SSC MTS 2024 Official Paper (Held On: 01 Oct, 2024 Shift 1) (Previous Year Paper)

SSC Multi-Tasking Staff (MTS) • 2024 • 90 questions • 90 minutes • Answer key and solutions

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Practise under exam conditions, then review your answers after you submit.

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SESSION 1

Q1. Find the area of the quadrilateral ABCD, the coordinates of whose vertices are A(6,-3), B(-4,-2), C(3,1) and D(5,0)?

(a) 21 unit²
(b) 30 unit2
(c) 25 unit2
(d) 18 unit2

Q2. A cylindrical disc of thickness 1 cm is made by melting two solid cylinders of radii 4 cm and 5 cm, and length 6 cm and 4 cm, respectively. The radius of the new cylinder is:

(a) 7 cm
(b) 21 cm
(c) 14 cm
(d) 28 cm

Q3. Two successive increases of 15% each, is by what percentage more than the two successive decreases of 12% each? (Rounded off to 2 decimal places)

(a) 30.56%
(b) 42.95%
(c) 28.25%
(d) 22.12%

Q4. The average weight of a certain number of students in a group was 72 kg. If 11 students, with an average weight of 76 kg each, leave the group, and 5 students, each with an average weight of 79 kg, join the group, the average weight of the students in the group decreases by 0.6 kg. The number of students initially in the group was:

(a) 21
(b) 25
(c) 17
(d) 19

Q5. What sum (in Rs.) will earn a simple interest of Rs. 240 in 4 years at 12% per year rate of interest?

(a) 250
(b) 1000
(c) 500
(d) 750

Q6. Two mixers and one TV cost Rs. 7,000, while two TVs and one mixer cost Rs. 9,800. The value of one TV is:

(a) Rs. 3,600
(b) Rs. 4,600
(c) Rs. 3,200
(d) Rs. 4,200

Q7. Refer to the given table and answer the question that follows.

Year	Company's % profit
2017	30
2018	10
2019	20
2020	15
2021	25

What was the revenue of the company if its expenditure was Rs. 600 crores in the year when its percentage profit was the maximum?

(a) Rs. 780 crores
(b) Rs. 800 crores
(c) Rs. 760 crores
(d) Rs. 820 crores

Q8. Find the simple interest (in Rs.) on Rs. 2500 as a sum borrowed at 7% per year rate of interest for 5 years.

(a) 815
(b) 875
(c) 915
(d) 835

Q9. The least number of square tiles required to pave the ceiling of a room 525 centimetre long and 378 centimetre broad is:

(a) 178
(b) 150
(c) 380
(d) 450

Q10. By selling an article for Rs. 20, a dealer makes a profit of 10%. By how much should he increase his selling price (in Rs. , rounded off to two decimal place) so as to make a profit of 20%?

(a) 2.82
(b) 4.82
(c) 1.82
(d) 3.82

Q11. Find the average of 300, 129, 49, 120 and 102.

(a) 130
(b) 120
(c) 150
(d) 140

Q12. A grocer mixes two varieties of tea worth Rs. 120/kg and Rs. 125/kg in a ratio to produce a new variety worth Rs. 122/kg. What is the ratio of the varieties to be mixed to obtain the new variety?

(a) 2:5
(b) 4:4
(c) 1:3
(d) 3:2

Q13. A retailer allows a trade discount of 25% and a further discount of 8% on the marked price of the products, if paid along with his shop's membership card. He makes a net profit of 15% on the cost. By what percentage are the products marked up by him?

(a) 66 2/3 %
(b) 84 1/3 %

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(c) 59 2/3 %
(d) 46 1/3 %

Q14. Ravi goes to college from his village at the speed of 5km/h and returns at the speed of 4km/h. If he takes 9 hours in all, find the distance (in km) between the village and the college.
(a) 20
(b) 40
(c) 18
(d) 9

Q15. Two trains running towards each other on parallel tracks, at speeds of 45 km/hr and 51 km/hr, take 21 seconds to cross each other. If the length of one train is 290 m, then the length (in m) of the other train is:
(a) 250
(b) 290
(c) 230
(d) 270

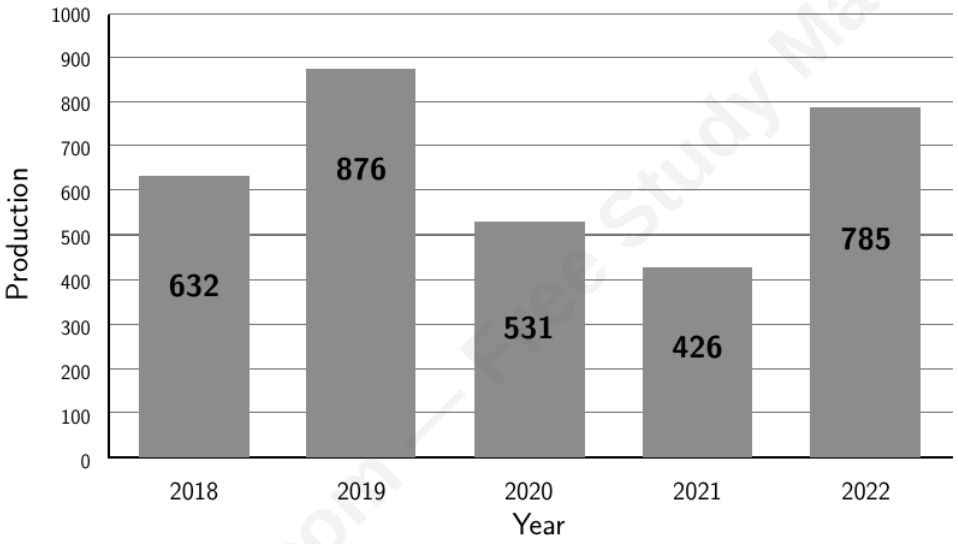
Q16. The ratio of the present ages of Ram and Shyam is 3 : 4, and 4 years ago the ratio was 2 : 3. What will be the ratio of the ages of Ram and Shyam 4 years from now?
(a) 4:5
(b) 1:5
(c) 2:5
(d) 3:5

Q17. A borrows Rs. 89,500 for 3 years at 7% p.a. simple interest. B borrows the same amount at simple interest of 9% for the first year, 8% for the second year, and 7% for the third year. What is the total simple interest (in Rs.) paid by A and B?
(a) 45,027
(b) 47,025
(c) 42,075
(d) 40,275

Q18. The average of 9 numbers is 3. If the average of the first 8 of these numbers is 2, the 9th number is:
(a) 11
(b) 12
(c) 14
(d) 15

Q19. The given bar graph shows the production of onions (in quintals) from the year 2018 to 2022. Study the graph and answer the question that follows. Considering the average production during this period, the number of years in which the production is above the average is:

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

Q20. A cylindrical tank of height 10 m and radius 5 m has a small circular cut of 0.5 m radius on its top surface. What would be the total surface area of the tank?

(a) 599π/4m²
(b) 156 πm²
(c) 299π/2m²
(d) 150 πm2

Q21. UBIP is related to YFMT in a certain way based on the English alphabetical order. In the same way, IPWD is related to MTAH. To which of the following is OVCJ related, following the same logic?

(a) SZGN
(b) SMGJ
(c) SJZM
(d) SZMG

Q22. In a certain code language, 'TALE' is coded as '5173' and 'AIDS' is coded as '6452'. What is the code for 'A' in the given code language?

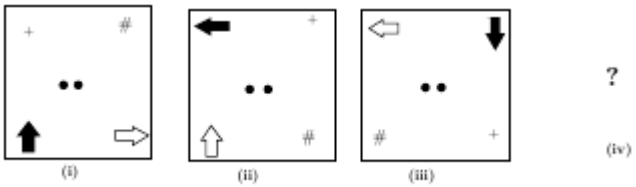
(a) 6
(b) 5
(c) 1
(d) 2

Q23. What should come in place of the question mark (?) in the given series based on the English alphabetical order?

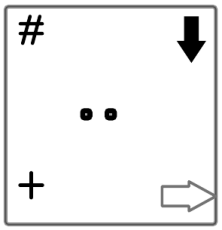
TKU, UNP, VQK, WTF, ?

(a) XXA
(b) WAW
(c) XWA
(d) YXB

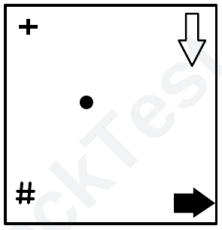
Q24. Select the figure given in the options which when put in place of the question mark (?) will logically complete the series.



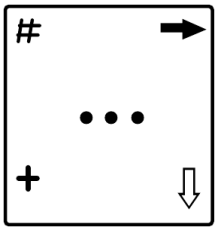
(a)



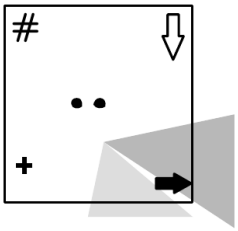
(b)



(c)



(d)



Q25. Select the set in which the numbers are related in the same way as are the numbers of the following sets.

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into their 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.)

(12, 4, 160)

(6, 11, 157)

(a) (6, 15, 90)
(b) (14, 7, 245)
(c) (21, 4, 168)
(d) (9, 15, 90)

Q26. GY 16 is related to DV 23 in a certain way. In the same way, OD 11 is related to LA 18. To which of the following is LW 13 related, following the same logic?

(a) IT 20
(b) IS 20

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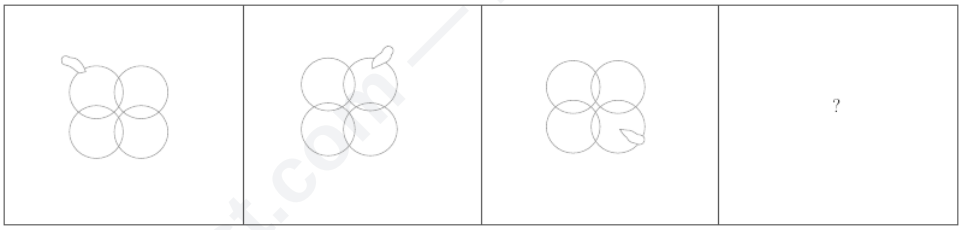
(c) HS 20
(d) HT 19

Q27. What should come in place of the question mark (?) in the given series?

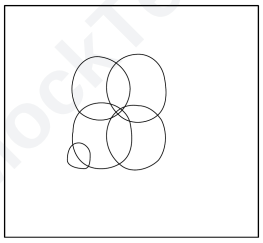
53, 52, 39, 38, ?, 24

(a) 23
(b) 25
(c) 26
(d) 28

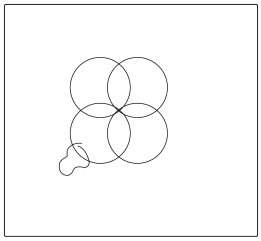
Q28. Select the figure that will come next in the following figure series.



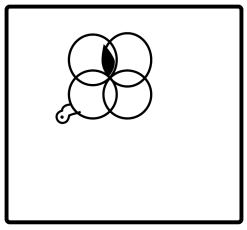
(a)



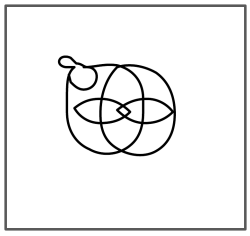
(b)



(c)



(d)



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Q29. Which of the following interchanges of signs would make the given equation correct?

15 - 54 × 18 + 16 ÷ 2 = 44

(a) • and +
(b) • and ×
(c) ÷ and ×
(d) • and ÷

Q30. In a certain code language, 'EAGER' is written as 'CGGTG' and 'LEARN' is written as 'GNAPT'. How will 'HINDI' be written in that language?

