers (Σn^2) = [n(n+1)(2n+1)] ÷ 6
Calculations:
=> Sum (11^2 to 45^2) = $\Sigma 1^{(45)} n^2 - \Sigma 1^{(10)} n^2$
=> For n = 45: $\Sigma 1^{(45)} n^2 = [45 \times (45+1) \times (2 \times 45 + 1)] \div 6$
=> $\Sigma 1^{(45)} n^2 = [45 \times 46 \times 91] \div 6$
=> $\Sigma 1^{(45)} n^2 = 15 \times 23 \times 91 = 31395$
=> For n = 10: $\Sigma 1^{(10)} n^2 = [10 \times (10+1) \times (2 \times 10 + 1)] \div 6$
=> $\Sigma 1^{(10)} n^2 = [10 \times 11 \times 21] \div 6$
=> $\Sigma 1^{(10)} n^2 = 5 \times 11 \times 7 = 385$
=> Required Sum = 31395 − 385 = 31010
Therefore The correct answer is 31010.
Additional Information
Sum of first n natural numbers
The sum of the first n natural numbers is given by the formula $S_n = [n(n+1)] \div 2$.
Sum of cubes of first n natural numbers
The sum of cubes is the square of the sum of the first n natural numbers: $\Sigma n^3 = [n(n+1) \div 2]^2$.
Sum of first n even natural numbers
The sum of the first n even natural numbers (2, 4, 6, ...) is given by n(n+1).

Q17. Answer: (b) X - 3.4

Shortcut Trick
Net change in the sum of numbers = New value − Old value
Net change = 20 − 54 = −34
Change in average = Net change ÷ Total numbers = −34 ÷ 10 = −3.4
New average = Old average + Change in average = X − 3.4
Therefore The correct answer is X − 3.4.
Alternate Method
Given:
Total numbers (n) = 10
Initial average = X

Old number = 54
New number = 20
Formula Used:
Average = Total Sum ÷ Total Numbers
New Average = [(Total Sum − Old Value) + New Value] ÷ n
Calculations:
=> Initial sum of 10 numbers = Average × Count = X × 10 = 10X
=> Sum after removing 54 = 10X − 54
=> Sum after adding 20 = (10X − 54) + 20
=> New sum = 10X − 34
=> New average = New sum ÷ 10
=> New average = (10X − 34) ÷ 10
=> New average = X − 3.4
Therefore The correct answer is X − 3.4.
Additional Information
Basic Average Formula
The average is the sum of all observations divided by the total number of observations. Average = ∑x_i ÷ n.
Impact of Change in Values
If every number in a data set is increased/decreased by a constant 'k', the average also increases/decreases by 'k'.
Net Deviation Principle
The algebraic sum of deviations of a set of observations from their arithmetic mean is always zero. New Avg = Old Avg + (Total Change ÷ n).

Q18. Answer: (b) 42.4

Shortcut Trick
The sum of the first 25 prime numbers (from 2 to 97) is a standard mathematical constant used in exams, which is 1060.
Total count of observations (n) = 25.
Average = Total Sum ÷ Total Count = 1060 ÷ 25.
Average = 42.4.
Therefore The correct answer is 42.4.
Alternate Method
Given: First 25 prime natural numbers.
Formula Used: Average = (Sum of all observations) ÷ (Total number of observations)
=> First 25 prime numbers = 2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47, 53, 59, 61, 67, 71, 73, 79, 83, 89, 97
=> Sum = (2+3+5+7+11) + (13+17+19+23+29) + (31+37+41+43+47) + (53+59+61+67+71) + (73+79+83+89+97)
=> Sum = 28 + 101 + 199 + 311 + 421 = 1060
=> Average = 1060 ÷ 25
=> Average = 42.4
Therefore The correct answer is 42.4.
Additional Information
Definition of Prime Numbers
Natural numbers greater than 1 that have only two factors: 1 and the number itself. The smallest prime is 2.
Average of First n Natural Numbers
Unlike primes, for consecutive natural numbers, the average is simply (n + 1) ÷ 2.
Properties of 2
The number 2 is the only even prime number; all other prime numbers are odd.
Composite Numbers
Numbers with more than two factors are composite. 1 is neither prime nor composite.

Q19. Answer: (c) 82

Shortcut Trick
When two lines are parallel (AB || CD), alternate exterior angles formed by a transversal are equal.

Angle PRB and Angle QSC are alternate exterior angles.
Therefore Angle QSC = Angle PRB = 82°.
Therefore The correct answer is 82°.
Alternate Method
Given: AB || CD and transversal PQ intersects AB at R and CD at S.
Angle PRB = 82°.
=> Angle PRB and Angle RSD are corresponding angles.
=> Angle RSD = Angle PRB = 82°.
=> Angle QSC and Angle RSD are vertically opposite angles.
=> Angle QSC = Angle RSD = 82°.
Therefore The correct answer is 82°.
Additional Information
Corresponding Angles
When two parallel lines are cut by a transversal, the angles in matching corners are equal.
Alternate Interior/Exterior Angles
Pairs of angles on opposite sides of the transversal and outside (exterior) or inside (interior) the parallel lines are equal.
Consecutive Interior Angles
Angles on the same side of the transversal and inside the parallel lines are supplementary (Sum = 180°).

Q20. Answer: (b) 75

Shortcut Trick
Since AB || DE, the angle angle CED is equal to angle BAC (32°) as alternate interior angles.
In ΔCDE, angle ACD acts as the exterior angle to the interior angle angle DCE.
By the Exterior Angle Theorem, angle ACD = angle CDE + angle CED.
angle ACD = 43° + 32° = 75°.
Therefore The correct answer is 75°.
Alternate Method
Given: AB || DE, angle BAC = 32°, angle CDE = 43°.
Formula: Alternate Interior Angles; Exterior Angle Theorem (angle ext = sum of two opposite interior angle s).
=> AB || DE and AE is the transversal.
=> angle CED = angle BAC = 32° (Alternate Interior Angles)
=> In ΔCDE, points A, C, E are collinear, making angle ACD the exterior angle at vertex C.
=> angle ACD = angle CDE + angle CED
=> angle ACD = 43° + 32° = 75°
Therefore The correct answer is 75°.
Additional Information
Exterior Angle Theorem
The measure of an exterior angle of a triangle is equal to the sum of the measures of its two remote (non-adjacent) interior angles.
Alternate Interior Angles
When two parallel lines are intersected by a transversal, the pairs of angles on opposite sides of the transversal and between the parallel lines are always equal.
Angle Sum Property
The sum of all interior angles in any triangle is always 180°. This can be used to find the third angle if two are known.

Q21. Answer: (b) K

The logic followed here is:
So, 'K' will replace the question mark in the given series.
Hence, the correct answer is "Option 2".

Q22. Answer: (a) NSK

The Logic followed here is:
For, DPT : IUY
For, ICR : NHW

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Now for, ? : SXP

Therefore, the missing letter cluster is NSK.

Hence, the correct answer is Option 1.

Q23. Answer: (b) UE

The logic followed here is:

So, 'UE' will replace the question mark in the given series.

Hence, the correct answer is "Option 2".

Q24. Answer: (a) (QY, OV, MS)

The Logic followed here is:

For, (KF, IC, GZ)

For, (FW, DT, BQ)

Now, checking the options:

Option (1) → (QY, OV, MS)

Therefore, the cluster set (QY, OV, MS) follows the same logic.

Hence, the correct answer is Option 1.

Q25. Answer: (c) 10

The logic followed here is:

Given: January 1, 2019 was a Tuesday.

Here, 31 (January) + 28 (February) = 59 days

59 ÷ 7 = 8 weeks and 3 odd days

So, Tuesday + 3 days = Friday

Sundays in March 2019
3
10
17
24
31

Number of Sundays in March 2019 = 5

Here, 31 (March) + 30 (April) + 31 (May) + 30 (June) + 31 (July) + 31 (August) + 30 (September) + 31 (October) + 30 (November) = 275 days

275 ÷ 7 = 39 weeks and 2 odd days

So, Friday + 2 days = Sunday

Sundays in December 2019
1
8
15
22
29

Number of Sundays in December 2019 = 5

Month Sundays

March 5

December 5

Total number of Sundays = 5 + 5 = 10

Hence, the correct answer is "Option 3".

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Q26. Answer: (a) Only I

The logic followed here is:

Given: January 1, 1910 was a Saturday.

Month	Odd Days
January	3
February	0
Total	3

So, Saturday + 3 days = Tuesday

Thursdays in March 1910
3
10
17
24
31

Total Thursdays in March 1910 = 5

Month	Odd Days
January	3
February	0
March	3
April	2
Total	8 → 1 odd day

So, Saturday + 1 day = Sunday

Thursdays in May 1910
5
12
19
26

Total Thursdays in May 1910 = 4

Statement Result

I. March 1910 had 5 Thursdays Correct

II. May 1910 had 5 Thursdays Incorrect

Hence, the correct answer is "Option 1".

Q27. Answer: (b) 2

The logic followed here is:

Given: Height of K is shorter than L but taller than J.

So, the order is: J < K < L

Height of no one is shorter than N.

L is not the tallest among them.

Therefore, the remaining student M must be taller than L.

Order: N > J > K > L > M

Students having height less than L but more than N are: J and K

So, Count = 2

Hence, the correct answer is Option 2.

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Q28. Answer: (c) 3

The logic followed here is:

Given: G1, G2, G3, G4, G5, G6 and G7 are sitting around a circular table facing opposite to the centre.

G6 is second to the left of G3.

G7 is third to the right of G6.

G1 is third to the right of G3.

G2 is not next to G1.

G4 is not next to G6.

So, there are 3 girls sitting between G4 and G6.

Hence, the correct answer is Option 3.

Q29. Answer: (c) [figure]

The logic followed here is:

Logic: The second figure is formed by replicating the main internal geometric shape inside itself to create concentric layers, followed by placing a solid black dot directly at the absolute center.

The first pair: The first figure contains a single diamond shape. In the second figure, another smaller concentric diamond is drawn inside it, and a solid black dot is placed at the center.

The second pair: The third figure contains a single hexagon shape. Following the same rule, the missing figure must contain a smaller concentric hexagon inside the original hexagon, along with a solid black dot at the center.

Hence, the correct answer is Option 3.

Q30. Answer: (c) [figure]

The logic followed here is:

Logic: The peripheral elements move one position in a counter-clockwise direction, and the central number increases by 3.

The first pair:

The element at the top moves to the left position.

The element on the left moves to the bottom position.

The element at the bottom moves to the right position.

The element on the right moves to the top position.

The center number increases from 2 to 5.

The second pair:

The element at the top (1) moves to the left position.

The element on the left (5) moves to the bottom position.

The element at the bottom (3) moves to the right position.

The element on the right (2) moves to the top position.

The center number increases from 4 to 7.

Hence, the correct answer is Option 3.

Q31. Answer: (a) HR24

The Logic followed here is:

For, QF20 : RH40

For, LX15 : MZ30

Now for, GP12 : ?

Therefore, the related letter-number cluster for GP12 is HR24.

Hence, the correct answer is Option 1.

