SSC CHSL Tier-1 2022: Official Paper (Held On: 20 March, 2023 Shift 2) (Previous Year Paper)

SSC Combined Higher Secondary Level (CHSL) • 2022 • 100 questions • 60 minutes • Answer key and solutions

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ENGLISH LANGUAGE

Q1. Arrange the given words in the sequence in which they occur in the dictionary.

1. Account
2. According
3. Accuracy
4. Accumulate
5. Accompany

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

Q2. Pointing towards a girl, Shilpa said, "She is daughter of my husband's wife". How is Shilpa 's son related to that girl?

(a) Son
(b) Paternal Uncle
(c) Brother
(d) Nephew

Q3. In a certain code language, 'LOAF' is coded as '8362', 'LICK' is coded as '5103', 'JOCK' is coded as '0841', 'JEAN' is coded as '9472'. What is the code for 'LOC' in that code language?

(a) 385
(b) 341
(c) 381
(d) 480

Q4. In a certain code language, 'DESIRE' is coded as 'GSKTGE'. What is the code for 'DIRECT' in that code language?

(a) VGDSKE
(b) VDKKSE
(c) VDGKSE
(d) VDGSKE

Q5. Select the combination of letters that when sequentially placed in the blanks of the given series will complete the series.

_ msk _ prm _ kt _ r _ s _ tpr _ skt _

(a) r, s, t, p, m, k, m, p
(b) r, t, s, p, m, m, m, p
(c) r, t, s, p, m, k, k, p
(d) r, t, s, p, m, k, m, p

Q6. In the following question below are given some statements followed by some conclusions based on those statements. Taking the given statements to be true even if they seem to be at variance from commonly known facts. Read all the conclusions and then decide which of the given conclusion logically follows the given statements.

Statements :

I. All A are T.

II. No T is N.

Conclusions :

I. Some N are T.

II. All N are A.

III. Some T are A.

(a) Only conclusion I follows
(b) Only conclusion III follows
(c) Only conclusion II follows
(d) All conclusion follows

Q7. Select the option in which the numbers share the same relationship in set as that shared by the numbers in the given set.

(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)

(29, 31, 37)

(11, 13, 17)

(a) (17, 19, 29)
(b) (37, 41, 47)
(c) (19, 21, 23)
(d) (19, 23, 29)

Q8. Select the option in which the numbers shares the same relationship in set as that shared by the numbers in the given set. (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)

(393, 342, 564)

(287, 82, 328)

(a) (485, 136, 548)
(b) (567, 162, 638)
(c) (237, 294, 384)
(d) (329, 144, 406)

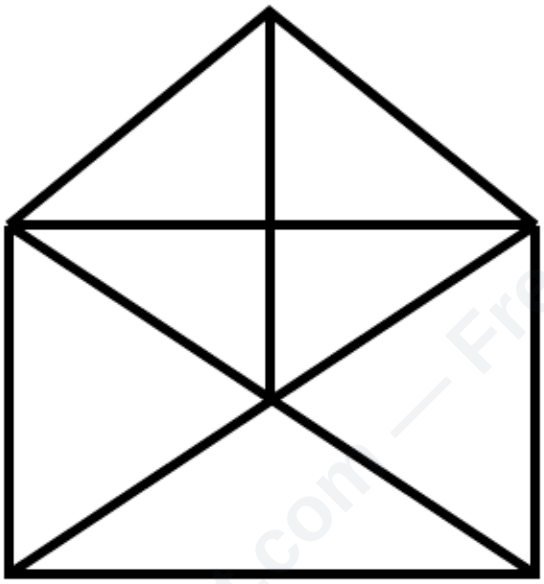
Q9. Words given on the left side of (::) are related with each other by some Logic/Rule/Relation. Select the missing word/word pair on the right side of (::) from the given alternatives based on the same Logic/Rule/Relation.

Thailand : Baht :: China : ?

(a) Riyal
(b) Dinar
(c) Yuan
(d) Dollar

Q10. Find the total number of quadrilaterals in the given figure.

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(a) 4
(b) 6
(c) 10
(d) 8

Q11. In the following question, select the odd letter/letters from the given alternatives.
(a) RPMN
(b) HFCX
(c) LJGT
(d) MKHG

Q12. What will come in the place of '?' in the following equation, if '×' and '-' are interchanged and also '+' and '÷ ' are interchanged?

12 + 4 - 2 × 5 ÷ 4 =?

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

Q13. Select the option in which the number-pair shares the same relationship as that is shared by the following number-pair.

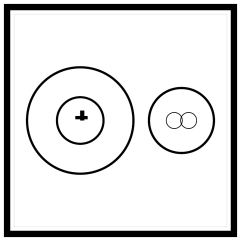
7 : 31

(a) 11 : 37
(b) 11 : 28
(c) 11 : 47
(d) 11 : 12

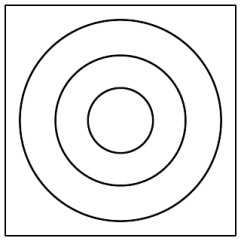
Q14. Select the Venn diagram that best represents the relationship between the following classes.

Lotus, Lily and Mango

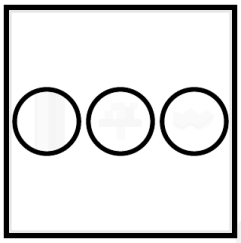
(a)



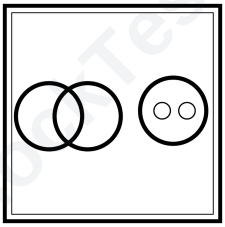
(b)



(c)



(d)



Q15. Three of the four group of words are alike in some manner. Select the odd group of words.

(a) (Sheep, Deer, Lion)
(b) (Goat, Rat, Jackal)
(c) (Cow, Dog, Tiger)
(d) (Stable, House, Pig)

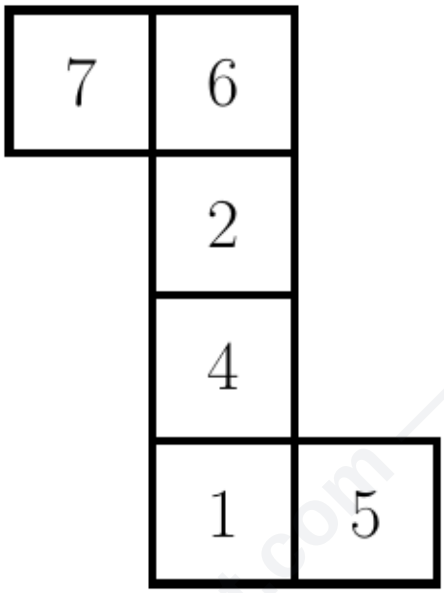
Q16. Words given on the left side of (::) are related with each other by some Logic/Rule/Relation. Select the missing word/word pair on the right side of (::) from the given alternatives based on the same Logic/Rule/Relation.

Grip : Spanner :: Amplify : ?

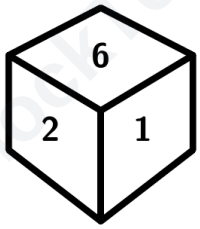
(a) Axe
(b) Shields
(c) Loudspeaker
(d) Microscope

Q17. By folding the given paper, which of the following box can be made?

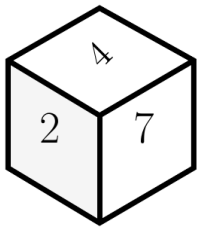
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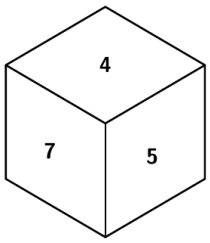
(a)



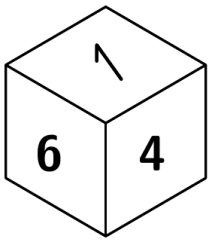
(b)



(c)



(d)



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Q18. In the following question, select the related letters from the given alternatives.

RT : QR :: ZO : ?

(a) ZZ
(b) YY
(c) NO
(d) YM

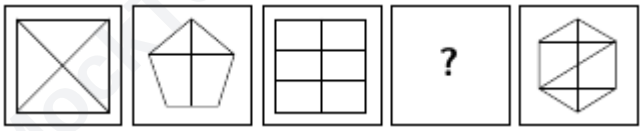
Q19. Select the option in which the numbers share the same relationship in set as that shared by the numbers in the given sets. (NOTE : Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g.13 - Operations on 13 such as adding/subtracting/multiplying 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)

(133, 144, 288)

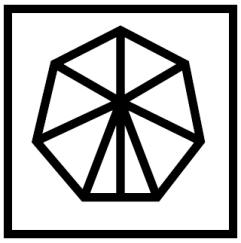
(127, 138, 276)

(a) (169, 180, 360)
(b) (143, 156, 312)
(c) (157, 168, 326)
(d) (117, 128, 266)

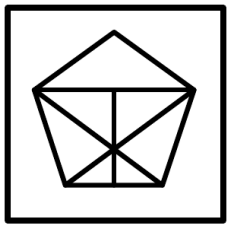
Q20. Select the figure from the given options that can replace the question mark (?) in the following series.