(a) KJNKF
(b) KJPKF
(c) KJNFK
(d) JKNKF

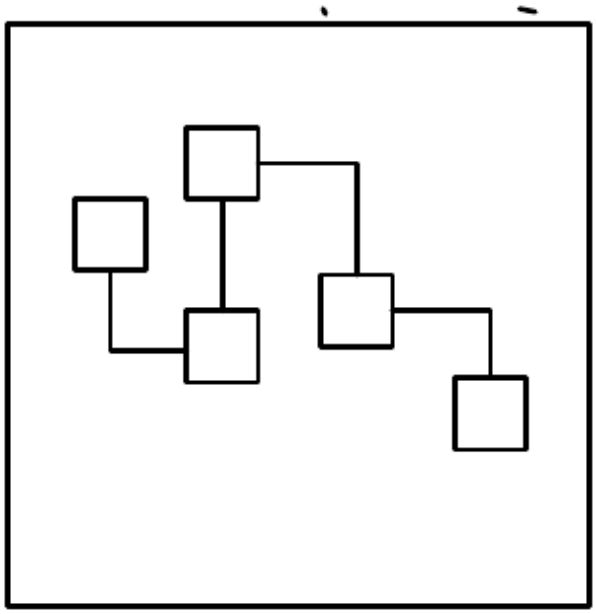
Q31. P, Q, R, S, T and U are sitting around a circular table facing the centre (but not necessarily in the same order). P is second to the left of T. Q is an immediate neighbour of both U and P. S and P are immediate neighbours. Who among the following has both T and U as his immediate neighbours?

(a) S
(b) R
(c) Q
(d) P

Q32. In a certain code language, '22 55 77' is coded as 'rr pp tt' and '77 66 44' is coded as 'pp kk ll' and '66 11 22' is coded as 'kk tt zz'. How is '11' coded in the given language?

(a) tt
(b) zz
(c) kk
(d) pp

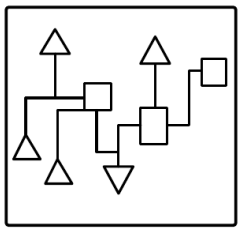
Q33. Select the option figure in which the given figure (X) is embedded as its part (rotation is NOT allowed).



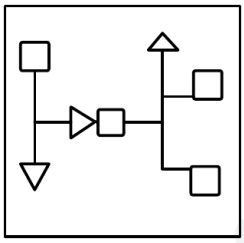
(X)

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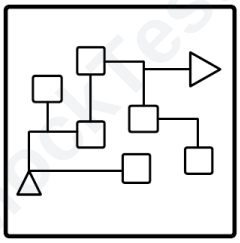
(a)



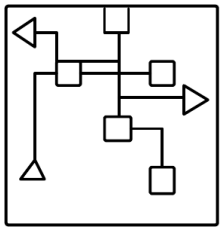
(b)



(c)



(d)



Q34. In a certain code language, 'PLAY' is coded as '4831' and 'CLAY' is coded as '1824'. What is the code for 'C' in that language?

(a) 2
(b) 1
(c) 8
(d) 4

Q35. Read the given statements and conclusions carefully. Assuming that the information given in the statements is true, even if it appears to be at variance with commonly known facts, decide which of the given conclusions logically follow(s) from the statements.

Statements:

All parrots are eagles.

No parrot is a crow.

Conclusions:

(I) No eagle is a crow.

(II) All crows are parrots.

(a) Both conclusions I and II follow
(b) Only conclusion I follows
(c) Only conclusion II follows
(d) Neither conclusion I nor II follows

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Q36. What will come in the place of the question mark (?) in the following equation if '-' and '×' are interchanged and "÷" and '+' are interchanged?

6 - 8 ÷ 12 + 3 × 9 + 3 ÷ 17 = ?

(a) 2
(b) 66
(c) 71
(d) 56

Q37. Read the given statements and conclusions carefully. Assuming that the information given in the statements is true, even if it appears to be at variance with commonly known facts, decide which of the given conclusions logically follow(s) from the statements

Statements

• Some carrots are radishes.

• Some cucumbers are radishes.

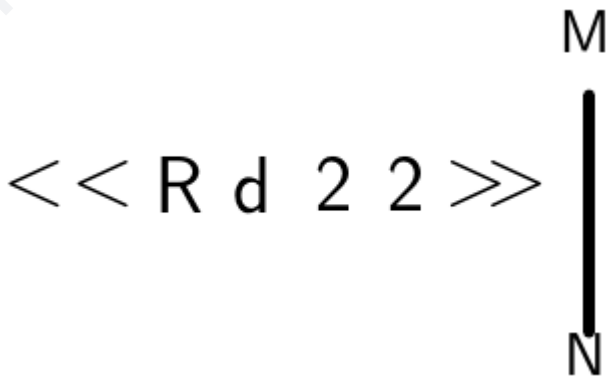
Conclusions:

• I. All cucumbers are carrots.

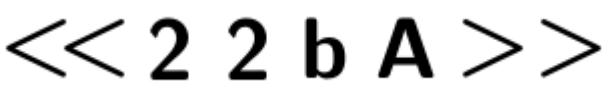
• II. Some cucumbers are carrots.

(a) Neither conclusion I nor II follows
(b) Only conclusion I follows
(c) Both conclusions I and II follow
(d) Only conclusion II follows

Q38. Select the correct mirror image of the given figure when the mirror is placed at MN as shown below.



(a)



(b)



(c)



(d)



Q39. 18 is related to 80 following a certain logic. Following the same logic, 23 is related to 100. To which of the following is 36 related, following the same logic?

(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)

(a) 138
(b) 144
(c) 152
(d) 142

Q40. Seven people A, B, C, D, E, F and G are sitting around a circular table, facing the center (but not necessarily in the same order). G is sitting third to the left of E. A is sitting to the immediate left of G. D is the immediate neighbour of A and B. F is sitting to the immediate left of C.

How many people are sitting between F and D when counted from the right of F?

(a) Three
(b) Two
(c) Five
(d) Four

SESSION 2

Q41. A party recognised by the Election Commission of India that secures at least _____ of the total votes in the General Election to Lok Sabha or Legislative Assembly in four or more states in addition to winning four Lok Sabha seats is called a National Party.

(a) eight per cent
(b) three per cent
(c) one per cent
(d) six per cent

Q42. Which musical duo is part of the Khayal singing lineage of the Banaras Gharana?

(a) Rajan and Sajan Mishra
(b) Salamat Ali and Nazakat Ali Khan
(c) Subhan Kasim and Subhan Bab
(d) Sandhya and Prasun Banerjee

Q43. Which of the following can be a basis of difference between a salamander and a house-wall lizard apart from their habitat?

(a) Egg-laying feature
(b) Cold-blood
(c) Scales on the skin
(d) Three-chambered heart

Q44. Which of the following novels is NOT written by Aravind Adiga?

(a) Last Man in Tower
(b) The English Teacher
(c) The White Tiger
(d) Selection Day

Q45. In which stadium did Indian cricketer Saurav Ganguly take off and waive his t-shirt?

(a) Cape Town Stadium, South Africa
(b) Lord's Stadium, England
(c) The Melbourne Cricket Ground, Australia
(d) Perth Stadium, Australia

Q46. The PM-SVANidhi Scheme (2020) is run by which Ministry of the Government of India?

(a) Ministry of Labour and Employment
(b) Ministry of Finance
(c) Ministry of Housing and Urban Affairs
(d) Ministry of Rural Development

Q47. After which of the following Acts did India come to be governed in the name of the British crown?

(a) Government of India Act, 1919
(b) Government of India Act, 1858
(c) Charter Act of 1853
(d) Charter Act of 1833

Q48. Hornbill festival is organised every year in which of the following states?

(a) Nagaland
(b) Sikkim
(c) Tripura
(d) Goa

Q49. At the Sansad Ratna Awards 2023, who among the following received the Dr. APJ Abdul Kalam Lifetime Achievement Award?

(a) Nagendra Singh
(b) HD Deve Gowda
(c) Laxminarayan Yadav
(d) TK Rangarajan

Q50. When was National Judicial Commission Bill, which is a private member bill to regulate the appointment of judges through the National Judicial Commission, introduced in Rajya Sabha?

(a) August 2023
(b) July 2023
(c) March 2022
(d) December 2022

Q51. The Mughal emperor, Babur was a devotee of the _____ Sufi Silsila.

(a) Naqshbandi
(b) Suhrawardi
(c) Qadri
(d) Chisti

Q52. Which of the following dances of Goa is performed to celebrate the victory of the Maratha warriors over the Portuguese?

(a) Ghodemodni
(b) Zemmedo
(c) Morulem
(d) Goff

Q53. The IUPAC name of CH3-(CH2)18-CH3 is _____

(a) triacontane
(b) decane
(c) icosane

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(d) dodecane

Q54. Which of the following Kathak dancers received the Padma Shri of 2022?

(a) Shakti and Mukti Mohan
(b) Sunayana Hazarilal Agrewal
(c) Shovana Narayan
(d) Kamalini and Nalini Asthana

Q55. The Bidar Fort of Karnataka is irregularly _____ in shape.

(a) rhomboid
(b) circular
(c) rectangular
(d) square

Q56. A coastal area was flooded with sea water and resulted in heavy salt deposits in the nearby area. After a few days, it was observed that many plants died. Based on these statements, which of the following is the most probable cause of the plant deaths?

A. Plants died due to infection from sea water borne germs.
B. Plants died due to absence of sunlight.
C. Plants died due to plasmolysis in the plant cells.
D. Plants died because they were eaten by sea organisms.

(a) A
(b) C
(c) D
(d) B

Q57. According to Indian Meteorology, which of the following is NOT a season experienced in India?

(a) The southwest monsoon season
(b) The hot weather season
(c) Equatorial season
(d) The cold weather season

Q58. Bawris are traditionally used for:

(a) storing and recharging water
(b) getting useful minerals
(c) getting petroleum oil
(d) collecting garbage

Q59. Who was the Indian match referee in the ICC - T20 World Cup 2021 tournament?

(a) Rahul Dravid
(b) Venkatesh Prasad
(c) Sunil Gavaskar
(d) Javagal Srinath

Q60. The Universal Adult Franchise in Indian Constitution is applicable to Indian Citizens from the age of _____.

(a) 18 years
(b) 22 years
(c) 21 years
(d) 17 years

Q61. Who was the man who decrypted the Brahmi script of the Mauryan period?

(a) James Mill
(b) James Prinsep
(c) Rakhal Das Banerjee
(d) Herbert Hope Risley

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Q62. In general, deficit is considered as a _____ concept.

(a) surplus
(b) stock
(c) margin
(d) flow

Q63. Who was appointed as the Viceroy of India in place of Lord Wavell in February 1947?

(a) Lord Willingdon
(b) Lord Linlithgow
(c) Lord Irwin
(d) Lord Mountbatten

Q64. Which of the following age groups is considered as working population or working age in India?

(a) 15-40 years
(b) 0-60 years
(c) 15-59 years
(d) 25-65 years

Q65. What is the approx width of broad-gauge railway network in India?

(a) 1.3 metres
(b) 1.6 metres
(c) 1 metre
(d) 1.2 metres

Q66. Select the word that has the same meaning (SYNONYM) as the underlined word in the given sentence.

The disposal of hazardous waste in hospitals and factories is a serious problem and needs to be taken care of urgently.

(a) dangerous
(b) belligerent
(c) hazy
(d) benign

Q67. Select the present perfect tense of the verb given in the brackets to fill in the blank.

Alex _____ (study) two programming languages.

(a) has studied
(b) have study
(c) has been studying
(d) had studied

Q68. The following sentence has been split into four segments. Identify the segment that contains a grammatical error.

The teacher checked / whether each of them / have a blanket / as it was a cold night.

(a) have a blanket
(b) as it was a cold night
(c) The teacher checked
(d) whether each of them

Q69. Select the most appropriate synonym of 'scanty' in the sentence given below.

India has varied regions which have excess, moderate and deficient rainfall all through the year.

(a) Excess
(b) Moderate
(c) Deficient
(d) Varied

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Q70. Select the correctly spelt word to fill in the blank.

Arvind wanted to bake a cake for Riya's birthday, so he mixed the _____ eggs and butter.

(a) flawer
(b) flower
(c) flour
(d) flover

Q71. Select the INCORRECTLY spelt word from the given sentence.

The gardener's meticulous care ensured the vibrent colours of the flowers.

(a) Vibrent
(b) Gardener's
(c) Care
(d) Meticulous

Q72. Select the most appropriate option to fill in the blank.

Please put the dishes in the _____ after you finish eating.

(a) sink
(b) shrink
(c) cinque
(d) sync

Q73. Select the INCORRECTLY spelt word.

(a) perepharal
(b) belated
(c) tentative
(d) stringent

Q74. Select the most appropriate synonym of the given word.

Inspire

(a) Reach
(b) Stimulate
(c) Aspire
(d) Daunt

Q75. Select the option that rectifies the spelling error in the given sentence.