Q32. Answer: (c) XZP320

The Logic followed here is:

For, ADJ120 : NHE280

For, RKI130 : MOV290

Now for, LVT160 : ?

Therefore, the related cluster for LVT160 is XZP320.

Hence, the correct answer is Option 3.

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Q33. Answer: (c) 43215

Given words: Discriminate, Discrepancy, Discreet, Discredit, Discuss

Logic: Arrange the words according to dictionary (alphabetical) order.

Now, compare:

Discriminate → i

Discrepancy → e

Discreet → e

Discredit → e

Alphabetical order: d < e < p

Order: Discredit, Discreet, Discrepancy, Discriminate, Discuss

Sequence: 4, 3, 2, 1, 5

Hence, the correct answer is Option 3.

Q34. Answer: (c) 1515

The Logic followed here is:

Logic: The pattern observed is (First Number − 43) = Second Number

For, 5077 : 5034

5077 − 43

= 5034

For, 3323 : 3280

3323 − 43

= 3280

Now for, 1558 : ?

1558 − 43

= 1515

Therefore, the missing number is 1515.

Hence, the correct answer is Option 3.

Q35. Answer: (c) 76

The Logic followed here is:

Logic: The pattern observed is (First Number − 321) = Second Number

For, 871 : 550

871 − 321

= 550

For, 630 : 309

630 − 321

= 309

Now for, 397 : ?

397 − 321

= 76

Therefore, the missing number is 76.

Hence, the correct answer is Option 3.

Q36. Answer: (d) JEKF

The logic followed here is:

Logic: The letters of the word are shifted by the pattern +2, +4, -3, -5 respectively.

Here, BUCK → DYZF

Similarly, FLOW → HPLR

Now, applying the same pattern to HANK:

So, HANK → JEKF

Hence, the correct answer is "Option 4".

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Q37. Answer: (c) 7:20

The logic followed here is:

Logic: Angle between hour hand and minute hand is calculated using:

Angle = |30 × H − 5.5 × M|

Now, checking the options:

For, 7:20 PM

= |30 × 7 − 5.5 × 20|

= |210 − 110|

= 100°

Thus, the angle between the hands is 100° at 7:20 PM.

Hence, the correct answer is Option 3.

Q38. Answer: (a) [figure]

The logic followed here is:

Logic: The number of vertical lines increases by one in each step, while the small square alternates its position and shading.

Vertical lines: 1 → 2 → 3 → 4 → 5

Square position: Right → Left → Right → Left → Right

Square shading: Hollow → Shaded → Hollow → Shaded → Hollow

So, the next figure must contain: 5 vertical lines

A hollow square at the bottom-right corner

Hence, the correct answer is Option 1.

Q39. Answer: (a) [figure]

The logic followed here is:

Logic: The letters shift positions in a fixed cyclic pattern in every step.

Position movement:

Top-Right → Top-Middle

Top-Middle → Top-Left

Top-Left → Center

Center → Bottom

Bottom → Top-Right

Applying the same pattern to Figure 1:

Hence, the correct answer is Option 1.

Q40. Answer: (b) 5 : 9

The logic followed here is:

Logic: To find the ages 6 years ago, subtract 6 from the present ages of both persons and then form the ratio.

Now, calculating:

Age of A, 6 years ago = 11 − 6 = 5 years

Age of B, 6 years ago = 15 − 6 = 9 years

Required ratio = 5 : 9

Hence, the correct answer is Option 2.

Q41. Answer: (d) Sponge

The correct answer is option 4. The detailed solution will be updated soon.

Q42. Answer: (b) 11.8%

The correct answer is option 2. In 1950-51, the industrial sector contributed approximately 11.8% to India's GDP. This low share highlights the agrarian nature of the Indian economy at the time of independence, with the industrial base still in its early stages of development.

Q43. Answer: (a) Only I

The correct answer is option 1. The detailed solution will be updated soon.

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Q44. Answer: (a) Ferrel's Law

The correct answer is option 1. The detailed solution will be updated soon.

Q45. Answer: (b) 3

The correct answer is 3.

Key Points

• Amphibians possess a three-chambered heart, which is a significant evolutionary step from the two-chambered hearts seen in fish.

• The heart structure consists of two atria (the right atrium and the left atrium) and one single ventricle.

• The right atrium receives deoxygenated blood from the various body organs, while the left atrium receives oxygenated blood from the lungs and the skin (which also acts as a respiratory organ).

• Both atria pump blood into the single ventricle, where some degree of mixing of oxygenated and deoxygenated blood occurs before it is pumped out to the rest of the body and the respiratory surfaces.

• This arrangement facilitates double circulation, although it is considered incomplete because the oxygenated and deoxygenated blood streams are not fully separated in the ventricle.

Additional Information

• Fish (Pisces):

• Fish have a two-chambered heart consisting of one atrium and one ventricle.

• They exhibit single circulation, where the heart pumps deoxygenated blood to the gills, and from there, it goes directly to the rest of the body.

• Reptiles:

• Most reptiles have a three-chambered heart with a partially divided ventricle, which reduces the mixing of blood.

• However, crocodiles, alligators, and gavials are unique among reptiles as they possess a fully functional four-chambered heart.

• Birds and Mammals:

• These groups possess a four-chambered heart with two atria and two ventricles.

• This structure ensures the complete separation of oxygenated and deoxygenated blood, allowing for high metabolic efficiency required for warm-blooded (endothermic) animals.

• Amphibian Respiration:

• Because the three-chambered heart allows for some blood mixing, amphibians (such as frogs, toads, and salamanders) often supplement their oxygen intake through cutaneous respiration (breathing through their moist skin).

• This is particularly important during periods when they are submerged in water or during hibernation.

Important Points

• The atrium is the receiving chamber of the heart, while the ventricle is the main pumping chamber.

• In Amphibians, the 3 chambers allow for a more complex circulatory route called the pulmocutaneous circuit, which directs blood to the gas-exchange tissues in the lungs and skin.

• The evolution of the heart from 2 chambers in fish to 3 in amphibians and finally 4 in mammals reflects the increasing energy demands of animals as they moved from aquatic to terrestrial environments.

Q46. Answer: (b) Right conduct

The correct answer is Right conduct.

Key Points

• In Jainism, the path to liberation (Moksha) is defined by the Triratna or the Three Jewels. Samyakcharitra is the third of these jewels and translates literally to Right conduct.

• Samyakcharitra refers to the practice of living a life based on the principles of Jainism, ensuring that one's actions do not lead to the accumulation of new Karma and help in the shedding of old Karma.

• It involves the strict adherence to ethical and moral codes, specifically the avoidance of harm to all living beings, which is the core tenet of Ahimsa.

• While Samyak Darshana (Right Faith) provides the vision and Samyak Jnana (Right Knowledge) provides the understanding, Samyak Charitra is the practical application of those beliefs in daily life. Hence, the correct answer is Right conduct.

• The practice of Right conduct is divided into two categories: Mahavratas (five great vows) for Jain monks and Anuvratas (five small vows) for laypersons or householders.

Additional Information

• Triratna (The Three Jewels):

• Samyak Darshana (Right Faith/Perception): This refers to having the correct vision or belief in the true nature of reality. It is the starting point of the spiritual journey in Jainism, involving the belief in the Tirthankaras and their teachings.

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• Samyak Jnana (Right Knowledge): This is the accurate and doubt-free knowledge of the soul (Jiva) and the non-soul (Ajiva). It requires studying the Jain scriptures and understanding the Anekantavada (theory of many-sidedness).

• Samyak Charitra (Right Conduct): As established, this is the ethical integration of faith and knowledge into action.

• The Five Vows of Jainism:

• Ahimsa: Non-violence toward all living beings.

• Satya: Truthfulness in speech and thought.

• Asteya: Non-stealing or not taking what is not given.

• Brahmacharya: Chastity or sexual continence (added by Lord Mahavira, the 24th Tirthankara).

• Aparigraha: Non-attachment or non-possession of worldly goods.

• Historical Context: Jainism is an ancient Indian religion. Lord Rishabhdev was the 1st Tirthankara, while Lord Parshvanatha was the 23rd. Lord Mahavira (born in 599 BCE) popularized the Triratna and the five-fold path to achieve Kaivalya (omniscience).

Important Points

• The ultimate goal of following the Triratna is to attain Moksha, which is the liberation of the soul from the cycle of birth and death.

• Right Conduct is not just about external actions but also internal purity. It includes Samiti (carefulness in movement) and Gupti (restraint of mind, speech, and body).

• In Jain philosophy, Karma is viewed as a physical substance that sticks to the soul due to passions (Kashayas) like anger, pride, and greed. Samyakcharitra serves as the shield that stops the influx of this matter (Samvara).

• The distinction between Digambara and Svetambara sects also involves slight variations in the interpretation of conduct, particularly regarding clothing and possessions.

Q47. Answer: (b) Leshalaptu

The correct answer is Leshalaptu.

Key Points

• Leshalaptu is a traditional folk dance originating from the state of Nagaland in Northeast India.

• This dance is specifically performed by women and is characterized by its rhythmic and graceful movements that showcase the cultural richness of the Naga people.

• It is one of the many vibrant dance forms of the state, often performed during social gatherings and tribal festivals to celebrate the community's heritage.

• The dancers wear traditional tribal costumes, which typically include colorful hand-woven shawls, ethnic beads, and unique jewelry that vary from tribe to tribe.

• The performance of Leshalaptu highlights the significant role of women in preserving the oral and physical traditions of the Naga tribes.

Additional Information

• Shon:

• Shon is a traditional dance from Ladakh, often referred to as the "Royal Dance" because it was historically performed for the King (Lama) of Ladakh.

• It is performed on special occasions, and the dancers move in a slow, dignified manner accompanied by the sounds of the Surna (oboe) and Daman (drum).

• Phulpati:

• This folk dance belongs to the Malwa region of Madhya Pradesh.

• It is primarily performed by unmarried girls during the Holi festival as a celebration of nature and the arrival of spring.

• Lezim:

• Lezim is a popular folk dance from the state of Maharashtra.

• The dance is named after a small musical instrument called the Lezim, which consists of a wooden stick with jingling cymbals attached to a chain.

• It is a high-energy dance form frequently seen during the Ganesh Chaturthi festival and other cultural processions.

• Nagaland:

• Located in Northeast India, Nagaland became the 16th state of the Indian Union on 1st December 1963.

• The state capital is Kohima, and the largest city is Dimapur.

• It is home to several major tribes, including the Angami, Ao, Sumi, Konyak, and Rengma, each having its own distinct festivals and dances.

Important Points

• Hornbill Festival: Often called the "Festival of Festivals," it is held every year from 1st to 10th December at Kisama Heritage Village to encourage inter-tribal interaction and promote the cultural heritage of Nagaland.

• War Dance: One of the most prominent dance styles in Nagaland, usually performed by men involving mock combat movements, spears, and shields.

• Bailadila: While not a dance, it's worth noting the Naga culture is deeply rooted in agriculture, and many dances like the Zeliang dance or Bamboo dance (similiar to Cheraw) are linked to harvest cycles.

• Moatsu Mong: A major festival of the Ao tribe celebrated in May after the completion of the sowing season, featuring vigorous singing and dancing.