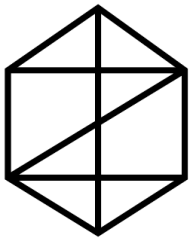
(a)



(b)

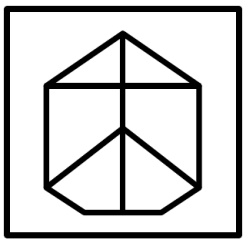


(c)

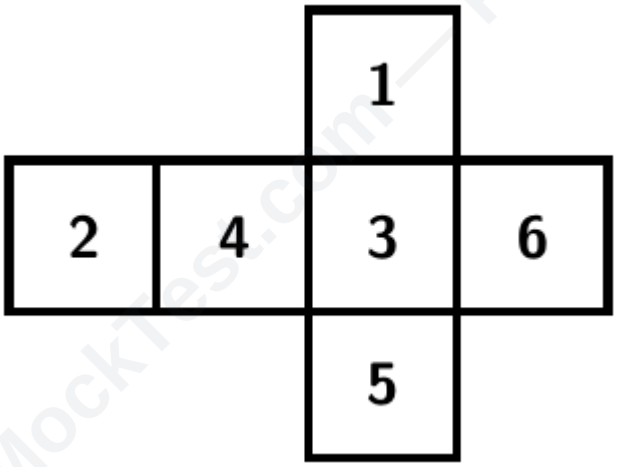


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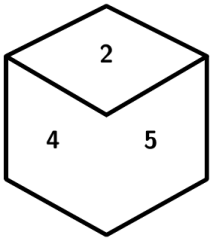
(d)



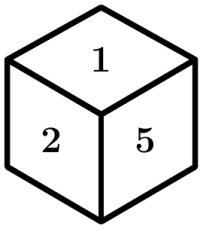
Q21. Which of the following figures can be formed on folding the given sheet of paper in the question?



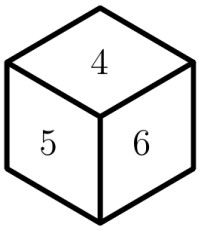
(a)



(b)

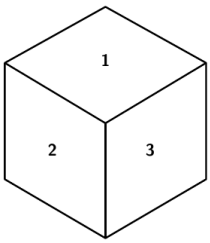


(c)

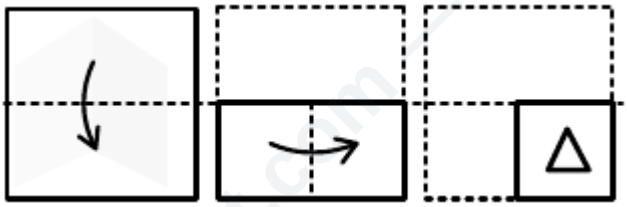


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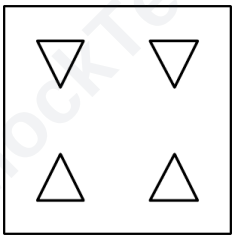
(d)



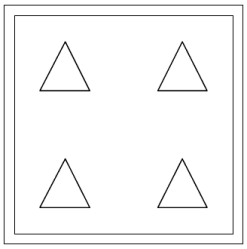
Q22. The sequence of folding a piece of paper and the manner in which the folded paper has been cut is shown in the following figures. How would this paper look when unfolded?



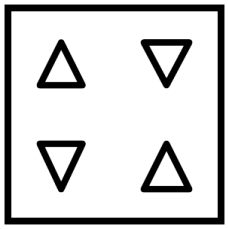
(a)



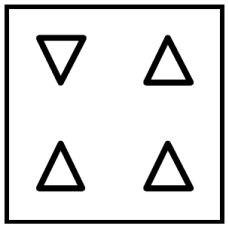
(b)



(c)



(d)



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Q23. In the following question, select the missing number from the given series.

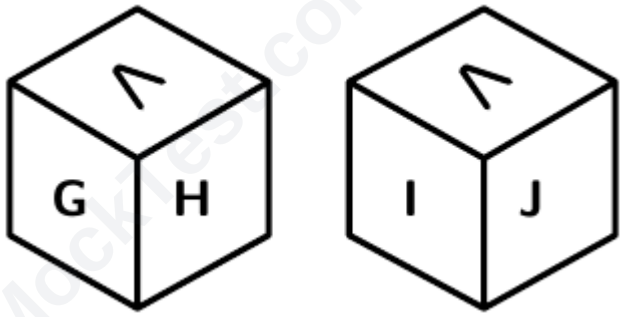
81, 94, 120, 159, 211, ?

(a) 266
(b) 278
(c) 276
(d) 264

Q24. If 'A' means '+', 'B' means '-', 'C' means '÷' and 'D' means '×', then 63 C 9 A 16 B 32 D 3 C 8 = ?

(a) 11
(b) 13
(c) 10
(d) 9

Q25. Two positions of a dice are given below. What will come on the face opposite to the face containing 'J' on it?



(a) G
(b) I
(c) A
(d) H

GENERAL INTELLIGENCE

Q26. C++ is an example of which type of computer language?

(a) Visual Programming Language
(b) Object-Oriented Language
(c) Business Data Processing
(d) String and List Processing

Q27. Market Based Economic Dispatch (MBED) Mechanism is related with which of the following ministry?

(a) Ministry of Power
(b) Ministry of Corporate Affairs
(c) Ministry of Finance
(d) Ministry of Micro, Small and Medium Enterprises

Q28. Which country won the Men's Asia Cup 2022 for cricket?

(a) Sri Lanka
(b) Bangladesh
(c) India
(d) Pakistan

Q29. Which among the following lakes connects the twin cities of Hyderabad and Secunderabad?

(a) Kanwar
(b) Salim Ali
(c) Hussain Sagar
(d) Periyar

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Q30. Personal income of households can be calculated in which of the following ways?

(a) National income + Undistributed profits - Net interest payments - Corporate tax + Transfer payments from the government and firms

(b) National income - Undistributed profits - Net interest payments - Corporate tax + Transfer payments from the government and firms

(c) National income - Undistributed profits + Net interest payments - Corporate tax - Transfer payments from the government and firms

(d) National income - Undistributed profits - Net interest payments - Corporate tax - Transfer payments from the government and firms

Q31. Which of the following earthquake waves are longitudinal waves?

(a) L waves

(b) P waves

(c) N waves

(d) S Waves

Q32. Who is the author of the book 'Elephant in the Womb'?

(a) Twinkle Khanna

(b) Konkana Sen Sharma

(c) Kalki Koechlin

(d) Farhan Akhtar

Q33. In which of the following sports India did NOT win a gold medal in Commonwealth Games 2022?

(a) Shooting

(b) Table Tennis

(c) Lawn bowls

(d) Weightlifting

Q34. Who has been appointed as the Chief of Defence Staff (CDS) in September 2022?

(a) Lt. Gen Hari Kumar

(b) Lt. Gen Anil Chauhan (Retired)

(c) Lt. Gen Vinod G. Khandare (Retired)

(d) Lt. Gen Manoj Pandey

Q35. Which of the following statements is correct?

I. Maize requires moderate temperature, rainfall and lots of sunshine.

II. Jute grows well on alluvial soil and requires high temperature, heavy rainfall and humid climate.

(a) Neither I nor II

(b) Only I

(c) Only II

(d) Both I and II

Q36. Which of the following keyboard shortcut is used to lock the windows screen in windows 10?

(a) Windows logo key + M

(b) Windows logo key + K

(c) Windows logo key + N

(d) Windows logo key + L

Q37. Theme of World Environment Day 2022 is _____.

(a) Only One Earth

(b) Save Environment for Future

(c) Ecosystem Restoration

(d) Nature is Money

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Q38. Ganga Dussehra takes place every year on the _____ day of Shukla Paksha of Jyeshtha month.

(a) 6th
(b) 8th
(c) 10th
(d) 12th

Q39. Which of the following comes under the platyhelminthes classificaion under the animalia?

(a) Sycon
(b) Leech
(c) Wuchereria
(d) Tapeworm

Q40. The distance of the Sun from the Earth is about _____ light minutes.

(a) 6
(b) 4.3
(c) 12
(d) 8

Q41. Which of the following do/does NOT come under state list of 7th schedule of the Indian constitution?

(a) Relief of the disabled and unemployable
(b) Burials and burial grounds, cremations and cremation grounds
(c) Regulation of labour and safety in mines and oilfields
(d) Pilgrimages, other than pilgrimages to places outside India

Q42. In _____, a Subsidiary Alliance system was imposed on Awadh by the British.

(a) 1828
(b) 1801
(c) 1814
(d) 1809

Q43. Which city will host the 2028 Summer Olympic Games?

(a) Los Angles
(b) Paris
(c) New York
(d) Munich

Q44. As the river enters the plain it twists and turns forming large bends known as _____.

(a) levees
(b) ox-bow lake
(c) floodplain
(d) meanders

Q45. What were the primary goals of the five-year plans in India?

(a) Industrialisation, Urbanisation, development and self-reliance
(b) Poverty reduction, Urbanisation, Self-sufficiency and Modernisation
(c) Social welfare, Self-sufficiency, equity and industrial development
(d) Growth, modernisation, self-reliance and equity

Q46. "Living root bridges" is an iconic structure found in which state?