The student received an A+ for her exellent performance.

(a) perfarmence
(b) excellent
(c) performence
(d) excelleant

Q76. Select the most appropriate option to fill in the blank.

The _____ of the scientific experiment raised questions about the validity of the results.

(a) transparency
(b) ambiguity
(c) verbosity
(d) meticulousness

Q77. Select the most appropriate option to fill in the blank.

The student leader has _____ politics recently.

(a) approached
(b) entered
(c) gathered
(d) jumped

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Q78. The following sentence has been divided into parts. One of them may contain an error. Select the part that contains the error from the given options. If you don't find any error, mark 'No error' as your answer.

I am / cleaning the sofa / when she called me.

(a) cleaning the sofa
(b) when she called me
(c) No error
(d) I am

Q79. The following sentence has been split into four segments. Identify the segment that contains a grammatical error.

The society / of the / our place / is good.

(a) is good
(b) our place
(c) The society
(d) of the

Q80. Select the most appropriate expression that can substitute the underlined word in the given sentence.

Sonali is contemplating whether to accept the offer from Saanvi or not; she is still not in a position to be able to arrive at a decision.

(a) raising the eyebrows
(b) blowing hot and cold
(c) getting her act together
(d) chewing the cud

Q81. Select the most appropriate option that can substitute the underlined segment in the sentence.

She was deeply effected by the news, to the point of tears.

(a) affect from
(b) effected from
(c) affected of
(d) affected by

Q82. Select the most appropriate option that can substitute the underlined segment in the given sentence.

Raghav, who studies tourism at present, is planning to go abroad after his graduation.

(a) will study
(b) study
(c) studied
(d) is studying

Q83. You overhear someone say, "He's always on cloud nine." What does this idiom mean in the given context?

(a) Often absent
(b) Extremely happy
(c) Frequently daydreaming
(d) Always busy

Q84. The following sentence has been divided into parts. One of them may contain an error. Select the part that contains the error from the given options. If you don't find any error, mark 'No error' as your answer.

She is / as more intelligent as / her brothers are.

(a) She is
(b) No error.
(c) her brothers are.
(d) as more intelligent as

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Q85. The following sentence has been split into four segments. Identify the segment that contains a grammatical error.

He dropped out / at his friend's house / on his way home / the day before yesterday.

(a) on his way home
(b) at his friend's house
(c) the day before yesterday
(d) He dropped out

Directions

In the following passage, some words have been deleted. Read the passage carefully and select the most appropriate option to fill in each blank.

It was one January morning, very early — a pinching, frosty morning — the cove all grey __ 1 hoar-frost and the ripple lapping softly on the stones. The captain had _ 2 earlier than usual and set out down the beach. Mother was upstairs with father and I was _ 3 the breakfast table against the captain's return when the parlour door opened and a man stepped in on whom I had never set my eyes before. He was a pale, tallowy creature, wanting two fingers of the left hand, and __ 4 he wore a cutlass, he did not look much like a fighter. I had always my eye open for seafaring __ 5___ with one leg or two, and I remember this one puzzled me.

Q86. Select the most appropriate option to fill in blank number 1

(a) with
(b) among
(c) amongst
(d) about

Q87. Select the most appropriate option to fill in blank number 2

(a) danced
(b) risen
(c) written
(d) waltzed

Q88. Select the most appropriate option to fill in blank number 3

(a) lying
(b) laying
(c) throwing
(d) playing

Q89. Select the most appropriate option to fill in blank number 4

(a) through
(b) throw
(c) though
(d) threw

Q90. Select the most appropriate option to fill in blank number 5

(a) plants
(b) birds
(c) men
(d) flowers

ANSWER KEY

1	a	2	c	3	b	4	a	5	c	6	d	7	a	8	b	9	d	10	c
11	d	12	d	13	a	14	a	15	d	16	a	17	d	18	a	19	a	20	a
21	a	22	b	23	c	24	d	25	b	26	a	27	b	28	b	29	c	30	a
31	b	32	b	33	c	34	a	35	d	36	b	37	a	38	a	39	c	40	a

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41	d	42	a	43	c	44	b	45	b	46	c	47	b	48	a	49	d	50	d
51	a	52	a	53	c	54	d	55	a	56	b	57	c	58	a	59	d	60	a
61	b	62	d	63	d	64	c	65	b	66	a	67	a	68	a	69	c	70	c
71	a	72	a	73	a	74	b	75	b	76	b	77	b	78	d	79	d	80	d
81	d	82	d	83	b	84	d	85	d	86	a	87	b	88	b	89	c	90	c

SOLUTIONS

Q1. Answer: (a) 21 unit²

Given:

The coordinates of the vertices of quadrilateral ABCD are A(6, -3), B(-4, -2), C(3, 1), and D(5, 0).

Formula Used:

The area of a quadrilateral given its vertices (x1, y1), (x2, y2), (x3, y3), and (x4, y4) is:

Area = (1/2) | x1y2 + x2y3 + x3y4 + x4y1 - (y1x2 + y2x3 + y3x4 + y4x1) |

Calculation:

Substituting the given coordinates:

Area = (1/2) | 6(-2) + (-4)1 + 3(0) + 5(-3) - (-3(-4) + (-2)3 + 1(5) + 0(6)) |

=> Area = (1/2) | -12 - 4 + 0 - 15 - (12 - 6 + 5 + 0) |

=> Area = (1/2) | -31 - 11 |

=> Area = (1/2) | -42 |

=> Area = (1/2) × 42

=> Area = 21

Therefore The correct answer is 21 unit².

Q2. Answer: (c) 14 cm

Shortcut Trick

In melting and recasting, the total volume remains constant.

Total Volume = π × (r1²h1 + r2²h2) = πR²H

4² × 6 + 5² × 4 = R² × 1

16 × 6 + 25 × 4 = R² => 96 + 100 = R²

R² = 196 => R = √196 = 14 cm.

Therefore The correct answer is 14 cm.

Alternate Method

Given:

Cylinder 1: r1 = 4 cm, h1 = 6 cm

Cylinder 2: r2 = 5 cm, h2 = 4 cm

New Disc: thickness (H) = 1 cm, radius = R

Formula: Volume of a cylinder = πr²h

V1

r=4, h=6

• V2

r=5, h=4

Disc

R = ?, H = 1 cm

Volume Conservation: V1 + V2 = V(Disc)

=> Volume of first cylinder (V1) = π × (4)² × 6 = 96π cm³

=> Volume of second cylinder (V2) = π × (5)² × 4 = 100π cm³

=> Total volume = V1 + V2 = 96π + 100π = 196π cm³

=> Volume of disc = π × R² × H = 196π

=> π × R² × 1 = 196π

=> $R^2 = 196$

=> $R = \sqrt{196} = 14$ cm.

Therefore The correct answer is 14 cm.

Additional Information

Volume of Cylinder

The amount of space occupied by a cylinder is given by $\pi r^2 h$, where r is the radius and h is the height.

Curved Surface Area (CSA)

The area of the curved part of the cylinder is $2\pi rh$.

Total Surface Area (TSA)

The sum of the curved surface area and the areas of the two circular bases: $2\pi rh + 2\pi r^2 = 2\pi r(h + r)$.

Principle of Recasting

When a solid object is melted and recast into a new shape, the total volume of the material remains the same, provided there is no wastage.

Q3. Answer: (b) 42.95%

Given:

Two successive increases of 15% each.

Two successive decreases of 12% each.

Formula Used:

Successive percentage change formula:

Total percentage change = x + y + (xy / 100)

Calculation:

For successive increases of 15% each:

Total increase = 15 + 15 + (15 x 15 / 100)

= 30 + 2.25 = 32.25%

For successive decreases of 12% each:

Total decrease = -12 - 12 + (-12 x -12 / 100)

= -24 + 1.44 = -22.56%

Percentage more than the decreases:

Required percentage = (Difference between total increase and total decrease) / |Total decrease| x 100

= (32.25 - (22.56)) / 22.56 x 100

= (32.25 - 22.56) / 22.56 x 100

= 9.69 / 22.56 x 100

= 42.95%

Therefore, the successive increases of 15% each are 42.95% more than the successive decreases of 12% each.

Q4. Answer: (a) 21

Given:

Initial average weight = 72 kg

11 students with 76 kg each leave the group

5 students with 79 kg each join the group

Decrease in average weight = 0.6 kg

Formula Used:

Total weight = Average weight × Number of students

New total weight = Initial total weight - Weight of leaving students + Weight of joining students

New average weight = New total weight / New number of students

Calculation:

Let the initial number of students be.

Total initial weight = 72 × N = 72N

Weight of 11 students leaving = 11 × 76 = 836 kg

Weight of 5 students joining = 5 × 79 = 395 kg

New average weight = 72 - 0.6 = 71.4 kg

New total weight equation:
72N - 836 + 395 = 71.4(N - 6)
Simplifying:
72N - 441 = 71.4N - 428.4
0.6N = 12.6
N = 12.6 / 0.6
N = 21
Therefore, the initial number of students in the group was 21.

Q5. Answer: (c) 500

Given:
P = Rs. 240, T = 4 years R= 12%
Formula Used:
Simple Interest (SI) = (P × R × T)/(100)
Calculation:
Given SI = Rs. 240, R = 12%, T = 4 years
240 = (P × 12 × 4)/(100)
=> 240 = (48P)/(100)
=> 240 = 0.48P
=> P = (240)/(0.48)
=> P = 500
Therefore The correct answer is Rs. 500.

Q6. Answer: (d) Rs. 4,200

Given:
Two mixers and one TV cost Rs. 7,000
Two TVs and one mixer cost Rs. 9,800.
Calculation:
Let the cost of one mixer be M and the cost of one TV be T.
From the given statements, we can write two equations:
2M + T = 7000
2T + M = 9800
From the first equation:
2M + T = 7000
=> T = 7000 - 2M
Substitute T = 7000 - 2M in the second equation:
2(7000 - 2M) + M = 9800
=> 14000 - 4M + M = 9800
=> 14000 - 3M = 9800
=> 14000 - 9800 = 3M
=> 4200 = 3M
=> M = 1400
Substitute M = 1400 back into the equation T = 7000 - 2M:
T = 7000 - 2 × 1400
=> T = 7000 - 2800
=> T = 4200
Therefore The value of one TV is Rs. 4,200.

Q7. Answer: (a) Rs. 780 crores

Given:
Percentage profit of the company for different years and expenditure of Rs. 600 crores.
Maximum percentage profit is 30% in the year 2017.
Formula Used:

Profit Percentage = (Revenue - Expenditure)/(Expenditure) × 100
Revenue = Expenditure + Profit
Profit = (Profit % × Expenditure)/(100)
Calculations:
In 2017, Profit % = 30%, Expenditure = Rs. 600 crores
Profit = (30 × 600)/(100) = 180 crores
Revenue = Expenditure + Profit
=> Revenue = 600 + 180
=> Revenue = Rs. 780 crores
Therefore The correct answer is Rs. 780 crores.

Q8. Answer: (b) 875

Given:
Principal (P) = Rs. 2500
Rate of Interest (R) = 7% per year
Time (T) = 5 years
Formula Used:
Simple Interest (SI) = (P × R × T)/(100)
Calculation:
SI = (2500 × 7 × 5)/(100)
=> SI = (87500)/(100)
=> SI = 875
Therefore The correct answer is Rs. 875.

Q9. Answer: (d) 450

Shortcut Trick
For the least number of square tiles, we must maximize the side of each tile.
Side of square tile = HCF(525, 378).
Prime factors: $525 = 3 \times 5^2 \times 7$ and $378 = 2 \times 3^3 \times 7$.
HCF = 3 × 7 = 21 cm.
Number of tiles = (525 ÷ 21) × (378 ÷ 21) = 25 × 18 = 450.
Therefore The correct answer is 450 tiles.
Alternate Method
Given: Length of the ceiling = 525 cm, Breadth of the ceiling = 378 cm.
Formula Used:
Side of the largest square tile = HCF(Length, Breadth)
Number of tiles = (Area of Ceiling) ÷ (Area of one square tile)
Calculations:
=> Prime factorization of 525 = 3 × 5 × 5 × 7
=> Prime factorization of 378 = 2 × 3 × 3 × 3 × 7
=> HCF(525, 378) = 3 × 7 = 21 cm
=> Area of the ceiling = 525 × 378 cm^2
=> Area of one square tile = 21 × 21 cm^2
=> Total tiles required = (525 × 378) ÷ (21 × 21)
=> Total tiles required = 25 × 18 = 450
Therefore The correct answer is 450 tiles.
Additional Information
HCF Application
HCF is used to find the largest identical size that can divide two or more dimensions perfectly without leaving any remainder.
Area Comparison
The number of units required to fill a surface is always the Total Area divided by the Unit Area.
LCM in Tiling

While HCF finds the tile size for a fixed room, LCM is used to find the smallest square room that can be paved using fixed-size rectangular tiles.