• Sekrenyi: A purification festival celebrated by the Angami tribe in February, marking the start of a new lunar year with traditional rituals.

Q48. Answer: (c) Adrenal gland

The correct answer is Adrenal gland.

Key Points

• The Adrenal glands are small, triangular-shaped endocrine glands located on the superior aspect (top) of both kidneys.

• These glands are responsible for secreting adrenaline (also known as epinephrine) and noradrenaline (norepinephrine) from the adrenal medulla, which is the inner part of the gland.

• Adrenaline is primarily known as the "emergency hormone" or the "fight-or-flight" hormone because it is secreted rapidly in response to stress, danger, or extreme emotions.

• The primary function of adrenaline is to prepare the body for immediate physical action by increasing the heart rate, elevating blood pressure, and dilating the bronchioles in the lungs to increase oxygen intake.

• It also stimulates the breakdown of glycogen into glucose in the liver, increasing blood sugar levels to provide a sudden surge of energy to the muscles.

Additional Information

• Pituitary Gland:

• Often referred to as the "Master Gland," it is located at the base of the brain, just below the hypothalamus.

• It secretes various essential hormones, including Growth Hormone (GH), Thyroid-stimulating hormone (TSH), and Adrenocorticotropic hormone (ACTH), which regulate other endocrine glands.

• Thyroid Gland:

• This butterfly-shaped gland is located in the neck, in front of the trachea.

• It produces Thyroxine (T4) and Triiodothyronine (T3), which play a critical role in regulating the body's metabolic rate, body temperature, and growth.

• Thymus Gland:

• Located in the upper chest behind the sternum, it is a vital part of the immune system during early life.

• It secretes thymosin, a hormone necessary for the maturation and development of T-lymphocytes (T-cells).

• The gland is most active during childhood and begins to shrink (atrophy) after puberty, being replaced by fatty tissue in adults.

Important Points

• The Adrenal gland is divided into two distinct structures: the Adrenal Cortex (outer layer) and the Adrenal Medulla (inner layer).

• The Adrenal Cortex produces corticosteroids such as Cortisol (involved in metabolism and stress response) and Aldosterone (which regulates salt and water balance).

• In medical applications, synthetic adrenaline is used in EpiPens to treat anaphylaxis (severe allergic reactions) by reversing low blood pressure and opening airways.

• The Endocrine System utilizes these hormones as chemical messengers that travel through the bloodstream to reach target organs and maintain homeostasis.

Q49. Answer: (a) Rajasthan

The correct answer is Rajasthan.

Key Points

• The Pushkar Fair, also known as the Pushkar Camel Fair or locally as Kartik Mela, is an annual multi-day livestock fair and cultural fete held in the town of Pushkar.

• It is held in the Ajmer district of the state of Rajasthan, India. Hence, the correct answer is Rajasthan.

• The fair is one of the world's largest camel and livestock fairs, attracting thousands of traders who bring camels, horses, and cattle for sale and purchase.

• The event is celebrated during the Hindu lunar month of Kartika, typically falling in October or November.

• The fair culminates on Kartika Purnima (the full moon day), which is the most auspicious day for pilgrims to take a holy dip in the Pushkar Lake.

• It has become a significant tourist attraction, drawing visitors from across the globe to witness traditional Rajasthani culture, folk

music, and dance.

Additional Information

• Religious Significance:

• Pushkar is home to the only prominent temple dedicated to Lord Brahma in the world, which dates back to the 14th century.

• The Pushkar Lake is surrounded by 52 ghats where devotees perform prayers and religious rituals.

• Cultural Activities:

• The fair features unique competitions such as the "longest moustache" contest, "matka phod", and bridal competitions.

• Camel races and decorated camel parades are the hallmark features of the festivities.

• Economic Impact:

• The fair is a vital source of income for local artisans, traders, and the hospitality sector in Rajasthan.

• It promotes rural tourism and showcases the vibrant heritage of the Thar Desert region.

Important Points

• Location and Geography: Pushkar is situated at an average elevation of 510 meters and is nestled between the Aravalli Range hills.

• Other Options Context:

• Bihar: Famous for the Sonepur Cattle Fair, which is another of the largest livestock fairs in Asia, held at the confluence of the Ganges and Gandak rivers.

• Punjab: Known for festivals like Baisakhi and Hola Mohalla, which reflect the martial and agricultural spirit of the state.

• Kerala: Renowned for temple festivals like Thrissur Pooram and the Nehru Trophy Boat Race held in the backwaters.

• Recent Trends: In recent years, the Rajasthan Tourism Department has introduced hot air balloon flights during the fair to provide a panoramic view of the massive gathering and the desert landscape.

Q50. Answer: (d) Queen Elizabeth I

The correct answer is Queen Elizabeth I.

Key Points

• On December 31, 1600, Queen Elizabeth I granted a Royal Charter to the "Governor and Company of Merchants of London Trading into the East Indies."

• This charter granted the East India Company (EIC) a monopoly on English trade with all countries east of the Cape of Good Hope and west of the Straits of Magellan.

• The initial charter provided the company with exclusive trading rights for a period of 15 years, which was later extended indefinitely by King James I in 1609.

• The primary motivation behind the charter was to compete with the Dutch and Portuguese who were already profiting from the spice trade in the East Indies (present-day Indonesia and Southeast Asia).

• At the time this charter was signed in 1600, the Mughal Empire in India was being ruled by Emperor Akbar, who reigned until 1605.

Additional Information

• Queen Victoria:

• She reigned from 1837 to 1901, which was much later than the formation of the company.

• Following the Revolt of 1857, the Government of India Act 1858 transferred the administration of India from the Company to the British Crown.

• She was proclaimed the Empress of India (Kaiser-i-Hind) in 1876 at the Delhi Durbar.

• Queen Mary I:

• Commonly known as "Bloody Mary," she ruled England and Ireland from 1553 until 1558.

• She was the elder half-sister of Queen Elizabeth I and was focused on restoring Catholicism in England rather than eastern trade expansion.

• Queen Anne:

• She reigned from 1702 to 1714.

• Her reign is most notable for the Acts of Union 1707, which united the kingdoms of England and Scotland into a single sovereign state called Great Britain.

• The East India Company's Evolution:

• The company eventually shifted its focus from spices to commodities like cotton, silk, indigo dye, saltpeter, and tea.

• It transitioned from a purely commercial entity to a ruling power in India after the Battle of Plassey in 1757 and the Battle of Buxar in 1764.

Important Points

• Early Expeditions: The first voyage of the company took place in 1601 under the command of James Lancaster, reaching Bantam in the East Indies.

• Entry into India: The company's first ship, Hector, reached Surat in 1608. Captain William Hawkins visited the court of the Mughal Emperor Jahangir to seek trade concessions but was initially unsuccessful due to Portuguese influence.

• Sir Thomas Roe: In 1615, King James I sent Sir Thomas Roe as an ambassador to the court of Jahangir, successfully securing a royal farman (decree) to establish factories at Surat and other places.

• Charter Act of 1813: This act was a major turning point as it ended the company's monopoly over Indian trade, though it retained the monopoly over trade with China and the trade in tea.

• Charter Act of 1833: This act brought an end to the East India Company's commercial activities entirely, turning it into a purely administrative body for the British possessions in India.

Q51. Answer: (c) Nagaland

The correct answer is Nagaland.

Key Points

• Bushu, popularly known as Bushu Dima, is the most significant post-harvest festival of the Dimasa Kachari community.

• It is traditionally celebrated in the state of Nagaland and parts of Assam. In Nagaland, the festival is observed with great enthusiasm in regions like Dimapur and Dhansiri.

• The festival is generally celebrated in the month of January, specifically on January 27th every year, after the harvest is safely gathered in the granaries.

• Depending on the duration and scale of the celebration, Bushu is categorized into three types: Bushu Jidap (celebrated for 3 days), Surem Bushu (celebrated for 5 days), and Hangseu Bushu (a grand celebration lasting 7 days or more).

• The celebration involves community feasts, traditional Dimasa folk dances like Baiba, and the playing of indigenous musical instruments such as the Muri (a long wooden flute) and Kharam (drum).

Additional Information

• Other Festivals of Nagaland:

• Nagaland is often called the 'Land of Festivals'. The most famous is the Hornbill Festival, held in the first week of December at Kisama Heritage Village, which features all 16 major tribes of the state.

• Other tribal festivals include Sekrenyi (celebrated by the Angami tribe in February), Moatsu (celebrated by the Ao tribe in May), and Aoleang (celebrated by the Konyak tribe in April).

• Festivals in Bihar:

• Chhath Puja is the most important ancient Hindu festival dedicated to the Sun God and Chhathi Maiya. It is observed on the sixth day of the lunar month of Kartika.

• Other notable festivals include Sama Chakeva, Bihula, and the Sonepur Cattle Fair, which is one of the largest livestock fairs in Asia.

• Festivals in Punjab:

• Baisakhi is the major harvest festival celebrated in April, marking the Sikh New Year and the formation of the Khalsa Panth in 1699.

• Lohri is celebrated in January to mark the end of peak winter and the arrival of longer days, characterized by bonfires and folk songs.

• Festivals in Karnataka:

• Ugadi is the New Year festival for the people of the Deccan region, celebrated with the preparation of 'Bevu Bella'.

• Kambala is a traditional buffalo race held annually in coastal Karnataka districts like Dakshina Kannada and Udupi.

Q52. Answer: (a) light years

The correct answer is light years.

Key Points

• A light year is defined as the total distance that light travels in a vacuum in one Julian year, which consists of 365.25 days.

• Since galaxies and other celestial bodies are separated by immense stretches of space, using terrestrial units like kilometres or miles results in numbers so large they become difficult to manage; therefore, astronomers use light years as a standard unit of measurement.

• The speed of light is a fundamental physical constant, approximately 2,99,792,458 metres per second (commonly rounded to 3,00,000 kilometres per second).

• Numerically, one light year is equivalent to approximately 9.46 trillion kilometres (9.46×10^{12} km) or about 5.88 trillion miles.

• For instance, the Andromeda Galaxy, which is the closest large spiral galaxy to our Milky Way, is located at a distance of about 2.5 million light years from Earth.

Additional Information

• Astronomical Unit (AU):

• This is another unit used in astronomy, primarily for distances within our solar system.

• 1 AU represents the mean distance between the Earth and the Sun, which is roughly 150 million kilometres or 93 million miles.

• Parsec (pc):

• The parsec is a unit of distance used to measure even larger scales than light years, based on the parallax method.

• One parsec is equal to approximately 3.26 light years or 30.9 trillion kilometres.

• Kilometres and Metres:

• These are SI (International System of Units) units for length. While they are essential for measuring distances on Earth or between planets within a system, they are too small for measuring the distance between galaxies. Hence, options 2 and 3 are incorrect.

• Nanometres (nm):

• A nanometre is an extremely small unit of length, equal to one-billionth of a metre (10^(-9) m).

• It is typically used to measure the wavelength of light, atomic scales, and nanotechnology components, rather than cosmic distances. Hence, option 4 is incorrect.

Important Points

• Milky Way Diameter: Our own galaxy, the Milky Way, is estimated to be about 1,00,000 to 2,00,000 light years in diameter.