(a) Meghalaya
(b) West Bengal
(c) Himachal Pradesh
(d) Assam

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Q47. _____ was the first governor-general of Bengal.

(a) Warren Hastings
(b) William Bentinck
(c) Charles Metcalfe
(d) John Shore

Q48. The Garba dance is performed in which state?

(a) Haryana
(b) Kerala
(c) Gujarat
(d) Punjab

Q49. Which of the following is the correct order of friction?

(a) Static > Rolling > Sliding
(b) Rolling > Static > Sliding
(c) Static > Sliding > Rolling
(d) Sliding > Static > Rolling

Q50. Which among the following constitutional amendments of the Indian Constitution deals with the formation of Sikkim as a state?

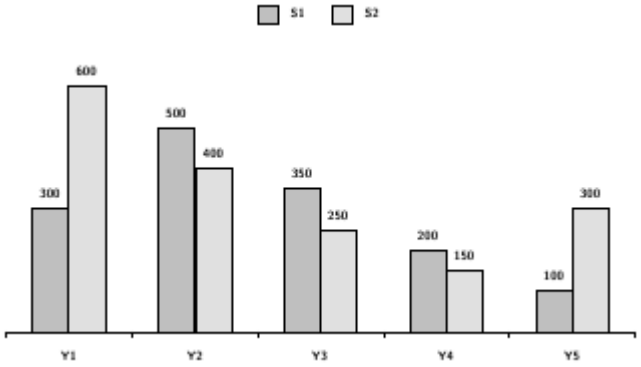
(a) 36^(th)
(b) 51^(st)
(c) 42^(nd)
(d) 30^(th)

QUANTITATIVE APTITUDE

Q51. A train of length 300 metres crosses a tree in 20 seconds and crosses another train of the same length travelling in opposite direction in 25 seconds. What is the speed of the second train?

(a) 10 m/s
(b) 12 m/s
(c) 15 m/s
(d) 9 m/s

Q52. The bar graph given below shows the population of two states S1 and S2 in 5 years.



Which of the following statement is correct?

I. The rate of population of S1 to the population of S2 in the year Y1 are 3 : 1.

II. The population of S1 is 140 percent of the population of S2 in the year Y3.

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

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Q53. MX is the median of ΔMNO. Y is the centroid of ΔMNO. If YX = 12 cm, then what is the length of MX?

(a) 30 cm
(b) 36 cm
(c) 28 cm
(d) 24 cm

Q54. Which of the following statement is true?

I. 1/2+1/6+1/12=3/4

II. 1/6+1/12+1/20=3/5

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

Q55. If cos θ = 9/13, then what is the value of cosec θ?

(a) 13/√22
(b) 13√22/44
(c) 2√22/13
(d) √22/13

Q56. The sum of the length and breadth of a cuboid is 4 cm. Length is three times of breadth. If the height of the cuboid is half of the sum of the length and breadth, then what is total surface of the cuboid?

(a) 64 cm^2
(b) 22 cm^2
(c) 32 cm^2
(d) 30 cm^2

Q57. In what ratio tea of Rs. 60 per kg should be mixed with tea of Rs. 70 per kg so that on selling the mixture at Rs. 80 per kg there is a profit of 25 percent?

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

Q58. The average marks obtained by 120 students in an examination is 50. If the average marks of passed students is 70 and average marks of the failed students is 30, then what is the number of students who passed the examination?

(a) 100
(b) 60
(c) 80
(d) 40

Q59. Tangent drawn from a point Y, touches the circle at X. O is the centre of this circle. If OY = 50 cm and XY = 40 cm, then what will be the radius of this circle?

(a) 60 cm
(b) 75 cm
(c) 45 cm
(d) 30 cm

Q60. A seller allows a discount of 9% on a watch. If he allows a discount of 6%, he earns Rs. 30 more in profit. What is the marked price?

(a) Rs. 900
(b) Rs. 1,400
(c) Rs. 1,000
(d) Rs. 1,300

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Q61. If sin m + sin n = p, cos m + cos n = q, then find the value of sin m × sin n + cos m × cos n.

(a) $p^2+ q^2 - 2$
(b) $(p^2 + q^2 - 2)/2$
(c) p + q - pq
(d) p + q + pq

Q62. Two medians NA and OB of ΔNOP intersect each other at S at right angles. If NA = 15 cm and OB = 15 cm, then what is the length of OA?

(a) 5√5 cm
(b) 7√5 cm
(c) 6√5 cm
(d) 3√5 cm

Q63. A certain sum becomes 4 times of itself in 5 years at a rate of simple interest. In 15 years it will become how many times of itself at the same rate of simple interest?

(a) 12
(b) 10
(c) 9
(d) 8

Q64. O is the incentre of the ΔPQR. If angle POR = 120 degree, then what is the angle PQR?

(a) 45 degree
(b) 60 degree
(c) 55 degree
(d) 48 degree

Q65. What is the least possible value of p for which a number 84pp153p is divisible by 9?

(a) 2
(b) 1
(c) 7
(d) 5

Q66. If $m^2 - n^2 = 21$ and m - n = 3, find the value of m + n.

(a) 7
(b) 4
(c) 24
(d) 18

Q67. P's income is 150 percent of Q's income and P's expenditure is 60 percent of Q's expenditure. If Q saves 20 percent of his income, then how much percentage does P save of his own income?

(a) 68 percent
(b) 60 percent
(c) 72 percent
(d) 75 percent

Q68. If a + b = 24 and 8ab = 256, then what is the value of $3a^2 + 3b^2$?

(a) 1536
(b) 1024
(c) 512
(d) 1636

Q69. On selling 14 notebooks a seller makes a profit equal to the selling price of 9 notebooks. FInd his percent profit. (Selling price of all notebooks is same. Cost price of all notebooks is same.)

(a) 210%
(b) 180%

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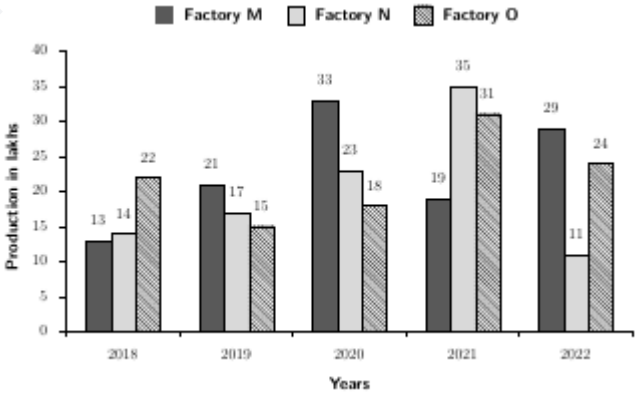
(c) 140%
(d) 130%

Q70. The line graph shows the Production (in crores) of three companies over years. Find the year in which total production in company Z is 30 percent more than that of company X.



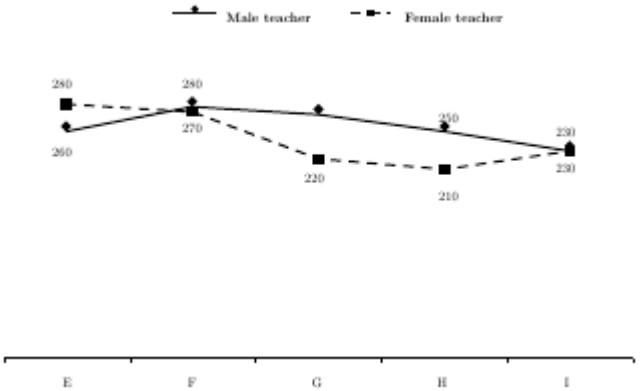
(a) 2021
(b) 2019
(c) 2020
(d) 2018

Q71. The following bar graph shows the production of pens (in lakhs) by three companies M, N, O from 2018 to 2022. What is the ratio of the average production of Company O in the period 2019-2021 to the average production of Company M in the same period?



(a) 55 : 46
(b) 66 : 79
(c) 64 : 73
(d) 64 : 65

Q72. The line chart below shows the number of male teachers and female teachers in 5 schools.



Which of the following statement is NOT correct?

I. The total number of male teachers in all the 5 schools is 106.61 percent of the total number of females teachers in the 5 schools.

II. The number of female teachers in school E is 11.73 percent more the number of male teachers in school I.

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

Q73. A alone can make a table in 30 days while B alone can make it in 15 days. B started the work alone and worked for 8 days. In how many days A alone can finish the remaining work?

(a) 14 days
(b) 10 days
(c) 12 days
(d) 15 days

Q74. If 6^x = 3^y = 2^z, then what is the value of 1/y+1/z-1/x ?

(a) 1
(b) 0
(c) 3
(d) 6

Q75. What is the value of (cotθ+cosecθ - 1)/(cotθ - cosecθ +1) ?

(a) 2 sec θ
(b) 2 cosec θ
(c) 2 cot θ
(d) (cosec θ + cot θ)

GENERAL AWARENESS

Q76. Choose the word that means the same as the given word.

Elucidate

(a) Exhaust
(b) Examine
(c) Oracular
(d) Explicate

Q77. In the following question, out of the given four alternatives, select the alternative which best expresses the meaning of the Idiom/Phrase.