Q10. Answer: (c) 1.82

Given:

Given SP = Rs. 20 and Profit = 10%

Formula Used:

Profit = (Profit percentage × CP) / 100

Calculations:

SP = Rs. 20 and Profit = 10%

20 = CP + (10 × CP) / 100

=> 20 = (11/10) CP

=> CP = (20 × 10) / 11

=> CP = 18.18 (approx)

To achieve a 20% profit, New SP should be:

New SP = 18.18 + (20 × 18.18) / 100

=> New SP = 18.18 + 3.64

=> New SP = 21.82

The increase in selling price:

Increase = 21.82 - 20

=> Increase = 1.82

Therefore The correct answer is 1.82.

Q11. Answer: (d) 140

Given:

Numbers: 300, 129, 49, 120, 102

Formula Used:

Average = (Sum of values) / (Total number of values)

Calculation:

Sum = 300 + 129 + 49 + 120 + 102

= 700

Number of values = 5

Average = 700 / 5

= 140

Therefore, the average of the given numbers is 140.

Q12. Answer: (d) 3:2

Given:

Cost of tea variety 1 = Rs. 120/kg.

Cost of tea variety 2 = Rs. 125/kg.

Cost of mixed tea = Rs. 122/kg.

Formula:

Allegation Method:

(c - b) : (a - c)

Where, a > c > b

Calculation:

Cost of Variety 1 (Rs.)	Cost of Mixture (Rs.)	Cost of Variety 2 (Rs.)
120	122	125
Difference = 2 | 3		

The ratio of the two tea varieties = 3 : 2.

The ratio to mix the tea varieties to obtain the new variety is 3:2.

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Q13. Answer: (a) 66 2/3 %

Given:

Trade discount = 25%, Additional membership discount = 8%, Net profit = 15%

Formula Used:

Markup Percentage = ((Final SP / Cost Price) - 1) × 100

Final SP = Marked Price × (1 - Effective Discount)

Calculation:

Effective Discount = 1 - ((1 - 0.25) × (1 - 0.08)) = 1 - 0.69 = 0.31 or 31%

Final SP = Marked Price × 0.69

Assuming Cost Price = 100, then Final SP = 115 (15% profit)

115 = Marked Price × 0.69

Marked Price = 115 / 0.69 ≈ 166.67

Markup Percentage = ((166.67 / 100) - 1) × 100 = 66 2/3% %

The products are marked up by approximately 66 2/3 %.

Q14. Answer: (a) 20

Given:

Speed while going to college = 5 km/h.

Speed while returning = 4 km/h.

Total time taken = 9 hours.

Formula Used:

Distance = Speed × Time.

For combined trips with different speeds, use the relationship between distance, speed, and time to set up an equation.

Calculation:

Let the distance between the village and the college be d kilometers.

Time taken to go to college = d / 5 hours.

Time taken to return = d / 4 hours.

Total time for both trips = Time to go + Time to return = 9 hours.

Setting up the equation:

(d / 5) + (d / 4) = 9

To solve for d, find a common denominator and solve the equation:

(4d + 5d) / 20 = 9

9d = 180

d = 180 / 9

d = 20 kilometers.

Therefore, the distance between the village and the college is 20 kilometers.

Q15. Answer: (d) 270

Given:

Speed of Train 1 = 45 km/hr.

Speed of Train 2 = 51 km/hr.

Time taken to cross each other = 21 seconds.

Length of Train 1 = 290 meters.

Formula Used:

Total distance covered = Length of Train 1 + Length of Train 2.

Relative speed = Speed of Train 1 + Speed of Train 2 (since they are moving towards each other).

Distance = Speed × Time.

Calculation:

Convert the speed of both trains from km/hr to m/s:

Speed of Train 1 = 45 km/hr = 45 × (1000 m / 3600 s) = 12.5 m/s.

Speed of Train 2 = 51 km/hr = 51 × (1000 m / 3600 s) = 14.17 m/s.

Relative speed = 12.5 m/s + 14.17 m/s = 26.67 m/s.

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Calculate the total distance covered when they cross each other:
Total distance = Relative speed × Time = 26.67 m/s × 21 s = 560.07 meters.
Let the length of Train 2 be L meters. Then:
Total distance = Length of Train 1 + Length of Train 2 = 290 m + L m = 560.07 m.
Solving for L:
290 m + L m = 560.07 m.
L = 560.07 m - 290 m.
L = 270.07 meters.
Therefore, the length of the other train is approximately 270 meters.

Q16. Answer: (a) 4:5

Shortcut Trick
Present ratio Ram : Shyam = 3 : 4 (Difference = 1 unit)
Ratio 4 years ago = 2 : 3 (Difference = 1 unit)
Change in ratio units = 3 − 2 = 1 unit or 4 − 3 = 1 unit
Since 1 unit corresponds to 4 years, the ratio 4 years from now will be:
(3 + 1) : (4 + 1) = 4 : 5
Therefore The correct answer is 4:5.
Alternate Method
Given: Present age ratio = 3 : 4 | Ratio 4 years ago = 2 : 3
Formula: Age = Ratio × Constant (x)
=> Let present ages be 3x and 4x.
=> 4 years ago: (3x − 4) ÷ (4x − 4) = 2 ÷ 3
=> 3 × (3x − 4) = 2 × (4x − 4)
=> 9x − 12 = 8x − 8
=> x = 4
=> Present age of Ram = 3 × 4 = 12 years
=> Present age of Shyam = 4 × 4 = 16 years
=> Ages 4 years from now: Ram = 12 + 4 = 16 | Shyam = 16 + 4 = 20
=> Required Ratio = 16 : 20 = 4 : 5
Therefore The correct answer is 4:5.
Additional Information
Age Difference Property
The difference between the ages of two persons remains constant throughout their lives. If the ratio differences are not equal, multiply the ratios by the difference of the other ratio to balance them.
Ratio Balancing
If (a:b) is the ratio at time T1 and (c:d) at time T2, ensure (b−a) = (d−c) to directly equate the unit change to the time interval.

Q17. Answer: (d) 40,275

Given:
A borrows Rs. 89,500 at 7% per annum for 3 years.
B borrows the same amount with rates of 9% for the first year, 8% for the second year, and 7% for the third year.
Formula Used:
Simple Interest = Principal × Rate × Time / 100
Calculation for A:
Principal (P) = Rs. 89,500, Rate (R) = 7%, Time (T) = 3 years
Simple Interest for A = (89,500 × 7 × 3) / 100 = Rs. 18795
Calculation for B:
Interest for the first year at 9% = (89,500 × 9 × 1) / 100 = Rs. 8055
Interest for the second year at 8% = (89,500 × 8 × 1) / 100 = Rs. 7160
Interest for the third year at 7% = (89,500 × 7 × 1) / 100 = Rs. 6265
Total Simple Interest for B = 8055 + 7160 + 6265 = Rs. 21480

Total Simple Interest paid by A and B:
= 18795 + 21480 = Rs. 40275
Therefore, the total simple interest paid by A and B is Rs. 40275.

Q18. Answer: (a) 11

Given:
The average of 9 numbers is 3.
The average of the first 8 of these numbers is 2.
Calculation:
Total Sum = Average × Number of terms
Calculation:
9th number = Sum of 9 numbers - Sum of 8 numbers
Sum of 9 numbers = 3 × 9 = 27
Sum of 8 numbers = 2 × 8 = 16
=> 9th number = 27 - 16 = 11
Therefore The correct answer is 11.

Q19. Answer: (a) 2

Calculation:
First, calculate the average production over these years.
Average Production = (632 + 876 + 531 + 426 + 785) / 5 = 3,250 / 5 = 650 units.
Next, determine how many years had production above the average:
2018: 632 units (Below average)
2019: 876 units (Above average)
2020: 531 units (Below average)
2021: 426 units (Below average)
2022: 785 units (Above average)
The number of years with production above the average is 2

Q20. Answer: (a) 599π/4m²

Given:
Height of the cylindrical tank (h) = 10 m.
Radius of the cylindrical tank (R) = 5 m.
Radius of the circular cut (r) = 0.5 m.
Formula Used:
Lateral surface area of the cylinder = $2\pi Rh$
Top circular area = πR^2
Bottom circular area = πR^2
Cut area to be subtracted = πr^2
Total surface area = Lateral surface area + Bottom circular area + (Top circular area - Cut area)
Calculation:
Lateral surface area = $2 \times \pi \times 5 \times 10 = 100\pi$
Bottom area = $\pi \times 5^2 = 25\pi$
Top area without the cut = $\pi \times 5^2 - \pi \times 0.5^2$
= $25\pi - 0.25\pi = 24.75\pi$
Total surface area = $100\pi + 25\pi + 24.75\pi$
= 149.75π
Total surface area = $(599\pi/4)$
Therefore, the total surface area of the tank is $(599\pi / 4)$ square meters.

Q21. Answer: (a) SZGN

The logic followed here is:
For, UBIP : YFMT

For, IPWD : MTAH.
Similarly,
OVCJ : ?
Thus, the OVCJ : SZGN
Hence, the correct answer is "Option 1".

Q22. Answer: (b) 5

The logic followed here is:
The code for A is "5".
Hence, the correct answer is "Option 2".

Q23. Answer: (c) XWA

The logic followed here is:
Hence, the correct answer is "Option 3".

Q24. Answer: (d) [figure]

The logic followed here is:
Step :1) Elements are moving clockwise direction in each next step.
Step :2) Element of Arrow rotate 90º in anticlockwise direct.
Hence, the correct answer is "Option 4".

Q25. Answer: (b) (14, 7, 245)

Logic followed here is,
First number² + Second number² = Third number
Given,
(12, 4, 160)
$12^2 + 4^2$
144 + 16 = 160(Third number)
(6, 11, 157)
$6^2 + 11^2$
36 + 121 = 157(Third number)
Check the option,
Option 1) (6, 15, 90)
$6^2 + 15^2$
36 + 225 = 261 ≠ 90
Option 2) (14, 7, 245)
$14^2 + 7^2$
196 + 49 = 245(Third number)
Option 3) (21, 4, 168)
$21^2 + 4^2$
441 + 16 = 457 ≠ 168
Option 4) (9, 15, 90)
$9^2 + 15^2$
81 + 225 = 306 ≠ 90
Hence the correct answer is "Option 2"

Q26. Answer: (a) IT 20

The logic followed here is:
For, GY 16 : DV 23
For, OD 11 : LA 18
Similarly, LW 13 : ?
Hence, the correct answer is "Option 1".

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Q27. Answer: (b) 25

The logic followed here is:

Hence, the correct answer is "Option 2".

Q28. Answer: (b) [figure]

The logic followed here is:

Logic: Figure moving 90ºclockwise direction in each next step.

Hence, the correct answer is "Option 2".

Q29. Answer: (c) ÷ and ×

Give: 15 - 54 × 18 + 16 ÷ 2 = 44

According to the question,

Let's check options one by one.

Option 1) - and +

=> 15 + 54 × 18 - 16 ÷ 2 = 44

=> 15 + 972 - 8 = 44

=> 987 - 8 = 44

=> 979 ≠ 44

Option 2) + and ×

=> 15 - 54 + 18 × 16 ÷ 2 = 44

=> 15 - 54 + 18 × 8 = 44

=> 15 - 54 + 144 = 44

=>159 - 54 = 44

=> 1-5 ≠ 44.

Option 3) ÷ and ×

=> 15 - 54 ÷ 18 + 16 × 2 = 44

=> 15 - 3 + 32 = 44

=> 47 - 3 = 44

Option 4) - and ÷

=> 15 ÷ 54 × 18 + 16 - 2 = 44

=> 0.27 × 18 + 16 - 2 = 44

=> 5 + 16 - 2 = 44

=> 21 - 2 = 44

=> 19 ≠ 44.