• Proxima Centauri: The closest star to our Sun is Proxima Centauri, which is approximately 4.24 light years away.

• Observable Universe: The diameter of the observable universe is estimated to be about 93 billion light years, showing the necessity of such large units in cosmology.

• The term "light year" was first used in a scientific context around the year 1838 by Friedrich Bessel, who measured the distance to the star 61 Cygni.

Q53. Answer: (b) Jallianwala Bagh Massacre

The correct answer is Jallianwala Bagh Massacre.

Key Points

• The Jallianwala Bagh Massacre, also known as the Amritsar Massacre, took place on 13 April 1919, which coincided with the festival of Baisakhi.

• A large, peaceful crowd had gathered at the Jallianwala Bagh in Amritsar, Punjab, to protest the arrest of pro-independence activists Dr. Saifuddin Kitchlew and Dr. Satyapal.

• Brigadier-General Reginald Dyer entered the area, blocked the only narrow exit, and ordered his troops to fire on the unarmed crowd without any warning.

• The firing lasted for about 10 minutes, resulting in the deaths of hundreds of people and leaving thousands injured, according to various records.

• In protest against this horrific incident, Rabindranath Tagore renounced his Knighthood, and Mahatma Gandhi returned the Kaisar-i-Hind gold medal.

Additional Information

• Champaran Satyagraha Movement (1917):

• This was the first Satyagraha movement led by Mahatma Gandhi in India, specifically in the Champaran district of Bihar.

• It was organized to protest against the Tinkathia system, where peasants were forced by British planters to grow Indigo on 3/20th of their land.

• Ahmedabad Mill Workers Movement (1918):

• This movement involved a dispute between cotton mill owners and workers in Ahmedabad regarding the discontinuation of the Plague Bonus.

• Mahatma Gandhi intervened and undertook his first hunger strike in India to demand a 35% wage increase for the workers.

• Chauri-Chaura Incident (1922):

• Occurred on 4 February 1922 (some sources cite 5 February) at Chauri Chaura in the Gorakhpur district of the United Provinces (modern-day Uttar Pradesh).

• A large group of protesters participating in the Non-Cooperation Movement clashed with police, who opened fire. In retaliation, the demonstrators attacked and set fire to a police station, killing 22 policemen.

• This violence led Mahatma Gandhi to call off the Non-Cooperation Movement on 12 February 1922.

• Rowlatt Act (1919):

• Formally known as the Anarchical and Revolutionary Crimes Act, it was passed in March 1919 by the Imperial Legislative Council.

• It authorized the government to imprison any person suspected of terrorism for up to two years without trial, leading to widespread protests across India.

Important Points

• The British government established the Hunter Commission (Disorders Inquiry Committee) in October 1919 to investigate the events of the Jallianwala Bagh Massacre.

• Michael O'Dwyer was the Lieutenant Governor of Punjab at the time of the massacre and supported General Dyer's actions.

• Years later, in 1940, Udham Singh assassinated Michael O'Dwyer in London as an act of revenge for the massacre.

• The incident is considered a decisive turning point in the Indian Freedom Struggle, as it significantly alienated the Indian public from British rule.

Q54. Answer: (d) Coronagraph and Occulter

The correct answer is Coronagraph and Occulter.

Key Points

• The Proba-3 mission is a pioneering project by the European Space Agency (ESA) designed to demonstrate high-precision formation flying in space.

• The mission consists of two distinct spacecraft: the Coronagraph spacecraft (CSC) and the Occulter spacecraft (OSC).

• The primary objective of these two satellites is to act as a single, giant solar coronagraph. The Occulter spacecraft flies approximately 150 meters in front of the Coronagraph spacecraft to block the direct light of the Sun.

• By perfectly aligning the two satellites, the Occulter casts a shadow precisely over the Coronagraph's lens, allowing the latter to observe the Sun's inner corona, which is usually invisible due to the Sun's intense glare.

• This formation requires extreme precision, maintaining their relative positions within millimeter-level accuracy while orbiting the Earth in a Highly Elliptical Orbit (HEO).

Additional Information

• Launch Details: The Proba-3 mission was launched by the Indian Space Research Organisation (ISRO) using the PSLV-C59 (Polar Satellite Launch Vehicle) rocket. The launch took place from the Satish Dhawan Space Centre (SDSC) in Sriharikota in December 2024.

• Scientific Significance: The mission aims to study the solar corona in visible light. Understanding the corona is vital for predicting Space Weather, Solar Winds, and Coronal Mass Ejections (CMEs), which can impact satellite communications and power grids on Earth.

• Project for On-Board Autonomy (Proba): The Proba series is part of ESA's technology demonstration program. Previous missions include Proba-1 (Earth observation), Proba-2 (solar observation), and Proba-V (vegetation monitoring).

• Technical Innovation: Proba-3 is the world's first mission to maintain such a rigid large-scale structure in space using two independent satellites rather than a single physical structure.

Important Points

• Spacecraft Roles: The Occulter spacecraft weighs approximately 250 kg and carries the occulting disk, while the Coronagraph spacecraft weighs about 300 kg and carries the scientific camera and instruments.

• Mission Orbit: The satellites operate in a 19.7-hour orbit. The formation flying and scientific observations occur during the 6-hour period near the apogee (the point farthest from Earth), where gravity effects are minimized, allowing for stable alignment.

• International Collaboration: While led by ESA, the mission involves a consortium of European industries and a significant partnership with ISRO for the launch services, highlighting global cooperation in space exploration.

Q55. Answer: (a) 1020

The correct answer is 1020.

Key Points

• According to the National Family Health Survey-5 (NFHS-5) conducted between 2019-21, the sex ratio for the total population in India is 1020 females per 1000 males.

• This is a landmark finding as it is the first time in any major national survey or census in India that the number of women has exceeded the number of men.

• In comparison, the previous NFHS-4 (2015-16) recorded a sex ratio of 991 females per 1000 males, showing a positive upward trend in the female population ratio.

• The survey highlights a significant disparity between residential areas: the rural sex ratio stands at 1037, while the urban sex ratio is recorded at 985.

• The Sex Ratio at Birth (SRB) has also seen an improvement, rising from 919 in NFHS-4 to 929 in NFHS-5, although it still remains below the natural equilibrium.

Additional Information

• Nodal Agency: The International Institute for Population Sciences (IIPS), located in Mumbai, is the designated nodal agency for the National Family Health Survey.

• Funding and Oversight: The survey is conducted under the aegis of the Ministry of Health and Family Welfare (MoHFW),

Government of India, with technical assistance from ICF International and funding from USAID.

• Total Fertility Rate (TFR): The NFHS-5 reported that India's TFR has declined to 2.0, which is below the replacement level of fertility (2.1).

• Institutional Births: There has been a substantial increase in institutional births, rising from 78.9% in the previous survey to 88.6% in NFHS-5, indicating better access to healthcare facilities.

• Financial Inclusion: The survey noted that the percentage of women having a bank or savings account that they themselves use increased significantly to 78.6%.

Important Points

• Comparison with Census 2011: It is important to note the difference between survey data and census data. The Census of 2011 recorded a sex ratio of 943 females per 1000 males, which was the last comprehensive enumeration of the entire population.

• Policy Impact: The improvement in the sex ratio is often attributed to the success of government schemes like Beti Bachao Beti Padhao (launched in 2015) and various maternal health initiatives.

• Life Expectancy: Experts suggest that the higher sex ratio in the total population is partly due to the fact that women generally have a higher life expectancy than men, leading to a larger surviving female population in older age groups.

• Survey Scope: NFHS-5 provided data for 28 States and 8 Union Territories, covering approximately 6.1 lakh sample households to provide comprehensive estimates for 707 districts.

• Gender Gap: While the overall ratio is positive, the Sex Ratio at Birth (SRB) of 929 indicates that challenges regarding son preference and gender-biased sex selection still persist in society.

Q56. Answer: (a) speed

The correct answer is speed.

Key Points

• Kinetic energy is the energy possessed by an object by virtue of its motion. It is defined as the work needed to accelerate a body of a given mass from rest to its stated velocity.

• The mathematical expression for kinetic energy is K.E. = 1/2 mv^2, where m is the mass of the object and v is its speed or velocity.

• According to this formula, the kinetic energy of an object is directly proportional to the square of its speed. Therefore, if the speed of an object increases, its kinetic energy increases significantly. Hence, the statement that kinetic energy increases with speed is correct.

• If the speed of an object is doubled, its kinetic energy becomes four times its original value because the speed is squared (2^2 = 4).

• For an object to have kinetic energy, it must be in motion; if the speed is zero, the kinetic energy will also be zero.

Additional Information

• Mass and Kinetic Energy:

• Kinetic energy is also directly proportional to the mass of the object. If two objects move at the same speed, the object with the greater mass will possess more kinetic energy.

• For example, a truck moving at 50 km/h has much more kinetic energy than a bicycle moving at the same speed due to the difference in their mass.

• Friction:

• Friction is a force that opposes motion between two surfaces. Instead of increasing kinetic energy, friction typically acts to decrease it by converting the energy into thermal energy (heat) or sound energy.

• Volume and Density:

• Density is the mass per unit volume of a substance. While density and volume determine the mass (Mass = Density x Volume), they do not directly dictate the increase in kinetic energy unless they result in a change in mass for an object already in motion.

Important Points

• Units of Energy: The SI unit of kinetic energy is the Joule (J). One Joule is equal to 1 kg.m^2/s^2.

• Work-Energy Theorem: This theorem states that the net work done on an object is equal to the change in its kinetic energy. If positive work is done, the speed increases; if negative work is done (like by friction), the speed decreases.

• Scalar Quantity: Kinetic energy is a scalar quantity, meaning it has magnitude but no direction. This is why even if an object changes its direction of motion but maintains the same speed, its kinetic energy remains constant.

• Potential Energy Comparison: Unlike kinetic energy, potential energy is the energy stored in an object due to its position or configuration (e.g., height above the ground). The sum of kinetic and potential energy is known as mechanical energy.

Q57. Answer: (a) Serbia

The correct answer is Serbia.

Key Points

• In March 2025, the government of Serbia was widely accused by international observers and human rights organizations of utilizing sonic weapons to suppress anti-government demonstrations in Belgrade.

• The specific device identified in these reports is the Long Range Acoustic Device (LRAD), a high-intensity hailing system that can emit directed beams of sound reaching painful decibel levels.

• The use of this technology occurred during a period of significant political tension in the Balkan nation, where protesters had gathered to voice concerns over electoral integrity and legislative changes.

• Medical reports from the scene indicated that individuals exposed to the device suffered from acute hearing impairment, extreme vertigo, and nausea, leading to a surge in hospitalizations among the civilian population.

• While the Serbian Ministry of Interior initially described the equipment as a "communication tool," the intensity of the sound waves used suggested a deterrent or weaponized application intended to forcibly clear public spaces.

Additional Information

• Long Range Acoustic Device (LRAD):

• Developed by Genasys (formerly LRAD Corporation), this device is a "non-lethal" weapon that sends messages or deterrent tones over much longer distances than normal loudspeakers.