A beast of burden

(a) A liability
(b) An animal that carries luggage
(c) A person who works hardly
(d) A violent man

Q78. Select the correct passive form of the given sentence.

The police have apprehended the criminal.

(a) The criminal had been apprehended by the police.
(b) The criminal had been apprehend by the police.
(c) The criminal was apprehended by the police.
(d) The criminal has been apprehended by the police.

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Q79. Rearrange the parts of the sentence in correct order.

Approaching her

P. upon the impacts of county lines drug-running networks

Q. 80th birthday in February next year, Hill's

R. relevance and urgency this time focusing

S. writing has lost none of its immediate

(a) QSRP
(b) SQRP
(c) RPQS
(d) PQSR

Q80. Find the part of the given sentence that has an error in it. If there is no error, choose 'No error'.

Her failure in life is too much painful for me.

(a) No error
(b) painful for me.
(c) is too much
(d) Her failure in life

Q81. In the following question, out of the given four alternatives, select the alternative which best expresses the meaning of the Idiom/Phrase.

To lose one's head

(a) To reach nowhere
(b) To lose one's self-control
(c) To have bad memory
(d) To lose the track of time

Q82. Rearrange the parts of the sentence in correct order.

P. we found that thyroid hormones regulate white bar formation

Q. sea anemone species in which the young fish is recruited

R. and that a shift in hormone levels, associated with ecological

S. differences, result in divergent colour patterns in different

(a) SQPR
(b) RSQP
(c) PRSQ
(d) PQRS

Q83. Improve the underlined part of the sentence. Choose 'No improvement' as an answer if the sentence is grammatically correct.

I can sees the mountains in the distance.

(a) No improvement
(b) can seen
(c) can saw
(d) can see

Q84. Improve the underlined part of the sentence. Choose 'No improvement' as an answer if the sentence is grammatically correct.

The early morning flight is the lest expensive.

(a) least's expensive
(b) least expensive
(c) lastly expensive
(d) No improvement

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Q85. Select the correct indirect form of the given sentence.

She said to her maid, "Clean the utensils properly."

(a) She ordered her maid to clean the utensils properly.
(b) She commanded her maid that kindly clean the utensils properly.
(c) She orders her maid to clean the utensils properly.
(d) She commands her maid that clean the utensils properly.

Q86. Choose the incorrectly spelt word.

(a) Bubble
(b) Fantsy
(c) Stormy
(d) Mince

Q87. Choose the sentence with no spelling error.

(a) I thought I was going to die.
(b) I thought I was going to diye.
(c) I thought I was goinng to die.
(d) I thught I was going to die.

Q88. Select the most appropriate antonym of the given word.

Legit

(a) Bona fide
(b) Endorsed
(c) Illegal
(d) Canonical

Q89. Choose the word that can substitute the given group of words.

One who adapts oneself readily to various situations

(a) Versatile
(b) Orthodox
(c) Fastidious
(d) Ardent

Q90. Select the word that is opposite in meaning (ANTONYM) to the word given below.

Cynical

(a) Scoffing
(b) Incredulous
(c) Credulous
(d) Sceptical

Q91. Find the part of the given sentence that has an error in it. If there is no error, choose 'No error'.

Bacteria are single-celled organisms that can reproduce on its own.

(a) organisms that can
(b) No error
(c) Bacteria are single-celled
(d) reproduce on its own.

Q92. Choose the word is opposite in meaning to the given word.

Chastise

(a) Mulct
(b) Keelhaul
(c) Berate
(d) Extol

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Q93. Given below are four jumbled sentences. Pick the option that gives their correct order.

P. To stop Caesar from gaining too much power, Brutus and the conspirators kill him on the Ides of March.

Q. Brutus and his friend Cassius lose and kill themselves, leaving Antony to rule in Rome.

R. Mark Antony drives the conspirators out of Rome and fights them in a battle.

S. The tale of Julius Caesar involves jealous conspirators who convince Caesar's most trusted ally Brutus to join their assassination plot against Caesar.

(a) SQPR
(b) SPRQ
(c) QPSR
(d) SQRP

Q94. Select the most appropriate 'one word' for the expression given below.

A place where public records are preserved.

(a) Archive
(b) Library
(c) Court Room
(d) Diary

Q95. Select the most appropriate 'one word' for the expression given below.

Something that is no longer in use.

(a) Absolute
(b) Vogue
(c) Obsolete
(d) Contemporary

Directions

In the following passage some of the words have been deleted. Read the passage carefully and select the correct answer for the given blank out of the four alternatives.

Sudden changes in the gilts market are (1) _____, but when they do happen it can cause (2) _____ problems for certain types of pension scheme, as UK pension savers (3) ____ recently. In addition to raising borrowing costs for the government, the market mayhem following September's mini-budget (4) _____ many pension providers to quickly cash in some of their holdings to try to weather the (5) _____.

Q96. Select the most appropriate option to fill in blank number 1.

(a) easy
(b) rare
(c) severe
(d) high

Q97. Select the most appropriate option to fill in blank number 2.

(a) untidy
(b) major
(c) scanty
(d) bulky

Q98. Select the most appropriate option to fill in blank number 3.

(a) seen
(b) have seen
(c) has seen
(d) did saw

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Q99. Select the most appropriate option to fill in blank number 4.

(a) forced
(b) uncontrived
(c) seized
(d) slated

Q100. Select the most appropriate option to fill in blank number 5.

(a) cup
(b) pond
(c) storm
(d) soil

ANSWER KEY

1	c	2	c	3	c	4	d	5	d	6	b	7	d	8	c	9	c	10	d
11	d	12	b	13	c	14	c	15	d	16	c	17	b	18	d	19	a	20	b
21	a	22	a	23	c	24	a	25	d	26	b	27	a	28	a	29	c	30	b
31	b	32	c	33	a	34	b	35	d	36	d	37	a	38	c	39	d	40	d
41	c	42	b	43	a	44	d	45	d	46	a	47	a	48	c	49	c	50	a
51	d	52	c	53	b	54	c	55	b	56	b	57	a	58	b	59	d	60	c
61	b	62	a	63	b	64	b	65	a	66	a	67	a	68	a	69	b	70	c
71	c	72	a	73	a	74	b	75	d	76	d	77	b	78	d	79	a	80	c
81	b	82	c	83	d	84	b	85	a	86	b	87	a	88	c	89	a	90	c
91	d	92	d	93	b	94	a	95	c	96	b	97	b	98	b	99	a	100	c

SOLUTIONS

Q1. Answer: (c) 5, 2, 1, 4, 3

The correct order as per the dictionary is:
5) Accompany
2) According
1) Account
4) Accumulate
3) Accuracy
Hence, the correct answer is "5, 2, 1, 4, 3".

Q2. Answer: (c) Brother

So,
• Pointing towards a girl, Shilpa said, "She is daughter of my husband's wife".

Thus, according to the family tree Shilpa 's son and the girl are the siblings, i.e brother of that girl.
Hence, "Brother" is the correct answer.

Q3. Answer: (c) 381

Logic : No specific pattern is followed here, random digits are assigned to certain letters.
So,
• 'LOAF' is coded as '8362'
• 'LICK' is coded as '5103'
• 'JOCK' is coded as '0841'
• 'JEAN' is coded as '9472'

Thus, as marked above codes for the given letters are as follows :

Letters	L	O	A	F	I	J	C / K
Codes	3	8	2	6	5	4	1 / 0

=> Code for C is either 1 or 0

=> Code for K is either 1 or 0

Now, according to the above codes:

• 'LOC' is coded as

Letters	L	O	C
Codes	3	8	1 / 0

=> LOC is coded as either '381' or '380'

Here, from the given options only '381' is given, therefore 'LOC' is coded as '381'.

Hence, "381" is the correct answer.

Q4. Answer: (d) VDGSKE

Logic : (1) and (2) are added alternatively to the position value according to the English alphabetic series diagonally.

So,

• 'DESIRE' is coded as 'GSKTGE'

Similarly,

• 'DIRECT' is coded as

Hence, "VDGSKE" is the correct answer.

Q5. Answer: (d) r, t, s, p, m, k, m, p

Let's check each option,

1	r	m	s	k	s	p	r	m	t	k	t	p	r	m	s	k	t	p	r	m	s	k	t	p
2	r	m	s	k	t	p	r	m	s	k	t	p	r	m	s	m	t	p	r	m	s	k	t	p
3	r	m	s	k	t	p	r	m	s	k	t	p	r	m	s	k	t	p	r	k	s	k	t	p
4	r	m	s	k	t	p	r	m	s	k	t	p	r	m	s	k	t	p	r	m	s	k	t	p

Here, we can see that Option 4 follows a repetitive pattern of " r m s k t p ".

Hence, the correct answer is "r, t, s, p, m, k, m, p".

Q6. Answer: (b) Only conclusion III follows

The least possible Venn diagram for the given statements is as shown below :

Conclusions:

I. Some N are T → Does not follow (As no T is N. So, as direct negative or cross relation between T and N is given, therefore it is definitely false)

II. All N are A → Does not follow (As all A are T and no T is N. So, as whole A comes in T which has direct negative or cross relation with N, therefore it is definitely false)

III. Some T are A → Follow (As all A are T. So, as whole A comes in T, therefore it is definitely true)

Therefore Here, Only conclusion III follows.