Hence, the correct answer is "Option 3".

Q30. Answer: (a) KJNKF

Given:

EAGER' is written as 'CGGTG'

And, 'LEARN' is written as 'GNAPT'

Similarly,

'HINDI' be written

Thus, 'HINDI' be written as KJNKF

Hence, the correct answer is "Option 1".

Q31. Answer: (b) R

Given:

P is second to the left of T, Q is an immediate neighbour of both U and P.

S and P are immediate neighbours

Thus, 'R' is the immediate neighbour of both T and U.

Hence, the correct answer is "Option 2".

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Q32. Answer: (b) zz

The logic followed here is:

The code for "11" is "zz".

Hence, the correct answer is "Option 2".

Q33. Answer: (c) [figure]

The image embedded in given figure is as shown below:

Hence, the correct answer is "Option 3".

Q34. Answer: (a) 2

The logic followed here is:

The code for "C" is "2"

Hence, the correct answer is "Option 2".

Q35. Answer: (d) Neither conclusion I nor II follows

Statements:

All parrots are eagles.

No parrot is a crow.

The least possible venn diagram is given:

Conclusions:

(I) No eagle is a crow - False(because, All parrots are eagles and No parrot is a crow, it implies that some eagle are not crow, so it can be possible only).

(II) All crows are parrots - False(because, No parrot is a crow, so it cannot possible).

Thus, Neither conclusion I nor II follows.

Hence, the correct answer is "Option 4".

Q36. Answer: (b) 66

Given: 6 - 8 ÷ 12 + 3 × 9 + 3 ÷ 17 = ?

According to question, After '-' and '×' are interchanged and '÷ ' and '+' are interchanged

=> 6 × 8 + 12 ÷ 3 - 9 ÷ 3 + 17 = ?

=> 6 × 8 + 4 - 3 + 17 = ?

=> 48 + 4 - 3 + 17 = ?

=> 69 - 3 = 66

Hence, the correct answer is "Option 2".

Q37. Answer: (a) Neither conclusion I nor II follows

Statements

• Some carrots are radishes.

• Some cucumbers are radishes.

The least possible Venn diagram is given.

• Conclusions:

• I. All cucumbers are carrots - False(because there is no direct relation between cucumber and carrots, so it can be possible only).

• II. Some cucumbers are carrots - False(because there is no direct relation between cucumber and carrots, so it can be possible only).

Thus, Neither conclusion I nor II follows

Hence, the correct answer is "Option 1".

Q38. Answer: (a) [figure]

The correct mirror image of the given figure is:

Hence, the correct answer is "Option 1".

Q39. Answer: (c) 152

The logic followed here is:

Logic: 1^(st) number × 4 + 8 = 2^(nd) number.

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18 is related to 80

→ 18 × 4 + 8

→ 72 + 8 = 80 (equal to 2nd number)

23 is related to 100

→ 23 × 4 + 8

→ 92 + 8 = 100 (equal to 2nd number)

Similarly,

36 is related to,

→ 36 × 4 + 8

→ 144 + 8 = 152.

So, 152 is the correct answer.

Hence, the correct answer is "Option 3".

Q40. Answer: (a) Three

Given: Seven people A, B, C, D, E, F and G are sitting around a circular table, facing the center.

1) G is sitting third to the left of E.

2) A is sitting to the immediate left of G.

3) D is the immediate neighbour of A and B.

4) F is sitting to the immediate left of C..

Thus, according to the final arrangement, three people are sitting between F and D when counted from the right of F.

Hence, "Option 1" is the correct answer.

Q41. Answer: (d) six per cent

The correct answer is six per cent.

Key Points

• A party is recognized as a National Party by the Election Commission of India if it secures at least six per cent of the total votes in the General Election to Lok Sabha or Legislative Assembly in four or more states.

• In addition to the vote percentage, the party must also win at least four Lok Sabha seats.

• Recognition as a National Party provides the party with several privileges, including a common symbol for candidates across India.

• National parties have the ability to influence national politics and policies due to their significant presence across multiple states.

• As of the latest information, India has eight recognized National Parties.

Additional Information

• State Party Recognition:

• To be recognized as a State Party, a party must secure at least six per cent of the total votes in the Legislative Assembly or Lok Sabha elections in that state.

• It must also win at least two seats in the Legislative Assembly of the state.

• Symbol Allocation:

• National and State Parties are granted exclusive symbols for their candidates.

• Independent candidates and unrecognized parties can choose from a list of free symbols.

• Election Commission of India (ECI):

• The ECI is an autonomous constitutional authority responsible for administering election processes in India.

• It ensures free and fair elections to the Parliament, State Legislatures, and the offices of the President and Vice President.

• Privileges of National Parties:

• National Parties are entitled to broadcast/telecast facilities during elections on public broadcasters Doordarshan and All India Radio.

• They are also allowed to consult with the ECI regarding the dates of elections and other important electoral matters.

Q42. Answer: (a) Rajan and Sajan Mishra

The correct answer is Rajan and Sajan Mishra.

Key Points

• Rajan and Sajan Mishra are renowned Indian classical vocalists of the Khayal style in the Banaras Gharana.

• They were awarded the Padma Bhushan in 2007, India's third-highest civilian honor, for their contribution to Indian classical music.

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• The duo has performed at numerous prestigious concerts and festivals both in India and internationally.
• Rajan and Sajan Mishra are known for their impeccable voice coordination and emotional depth in their performances.

Additional Information

• Khayal
• Khayal is a form of Hindustani classical music that is characterized by a two-part structure: Asthai and Antara.
• It allows for extensive improvisation and expression of various emotions.
• Khayal singing typically involves a lead vocalist accompanied by a harmonium or sarangi, and a tabla for rhythm.
• Banaras Gharana
• The Banaras Gharana is one of the prominent schools of Indian classical music, known for its unique style and contributions to both vocal and instrumental music.
• It emphasizes intricate rhythms and robust melodic lines.
• Besides Khayal, it is also known for other forms such as Thumri, Dadra, and Tappa.
• Padma Bhushan
• The Padma Bhushan is the third-highest civilian award in India, awarded for distinguished service of a high order in any field.
• It is conferred by the Government of India on Republic Day.
• Indian Classical Music
• Indian classical music is broadly divided into two traditions: Hindustani (North Indian) and Carnatic (South Indian).
• It is based on ragas (melodic frameworks) and talas (rhythmic cycles).
• It has a rich heritage and has been passed down through generations via the guru-shishya (teacher-student) tradition.

Q43. Answer: (c) Scales on the skin

The correct answer is Scales on the skin.

Key Points

• Salamanders have smooth, moist skin without scales, which helps in cutaneous respiration (breathing through the skin).
• House-wall lizards possess dry, scaly skin that protects them from desiccation and provides a barrier against predators.
• The absence of scales in salamanders allows them to live in moist environments, whereas the presence of scales in lizards allows them to thrive in drier habitats.
• Scales in lizards are made of keratin, providing structural strength and aiding in locomotion by reducing friction.

Additional Information

• Cold-blooded Nature:
• Both salamanders and lizards are ectothermic (cold-blooded), meaning they rely on external sources to regulate their body temperature.
• Egg-laying Feature:
• Both groups generally lay eggs, though some salamanders can give birth to live young depending on the species.
• Heart Structure:
• Both salamanders and lizards typically have a three-chambered heart, consisting of two atria and one ventricle.
• Skin Function:
• Salamander skin helps in respiration, whereas lizard skin primarily protects against environmental hazards.
• Habitat Differences:
• Salamanders prefer moist or aquatic environments, while lizards are more commonly found in terrestrial or arid regions.

Q44. Answer: (b) The English Teacher

The correct answer is The English Teacher.

Key Points

• The English Teacher is written by the renowned Indian author R.K. Narayan.
• R.K. Narayan is famous for his works set in the fictional South Indian town of Malgudi.
• Published in 1945, The English Teacher is a part of Narayan's trilogy, which includes Swami and Friends and The Bachelor of Arts.
• Aravind Adiga, on the other hand, is known for novels such as The White Tiger and Last Man in Tower.

Additional Information

• Aravind Adiga:
• He is an Indian author and journalist who won the Man Booker Prize in 2008 for his debut novel The White Tiger.
• His works often explore themes such as class struggle, poverty, and the socio-economic landscape of India.

• R.K. Narayan:
• Full name: Rasipuram Krishnaswami Iyer Narayanaswami.
• One of the leading figures of early Indian literature in English.
• Created the fictional town of Malgudi, which serves as the setting for many of his novels and short stories.
• The White Tiger:
• A novel by Aravind Adiga that provides a darkly humorous perspective on India's class struggles in a globalized world.
• Adapted into a Netflix film in 2021.
• Selection Day:
• A novel by Aravind Adiga that revolves around the lives of two brothers aspiring to become professional cricketers.
• Explores themes such as ambition, sibling rivalry, and the pressures of societal expectations.

Q45. Answer: (b) Lord's Stadium, England

The correct answer is Lord's Stadium, England.

Key Points

• Sourav Ganguly took off and waived his t-shirt at Lord's Stadium in England.
• This incident occurred on July 13, 2002, during the NatWest Series final between India and England.
• India chased down a target of 326, which was a significant achievement and led to Ganguly's exuberant celebration.
• The act has since become an iconic moment in Indian cricket history, symbolizing India's aggressive and fearless approach in cricket.

Additional Information

• NatWest Series 2002
• The NatWest Series is a triangular cricket tournament held in England, sponsored by the National Westminster Bank.
• The 2002 series included teams from India, England, and Sri Lanka.
• India won the final match against England by 2 wickets, marking a historic victory.
• Lord's Stadium
• Known as the "Home of Cricket," Lord's is a cricket venue in St John's Wood, London.
• It is owned by Marylebone Cricket Club (MCC) and is the home of the England and Wales Cricket Board (ECB).
• Established in 1814, Lord's hosts Test matches, One Day Internationals, and other significant cricket events.
• Sourav Ganguly
• Sourav Ganguly, also known as the "Prince of Calcutta," is a former Indian cricketer and captain of the Indian national team.
• He is regarded as one of India's most successful captains, known for his leadership and aggressive style of play.
• Ganguly played a crucial role in transforming the Indian cricket team into a formidable force on the international stage.
• Iconic Moments in Cricket
• Such moments include Kapil Dev lifting the 1983 World Cup, Sachin Tendulkar's 100th international century, and MS Dhoni's winning six in the 2011 World Cup final.
• These events are celebrated for their impact on the sport and their significance in the history of cricket.

Q46. Answer: (c) Ministry of Housing and Urban Affairs

The correct answer is Ministry of Housing and Urban Affairs.

Key Points

• The PM-SVANidhi (Pradhan Mantri Street Vendor's AtmaNirbhar Nidhi) Scheme is implemented by the Ministry of Housing and Urban Affairs.
• It was launched by the Government of India on June 1, 2020.
• The scheme aims to provide affordable working capital loans to street vendors to help them resume their livelihoods post-COVID-19 pandemic.
• Under this scheme, street vendors can avail a working capital loan of up to Rs. 10,000 with a one-year tenure.
• The scheme also promotes digital transactions through cashback incentives to encourage vendors to adopt digital payments.

Additional Information

• Eligibility Criteria:
• The scheme is applicable to all street vendors engaged in vending in urban areas as on or before March 24, 2020.
• Street vendors should possess a Certificate of Vending/Identity Card issued by Urban Local Bodies (ULBs).
• If not, they can be identified through a survey conducted by ULBs or can produce a letter of recommendation from the ULB or Town Vending Committee.

• Loan Repayment:
• The loan has to be repaid in monthly installments within a year.
• There is no penalty for early repayment of the loan.
• Interest Subsidy:
• An interest subsidy of 7% per annum is credited to the bank accounts of beneficiaries on a quarterly basis.
• Interest subsidy is available up to March 31, 2022.
• Scheme Performance:
• As of August 2023, the scheme has benefitted over 30 lakh street vendors across the country.
• The scheme has disbursed loans worth over Rs. 3,000 crore to street vendors.

Q47. Answer: (b) Government of India Act, 1858

The correct answer is Government of India Act, 1858.

Key Points

• The Government of India Act, 1858 marked the end of the East India Company's rule in India.
• Following the Indian Rebellion of 1857, the British Crown took direct control over India.
• This Act transferred the powers of the East India Company to the British Crown, henceforth governing India in the name of the Queen.
• A new position, the Secretary of State for India, was established to oversee Indian affairs, with a Council of India to assist.
• The Act also led to the appointment of a Viceroy, who acted as the British monarch's representative in India.