• It was originally designed for maritime security following the 2000 attack on the USS Cole to warn approaching small boats.

• Physical Impact and Decibel Levels:

• The LRAD 1000Xi model can produce a maximum continuous output of 150 decibels (dB).

• Since the human threshold of pain is approximately 120 to 130 dB, exposure to these levels can cause permanent hearing loss or tinnitus (ringing in the ears).

• The sound waves act on the vestibular system of the inner ear, which controls balance, often causing targets to fall or become physically incapacitated.

• International Human Rights Context:

• Organizations such as Amnesty International and Human Rights Watch have called for the regulation of acoustic devices, arguing they are indiscriminate and can affect peaceful bystanders and residents in nearby buildings.

• The use of these devices in Europe is subject to strict scrutiny under the European Convention on Human Rights, particularly regarding the prohibition of torture and degrading treatment.

• Global Precedents:

• Similar devices have been used for crowd control in the United States during the G20 summits and in Australia during pandemic-related protests, but the 2025 incident in Serbia is noted for the reported duration and intensity of the acoustic strikes.

Important Points

• Technical Functionality: Unlike standard speakers that disperse sound in all directions, a sonic weapon uses piezoelectric transducers to create a narrow, "flashlight-like" beam of sound, allowing police to target specific groups without affecting officers standing behind the device.

• Legal Classification: In many jurisdictions, the LRAD is legally classified as a "communication device" rather than a weapon, which often allows police departments to bypass the stringent oversight required for firearms or chemical agents like tear gas.

• March 2025 Timeline: The escalation in Serbia reached its peak in mid-March, leading to a formal inquiry by the European Parliament regarding the export of such technologies to non-EU countries with histories of civil rights concerns.

Q58. Answer: (a) 2030

The correct answer is 2030.

Key Points

• India has set an ambitious target to reach 500 GW of non-fossil fuel-based energy capacity by the year 2030, as part of its climate action commitments.

• Within this broader goal, the specific target for wind energy is to increase the cumulative installed capacity from its current level of approximately 42 GW to 140 GW by 2030.

• As of 2023, India's total installed wind power capacity stands at about 44.73 GW, making it the fourth-largest in the world in terms of wind energy installation.

• The Ministry of New and Renewable Energy (MNRE) has outlined a trajectory to bid out 50 GW of renewable energy capacity annually from FY 2023-24 to FY 2027-28, which includes a significant portion of wind power projects.

• This expansion is critical for India to meet its Nationally Determined Contributions (NDCs) under the Paris Agreement to reduce the carbon intensity of its economy.

Additional Information

• Global Ranking: India currently ranks 4th in the world for total installed wind power capacity, trailing only China, the United States, and Germany.

• Leading States: Tamil Nadu is the leader in wind power generation in India, followed closely by Gujarat, Karnataka, and Maharashtra. These states possess high wind power potential due to their geographical locations.

• Offshore Wind Potential: India has a massive coastline of about 7,517 km. The government has identified a potential of 70 GW of offshore wind energy off the coasts of Gujarat and Tamil Nadu.

• National Institute of Wind Energy (NIWE): Based in Chennai, this autonomous institution under the MNRE serves as the technical focal point for wind energy in India, conducting wind resource assessments and testing.

• Policy Incentives: To promote wind energy, the government provides various incentives such as the Generation Based Incentive (GBI), concessional custom duty on certain components, and Inter-State Transmission System (ISTS) charges waiver for wind power projects commissioned by June 2025.

Important Points

• COP26 Commitments: At the COP26 summit in Glasgow (2021), India announced the Panchamrit strategy, which includes achieving Net Zero emissions by 2070 and meeting 50% of its energy requirements from renewable energy by 2030.

• Wind-Solar Hybrid Policy: The National Wind-Solar Hybrid Policy (2018) aims to provide a framework for the promotion of large grid-connected wind-solar PV hybrid systems for optimal utilization of transmission infrastructure and land.

• Repowering Policy: The government introduced a Repowering Policy in 2016 (and updated later) to encourage the replacement of old, low-capacity wind turbines with modern, high-capacity ones to maximize the energy yield per square kilometer of land.

• Manufacturing Hub: India is also emerging as a global manufacturing hub for wind turbine components, with an annual production capacity of about 10 GW to 12 GW.

Q59. Answer: (d) Haldia

The correct answer is Haldia.

Key Points

• Haldia Port was specifically constructed to function as a satellite port to the Kolkata Port to reduce the heavy congestion and pressure on the latter.

• It is situated at the confluence of the Hooghly River and the Haldi River, approximately 105 kilometers downstream from the city of Kolkata in West Bengal.

• The port is better equipped to handle deep-draft vessels and bulk cargo like petroleum, chemicals, and iron ore, which are difficult for the riverine Kolkata Port to manage due to siltation issues.

• It is officially known as the Haldia Dock Complex (HDC) and functions under the administrative control of the Syama Prasad Mookerjee Port Trust (formerly Kolkata Port Trust).

• The port serves a massive hinterland that includes the states of West Bengal, Bihar, Jharkhand, Chhattisgarh, and the landlocked neighboring countries of Nepal and Bhutan.

• Hence, the correct answer is Haldia.

Additional Information

• Kolkata Port:

• It is the only major riverine port in India, located on the banks of the Hooghly River.

• Because it is a riverine port, it requires constant dredging to maintain the necessary depth for ships to navigate, especially due to the high siltation from the Ganges system.

• Paradip Port:

• Located in the Jagatsinghpur district of Odisha, it is a deep-water, all-weather port situated at the confluence of the Mahanadi River and the Bay of Bengal.

• It was the first major port on the East Coast commissioned after Independence in 1966 and is a premier gateway for exporting iron ore to Japan and other Southeast Asian nations.

• Kandla Port:

• Located in the Gulf of Kutch in Gujarat, it is now known as the Deendayal Port.

• It was developed in the 1950s to serve as a substitute for the Karachi Port, which went to Pakistan after the Partition of India in 1947. It is a tidal port and handles a large volume of crude oil and petroleum imports.

• Jawaharlal Nehru Port (JNPT):

• Also known as Nhava Sheva, it is located in Navi Mumbai, Maharashtra.

• Commissioned on 26 May 1989, it is the largest container port in India and was built to decongest the Mumbai Port. It handles more than half of the total container traffic of all major ports in the country.

Important Points

• Major Ports in India: India has 13 major ports (12 government-controlled and 1 corporate) that handle about 95% of India's foreign trade by volume and 70% by value.

• Geographical Distribution: Ports like Kandla, Mumbai, JNPT, Mormugao, New Mangalore, and Kochi are located on the West Coast. Ports like Tuticorin, Chennai, Ennore, Visakhapatnam, Paradip, and Kolkata/Haldia are on the East Coast.

• Sagarmala Programme: Launched by the Government of India in 2015, this initiative aims to promote port-led development and modernize India's coastline to reduce logistics costs for domestic and EXIM cargo.

Q60. Answer: (c) Sudarshan Iyengar

The correct answer is Sudarshan Iyengar.

Key Points

• The book titled ‘In the Footsteps of Mahatma... Gandhi and Sanitation’ is authored by Sudarshan Iyengar.

• Sudarshan Iyengar is a well-known Gandhian scholar and economist who served as the Vice-Chancellor of Gujarat Vidyapith, an institution founded by Mahatma Gandhi in 1920.

• The book explores the profound relationship between Mahatma Gandhi’s philosophy of Swaraj (self-rule) and his rigorous focus on sanitation and hygiene.

• It highlights Gandhi's belief that cleanliness is not just a physical necessity but a spiritual and social responsibility, essential for the dignity of labor and the eradication of untouchability.

• The narrative often connects historical Gandhian practices with contemporary initiatives, providing a roadmap for modern environmental and health challenges.

Additional Information

• Mahatma Gandhi and Sanitation:

• Mahatma Gandhi famously said, "Sanitation is more important than independence," emphasizing that a nation cannot be truly free if it is not clean.

• He initiated several cleanliness drives during his stay in South Africa and later in India, particularly in ashrams like Sabarmati and Sevagram.

• The Swachh Bharat Abhiyan, launched by the Government of India on October 2, 2014, was a national campaign to achieve a "Clean India" as a tribute to Gandhi on his 150th birth anniversary in 2019.

• Raja Rao:

• He was an Indian-American writer of English-language novels and short stories.

• His famous work Kanthapura (1938) is a significant novel that illustrates the influence of Gandhian ideology on a small Indian village.

• Arun Shourie:

• He is an Indian economist, journalist, and politician who served as a Minister in the Union Cabinet.

• He is the author of several impactful books including "Worshipping False Gods" and "Eminent Historians".

• Kamala Das:

• Known as Madhavikutty in Malayalam literature, she was a renowned poet and memoirist.

• She is widely recognized for her autobiography My Story, published in 1973, and her bold treatment of female sexuality and social issues.

Important Points

• The work of Sudarshan Iyengar often involves the application of Gandhian economic thought to sustainable development.

• The book ‘In the Footsteps of Mahatma... Gandhi and Sanitation’ serves as a critical document for understanding the historical evolution of public health policy in India through a Gandhian lens.

• Gujarat Vidyapith, where Iyengar held a leadership role, continues to promote the values of manual labor and community service, which are central themes in the book.

Q61. Answer: (a) 2019

The correct answer is 2019.

Key Points

• The merger of Vijaya Bank and Dena Bank into Bank of Baroda (BoB) became effective on April 1, 2019.

• This was a historic event as it marked the first-ever three-way merger of public sector banks in India, aimed at creating a stronger and more globally competitive banking entity.

• Following the amalgamation, Bank of Baroda became India's third-largest lender, trailing only behind the State Bank of India (SBI) and HDFC Bank in terms of total business.

• As per the Reserve Bank of India (RBI) guidelines, all branches of the amalgamating banks (Vijaya and Dena) began to function as branches of Bank of Baroda from the commencement of the 2019-20 financial year.

• The primary objective behind this consolidation was to achieve economies of scale, improve operational efficiency, and better manage Non-Performing Assets (NPAs) within the public sector banking system.

Additional Information

• Bank of Baroda (BoB):

• It was founded by Maharaja Sayajirao Gaekwad III of Baroda on July 20, 1908.

• The bank, along with 13 other major commercial banks of India, was nationalized on July 19, 1969, by the Government of India.

• The headquarters of the bank is located in Vadodara (formerly Baroda), Gujarat, and its corporate office is in Mumbai, Maharashtra.

• Vijaya Bank and Dena Bank:

• Vijaya Bank was established in 1931 in Mangaluru, Karnataka, and was nationalized in 1980.

• Dena Bank was founded in 1938 by the family of Devkaran Nanjee and was nationalized in 1969.

• At the time of the merger, Dena Bank was under the Prompt Corrective Action (PCA) framework of the RBI due to high net NPAs.

• Consolidation of Public Sector Banks (PSBs):

• Following this 2019 merger, the government announced another massive consolidation in 2020, where 10 public sector banks were merged into 4 larger entities to streamline the Indian banking landscape.

Important Points

• Share Swap Ratio: Under the scheme of amalgamation, Vijaya Bank shareholders received 402 equity shares of Bank of Baroda for every 1,000 shares held. Dena Bank shareholders received 110 equity shares of Bank of Baroda for every 1,000 shares held.