Hence, the correct answer is "Only conclusion III follows"

Q7. Answer: (d) (19, 23, 29)

The logic followed here is:

Logic: The three numbers of the set are the consecutive prime numbers.

Prime numbers (Between 1 - 50) → 2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47.

(29, 31, 37):

→ They are the consecutive prime numbers.

(11, 13, 17):

→ They are the consecutive prime numbers.

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Let's check each option as per the logic,
1) (17, 19, 29):
→ They are not the consecutive prime numbers.
2) (37, 41, 47):
→ They are not the consecutive prime numbers.
3) (19, 21, 23):
→ Here, 21 is not a prime number.
4) (19, 23, 29):
→ They are the consecutive prime numbers => Follow the logic.
Hence, the correct answer is" option 4". "(19, 23, 29)".

Q8. Answer: (c) (237, 294, 384)

Logic : (3rd number - 1st number) = (2nd number ÷ 2)
Given :
• (393, 342, 564)
564 - 393 = 342 ÷ 2
171 = 171 (LHS = RHS)
• (287, 82, 328)
328 - 287 = 82 ÷ 2
41 = 41 (LHS = RHS)
So,
• Option - (1) : (485, 136, 548)
548 - 485 = 136 ÷ 2
63 ≠ 68 (LHS ≠ RHS)
• Option - (2) : (567, 162, 638)
638 - 567 = 162 ÷ 2
71 ≠ 81 (LHS ≠ RHS)
• Option - (3) : (237, 294, 384)
384 - 237 = 294 ÷ 2
147 = 147 (LHS = RHS)
• Option - (4) : (329, 144, 406)
406 - 329 = 144 ÷ 2
77 ≠ 72 (LHS ≠ RHS)
Hence, "Option - (3)" is the correct answer.

Q9. Answer: (c) Yuan

The logic followed here is:
Logic: The first word is the country, and the second word is its currency.
Thailand: Baht
→ Baht is the currency of Thailand.
Similarly,
China: ?
→ Yuan is the currency of China.
Hence, the correct answer is "Yuan".

Q10. Answer: (d) 8

The number of quadrilaterals in the given figure are shown below :
Thus, as marked above there are total 8 quadrilaterals.
Hence, "8" is the correct answer.

Q11. Answer: (d) MKHG

The logic followed here is :-
1. First and second letters → Difference between the position values according to English alphabetic series is (2).

2. Third and fourth letters → Opposite letters according to English alphabetic series.

So,

• RPMN

• HFCX

• LJGT

• MKHG

Thus, out of all options only 'MKHG' doesn't follows the same logic as others.

Hence, the correct answer is "MKHG".

Q12. Answer: (b) 5

After interchanging the signs, the equation we get:

→ 12 ÷ 4 × 2 - 5 + 4 =?

→ 3 × 2 - 5 + 4 =?

→ 6 - 5 + 4 =?

→ 10 - 5 =?

→ 5 =?

Hence, the correct answer is "5".

Q13. Answer: (c) 11 : 47

The logic followed here is:

Logic: Second number = (First Number × 4) + 3

7: 31

→ 31 = (7 × 4) + 3

→ 31 = 28 + 3

Let's check each option as per the logic,

1) 11: 37

→ 37 = (11 × 4) + 3

→ 37 ≠ 44 + 3

2) 11: 28

→ 28 = (11 × 4) + 3

→ 28 ≠ 44 + 3

3) 11: 47

→ 47 = (11 × 4) + 3

→ 47 = 44 + 3 => Follow the logic.

4) 11: 12

→ 12 = (11 × 4) + 3

→ 12 ≠ 44 + 3

Here, we can see that only Option 3 follow the logic.

Hence, the correct answer is "11: 47".

Q14. Answer: (c) [figure]

The correct Venn diagram representing the relationship between Lotus, Lily and mango is shown below:

→ Lotus and Lily are two different types of flower and Mango is a Fruit.

Hence, the correct answer is "Option 3".

Q15. Answer: (d) (Stable, House, Pig)

The logic followed here is:

Logic: All three are animals in a set.

Let's check each option as per the logic,

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1) (Sheep, Deer, Lion):
→ All three are animals.
2) (Goat, Rat, Jackal):
→ All three are animals.
3) (Cow, Dog, Tiger):
→ All three are animals.
4) (Stable, House, Pig):
→ Here, Stable is not an animal. Stable is a place where horses are kept.
Here, we can see that only option 4 doesn't follow the logic and is different from the others.
Hence, the correct answer is "(Stable, House, Pig)".

Q16. Answer: (c) Loudspeaker

The logic followed here is:
Logic: The second word is a instrument or device which is used to perform the first word.
Grip: Spanner
→ Spanner is an instrument which is used to provide grip.
Similarly,
Amplify:?
→ Loudspeaker is a device which is used to amplify the sound.
Hence, the correct answer is "Loudspeaker".

Q17. Answer: (b) [figure]

The faces opposite to each other are shown below:
=> As the alternate positions becomes opposite to each other and the remaining two faces becomes opposite to each other.
So, opposite pairs are:
• 1 → 2
• 4 → 6
• 7 → 5
Therefore,
• Option(1) →
=> Cannot be formed as a box from the given sheet (As 1 and 2 are one of the opposite pairs)
• Option(2) →
=> can be formed as a box from the given sheet (As 2, 4 and 7 are one numbers of each opposite pairs)
• Option(3) →
=> Cannot be formed as a box from the given sheet (As 7 and 5 are one of the opposite pairs)
• Option(4) →
=> Cannot be formed as a box from the given sheet (As 4 and 6 are one of the opposite pairs)
Hence, "Option - (2)" is the correct answer.

Q18. Answer: (d) YM

The logic followed here is:
Logic: 1 has been subtracted in the first letter's positional value to get the corresponding first letter.
2 has been subtracted in the second letter's positional value to get the corresponding second letter.
RT: QR
Similarly,
ZO:?
Hence, the correct answer is "YM".

Q19. Answer: (a) (169, 180, 360)

The logic followed here is:
Logic: Second Number = First Number + 11
→ Third Number = Second Number × 2
(133, 144, 288):

→ 144 = 133 + 11

→ 288 = 144 × 2

(127, 138, 276):

→ 138 = 127 + 11

→ 276 = 138 × 2

Let's check each option as per the logic,

1) (169, 180, 360):

→ 180 = 169 + 11

→ 360 = 180 × 2 → Follow the logic.

2) (143, 156, 312):

→ 156 ≠ 143 + 11 → Doesn't follow the logic.

3) (157, 168, 326):

→ 168 = 157 + 11

→ 326 ≠ 168 × 2 → Doesn't follow the logic.

4) (117, 128, 266):

→ 128 = 117 + 11

→ 266 ≠ 128 × 2 → Doesn't follow the logic.

Here, we can see that only option 1 follow the logic.

Hence, the correct answer is "(169, 180, 360)".

Q20. Answer: (b) [figure]

The figure that will replace the question mark (?) in the following figure series is shown below:

=>The number of parts are increasing in each box.

Hence, ‘option - (2)’ is the correct answer.

Q21. Answer: (a) [figure]

The faces opposite to each other are shown below:

=> As the alternate positions becomes opposite to each other and the remaining two faces becomes opposite to each other.

So, opposite pairs are:

• 1 → 5

• 2 → 3

• 4 → 6

Therefore,

• Option(1) →

=> Can be formed as a box from the given sheet (As 2, 4 and 5 are one numbers of each opposite pairs)

• Option(2) →

=> Cannot be formed as a box from the given sheet (As 2 and 1 are one of the opposite pairs)

• Option(3) →

=> Cannot be formed as a box from the given sheet (As 4 and 6 are one of the opposite pairs)

• Option(4) →

=> Cannot be formed as a box from the given sheet (As 1 and 2 are one of the opposite pairs)

Hence, "Option - (1)" is the correct answer.

Q22. Answer: (a) [figure]

According to given figure:

The figure will appear when it is opened as follows:

Hence, "Option - (1)" is the correct answer.

Q23. Answer: (c) 276

The logic followed here is : Consecutive multiples of (13) are added subsequently.

Hence, "276" is the correct answer.

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Q24. Answer: (a) 11

Letters	Means
A	•
B	•
C	÷
D	×

After replacing the letters with signs, the equation we get:

→ 63 ÷ 9 + 16 - 32 × 3 ÷ 8 =?

→ 7 + 16 - 32 × 3/8 =?

→ 7 + 16 - 12 =?

→ 23 - 12 =?

→ 11 =?

Hence, the correct answer is "11".

Q25. Answer: (d) H

The logic followed here is :-

From the given two different cubes the adjacent sides are as shown below :

As A is common on both the dice, it is clear that G, H, I and J are adjacent to it.

Opposite pairs:

J → H

I → G

A → Not given

So, the opposite side of "J" will be side "H".

Hence, the correct answer is "H".

Q26. Answer: (b) Object-Oriented Language

The correct answer is Option 2.

Key Points

• C++ is a general-purpose programming language that supports multiple programming paradigms, including procedural, object-oriented, and generic programming.

• It was originally developed as an extension of the C programming language, adding support for object-oriented programming features such as classes, inheritance, and polymorphism.