Additional Information

• Indian Rebellion of 1857
• Often referred to as the First War of Indian Independence.
• This rebellion was a major, but ultimately unsuccessful, uprising against the British East India Company's rule.
• The revolt had widespread participation from various sections of Indian society.
• East India Company
• Originally a trading corporation, it gradually took over large parts of India.
• Governed India from the mid-18th century until 1858.
• Its mismanagement and exploitative policies were major factors leading to the 1857 rebellion.
• Secretary of State for India
• A British government minister with complete authority over the administration of India.
• Assisted by the Council of India, which comprised members with experience in Indian affairs.
• Viceroy of India
• The highest official in India representing the British Crown.
• First Viceroy was Lord Canning, who had been the Governor-General during the 1857 revolt.
• The Viceroy had significant administrative, legislative, and military powers.

Q48. Answer: (a) Nagaland

The correct answer is Nagaland.

Key Points

• The Hornbill Festival is an annual event organized by the Government of Nagaland.
• It is held from December 1 to 10 every year in Kisama Heritage Village, near Kohima.
• The festival is named after the Indian hornbill, a large and colorful forest bird which is displayed in the folklore of most of the state's tribes.
• The event showcases Nagaland's rich culture, traditions, and heritage through music, dance, and traditional arts and crafts.

Additional Information

• Nagaland
• Nagaland is a state in Northeast India, known for its indigenous tribes and vibrant festivals.
• The state capital is Kohima, and the largest city is Dimapur.
• Nagaland was formally established as a state on December 1, 1963.
• It shares borders with Assam to the west, Arunachal Pradesh to the north, Myanmar to the east, and Manipur to the south.
• Indian Hornbill
• The Indian hornbill is a large bird found in the Indian subcontinent and Southeast Asia.
• It plays a significant role in the folklore and traditions of the Naga tribes.

• The bird is known for its impressive beak and the casque on top of its head.
• Conservation efforts are in place due to habitat loss and hunting pressures.
• Festivals of Nagaland
• Besides the Hornbill Festival, Nagaland celebrates other festivals such as Moatsu, Sekrenyi, and Tokhu Emong.
• These festivals are integral to the cultural and social life of the Naga people.
• They often involve traditional dances, music, and rituals that reflect the rich heritage of the tribes.
• Kisama Heritage Village
• Kisama Heritage Village is the main venue for the Hornbill Festival.
• The village is designed to represent the traditional architecture and lifestyle of the Naga tribes.
• It serves as a cultural showcase where visitors can experience the diverse traditions of Nagaland.

Q49. Answer: (d) TK Rangarajan

The correct answer is TK Rangarajan.

Key Points

• TK Rangarajan is a veteran Indian politician and a senior leader of the Communist Party of India (Marxist) (CPI-M).
• He has served as a Member of Parliament in the Rajya Sabha, representing Tamil Nadu.
• Rangarajan has been a prominent voice for workers' rights and social justice throughout his political career.
• He was honored with the Dr. APJ Abdul Kalam Lifetime Achievement Award at the Sansad Ratna Awards 2023 for his significant contributions to Indian politics and public service.

Additional Information

• Sansad Ratna Awards
• Initiated in 2010, these awards honor top-performing Members of Parliament for their outstanding contributions.
• The awards were inspired by the suggestions of Dr. APJ Abdul Kalam, the former President of India.
• They recognize MPs based on their performance in debates, questions raised, and overall engagement in Parliament.
• Dr. APJ Abdul Kalam
• Dr. APJ Abdul Kalam, known as the "Missile Man of India," served as the 11th President of India from 2002 to 2007.
• He made significant contributions to India's civilian space program and military missile systems.
• Dr. Kalam was highly respected for his vision for India's development and his dedication to education and innovation.
• Communist Party of India (Marxist) (CPI-M)
• The CPI-M is a major communist party in India, founded in 1964.
• It primarily advocates for the rights of workers, peasants, and the marginalized sections of society.
• The CPI-M has been influential in Indian politics, particularly in states like Kerala, West Bengal, and Tripura.
• Rajya Sabha
• The Rajya Sabha is the upper house of India's bicameral Parliament, representing the states and union territories.
• Members are elected by the elected members of State Legislative Assemblies through proportional representation.
• The Rajya Sabha plays a crucial role in the legislative process and in representing the interests of the states at the national level.

Q50. Answer: (d) December 2022

The correct answer is December 2022.

Key Points

• The National Judicial Commission Bill is a private member bill aimed at regulating the appointment of judges through the National Judicial Commission.
• It was introduced in the Rajya Sabha on December 1, 2022.
• The bill seeks to establish a commission for the appointment and transfer of judges, thereby aiming to bring more transparency and accountability.
• Private member bills are proposed by members of parliament who are not part of the government.

Additional Information

• National Judicial Commission (NJC)
• The NJC is envisioned as an independent body to oversee the appointment, transfer, and discipline of judges in higher judiciary.
• The aim is to ensure transparency and accountability in the judicial appointment process.
• The commission would include members from the judiciary, executive, and eminent persons from the legal profession.
• Private Member Bill
• Such bills are introduced by MPs who are not ministers.

• These bills reflect the personal views of the legislator and are not part of the government's agenda.
• Private member bills rarely become laws, but they play a crucial role in highlighting issues and generating debates.
• Judicial Appointments in India
• Currently, the Collegium System is used for the appointment and transfer of judges in the higher judiciary.
• The system includes the Chief Justice of India and four senior-most judges of the Supreme Court.
• There has been ongoing debate about the need for reforms in the judicial appointment process.

Q51. Answer: (a) Naqshbandi

The correct answer is Naqshbandi.

Key Points

• Babur, the founder of the Mughal Empire in India, was a follower of the Naqshbandi Sufi order.
• The Naqshbandi order is one of the major Sunni spiritual orders of Sufism.
• It emphasizes the inner relationship between the seeker and God, focusing on silent meditation (zikr).
• Babur's connection with the Naqshbandi order influenced his personal and political life, including his tolerant religious policies.

Additional Information

• Sufi Silsilas (Orders)
• Sufism is the mystical Islamic belief and practice in which Muslims seek the truth of divine love and knowledge through direct personal experience of God.
• Sufi orders are often referred to as "Silsilas," which means chain or lineage, representing the chain of spiritual masters going back to Prophet Muhammad.
• Naqshbandi Order
• The Naqshbandi order was founded by Baha-ud-Din Naqshband Bukhari in the 14th century.
• It is known for its silent meditation and the emphasis on the heart's connection with God rather than vocal chanting.
• Babur
• Babur (1483-1530) was the first Mughal emperor of India, establishing the Mughal dynasty which ruled for over 300 years.
• He wrote a famous autobiography, the Baburnama, which provides insights into his life and the early Mughal Empire.
• Religious Tolerance
• Babur's association with Sufism, particularly the Naqshbandi order, influenced his approach to governance, including his policies of religious tolerance.
• This legacy of tolerance was carried forward by his descendants, notably Akbar the Great.

Q52. Answer: (a) Ghodemodni

The correct answer is Ghodemodni.

Key Points

• Ghodemodni is a traditional folk dance of Goa performed to celebrate the victory of the Maratha warriors over the Portuguese.
• The dance features performers dressed as horse riders, simulating a cavalry parade.
• Ghodemodni is typically performed during the Shigmo festival, a spring festival in Goa.
• The dance involves synchronized movements and vibrant costumes, symbolizing valor and heroism.
• It reflects the historical and cultural significance of the Maratha resistance against Portuguese colonization.

Additional Information

• Shigmo Festival
• Shigmo is a major spring festival celebrated in Goa, similar to Holi.
• The festival includes traditional folk dances, music, and street parades.
• It marks the arrival of spring and the harvest season for the farming community.
• Shigmo festivities span over two weeks, featuring various traditional performances and rituals.
• Maratha Empire
• The Maratha Empire was a powerful Indian state that existed from 1674 to 1818.
• It played a significant role in resisting Mughal rule and later the Portuguese and British colonization.
• The Marathas were known for their guerrilla warfare tactics and strong cavalry.
• Portuguese Colonial Rule in Goa
• Goa was a Portuguese colony from 1510 until it was annexed by India in 1961.
• The Portuguese influence is evident in Goan architecture, culture, and cuisine.
• Resistance against Portuguese rule included various revolts and uprisings by local communities.

• Folk Dances of Goa
• Goa has a rich tradition of folk dances, including Dekhni, Fugdi, and Dhalo.
• These dances are typically performed during festivals and special occasions.
• They reflect the cultural diversity and heritage of the Goan people.

Q53. Answer: (c) icosane

The correct answer is icosane.

Key PointsTo find the IUPAC name of this compound, follow these steps:

• Count the Carbon Atoms: There are 20 carbon atoms in the longest chain.
• Identify the Base Name: The base name for a hydrocarbon chain with 20 carbon atoms is "icosane" (the prefix "icosa-" indicates 20 carbon atoms).
• Check for Substituents: Since there are no other groups attached, it's just a straight chain alkane.
• Combine to Form the Name: The complete IUPAC name is "icosane".
• Therefore, the correct IUPAC name for CH3-(CH2)18-CH3 is icosane, which corresponds to option 3 in your image.

Additional InformationTriacontane:

• Formula: CH3-(CH2)28-CH3
• Description: This compound is an alkane with 30 carbon atoms in its longest chain.

Decane:

• Formula: CH3-(CH2)8-CH3
• Description: This is an alkane with 10 carbon atoms in its longest chain.

Dodecane:

• Formula: CH3-(CH2)10-CH3
• Description: Dodecane is an alkane consisting of a chain of 12 carbon atoms.

Q54. Answer: (d) Kamalini and Nalini Asthana

The correct answer is Kamalini and Nalini Asthana.

Key Points

• Kamalini and Nalini Asthana are renowned Kathak dancers who have made significant contributions to Indian classical dance.
• They were honored with the Padma Shri award in 2022 for their exceptional contribution to the art of Kathak.
• The Padma Shri is the fourth highest civilian award in India, recognizing distinguished service in various fields.
• Kamalini and Nalini Asthana have performed widely across India and internationally, promoting Kathak dance.
• Their dedication to preserving and teaching Kathak has inspired many young dancers.

Additional Information

• Kathak Dance:
• One of the eight major forms of Indian classical dance, originating from Northern India.
• Known for its intricate footwork, spins, and expressive gestures.
• The word 'Kathak' is derived from 'Katha', meaning 'story', and Kathakars are storytellers through dance.
• It has influences from both Hindu and Muslim cultures, particularly during the Mughal era.
• Padma Awards:
• Constituted in 1954, awarded annually on Republic Day.
• Three categories: Padma Vibhushan, Padma Bhushan, and Padma Shri.
• Recognizes achievements in various fields like arts, education, industry, literature, science, sports, medicine, social service, and public affairs.
• Padma Shri is the fourth highest civilian award in India.
• Indian Classical Dance:
• Includes Bharatanatyam, Kathak, Kathakali, Kuchipudi, Odissi, Manipuri, Mohiniyattam, and Sattriya.
• Each dance form has its own unique style, costumes, and music.
• Integral part of Indian culture and heritage, often depicting mythological and spiritual themes.
• Guru-Shishya Tradition:
• Traditional method of learning Indian classical arts, including dance, music, and yoga.
• Involves a deep bond between the teacher (Guru) and student (Shishya).
• Emphasizes dedication, discipline, and respect in the learning process.

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Q55. Answer: (a) rhomboid

The correct answer is rhomboid.

Key Points

• The Bidar Fort is located in Bidar, Karnataka, India and is known for its unique architecture.

• The fort is irregularly rhomboid in shape, featuring various bastions and structures within its perimeter.

• The fort was built in the 15th century by Sultan Ahmad Shah Wali Bahmani of the Bahmani Sultanate.

• Bidar Fort is a significant historical monument and has a combination of Persian and indigenous architectural styles.

Additional Information

• Bidar

• Bidar is a city in the northeastern part of Karnataka, India, known for its rich history and cultural heritage.

• The city is famous for its Bidriware, a form of metal handicraft that originated in the region.

• Bidar was once the capital of the Bahmani Sultanate and later the Barid Shahi dynasty.