• Administrative Integration: The Amalgamation of Vijaya Bank and Dena Bank with Bank of Baroda Scheme, 2019, ensured that the employees of the merged banks enjoyed the same pay and service conditions as before, without any immediate displacement.

• Customer Impact: Post April 1, 2019, customers of the erstwhile Vijaya Bank and Dena Bank were treated as customers of Bank of Baroda, though technical integration of passbooks and checkbooks took place in a phased manner over the following months.

Q62. Answer: (a) 11

The correct answer is 11.

Key Points

• According to the Laws of Table Tennis established by the International Table Tennis Federation (ITTF), a game is won by the player or pair who first scores 11 points.

• An exception to this rule occurs if both players or pairs reach 10 points; in this situation, the game is won by the first player or pair to subsequently establish a lead of 2 points.

• The scoring system was significantly updated in September 2001, when the ITTF reduced the winning score from 21 points to 11 points to increase the intensity and spectator appeal of the sport.

• In an 11-point game, the service alternates between the opponents after every 2 points are scored, regardless of who won the points.

• If the score reaches a 10-10 tie, known as a deuce, the service continues to alternate but changes after every 1 point until a winner is determined by a 2-point margin.

• Hence, the correct answer is 11.

Additional Information

• The International Table Tennis Federation (ITTF):

• The ITTF is the worldwide governing body for table tennis, founded in 1926.

• It is responsible for the rules and regulations of the sport and organizes major international events, including the World Table Tennis Championships.

• The headquarters of the ITTF are located in Lausanne, Switzerland.

• Match Formats:

• A competitive match is usually played as the best of 5 games (first to win 3 games) or the best of 7 games (first to win 4 games).

• In international competitions, individual singles matches are typically played in the best of 7 format.

• Equipment Specifications:

• The standard table dimensions are 2.74 meters (9 feet) in length and 1.525 meters (5 feet) in width, standing 76 cm above the floor.

• The ball must be spherical with a diameter of 40mm and a weight of 2.7 grams, usually made of celluloid or similar plastic material.

• The net is 15.25 cm (6 inches) high and extends 15.25 cm beyond the side limits of the table.

Important Points

• Service Regulations: The ball must be placed on the open palm of the server's stationary hand and tossed at least 16 cm (6 inches) into the air before being struck. It must first bounce on the server's side and then on the receiver's side.

• The "Let" Rule: A let is a rally where no point is scored. This happens if the ball touches the net assembly during service, provided the service is otherwise correct, or if play is interrupted by the umpire.

• Olympic History: Table tennis became an official Olympic sport at the 1988 Seoul Olympics. Since then, it has been a staple of the Summer Olympic Games, with dominant performances historically coming from China.

• Changing Ends: Players switch sides of the table after each game. In the deciding game of a match, players change ends as

soon as the first player or pair scores 5 points.

Q63. Answer: (c) Humayun

The correct answer is Humayun.

Key Points

• Humayun, the second Mughal Emperor, laid the foundation of the city of Dinpanah in the year 1533 AD.

• The city was constructed on the ancient mound of Indraprastha, a site traditionally associated with the capital of the Pandavas from the epic Mahabharata.

• The name Dinpanah translates to "Refuge of the Faith," reflecting Humayun's vision of creating a cosmopolitan hub for scholars and holy men from various parts of the Islamic world. Hence, the statement regarding Humayun is correct.

• The site is currently known as the Purana Qila (Old Fort) in Delhi. It is situated on the banks of the Yamuna River.

• The construction of Dinpanah was interrupted when Humayun was defeated by Sher Shah Suri in the Battle of Kannauj in 1540, leading to his exile.

Additional Information

• Humayun (Reign: 1530–1540 and 1555–1556):

• He was the son of Babur and faced significant challenges from Sher Shah Suri and his own brothers.

• Within the Purana Qila complex, he built a double-storied octagonal tower known as Sher Mandal, which he used as a library.

• Tragically, Humayun died in 1556 after falling down the stairs of this very library.

• Bakhtiyar Khilji:

• He was a general of Qutub-ud-din Aibak and is primarily known for his military campaigns in Eastern India.

• He is historically noted for the destruction of the ancient Nalanda University in Bihar around 1193 AD. He did not build Dinpanah.

• Akbar (Reign: 1556–1605):

• The son of Humayun, Akbar is considered one of the greatest Mughal rulers.

• He shifted the capital to Agra and later built the magnificent city of Fatehpur Sikri near Agra in 1571. He also commissioned the Agra Fort and Lahore Fort.

• Mohammed Bin Tughlaq (Reign: 1325–1351):

• A ruler of the Tughlaq Dynasty, he is known for his eccentric administrative experiments.

• His most famous projects include the shifting of the capital from Delhi to Daulatabad (Devagiri) and the introduction of token currency using copper coins.

• He built the city of Jahanpanah in Delhi to enclose the areas between Qila Rai Pithora and Siri, but not Dinpanah.

• Sher Shah Suri (Reign: 1540–1545):

• After defeating Humayun, he took over Dinpanah and renamed it Shergarh.

• He added several significant structures to the fort, including the Qila-i-Kuhna Mosque and the Sher Mandal.

Q64. Answer: (c) Dilruba

The correct answer is Dilruba.

Key Points

• Tat Vadya is a category of musical instruments where sound is produced by the vibration of strings. These are also known as Chordophones.

• Dilruba is a traditional stringed instrument found mainly in North India and Punjab. It is played with a bow and has a neck similar to a Sitar and a soundbox similar to a Sarangi. Hence, the correct answer is Dilruba.

• The Dilruba holds great significance in Sikh history, as it is believed to have been designed by the 10th Sikh Guru, Guru Gobind Singh, to make it easier for the Sikh warriors to carry the instrument on horseback compared to the heavier Taus.

• It features metal strings and frets, and the soundbox is covered with goatskin (parchment), which gives it a distinct, resonant tone often used in Gurbani Sangeet and Indian Classical Music.

• Flute is a wind instrument where sound is produced by a column of air. In Indian music classification, it is categorized as a Sushira Vadya. Hence, this option is incorrect.

• Dandia are wooden sticks used primarily in the folk dance of Gujarat. Since they produce sound by being struck together, they are classified as Ghan Vadya (Idiophones). Hence, this option is incorrect.

Additional Information

• Classification of Musical Instruments (Natya Shastra):

• The ancient treatise Natya Shastra, written by Bharat Muni (dated between 200 BCE and 200 CE), classifies Indian musical instruments into four main categories based on how they produce sound.

• Tat Vadya (Chordophones): These are stringed instruments. The sound is produced by plucking, bowing, or striking the strings. Examples include Sitar, Veena, Sarod, Santoor, Tanpura, and Ektara.

• Sushira Vadya (Aerophones): These are wind instruments where sound is produced by air. Common examples are Bansuri (Flute), Shehnai, Pungi, and Harmonium.

• Avanaddha Vadya (Membranophones): These are percussion instruments with a stretched skin or membrane that is struck to produce sound. Examples include Tabla, Mridangam, Dholak, and Para (a traditional drum).

• Ghan Vadya (Idiophones): These are solid instruments made of metal or wood that do not require a membrane. Sound is produced by striking two objects together. Examples include Manjira (Cymbals), Jaltarang, Ghatam, and Dandia.

• Detailed Features of Dilruba:

• Origin: Developed in the 18th century in the Punjab region of India.

• Structure: It consists of approximately 18 to 22 sympathetic strings and 4 main strings. The frets are movable, allowing the player to adjust for different Ragas.

• Use: It is widely used in shabad kirtan and was historically popular in Santour and Rabindra Sangeet.

• Para and Dandia:

• Para (or Parai): One of the oldest drums used in Tamil Nadu, specifically in folk music. It is an Avanaddha Vadya.

• Dandia: These are typically made of bamboo or teak wood and are synonymous with the Navratri festival in Western India.

Important Points

• The Santoor is a unique Tat Vadya because, unlike the Sitar which is plucked, the strings of the Santoor are struck with lightweight wooden mallets or hammers.

• The Veena is often considered the mother of all stringed instruments in Carnatic music and is associated with Goddess Saraswati.

• In 2015, the Dilruba and Taus saw a revival in the Harmandir Sahib (Golden Temple) as the Shiromani Gurdwara Parbandhak Committee (SGPC) encouraged the use of traditional string instruments over the harmonium.

Q65. Answer: (a) USA

The correct answer is USA.

Key Points

• The United States of America (USA) has been ranked 1st in the Global Firepower (GFP) Index 2025, maintaining its position as the world's most powerful military.

• The USA achieved the lowest and most favorable Power Index (PwrIndx) score of 0.0744. In this indexing system, a score of 0.0000 is considered the "perfect" score, meaning the lower the numerical value, the higher the nation's theoretical fighting capability.

• The 2025 Global Firepower ranking utilized more than 60 individual factors to determine a given nation's Power Index score, ranging from military might and financials to logistical capability and geography.

• The assessment included a total of 145 world powers, providing a comprehensive look at the conventional war-making capabilities of nations across the globe.

• The USA remains at the top due to its massive defense budget, advanced technological integration, and significant lead in airpower and naval carrier fleets.

Additional Information

• Top Ranked Nations in 2025:

• Russia: Ranked 2nd globally with a Power Index score of 0.0768.

• China: Ranked 3rd globally with a Power Index score of 0.0772, closely trailing Russia.

• India: Ranked 4th globally with a Power Index score of 0.1087, solidifying its status as a major regional and global military power.

• South Korea: Ranked 5th, showing significant growth in military manufacturing and exports.

• Methodology of the Index:

• The Global Firepower Index has been compiled since 2006. It focuses strictly on conventional capabilities and does not take nuclear stockpiles into account for the direct score, though it considers them as a general strategic deterrent.

• Factors weighed include manpower (available population and active personnel), equipment (tanks, aircraft, naval units), natural resources (oil production/reserves), and financial stability.

• The ranking allows smaller, but more technologically advanced, nations to compete with larger, less-developed ones by applying specific modifiers (penalties and bonuses) to the raw data.

Important Points

• Geographic and Economic Factors: The index rewards nations with high Purchasing Power Parity (PPP) and strong logistical infrastructure, such as ports, terminals, and roadway networks, as these are vital for sustaining long-term military operations.

• Budgetary Dominance: The USA defense budget remains the largest in the world, often exceeding $800 billion, which is greater than the next several countries combined. This enables the United States to maintain 11 nuclear-powered aircraft carriers, a feat unmatched by any other nation.

• Regional Trends: In the 2025 report, there is a notable trend of Asian nations (specifically China, India, and South Korea) increasing their dominance in the top 5, reflecting a shift in global military investment toward the Indo-Pacific region.

Q66. Answer: (c) To cause one an acute feeling of disgust, shame, embarrassment, or anguish

The solution is in Hindi. Read it online.

Q67. Answer: (d) Embarrassment

The solution is in Hindi. Read it online.

Q68. Answer: (a) laconic

The solution is in Hindi. Read it online.

Q69. Answer: (b) prudance

The solution is in Hindi. Read it online.