• Therefore, C++ is considered an object-oriented language.

Additional Information

• Visual Programming Language:

• A visual programming language is a type of programming language that allows users to create programs by manipulating graphical elements rather than writing traditional text-based code.

• Visual programming languages often use visual representations of code blocks or nodes that can be connected to define program logic and flow.

• Business Data Processing:

• Business Data Processing (BDP) refers to the process of managing and processing data related to business operations and transactions.

• It involves collecting, storing, manipulating, and analyzing data to support various business functions, such as accounting, inventory management, payroll processing, and customer relationship management (CRM).

• BDP typically involves the use of specialized software and databases to handle large volumes of data efficiently.

• String and List Processing:

• String and list processing refers to the manipulation and manipulation of strings (sequences of characters) and lists (collections of elements) within a programming language.

• This typically involves operations such as searching, sorting, modifying, and iterating over strings and lists. Programming languages often provide built-in functions or libraries to facilitate these operations efficiently.

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Q27. Answer: (a) Ministry of Power

The correct answer is Option 1.

Key Points

• Market Based Economic Dispatch (MBED) Mechanism is an approach used in the power sector to optimize the allocation of electricity generation resources.

• It is implemented and overseen by the Ministry of Power in many countries.

• In traditional power systems, the dispatch of power plants was primarily determined by the system operator based on technical and operational considerations, such as system stability and reliability.

• However, with the increasing penetration of renewable energy sources and the liberalization of the electricity market, there is a need for a more economically efficient approach to dispatching power generation.

• The MBED mechanism introduces market principles into the dispatch process, allowing the economic forces of supply and demand to determine the allocation of electricity generation resources.

• It involves the establishment of electricity markets where power producers compete to sell their electricity, and buyers (such as distribution companies and industrial consumers) compete to purchase the electricity.

Additional Information

• The Ministry of Corporate Affairs (MCA) is a government ministry in India that is responsible for the administration and regulation of corporate affairs in the country.

• It is one of the key ministries under the Government of India.

• The primary objective of the Ministry of Corporate Affairs is to ensure the proper functioning and regulation of the corporate sector in India.

• The Ministry of Finance is a government ministry that is responsible for the financial and economic matters of a country.

• Its primary objective is to formulate and implement fiscal policies, manage public finances, and ensure the stability and growth of the economy.

• The Ministry of Micro, Small and Medium Enterprises (MSME) is a government ministry in India that is responsible for the promotion, development, and enhancement of competitiveness of micro, small, and medium enterprises.

• It was established in 2007 with the aim of creating a conducive environment for the growth of these enterprises, which play a vital role in the Indian economy.

Q28. Answer: (a) Sri Lanka

The correct answer is Option 1.

Key Points

• In Cricket, Sri Lanka defeated Pakistan by 23 runs to lift their 6th Asia Cup title at the Dubai International Stadium on 11 Sept 2022.

• Sri Lanka posted 170 runs for the loss of six wickets in 20 overs.

• Sri Lanka all-rounder Wanindu Hasaranga has been adjudged the Player of the Series while Bhanuka Rajapaksa has been named the Player of the Match for his batting performance in the final.

Additional Information

• The 2022 Asia Cup was the 15th edition of the Asia Cup cricket tournament.

• The matches were played as Twenty20 Internationals (T20Is) during August and September 2022 in the United Arab Emirates.

• Originally scheduled to be held in September 2020, the tournament was postponed in July 2020 due to the COVID-19 pandemic.

Q29. Answer: (c) Hussain Sagar

The correct answer is Option 3.

Key Points

• The twin cities of Hyderabad and Secunderabad in India are connected by the Hussain Sagar Lake.

• It is a man-made lake located in the heart of the cities and serves as a prominent landmark.

• The lake was built during the reign of Ibrahim Quli Qutb Shah, and it separates the two cities while providing a scenic view with its iconic Buddha statue at the center.

Additional Information

• Hussain Sagar Lake is a large artificial lake located in the heart of Hyderabad, the capital city of Telangana, India.

• It was constructed in 1562 during the reign of Ibrahim Quli Qutb Shah, the fourth Sultan of the Qutb Shahi dynasty.

• The lake is named after Hussain Shah Wali, who served as the saintly advisor to Ibrahim Quli Qutb Shah.

• The primary purpose of building Hussain Sagar Lake was to provide a reliable source of water for both irrigation and drinking

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purposes to the residents of Hyderabad and the surrounding areas.

• The lake was created by damming the Musi River, a tributary of the Krishna River.

Q30. Answer: (b) National income - Undistributed profits - Net interest payments - Corporate tax + Transfer payments from th...

The correct answer is Option 2.

Key Points

• The correct option for calculating personal income of households is: National income - Undistributed profits - Net interest payments - Corporate tax + Transfer payments from the government and firms

• Personal income is a measure of the income received by households before any deductions.

• It includes the income received from various sources, such as wages, salaries, rental income, interest, dividends, and transfer payments from the government and firms.

• To calculate personal income, you start with the national income, which is the total income earned by individuals and businesses within a country.

• From the national income, you deduct undistributed profits (profits not distributed as dividends to shareholders), net interest payments (interest paid on loans minus interest received), and corporate tax (tax paid by corporations).

Q31. Answer: (b) P waves

The correct answer is Option 2.

Key Points

• The longitudinal waves, also known as compressional waves or primary waves, are represented by the letter "P."

• P waves are the fastest seismic waves and can travel through solid, liquid, and gas.

• They cause particles to move in the same direction as the wave propagation, creating a push-pull motion.

Additional Information

• P waves (Primary waves):

• Also known as compressional waves.

• Longitudinal waves that travel through the Earth's interior.

• They cause particles to compress and expand in the same direction as the wave travels.

• Can travel through solid, liquid, and gas.

• Fastest seismic waves.

• First waves to be recorded by seismographs.

• S waves (Secondary waves):

• Also known as shear waves.

• Transverse waves that travel through the Earth's interior.

• They cause particles to move perpendicular to the direction of wave propagation.

• Can only travel through solids.

• Slower than P waves.

• Second waves to be recorded by seismographs.

• L waves (Love waves):

• Surface waves that travel along the Earth's surface.

• Named after A.E.H. Love, who mathematically described their behavior.

• They cause particles to move in a horizontal, side-to-side motion.

• Slower than P and S waves.

• Responsible for the most significant damage during an earthquake.

• N waves (Rayleigh waves):

• Surface waves that travel along the Earth's surface.

• Named after Lord Rayleigh, who mathematically described their behavior.

• They cause particles to move in an elliptical motion, with both vertical and horizontal components.

• Slower than P and S waves.

• Can cause vertical ground displacement and rolling motion.

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Q32. Answer: (c) Kalki Koechlin

The correct answer is Kalki Koechlin.

Key Points

• The book titled 'Elephant In The Womb' has been authored by actor Kalki Koechlin.

• The book, illustrated by Valeriya Polyanychko, will be published under 'Penguin's' imprint.

• A combination of personal essays and think-pieces, the graphic book is a "candid, funny and relatable" account talking about pregnancy and parenting for mothers, expectant mothers, and "anyone even thinking about motherhood".

Additional Information

Author	Title
Twinkle Khanna	Mrs. Funnybones
Konkana Sen Sharma	Difficult Daughters

Q33. Answer: (a) Shooting

The correct answer is Shooting.

Key Points

• India has won a total of 61 medals in the Commonwealth Games 2022.

• 22 gold,

• 16 silver, and

• 23 bronze

• This time shooting was not included. Therefore India does not won any medal.

• In the 2018 Commonwealth Games, India won a total of 66 medals out of which 16 were in shooting.

• India finished fourth in the medal tally.

• Australia took first place.

• England finished second and Canada third.

• New Zealand finished fifth.

Additional Information

• The Commonwealth Games often referred to as the Friendly Games, is an international multi-sport event.

• It involves athletes from the Commonwealth of Nations.

• The event was first held in 1930, and, with the exception of 1942 and 1946, has taken place every four years since then.

• The 2022 Commonwealth Games took place at the Alexander Stadium in Birmingham, England, from 28 July to 8 August 2022.

• Perry the Bull is Birmingham 2022's official mascot.

• Indian men's hockey team captain Manpreet Singh & shuttler PV Sindhu were India's flag-bearers for the opening ceremony of the Commonwealth Games (CWG) 2022.

Q34. Answer: (b) Lt. Gen Anil Chauhan (Retired)

The correct answer is Lt. Gen Anil Chauhan (Retired).

Key Points

• The Government announced Lt General Anil Chauhan (retired) as the new CDS.

• He is the second CDS of India.

• General Anil Chauhan, PVSM, UYSM, AVSM, SM, and VSM assumed office as the Chief of Defence Staff (CDS) on September 30, 2022.

Additional Information

• The Chief of Defence Staff (CDS) is the military head and acts as the single-point advisor to the Government of India in matters of India’s military.

• He is also the permanent Chairman of the Chiefs of Staff Committee (CoSC) of the Indian Armed Forces.

• The Chief also heads the Department of Military Affairs.

• The first Chief of Defence Staff, General Bipin Rawat took office on 1 January 2020.

• The creation of the post of CDS was first recommended after the 1999 Kargil War.