• Bahmani Sultanate

• The Bahmani Sultanate was a Muslim state of the Deccan in South India and one of the major medieval Indian kingdoms.

• It was established in 1347 by Ala-ud-Din Bahman Shah.

• The sultanate is known for its contributions to art, architecture, and culture in the Deccan region.

• Architectural Features of Bidar Fort

• The fort includes various structures such as mosques, palaces, and large gateways.

• Notable features include the Rangin Mahal, Gagan Mahal, and the Takht Mahal.

• The fort's design incorporates Persian architectural elements, evident in its intricate tile work and domes.

Q56. Answer: (b) C

The correct answer is Plants died due to plasmolysis in the plant cells..

Key Points

• Plasmolysis occurs when plant cells lose water in a hypertonic solution, causing the cell membrane to pull away from the cell wall.

• The high salt concentration in the soil creates a hypertonic environment, leading to water loss from the plant cells.

• As the water leaves the cells, they become dehydrated and unable to maintain turgor pressure, which is essential for structural integrity and nutrient transport.

• This dehydration disrupts vital cellular processes and ultimately results in the death of the plant.

• Plasmolysis is a common response to high salinity in the environment, which can be caused by sea water flooding.

Additional Information

• Hypertonic Solution:

• A hypertonic solution has a higher concentration of solutes compared to the inside of the cell.

• In a hypertonic environment, water moves out of the cell to balance the solute concentrations, leading to cell shrinkage.

• Turgor Pressure:

• Turgor pressure is the pressure exerted by the cell membrane against the cell wall due to water intake.

• It is crucial for maintaining the plant's structural integrity and supporting its upright position.

• Osmosis:

• Osmosis is the movement of water across a semipermeable membrane from an area of low solute concentration to an area of high solute concentration.

• It is a vital process for maintaining cellular hydration and nutrient balance.

• Salinity Stress:

• Salinity stress occurs when high salt levels in the soil disrupt the water balance and nutrient uptake in plants.

• It can lead to reduced growth, physiological dysfunctions, and even plant death.

Q57. Answer: (c) Equatorial season

The correct answer is Equatorial season.

Key Points

• India predominantly experiences four main seasons: summer, monsoon, autumn, and winter.

• The Indian Meteorological Department (IMD) classifies these seasons as the hot weather season (summer), the southwest monsoon season (rainy season), the retreating monsoon season (autumn), and the cold weather season (winter).

• The term "Equatorial season" is not used in the classification of Indian seasons as per the IMD.

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• Equatorial climates are typically found near the Equator and are characterized by high temperatures and heavy rainfall throughout the year, which is distinct from India's seasonal variations.

Additional Information

• Hot Weather Season (Summer)

• This season typically lasts from March to May.

• It is characterized by high temperatures, with some regions experiencing temperatures above 40°C.

• Southwest Monsoon Season

• This season occurs from June to September.

• It is marked by heavy rainfall brought by the southwest monsoon winds.

• Retreating Monsoon Season (Autumn)

• This season spans from October to November.

• It is characterized by the withdrawal of monsoon rains and the commencement of cooler temperatures.

• Cold Weather Season (Winter)

• This season extends from December to February.

• It is known for its cooler temperatures, especially in northern India, where temperatures can drop significantly.

Q58. Answer: (a) storing and recharging water

The correct answer is storing and recharging water.

Key Points

• Bawris are traditional stepwells primarily used for storing and recharging groundwater.

• They are architectural marvels designed to tackle water scarcity in arid regions, particularly in India.

• These structures not only serve as water reservoirs but also help in maintaining the water table in the surrounding areas.

• They are often intricately designed and have historical and cultural significance, dating back to ancient India.

• Bawris are particularly common in Rajasthan and Gujarat, where water scarcity is a significant issue.

Additional Information

• Stepwells

• Also known as baolis or vavs, these structures are unique to the Indian subcontinent.

• They were used not only for water storage but also as places for social gatherings, religious ceremonies, and resting spots.

• Stepwells are often multi-storied structures with intricate carvings and artworks.

• They are an excellent example of ancient water management systems in India.

• Water Conservation

• Traditional methods like bawris play a crucial role in contemporary water conservation strategies.

• Reviving and maintaining such structures can help in sustainable water management.

• They are eco-friendly and do not require modern technology or electricity to function.

• Architectural Significance

• Many bawris are considered architectural masterpieces and are protected heritage sites.

• They showcase the engineering skills and aesthetic sense of ancient Indian civilizations.

• Revival Projects

• Several initiatives are underway to restore and preserve these historic stepwells.

• Community involvement is crucial for the successful revival and maintenance of these structures.

Q59. Answer: (d) Javagal Srinath

The correct answer is Javagal Srinath.

Key Points

• Javagal Srinath is a former Indian cricketer and currently serves as an ICC match referee.

• He was one of the match referees for the ICC T20 World Cup 2021, ensuring fair play and adherence to the rules.

• Srinath has officiated in several international matches and is known for his experience and integrity in the role.

• He is one of the most prominent match referees from India, having served in this capacity for multiple ICC tournaments.

Additional Information

• Role of a Match Referee

• A match referee is responsible for ensuring that the game is played within the spirit and laws of cricket.The referee oversees the conduct of players and officials during the match.

• They have the authority to impose penalties and fines for breaches of conduct.

• Match referees prepare reports on the conduct of the match and any disciplinary issues.
• ICC T20 World Cup 2021
• The ICC T20 World Cup 2021 was held in the UAE and Oman from October 17 to November 14, 2021.
• The tournament featured 16 teams competing in the shortest format of the game.
• Australia won the tournament, claiming their first ICC T20 World Cup title.
• The event was initially scheduled to be held in India but was moved due to the COVID-19 pandemic.
• Javagal Srinath's Career
• Srinath was a fast bowler for the Indian cricket team from 1991 to 2003.
• He played in 67 Tests and 229 One Day Internationals (ODIs), taking 236 and 315 wickets respectively.
• Post-retirement, Srinath transitioned to a match referee, officiating in numerous international matches.
• He is regarded as one of India's finest fast bowlers.
• Match Referees in ICC Tournaments
• Match referees play a crucial role in maintaining the integrity of ICC tournaments.
• They work alongside umpires to ensure fair play and adherence to the rules.
• Referees are selected based on their experience and understanding of the game.
• They are responsible for handling disciplinary actions and match reports.

Q60. Answer: (a) 18 years

The correct answer is 18 years.

Key Points

• The Universal Adult Franchise in India grants the right to vote to all citizens aged 18 and above.
• This was established by the 61st Amendment Act of 1988, which lowered the voting age from 21 to 18.
• The amendment was implemented to increase political participation among the younger population.
• All citizens, irrespective of their race, religion, caste, or gender, are eligible to vote once they reach the age of 18.

Additional Information

• 61st Amendment Act of 1988:
• It is an important constitutional amendment in India.
• This amendment changed the voting age from 21 years to 18 years.
• The aim was to provide greater opportunities for youth involvement in the democratic process.
• Representation of the People Act, 1950 and 1951:
• These acts provide for the conduct of elections and the qualifications and disqualifications for membership of both houses of Parliament and the state legislatures.
• They also regulate the preparation of electoral rolls and the manner of filling seats in the Parliament and state legislatures.
• Electoral Roll:
• An electoral roll is a list of all individuals who are registered and eligible to vote in a specific area.
• It is updated periodically to include new voters and remove names of deceased individuals.
• Election Commission of India:
• The Election Commission of India is an autonomous constitutional authority responsible for administering election processes in India.
• It ensures free and fair elections to the Parliament, state legislatures, and the offices of the President and Vice President.

Q61. Answer: (b) James Prinsep

The correct answer is James Prinsep.

Key Points

• James Princep is a British scholar in India, archaeological scientist and migrant officer.
• In 1837, James Princep successfully decryed the Brahmi script used in Ashoka inscriptions.
• His work on Brahmi script is important in understanding the historical and cultural context of ancient India.
• Decrypting the Brahmi has been revealed by the Maurya inscriptions and the emperor Ashoka's kingdom has been given important insights.
• His work was a guide for the study of ancient Indian legislative and archaeological science.

Additional Information

• Brahmi script:
• The Brahmi script is one of the oldest written systems used in ancient India, which is BC. Belonging to the 3rd century.

• It is believed that it is an ancestor of many modern Indian scripts such as Devanagari, Tamil and Bengali.
• Emperor Ashoka
• The third emperor of the Maurya dynasty, Ruled from 268 to 232.
• He is famous for Buddhism and Buddhist philosophies such as compassion and non -violence.
• Ashoka inscriptions carved on the pillars and rocks are some of the oldest written records in India.
• Archaeological scientist
• The archaeologist is a person who studies or collect the old objects or things belonging to the past.
• James Princep's work as an archaeological scientist has contributed to understanding the ancient Indian history and culture.

Q62. Answer: (d) flow

The correct answer is flow.

Key Points

• In economics, a flow concept measures a variable over a period of time, such as income or expenditure.
• A deficit is the shortfall between revenue and expenditure within a specific period, making it a flow concept.
• Examples of flow concepts include Gross Domestic Product (GDP), national income, and savings.
• Flow variables are critical for understanding economic performance and fiscal health over time.

Additional Information

• Stock Concept
• A stock concept measures a quantity at a particular point in time, such as wealth or capital.
• Examples of stock variables include the money supply, national wealth, and inventory levels.
• Surplus
• A surplus occurs when revenue exceeds expenditure within a specified time frame.
• Like deficit, a surplus is also a flow concept.
• Economic Indicators
• Flow and stock concepts are key indicators used to assess economic health.
• They help policymakers make informed decisions regarding fiscal and monetary policy.
• Fiscal Deficit
• Fiscal deficit is a specific type of deficit where a government's total expenditures exceed the revenue that it generates, excluding money from borrowings.
• Monitoring fiscal deficit is important for maintaining a country's economic stability.

Q63. Answer: (d) Lord Mountbatten

The correct answer is Lord Mountbatten.

Key Points

• Lord Louis Mountbatten was appointed as the last Viceroy of India in February 1947.
• He succeeded Lord Wavell, who had served as Viceroy since 1943.
• Mountbatten's primary task was to oversee the transition of British India to independence by June 1948.
• He played a crucial role in the partition of India and Pakistan, which took place on 15 August 1947.

Additional Information

• Viceroy of India:
• The Viceroy was the highest official in British India, serving as the Crown's representative.
• During the British Raj, the Viceroy had significant executive powers and was responsible for the administration of India.
• Partition of India:
• Partition led to the creation of two independent dominions, India and Pakistan.
• It was accompanied by significant violence, displacement, and loss of life.
• Mountbatten Plan:
• Also known as the June 3rd Plan, it outlined the process for the division of British India.
• It included provisions for the partition of Punjab and Bengal and the establishment of boundary commissions.
• Independence of India:
• India gained independence on 15 August 1947, ending nearly 200 years of British rule.
• Jawaharlal Nehru became the first Prime Minister of independent India.

Q64. Answer: (c) 15-59 years

The correct answer is 15-59 years.

Key Points

• The working age population in India is generally considered to be those aged between 15 and 59 years.

• This age group is crucial as they are actively involved in the workforce and contribute significantly to the economic development of the country.

• Policies and programs aimed at employment, skill development, and social security are primarily targeted towards individuals within this age bracket.

• National policies, such as the National Policy on Skill Development and Entrepreneurship, focus on this age group to enhance their employability and productivity.

Additional Information

• Demographic Dividend:

• The demographic dividend refers to the economic growth potential that can result from shifts in a population's age structure, mainly when the share of the working-age population is larger than the non-working-age population.

• India is expected to have a demographic dividend advantage until around 2055.

• Effective policies and investments in health, education, and employment are essential to maximize the benefits of the demographic dividend.

• Skill India Mission:

• Launched in 2015, the mission aims to train over 40 crore people in different skills by 2022.

• It includes various initiatives such as the Pradhan Mantri Kaushal Vikas Yojana (PMKVY) and the National Skill Development Mission.

• Employment Generation Programs:

• Programs like Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) provide wage employment opportunities to enhance livelihood security in rural areas.

• Start-Up India and Stand-Up India schemes aim to promote entrepreneurship and job creation.

• Social Security Schemes:

• Pradhan Mantri Shram Yogi Maan-Dhan (PM-SYM) provides old age protection and social security to unorganized workers.