Q70. Answer: (a) Critisism

The solution is in Hindi. Read it online.

Q71. Answer: (a) Uncomfortable

The solution is in Hindi. Read it online.

Q72. Answer: (d) Stop

The solution is in Hindi. Read it online.

Q73. Answer: (b) knight

The correct answer is 'knight'.

Key Points

• The word "knight" refers to a medieval soldier who served a noble or king and often rode on horseback.

• The sentence refers to a haunted castle, suggesting that the context involves historical or mythical elements, which aligns with the term "knight."

• Options 1 (night), 3 (nigh), and 4 (knit) do not fit the meaning or context of the sentence.

Therefore, the correct answer is Option 2.

Complete Sentence: "The old castle was said to be haunted by a knight."

Additional Information

• Option 1: "night" is incorrect because "night" refers to the time after sunset, which does not align with the context of a haunted castle.

• Option 3: "nigh" is incorrect because "nigh" means "near" or "approaching" and does not fit the sentence.

• Option 4: "knit" is incorrect because "knit" refers to creating fabric by looping yarn, which is unrelated to the sentence.

Q74. Answer: (b) Pacifist

The solution is in Hindi. Read it online.

Q75. Answer: (a) A new bridge has been built across the river.

The correct answer is Option 1.

Key Points

• The original sentence is in the active voice: "They have built a new bridge across the river."

• The sentence is in the Present Perfect Tense (have/has + past participle).

• To convert from active to passive voice in the Present Perfect Tense:

• The object "a new bridge" becomes the subject. Since it is singular, we use "has."

• The structure for passive voice is: Subject + has/have + been + past participle (V3).

• "Have built" changes to "has been built."

• The agent "they" is often omitted in the passive voice when it is general or understood.

Therefore, the correct answer is Option 1.

Correct Sentence: "A new bridge has been built across the river."

Additional Information

• Option 2: "A new bridge was being built across the river." – Incorrect tense (Past Continuous Passive).

• Option 3: "A new bridge is built across the river." – Incorrect tense (Simple Present Passive).

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• Option 4: "A new bridge will be built across the river." – Incorrect tense (Simple Future Passive).

Q76. Answer: (b) Couldn't the problem be identified by the mechanic?

The correct answer is Option 2.

Key Points

• The original sentence is a negative interrogative sentence using a modal verb: "Couldn't the mechanic identify the problem?"

• The structure of an active voice sentence with a modal in interrogative form is: Modal + Subject + Verb (base form) + Object?

• To convert this to passive voice, the structure becomes: Modal + Object + be + Past Participle (V3) + by + Agent?

• Following this rule:

• The modal "Couldn't" stays at the beginning.

• The object "the problem" becomes the new subject.

• We add "be" followed by the past participle of identify, which is "identified."

• The original subject "the mechanic" becomes the agent after "by."

Therefore, the correct answer is Option 2.

Correct Sentence: "Couldn't the problem be identified by the mechanic?"

Additional Information

• Option 1: "Can't the problem be identified by the mechanic?" – Incorrect because it changes the modal verb from "could" to "can," which changes the tense/mood.

• Option 3: "Couldn't the problem identified by the mechanic?" – Incorrect because it is missing the auxiliary verb "be," which is essential for passive modal constructions.

• Option 4: "Couldn't the problem be identify by the mechanic?" – Incorrect because it uses the base form "identify" instead of the required past participle "identified."

Q77. Answer: (d) Had the event organisers already sold out the concert tickets?

The correct answer is Option 4.

Key Points

• The original sentence is a passive voice question: "Had the concert tickets already been sold out by the event organisers?"

• The sentence is in the Past Perfect Tense (Had + been + V3).

• To convert an interrogative sentence from passive to active voice:

• Identify the agent (the doer), which is "the event organisers."

• Identify the object (the receiver), which is "the concert tickets."

• The structure for an active voice question in Past Perfect is: Had + Subject + already + V3 + Object?

• Remove the auxiliary "been" which is only used in the passive form.

Therefore, the correct answer is Option 4.

Correct Sentence: "Had the event organisers already sold out the concert tickets?"

Additional Information

• Option 1: "Have the event organisers already sold out the concert tickets?" – Incorrect tense (Present Perfect).

• Option 2: "Did the event organisers already sell out the concert tickets?" – Incorrect tense (Simple Past).

• Option 3: "Were the event organisers already selling out the concert tickets?" – Incorrect tense (Past Continuous).

Q78. Answer: (c) forest passing with trees

The correct answer is Option 3.

Key Points

• The error lies in part 3 of the sentence: "forest passing with trees."

• The word "passing" is contextually incorrect here. A forest is typically described by what it contains or is composed of.

• The correct prepositional phrase or adjective should be "filled with," "teeming with," or "dense with" to indicate the presence of trees.

• "Passing" usually refers to movement or the passage of time, which does not fit the description of a static forest environment in this context.

Therefore, the correct answer is Option 3.

Correct Sentence: "I want to spend some time in the forest filled with trees and enjoying the natural beauty."

Additional Information

• Option 1: "I want to spend" – This part is grammatically correct, using the subject followed by the appropriate verb and infinitive.

• Option 2: "some time in the" – This part is correct as it properly uses the quantifier "some" with the uncountable noun "time."

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• Option 4: "and enjoying the natural beauty." – This part is correct; it maintains parallel structure with "spending" (implied) or functions as a gerund phrase describing the activity.

Q79. Answer: (c) When did she transfer the money to you?

The correct answer is Option 3.

Key Points

• The original sentence is a "Wh-" question in the passive voice: "When was the money transferred to you by her?"

• The sentence is in the Simple Past Tense (was/were + V3).

• To convert a Simple Past interrogative sentence from passive to active voice:

• The agent "her" becomes the subject "she."

• The structure for a Simple Past active question is: Wh-word + did + subject + base form of verb (V1) + object?

• "Was transferred" changes to "did transfer."

• The receiver "the money" becomes the direct object.

Therefore, the correct answer is Option 3.

Correct Sentence: "When did she transfer the money to you?"

Additional Information

• Option 1: "When does she transfer the money to you?" – Incorrect tense (Simple Present).

• Option 2: "When did she transferred the money to you?" – Grammatically incorrect; "did" must be followed by the base form "transfer," not "transferred."

• Option 4: "When was she transferring the money to you?" – Incorrect tense (Past Continuous).

Q80. Answer: (b) for

The correct answer is 'for'.

Key Points

• The correct preposition in the sentence is "for" because it is commonly used to indicate purpose or suitability ("available for sale").

• The phrase "available for sale" is a standard English expression meaning something is ready to be sold.

• Options 1, 3, and 4 are incorrect:

• Option 1: on is incorrect because "on sale" refers to a discount, not availability.

• Option 3: to is incorrect; it does not fit the context.

• Option 4: through is incorrect because it implies an intermediary, which is not relevant here.

Therefore, the correct answer is Option 2.

Complete Sentence: "There is a sports car available for sale in Bapuji Nagar."

Additional Information

• Option 1: "on" is typically used to describe discounts (e.g., "on sale").

• Option 3: "to" is incorrect because it does not convey the idea of availability.

• Option 4: "through" is used to indicate a medium or intermediary, which is not suitable in this context.

Q81. Answer: (a) replete with inconsistencies and therefore required

The correct answer is 'Option 1'.

Key Points

• The phrase "replete in inconsistencies" is incorrect usage in English grammar.

• The correct preposition to use with "replete" is "with," as it indicates abundance or being full of something.

• The sentence should read "replete with inconsistencies" to convey the intended meaning correctly.

• Options 2 and 3 use incorrect prepositions ("of" and "by") and verb forms, making them grammatically incorrect.

Therefore, the correct answer is Option 1.

Complete Sentence: "The review panel concluded that the policy was replete with inconsistencies and therefore required immediate revision."

Additional Information

• Option 2: "replete of inconsistencies and therefore requiring" is incorrect as "replete" does not pair with the preposition "of."

• Option 3: "replete by inconsistencies and therefore requires" is incorrect because "replete" does not pair with the preposition "by."

• Option 4: "No improvement required" is incorrect because the original sentence uses "replete in inconsistencies," which is grammatically incorrect.

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Q82. Answer: (b) of

The correct answer is '

of'

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Key Points

• The preposition "of" is used to indicate the subject or topic of something, in this case, the athlete's chance of winning.

• The other prepositions (on, for, by) do not fit the context and meaning of the sentence.

• Correct usage: "chance of" is a standard expression in English.

Therefore, the correct answer is Option 2.

Complete Sentence: "The athlete has no chance of winning this match."

Additional Information

• Option 1: "on" is incorrect because "chance on" does not convey the intended meaning in this context.

• Option 3: "for" is incorrect as "chance for" suggests an opportunity rather than likelihood, which does not fit here.

• Option 4: "by" is incorrect because "chance by" is not a valid expression in English.

Q83. Answer: (d) CBDA

The correct answer is Option 4.

Key Points

• The paragraph describes a character's tactical decision-making and physical action as he moves toward a specific goal.

• Sentence C is the first sentence following S1 because it directly references the "direction" established by the terrace mentioned in the opening sentence:

• "That provided him as good a direction to explore as any."

• Sentence B follows as it provides the logical reasoning for why that direction is worth exploring, linking the presence of archers to something valuable:

• "The archers had to be guarding something important."

• Sentence D is the third sentence because it elaborates on his plan and specific objective (reaching the Sisters of Fate) while maintaining caution:

• "And if he approached cautiously enough, he might find a way to declare his intentions of speaking with the Sisters of Fate..."

• Sentence A is the fourth as it transitions from mental planning to physical execution, describing the leap that leads directly into the final sentence S2:

• "Going to the side of the bridge, he judged distances... drew the Blades of Athena, and then leaped into space."

• The correct sequence is CBDA.

Coherent paragraph after rearrangement:

"He surveyed the way over to the terrace from which the archers had fired. That provided him as good a direction to explore as any. The archers had to be guarding something important. And if he approached cautiously enough, he might find a way to declare his intentions of speaking with the Sisters of Fate so he would not have to fight his way through a phalanx of other guards. Going to the side of the bridge, he judged distances and how difficult it would be to reach that terrace, drew the Blades of Athena, and then leaped into space. The blades dug into the ornate stonework facing the palace wall."

Q84. Answer: (b) CBDA

The correct answer is Option 2.

Key Points

• The paragraph begins with a descriptive scene of twilight descending like gray ashes (S1).

• Sentence C is the first sentence as it introduces Sofia gazing out at the crowded, noisy street, establishing the setting:

• "Sofia, standing at the window that opened out onto the balcony, was gazing down into the crowded, noisy street."

• Sentence B follows as it describes the dangerous hour in the Via Toledo, adding context to the scene:

• "It was the hour in which the Via Toledo becomes dangerous because of the great number of large and small carriages that pass up and down in a continuous stream."

• Sentence D is the third sentence because it connects Sofia's actions and emotions, giving a sense of anticipation:

• "Sofia seemed looking for someone; suddenly a vivid flush passed over her face, she bent her head slightly, then suddenly paled and turned back into the room."

• Sentence A is the fourth as it introduces Lulu entering the scene like a whirlwind, providing a dramatic interruption:

• "A minute later Lulu entered like a whirlwind, slamming doors, overturning chairs that she might hurry more."