Q35. Answer: (d) Both I and II

The correct answer is Both I and II.

Key Points

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Maize

• Maize is a crop which is used both as food and fodder.

• It is a kharif crop which requires moderate temperature, rainfall and lots of sunshine. Therefore 1st statement is correct.

• It grows well in fertile and well drained alluvial soil.

• Major maize-producing states of India are Karnataka, Madhya Pradesh, Uttar Pradesh, Bihar, Andhra Pradesh and Telangana.

JUTE

• Jute is a kharif crop of hot and humid climate and requires warm temperature varying from 24-35 degrees celsius. Hence statement II is correct.

• The cultivation of jute in India is mainly confined to the eastern region of the country.

• The jute crop is grown in nearly 83 districts of seven states - West Bengal, Assam, Orissa, Bihar, Uttar Pradesh, Tripura, and Meghalaya.

• West Bengal alone accounts for over 50 percent of raw jute production.

Additional Information

Cropping Season	Time Period	Crops	States
Rabi	Sown: October-December Harvested: April-June	Wheat, barley, peas, gram, mustard, etc.	Punjab, Haryana, Himachal Pradesh, Jammu and Kashmir, Uttarakhand, and Uttar Pradesh
Kharif	Sown: June-July Harvested: September-October	Rice, maize, jowar, bajra, tur, moong, urad, cotton, jute, groundnut, soybean, etc.	Assam, West Bengal, coastal regions of Odisha, Andhra Pradesh, Telangana, Tamil Nadu, Kerala, and Maharashtra
Zaid	Sown and harvested: March-July (between Rabi and Kharif)	Seasonal fruits, vegetables, fodder crops, etc.	Most of the northern and northwestern states

Q36. Answer: (d) Windows logo key + L

The correct answer is Windows logo key + L.

Key Points

• The Start Menu offers an option for locking your PC. Just click the Start button (the Windows icon), select your account name, and then click “Lock.”

• In addition to locking it from the Start menu, letting it lock automatically after a period of inactivity, and even using Bluetooth to lock when it senses you've left, there are two ways to lock Windows with quick keyboard shortcuts.

• The Ctrl+Alt+Delete keyboard shortcut is commonly used to kill unresponsive software, but you can also use it to lock your computer. Press Ctrl+Alt+Delete, and then click “Lock” in the menu that appears.

• There's an even faster way to lock the screen — do it in a single keystroke. Press the Windows and L keys at the same time. It should lock instantly.

Additional Information

• Windows logo key + l is used to lock the computer.

• Windows logo key + i is used to open settings.

• Windows logo key + f is used to open the feedback hub.

• Windows logo key + r is used to open the run window.

Q37. Answer: (a) Only One Earth

The correct answer is Only One Earth.

Key Points

• World Environment Day:

• It is celebrated every year on the5th of June. It was established in 1972 by the United Nations at the Stockholm Conference on the Human Environment

• It was first celebrated in the year1974.

• The theme for world environment day 2022 is Only One Earth.

Additional Information

• United Nations:

• The UNO was formed on 24 October 1945.

• At present, 193 countries are members of the UN.

• South Sudan is the latest and the 193rd member to join the UN in 2011

• The UN Charter came into force on October 24, 1945, when the Governments of China, France, the UK, the Soviet Union, the USA and a majority of other counties had ratified it.

• The headquarters of the UN is situated in New York (USA).

Q38. Answer: (c) 10th

The correct answer is 10th.

Key Points

• Ganga Dussehra is celebrated on the 10th day (Dashami) of the Shukla Paksha (waxing phase of the moon) in the Hindu calendar month of Jyeshtha, which usually falls in May or June according to the Gregorian calendar.

• The festival commemorates the day when the Ganges River descended to Earth from heaven. It's a day dedicated to Goddess Ganga and the river's purifying and life-giving power.

• People usually celebrate by taking a dip in the Ganges River, which is believed to cleanse them of their sins. It is believed that a dip in the river on this day can bring the devotee to a state of purification and also heal any physical ailments.

• Alongside bathing in the river, people also perform aarti (a ritual of light) and make offerings to the river. They also chant hymns and mantras dedicated to Goddess Ganga.

• The festival is also known as Ganga Dashara, in reference to the ten days of worship leading up to the main day of celebration.

• The festival is most prominently celebrated in places along the river's course, including Haridwar, Rishikesh, Varanasi, and Allahabad. In these cities, thousands of devotees gather at the ghats (steps leading down to the river) to perform rituals and celebrate the festival.

• Devotees also worship at Ganga temples and participate in charity activities as part of the celebration. The festival is a significant event in Hinduism, emphasizing not just the worship of a deity but also respect for nature and the environment.

Additional Information

Festival	State(s)
Diwali	Pan-India celebration, but particularly in North India
Holi	Pan-India celebration, but particularly in North India
Navaratri/Durga Puja	West Bengal, Gujarat, Rajasthan, Karnataka, Tamil Nadu
Pongal/Makar Sankranti	Tamil Nadu, Andhra Pradesh, Telangana
Ganesh Chaturthi	Maharashtra, Karnataka, Tamil Nadu, Andhra Pradesh
Baisakhi	Punjab, Haryana
Onam	Kerala
Eid-ul-Fitr	Pan-India celebration, predominantly in Muslim-majority regions
Christmas	Pan-India celebration, particularly in Christian communities
Durga Puja	West Bengal
Lohri	Punjab, Haryana, Himachal Pradesh
Maha Shivaratri	Pan-India celebration, particularly in North India
Raksha Bandhan	Pan-India celebration, particularly in North India
Janmashtami	Uttar Pradesh, Maharashtra, Gujarat, West Bengal
Bihu	Assam
Karva Chauth	North India
Puthandu/Tamil New Year	Tamil Nadu
Ugadi/Gudi Padwa	Karnataka, Andhra Pradesh, Telangana, Maharashtra
Vishu	Kerala
Durga Puja	West Bengal
Maha Navami/Dussehra	Pan-India celebration, particularly in North India

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Q39. Answer: (d) Tapeworm

The correct answer is Tapeworm.

Key Points

• Platyhelminthes are also known as flatworms and belong to the Kingdom Animalia.
• The tapeworm is a member of this group and falls under the class Cestoda.
• These organisms are mostly parasites and are known to live in the digestive tracts of vertebrates.
• Tapeworms have a ribbon-like body with a distinct head (scolex) equipped with hooks and suckers for attachment.
• A single individual can contain numerous proglottids (segments), each capable of producing eggs.

Additional Information

Organism	Group	Habitat or Host	Brief Description
Sycon	Phylum Porifera	Marine environments	Sycon belongs to the sponges group. They possess a tube-like body structure and are filter feeders.
Leech	Phylum Annelida	Freshwater, terrestrial, marine	Leeches are segmented worms. Some species are parasitic, feeding on the blood of hosts.
Wuchereria	Phylum Nematoda	Humans (lymph vessels)	Wuchereria is a roundworm that causes the disease filariasis in humans.

Q40. Answer: (d) 8

The Correct Answer is 8.

Key Points

• Light from the sun takes 8 minutes16.6 seconds to reach the Earth.
• The Earth takes about 365.25 days to complete one full revolution around the Sun. This period is called a year.
• The Earth's axis of rotation is tilted by 23.5 degrees
• The Moon orbits Earth in one revolution in about 27.32 days.
• Venus makes a complete orbit around the Sun in 225 Earth days.
• Jupiter makes a complete orbit around the Sun in about 12 Earth years.
• Light travels at a speed of 299,792 kilometres per second; 186,287 miles per second.
• It takes 499.0 seconds for light to travel from the Sun to the Earth, a distance called 1 Astronomical Unit.

Additional Information

• Sunlight an average of 8 minutes and 20 seconds to travel from the Sun to the Earth.
• Photons emitted from the Sun travel across the vacuum of space to reach earth.
• The distance between the sun and Earth is 149.6 million km.
• The Sun’s corona is the outermost part of the Sun’s atmosphere.
• It is hidden by the bright light of the Sun's surface, it can be viewed during a total solar eclipse.
• The corona reaches extremely high temperatures.
• The surface of the Sun is covered in magnetic fields.

Q41. Answer: (c) Regulation of labour and safety in mines and oilfields

The correct answer is Regulation of labour and safety in mines and oilfields

Key Points:

• The seventh schedule of the Indian constitution deals with the division of powers between the central government and the state governments through three lists: the Union List, the State List, and the Concurrent List.
• The Union List consists of subjects on which the central government has exclusive legislative authority.
• This means that only the Parliament of India can make laws regarding the items mentioned in the Union List.
• The Union List includes subjects of national importance or those that require uniform laws throughout the country.
• It encompasses areas such as defense, foreign affairs, atomic energy, railways, communication, and more.
• In this way, all the other options lie on the union list except intoxicating liquors.

Additional Information:Union List:

• The Union List consists of around 100 items over which the central government has exclusive legislative authority, including defence, foreign affairs, atomic energy, banking, and telecommunications.

• The central government has the power to make laws, regulate, and govern the subjects mentioned in the Union List uniformly across all states and union territories in India.

• Items in the Union List ensure the central government's authority in critical areas such as national security, inter-state trade and commerce, currency, copyright, air and water pollution, and more.