• Atal Pension Yojana (APY) aims to create a universal social security system for all Indians, especially the poor, the underprivileged, and the workers in the unorganized sector.

Q65. Answer: (b) 1.6 metres

The correct answer is 1.6 metres.

Key Points

• The width of the broad-gauge railway network in India is approximately 1.6 metres (5 feet 6 inches).

• Broad gauge is the most widely used railway gauge in India, making up about 80% of the total railway network.

• The broad-gauge tracks are used for both freight and passenger trains due to their stability and ability to handle higher speeds and heavier loads.

• It was first introduced in the mid-19th century during the British colonial period and has since become the standard gauge in India.

Additional Information

• Gauge Types in India

• Metre Gauge: Approximately 1 metre (3 feet 3 3⁄8 inches) wide, used in some regional and rural areas.

• Narrow Gauge: Less than 1 metre wide, including gauges of 2 feet 6 inches and 2 feet, primarily used in hilly and difficult terrains.

• Standard Gauge: 1.435 metres (4 feet 8 1⁄2 inches) wide, used for metro and high-speed rail projects.

• Benefits of Broad Gauge

• Increased stability and capacity for heavier and faster trains.

• Reduced transportation costs due to the ability to carry more freight.

• Better passenger comfort due to wider coaches and more space.

• Historical Development

• Railways were introduced to India in 1853 during British rule.

• The first railway line connected Bombay (now Mumbai) and Thane.

• Since then, the network has expanded significantly, integrating various gauge types.

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Q66. Answer: (a) dangerous

The solution is in Hindi. Read it online.

Q67. Answer: (a) has studied

The correct answer is 'has studied'.

Key Points

• The verb "has studied" is the present perfect tense form of the verb "study."

• The present perfect tense is used to describe an action that has been completed at some point in the past but is relevant to the present.

• Options 2, 3, and 4 are grammatically incorrect in this context.

Therefore, the correct answer is Option 1.

Complete Sentence: "Alex has studied two programming languages."

Additional Information

• Option 2: "have study" is incorrect because "have" and "study" cannot be combined in this way.

• Option 3: "has been studying" is incorrect in this context as it implies a continuous action, which is not the intended meaning.

• Option 4: "had studied" is incorrect because it is in the past perfect tense, which is not appropriate in this context.

Q68. Answer: (a) have a blanket

The correct answer is Option 1.

Key Points

• The primary issue in the sentence is the incorrect use of the verb "have" in place of "has."

• The subject "each of them" is singular and should be followed by the singular verb form "has."

• The correct phrase should be "whether each of them has a blanket," ensuring grammatical correctness and clarity.

Therefore, the correct answer is Option 1.

Correct Sentence: "The teacher checked whether each of them has a blanket as it was a cold night."

Q69. Answer: (c) Deficient

The solution is in Hindi. Read it online.

Q70. Answer: (c) flour

The solution is in Hindi. Read it online.

Q71. Answer: (a) Vibrent

The solution is in Hindi. Read it online.

Q72. Answer: (a) sink

The solution is in Hindi. Read it online.

Q73. Answer: (a) perepharal

The solution is in Hindi. Read it online.

Q74. Answer: (b) Stimulate

The solution is in Hindi. Read it online.

Q75. Answer: (b) excellent

The solution is in Hindi. Read it online.

Q76. Answer: (b) ambiguity

The solution is in Hindi. Read it online.

Q77. Answer: (b) entered

The solution is in Hindi. Read it online.

Q78. Answer: (d) I am

The correct answer is Option 4.

Key Points

• The sentence mixes present continuous tense ("I am cleaning") with past simple tense ("when she called").

• To maintain tense consistency, the sentence should use past continuous tense for the action that was ongoing when another

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action occurred.

• The correct phrase should be "I was cleaning the sofa" to match the past simple tense of "when she called me."

• Thus, the error is located in part 4 of the sentence.

Therefore, the correct answer is Option 4.

Correct Sentence: "I was cleaning the sofa when she called me."

Q79. Answer: (d) of the

The correct answer is Option 4.

Key Points

• The primary issue in the sentence is the redundancy in the phrase "of the our place."

• Using both "the" and "our" together is incorrect.

• The correct phrase should be either "of our place" or "of the place," ensuring grammatical correctness and clarity.

• Thus, the error is located in part 4 of the sentence.

Therefore, the correct answer is 4.

Correct Sentence: "The society of our place is good."

Note: This is a PYP question, and the official answer key has marked (correct option) as the correct answer, hence we cannot make any changes to it.

Q80. Answer: (d) chewing the cud

The solution is in Hindi. Read it online.

Q81. Answer: (d) affected by

The correct answer is Option 4.

Key Points

• The primary issue in the sentence is the incorrect use of the word "effected" instead of "affected."

• The word "effected" is a verb that means to bring about or cause something to happen, while "affected" is a verb that means to influence or make an impact on something.

• The correct phrase should be "affected by," ensuring the sentence conveys the intended meaning.

Therefore, the correct answer is Option 4.

Correct Sentence: "She was deeply affected by the news, to the point of tears."

Q82. Answer: (d) is studying

The correct answer is Option 4.

Key Points

• The primary issue in the sentence needs to clarify the correct tense.

• The current action, "studies," should be in present continuous form "is studying" to reflect ongoing action.

• The correct phrase should be "is studying tourism at present," ensuring grammatical correctness and clarity.

Therefore, the correct answer is Option 4.

Correct Sentence: "Raghav, who is studying tourism at present, is planning to go abroad after his graduation."

Additional Information

• Option 1: "will study" – Incorrect because it refers to future action rather than ongoing action.

• Option 2: "study" – Incorrect because it uses the wrong tense for the ongoing action.

• Option 3: "studied" – Incorrect because it refers to a completed action in the past.

Q83. Answer: (b) Extremely happy

The solution is in Hindi. Read it online.

Q84. Answer: (d) as more intelligent as

The correct answer is Option 4.

Key Points

• The primary issue in the sentence is the incorrect comparative structure "as more intelligent as."

• The correct comparative structure should be "as intelligent as" when comparing two entities.

• The phrase "as more intelligent as" is grammatically incorrect and should be corrected to "as intelligent as" to ensure clarity and correctness.

• Thus, the error is located in part 4 of the sentence.

Therefore, the correct answer is 4.

Correct Sentence: "She is as intelligent as her brothers are."

Q85. Answer: (d) He dropped out

The correct answer is Option 4.

Key Points

• The primary issue in the sentence is the use of the incorrect phrase "dropped out."

• The correct phrase should be "dropped by," which means to visit someone informally.

• Thus, the error is located in part 4 of the sentence.

Therefore, the correct answer is 4.

Correct Sentence: "He dropped by at his friend's house on his way home the day before yesterday."

Q86. Answer: (a) with

The correct answer is Option 1.

Key Points

• Option 1: "with" – Correct. 'With' properly fits the context of the cove being covered 'with' hoar-frost.

• Option 2: "among" – Incorrect. 'Among' does not fit the context of describing the cove being covered.

• Option 3: "amongst" – Incorrect. 'Amongst' is a variant of 'among' and also does not fit the context.

• Option 4: "about" – Incorrect. 'About' does not fit the context of describing the cove being covered 'with' hoar-frost.

Therefore, the correct answer is Option 1 – with.

Complete Passage: It was one January morning, very early — a pinching, frosty morning — the cove all grey __ with hoar-frost and the ripple lapping softly on the stones. The captain had _ 2 earlier than usual and set out down the beach. Mother was upstairs with father and I was _ 3 the breakfast table against the captain’s return when the parlour door opened and a man stepped in on whom I had never set my eyes before. He was a pale, tallowy creature, wanting two fingers of the left hand, and __ 4 he wore a cutlass, he did not look much like a fighter. I had always my eye open for seafaring __ 5___ with one leg or two, and I remember this one puzzled me.

Q87. Answer: (b) risen

The correct answer is Option 2.

Key Points

• Option 1: "danced" – Incorrect. 'Danced' does not fit the context of getting up earlier than usual.

• Option 2: "risen" – Correct. The verb 'risen' (to get up from bed) properly fits the context of the captain getting up earlier than usual.

• Option 3: "written" – Incorrect. 'Written' does not fit the context of getting up earlier than usual.

• Option 4: "waltzed" – Incorrect. 'Waltzed' does not fit the context and means to dance or move around in an exuberant fashion.

Therefore, the correct answer is Option 2 – risen.

Complete Passage: It was one January morning, very early — a pinching, frosty morning — the cove all grey __ with hoar-frost and the ripple lapping softly on the stones. The captain had _ risen earlier than usual and set out down the beach. Mother was upstairs with father and I was _ 3 the breakfast table against the captain’s return when the parlour door opened and a man stepped in on whom I had never set my eyes before. He was a pale, tallowy creature, wanting two fingers of the left hand, and __ 4 he wore a cutlass, he did not look much like a fighter. I had always my eye open for seafaring __ 5___ with one leg or two, and I remember this one puzzled me. density.

Q88. Answer: (b) laying

The correct answer is Option 2.

Key Points

• Option 1: "lying" – Incorrect. 'Lying' means resting in a flat position, which does not fit the context. The character is setting the breakfast table, not lying down.

• Option 2: "laying" – Correct. The verb 'laying' (the act of setting or arranging) properly fits the context of preparing the breakfast table.

• Option 3: "throwing" – Incorrect. 'Throwing' does not make sense in the context of preparing the breakfast table.

• Option 4: "playing" – Incorrect. 'Playing' is not appropriate as the character is performing a specific task related to setting the breakfast table.

Therefore, the correct answer is Option 2 – laying.

Complete Passage: It was one January morning, very early — a pinching, frosty morning — the cove all grey __ with hoar-frost and the ripple lapping softly on the stones. The captain had _*risen* earlier than usual and set out down the beach. Mother was

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upstairs with father and I was _ laying the breakfast table against the captain's return when the parlour door opened and a man stepped in on whom I had never set my eyes before. He was a pale, tallowy creature, wanting two fingers of the left hand, and __ 4 he wore a cutlass, he did not look much like a fighter. I had always my eye open for seafaring __ 5___ with one leg or two, and I remember this one puzzled me.

Q89. Answer: (c) though

The correct answer is 'Option 3'.

Key Points

• 1) through

• This option is incorrect as it means moving in one side and out of the other side, which does not fit the context of the sentence.

• 2) throw

• This option is incorrect as it means to propel something with force through the air, which does not fit the context of the sentence.

• 3) though

• This is the correct option. "Though" is used to introduce a fact that makes the main statement surprising, which fits the context of the sentence.

• 4) threw

• This option is incorrect as it is the past tense of "throw", which does not fit the context of the sentence.

Complete Passage: It was one January morning, very early — a pinching, frosty morning — the cove all grey __ with hoar-frost and the ripple lapping softly on the stones. The captain had _*risen* earlier than usual and set out down the beach. Mother was upstairs with father and I was _ laying the breakfast table against the captain's return when the parlour door opened and a man stepped in on whom I had never set my eyes before. He was a pale, tallowy creature, wanting two fingers of the left hand, and __ though he wore a cutlass, he did not look much like a fighter. I had always my eye open for seafaring __ 5___ with one leg or two, and I remember this one puzzled me.

Therefore, the most appropriate option to fill in blank number 4 is Option 3 - though.

Q90. Answer: (c) men

The correct answer is Option 3.

Key Points

• Option 1: "plants" – Incorrect. The passage is referring to seafaring individuals, not plants.

• Option 2: "birds" – Incorrect. The context of the passage does not support the use of birds here.

• Option 3: "men" – Correct. The passage is describing seafaring men, which fits the context perfectly.

• Option 4: "flowers" – Incorrect. This option does not make sense in the context of the passage.

Therefore, the correct answer is Option 3 – men.

Complete Passage: It was one January morning, very early — a pinching, frosty morning — the cove all grey __ with hoar-frost and the ripple lapping softly on the stones. The captain had _ risen earlier than usual and set out down the beach. Mother was upstairs with father and I was _ laying the breakfast table against the captain's return when the parlour door opened and a man stepped in on whom I had never set my eyes before. He was a pale, tallowy creature, wanting two fingers of the left hand, and __ though he wore a cutlass, he did not look much like a fighter. I had always my eye open for seafaring __ *men*___ with one leg or two, and I remember this one puzzled me.

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