• The paragraph concludes with S2, continuing the narrative with a dialogue directed at Sofia.

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• The correct sequence is CBDA.

Coherent paragraph after rearrangement:

"Twilight was descending like a rain of gray ashes. Sofia, standing at the window that opened out onto the balcony, was gazing down into the crowded, noisy street. It was the hour in which the Via Toledo becomes dangerous because of the great number of large and small carriages that pass up and down in a continuous stream. Sofia seemed looking for someone; suddenly a vivid flush passed over her face, she bent her head slightly, then suddenly paled and turned back into the room. A minute later Lulu entered like a whirlwind, slamming doors, overturning chairs that she might hurry more. 'What are you doing here, Donna Sofia Santangelo? Are you reading?'"

Q85. Answer: (c) I am confused because

The correct answer is '3'.

Key Points

• The sentence is about expressing confusion due to receiving mixed signals.

• The phrase "I am confused because" is concise and grammatically correct.

• Option 1: "Why am I confused is because" is awkward and ungrammatical.

• Option 2: "The reason for my confusion is because" is redundant as "reason" and "because" convey the same idea.

• Option 4: "No improvement required" is incorrect because the original sentence can be improved.

Therefore, the correct answer is Option 3.

Complete Sentence: "I am confused because they are giving me mixed signals."

Additional Information

• Option 1: "Why am I confused is because" does not follow proper sentence structure and is grammatically incorrect.

• Option 2: "The reason for my confusion is because" is unnecessarily verbose and repetitive.

• Option 4: "No improvement required" is not appropriate as the original sentence can be refined.

Q86. Answer: (a) The audiences started to reject the realism of Stanislavsky and the well-made plays and looked for new thea...

The correct answer is 'Option 1'.

Key Points

• Option 1: The audiences started to reject the realism of Stanislavsky and the well-made plays and looked for new theatrical forms.

• The passage explicitly states that Brecht's plays gained recognition in the mid-20th century "when people began rejecting Stanislavsky-oriented realism and the presentation of Well-made plays on stage."

• This shift in audience preference away from traditional, immersive realism allowed the more analytical and "instructive" style of Epic Theatre to become popular.

• Option 2: Brecht changed his style and began writing romantic dramas...

• This is incorrect. The text defines Brecht's work as "Epic theatre," which is "instructive" and uses the "alienation effect" rather than romantic or emotional empathy.

• Option 3: ...his plays were not allowed in Europe until the end of World War II.

• This is incorrect. While historically true in some contexts, this information is not mentioned in the provided passage, which focuses on theatrical theory and audience taste.

• Option 4: ...he deserted political matters and solely concentrated on entertainment.

• This is incorrect. The passage describes his theatre as having "analysis, argument, or evidence" and being "didactic," which indicates a focus on intellectual and often political instruction rather than pure entertainment.

Therefore, the correct answer is Option 1.

Additional Information

• Stanislavsky-oriented Realism: A style of theatre that aims for total "illusion," where the audience feels they are watching "real life" and empathizes deeply with characters' emotions.

• Alienation Effect (Verfremdungseffekt): A technique used by Brecht to "make the familiar strange." By breaking the theatrical illusion, he forced the audience to remain objective observers so they could think critically about the play's message.

• Well-made Play: A 19th-century genre of theatre characterized by a very tight, logical plot and a climax that resolves all conflicts—the very thing Brecht's loosely knit "episodic structure" rejected.

• Chinese Theatre Influence: Brecht admired how Chinese actors appeared to observe their own performance from the outside, helping to maintain the distance necessary for the alienation effect.

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Q87. Answer: (c) A series of loosely connected scenes that break the illusion and encourage critical thinking

The correct answer is 'Option 3'.

Key Points

• Option 3: A series of loosely connected scenes that break the illusion and encourage critical thinking.

• The passage defines Epic Theatre as a "mode of instructive theatre" consisting of "not so tightly knit scenes." This matches the "loosely connected" description.

• It states this form "refrained from creating an illusion" and frequently broke the plot to speak directly to spectators with "analysis, argument, or evidence."

• The goal of the "alienation effect" mentioned in the text is to stop the audience from empathizing so they can "focus objectively on the action and argument and draw a conclusion," which is the essence of critical thinking.

• Option 1: A plot that is closely woven together and thus conjures up a strong illusion of reality...

• This is incorrect. This describes the "Well-made plays" and "Stanislavsky-oriented realism" that Epic Theatre was explicitly rejecting.

• Option 2: An emphasis on melodrama and sentimental storytelling...

• This is incorrect. The text says Brecht wanted to "dissuade the audience from empathizing," which is the opposite of using melodrama to evoke sentimentality.

• Option 4: The use of improvisation as the only means of communication...

• This is incorrect. While modern Epic Theatre might use various tools, the passage emphasizes a "didactic style," "episodic structure," and "analysis," rather than unstructured improvisation.

Therefore, the correct answer is Option 3.

Additional Information

• Episodic Structure: Unlike a "Well-made play" where every scene leads logically to the next in a tight chain, Epic Theatre scenes can often stand alone. This prevents the audience from getting swept up in a "inevitable" story and keeps them thinking about each individual event.

• Didactic: This means intended to teach, particularly having moral instruction as an ulterior motive. Brecht believed theatre should be a tool for social and political change.

• Breaking the Fourth Wall: The passage notes that actors "talk to the spectators in a direct manner." This technique shatters the "fourth wall" (the invisible wall between the actors and audience), reminding the audience they are in a theatre watching a representation of reality, not reality itself.

Q88. Answer: (a) Alienation effect, keeps the audience critical

The correct answer is 'Option 1'.

Key Points

• Option 1: Alienation effect, keeps the audience critical.

• The passage explicitly identifies the "alienation effect" (also known as Verfremdungseffekt) as Brecht's primary tool.

• Its purpose is to "dissuade the audience from empathizing with characters," which forces them to "focus objectively" on the play's argument rather than getting lost in the characters' emotions.

• By maintaining this "critical distance," the audience is encouraged to analyze the social or political situation presented and "draw a conclusion" for themselves.

• Option 2: Catharsis, from Greek tragedy.

• This is incorrect. Catharsis involves an emotional "purging" through deep empathy with the characters' suffering. Brecht's goal was the opposite—to prevent that emotional sweep.

• Option 3: Stream-of-consciousness, from modernist fiction.

• This is incorrect. While this is a modernist technique (used by writers like James Joyce or Virginia Woolf), it is not mentioned in the text nor is it a defining feature of Epic Theatre.

• Option 4: Method acting, by Stanislavsky.

• This is incorrect. The passage notes that Brecht's success came when people began "rejecting Stanislavsky-oriented realism." Method acting focuses on deep emotional identification, which Brecht sought to break.

Therefore, the correct answer is Option 1.

Additional Information

• Verfremdungseffekt: Often translated as the "estrangement effect" or "alienation effect," it involves using techniques like bright lighting, placards, or having actors speak their stage directions out loud to remind the audience they are watching a play.

• Chinese Theatre Influence: Brecht was inspired by the way Chinese actors would "observe" their own characters as they performed, rather than "becoming" them. This helped preserve the critical distance.

• Didactic Theatre: The text mentions a "didactic style," which means the play is designed to be an "instructive theatre." Its goal

isn't just to entertain but to teach the audience something about the world.

Q89. Answer: (d) The significant movements of the Chinese theatre, where players do not completely identify with their chara...

The correct answer is 'Option 4'.

Key Points

• Option 4: The significant movements of the Chinese theatre, where players do not completely identify with their character.

• The passage explicitly identifies this influence in the final sentence: "This theatre also shows Chinese theatre influence, as the actors kept a distance from the characters they impersonated on stage."

• This "distance" or detachment is a core component of Brecht's "alienation effect," which aims to prevent the audience (and the performer) from becoming emotionally lost in the role.

• By maintaining this detachment, the performer acts as a demonstrator of the character's actions rather than "becoming" the character, allowing the audience to remain objective.

• Option 1: The realistic acting approach practiced by Stanislavsky.

• This is incorrect. The passage notes that Brecht's work gained recognition specifically because people were "rejecting Stanislavsky-oriented realism." Stanislavsky advocated for total identification with the character, which is the opposite of detachment.

• Option 2: The spontaneous methods used in the Italian commedia dell'arte.

• This is incorrect. While Brecht was influenced by many forms, commedia dell'arte is not mentioned in this passage as the source for his concept of performer detachment.

• Option 3: The emotional truthfulness in Chekhov's plays.

• This is incorrect. Chekhov’s plays are typically associated with the realism and emotional depth that Brecht sought to move away from in Epic Theatre. Furthermore, Chekhov is not mentioned in the text.

Therefore, the correct answer is Option 4.

Additional Information

• Mei Lanfang: Brecht was famously inspired by the Chinese opera singer Mei Lanfang. He observed that Chinese actors seemed to "watch themselves" while performing, which helped him formalize the idea that actors should stay emotionally separate from their roles.

• The Fourth Wall: In traditional realism, the "fourth wall" is never broken. In Brecht's Epic Theatre, influenced by these non-Western traditions, the actor frequently acknowledges the audience, effectively shattering the illusion of reality.

• Alienation Effect (V-Effekt): The goal of this detachment is to turn the spectator into an observer. Instead of feeling with the character, the audience is encouraged to think about the character's choices and the social structures influencing them.

Q90. Answer: (a) It presents the story in an episodic manner and interacts with the audience directly to provoke their criti...

The correct answer is 'Option 1'.

Key Points

• Option 1: It presents the story in an episodic manner and interacts with the audience directly to provoke their critical thinking.

• The passage defines Epic Theatre as following an "episodic structure," meaning scenes are not "tightly knit" but stand as individual units.

• It explicitly mentions that this form "frequently broke the plot to talk to the spectators in a direct manner," using analysis and argument to provoke an objective conclusion.

• This is the core of Brecht's goal: to move from emotional empathy to critical analysis.

• Option 2: It seeks to encourage the audience's emotional release...

• This is incorrect. Emotional release (catharsis) is a hallmark of traditional drama. Brecht sought to "dissuade the audience from empathizing" to ensure they remained intellectually engaged.

• Option 3: It avoids addressing social issues...

• This is incorrect. The passage describes Epic Theatre as "instructive" and "didactic," which inherently involves teaching the audience about social, political, or moral issues.

• Option 4: It emphasizes ornate sets and costumes...

• This is incorrect. The text states that Epic Theatre "refrained from creating an illusion." Ornate sets designed to heighten realism would contradict the alienation effect.

Therefore, the correct answer is Option 1.

Additional Information

• Episodic vs. Linear: Traditional realist drama usually follows a linear path where each scene builds tension toward a climax. Epic Theatre is episodic, jumping between times or locations to keep the audience from getting "swept away" by the story.

- The Spectator's Role: In realist drama, the spectator is a passive observer. In Brecht's theory, the spectator is an active participant who must judge the events on stage.
- Alienation Effect: By using techniques that "alienate" or "estrange" the audience from the action, Brecht ensures that the stage remains a place for intellectual inquiry rather than just emotional escapism.

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