• Any amendment to the Union List requires the approval of the Parliament through a prescribed legislative process, ensuring that changes to these subjects are made at the national level.

State List:

• The State List consists of subjects over which state governments have exclusive legislative authority, including public order, police, public health, local government, agriculture, state taxation, and more.

• State governments exercise their legislative and executive powers to make laws, regulate, and govern the subjects mentioned in the State List within their respective states.

• Subjects in the State List allow state governments to address regional and local concerns, implement policies specific to their states, and ensure effective governance at the state level.

• Any amendment to the State List requires the approval of the state legislature concerned and does not require the consent of the Parliament, providing states with autonomy in making changes to these subjects.

Concurrent List:

• The Concurrent List consists of subjects on which both the central government and state governments have the power to legislate, such as criminal law, marriage and divorce, bankruptcy and insolvency, education, forests, and more.

• Both the central and state governments can make laws, regulate, and govern the subjects mentioned in the Concurrent List simultaneously, subject to certain limitations and guidelines.

• In case of a conflict between central and state laws on Concurrent List subjects, the law made by the central government prevails, provided it receives the President's assent.

• Any amendment to the Concurrent List requires the approval of the Parliament, and state legislatures can also make laws on these subjects unless they conflict with existing central laws.

Q42. Answer: (b) 1801

The correct answer is 1801.

Key Points

• The Subsidiary Alliance had been imposed on Awadh in 1801.

• By the terms of the Alliance, the Nawab had to disband its military force and allow the British to position its troops within the kingdom and act in accordance with the advice of the British Resident who was now to be attached to the court.

• The Nawab of Awadh became increasingly dependent on the British to maintain law and order in the kingdom.

• Subsidiary Alliance was a system devised by Lord Wellesley in 1798.

• Thus, we can say that the Subsidiary Alliance was imposed on Awadh in 1801.

Additional Information

• The Subsidiary Alliance was a policy adopted by the British East India Company in India during the 18th and 19th centuries.

• It was a political and military strategy that allowed the British to exert control over the Indian princely states without directly annexing them.

• Under the Subsidiary Alliance system, the British would offer protection and support to a princely state in exchange for specific privileges and control.

• The princely state was required to accept a British subsidiary force stationed within its territory.

• This force was responsible for the defence of the state, but it also served as a means of British influence and control.

• In addition to hosting the subsidiary force, the princely state had to enter into a treaty with the British East India Company.

• The terms of the treaty often included provisions such as:

• Non-interference:

• The princely state was not allowed to form alliances with other Indian rulers or foreign powers without the consent of the British.

• Acceptance of a British Resident:

• A British official called the Resident would be stationed at the court of the princely state.

• The Resident served as an advisor to the ruler and oversaw the state's affairs.

• This gave the British a direct role in the internal administration of the princely state.

• Surrender of control over foreign affairs:

• The princely state had to surrender its control over matters related to foreign policy to the British.

• The British would represent the princely state in any dealings with other powers.

• Financial obligations:

• The princely state was required to pay for the maintenance of the subsidiary force and other expenses incurred by the British.

• This often led to a heavy financial burden on the princely states, as they had to contribute a significant portion of their revenue to the British.

Q43. Answer: (a) Los Angles

The correct answer is the Los Angles

Key Points:2028 Summer Olympic Games

• The United States of America will host the 2028 Summer Olympic Games.

• The 2028 Summer Olympics, officially known as the Games of the XXXIV Olympiad, and commonly known as LA28, is a forthcoming international multi-sport event that is scheduled to take place from July 21 to August 6, 2028, in Los Angeles, California, United States.

• It will be the first Summer Games to be held in the US since the 1996 Summer Olympics in Atlanta, Georgia, and the first Olympics in the US since the 2002 Winter Olympics in Salt Lake City, Utah.

Important Points:

• The 2024 Summer Olympics will take place in Paris, France from July 26 to Aug. 11.

• According to the official website for the Paris Olympics, new sports that will be introduced during these games include breaking (also known as breakdancing) and sport climbing.

• The 2032 Summer Olympics will take place in Brisbane, Australia from July 23 to Aug. 8.

• Events will be hosted across Queensland, including the Gold Coast.

Additional Information:Tokyo 2021 Olympics:

• The 2021 summer Olympics is an international sports event that will be held from 23 July to 8 August 2021, in the city of Tokyo, Japan.

• As the name suggests, this summer Olympics were originally intended to be held from 24 July to 9 August 2020, but due to the ongoing Covid-19 Pandemic, Tokyo 2020 Olympics was postponed.

Q44. Answer: (d) meanders

The correct answer is meanders

Key Points:

• The formation of successive bends of reverse order of a river may lead to the formation of a complete S curve called Meanders.

• When consecutive curves of reverse order connected with short straight reaches called Crossings are developed in a river reach, the river is stated to be a Meandering river.

• The formation of meanders is due to both deposition and erosion and meanders gradually migrate downstream.

• The force of the water erodes and undercuts the river bank on the outside of the bend where water flow has most energy due to decreased friction.

• This will form a river cliff.

• On the inside of the bend, where the river flow is slower, the material is deposited, as there is more friction.

• This will form a slip-off slope.

• Over time the horseshoe becomes tighter until the ends become very close together.

• As the river breaks through, e.g. during a flood when the river has a higher discharge and more energy, and the ends join, the loop is cut-off from the main channel.

• The cut-off loop is called an oxbow lake.

Q45. Answer: (d) Growth, modernisation, self-reliance and equity

Correct Answer Growth, modernisation, self-reliance and equity

Key PointsPlanning Commission:

• The Planning Commission was formed in 1950 with prime minister Jawaharlal Nehru as its Chairperson.

• It determined the type of plan that would be best for faster economic development.

• The chairperson of the Planning Commission is the Prime minister of India.

Functions:

• Assessment of material, capital, and human

• Formulation of a plan for their most effective and balanced

• Determination of priorities and allocation of resources.

Five-Year Plans:

• Planning Commission had suggested that India should prepare a plan covering a period of five years.
• That is why India's development plans are termed as Five Year Plans.
• It has four main objectives: Growth, Modernization, self-reliance and equity.

Q46. Answer: (a) Meghalaya

The Correct Answer is Meghalaya.

Key Points:

• Living root bridges are a form of tree shaping mostly found in the southern part of Meghalaya.
• Living root bridges (also known as Jing Kieng Jri) are aerial bridges.
• They are built by weaving and manipulating the roots of the Indian rubber tree.
• The longest-known example of a living root bridge is near the town of Pynursla, Meghalaya.

Q47. Answer: (a) Warren Hastings

Correct Answer Warren Hasting

Key Points:

• Warren Hastings was the first Governor-General of Bengal in 1774 till he resigned in the year 1785.
• He was a writer or can be called a clerk in the early stages of his career in the East India Company at Calcutta in 1750.
• He became the British resident at Murshidabad, the capital of Bengal in the year 1758 after Mir Jafar was appointed as the Nawab after the Battle of Plassey.
• During his tenure, the first Anglo-Maratha and the second Anglo-Mysore and wars were fought.
• In the year 1773, the Regulating Act of 1773 was passed during his period.
• He gave support to Sir William Jones in the formation of the Asiatic Society of Bengal in 1785.
• Warren Hastings abolished the dual system of government which was started by Robert Clive.

Hence, the first Governor General of Bengal was Warren Hasting.

Additional InformationWilliam Bentinck (1828-35):

• Appointed as the Governor of Madras in 1803.
• He was recalled to Britain after the Vellore mutiny in 1806.
• Cause of Vellore mutiny: Ban on putting caste symbols on forehead & wear of earrings by soldiers.
• On 04/12/1829, he issued a Regulation XVII prohibiting the practice of Sati or widow burning.
• Suppression of thugs was undertaken by Colonel Sleeman from 1830 under his reign.
• He took effective measures against female infanticide & made it a punishable offence.
• He prohibited child sacrifice at Saugar island in Bengal.
• He abolished the provincial court of appeal established by Cornwallis.
• He introduced local languages in lower courts & English in higher courts instead of Persian.
• He introduced the Mahalwari Land Revenue System in UP, Central Province, Punjab.

Charles Metcalfe

• Sir Charles Metcalfe (1835-1836) is known as the press liberator.
• The Governor-General of India has been dubbed the "Liberator of the Indian Press" because he lifted restrictions on press freedom.

John Shore (1793-1798) -

• John Shore, also known as Lord Teignmouth, was the third Governor-General of India, serving from 1793 to 1798.
• He continued the administrative and judicial reforms initiated by his predecessors and played an important role in the establishment of the Asiatic Society of Bengal.

Q48. Answer: (c) Gujarat

The correct answer is Gujarat.

Key Points:Garba:

• It is a popular folk dance of Gujarat.
• It is performed throughout nine nights of Navaratri.
• It is performed by the womenfolk of Gujarat.
• Garba danced around the symbol to honour the fact that all humans have the Divine energy of Devi within them.

Important Points:Some other common folk Dances are -

Folk Dance	State\Place

Rouff	Jammu and Kashmir
Bhangra	Punjab
Garba	Gujarat
Ras Leela	Uttar Pradesh
Ghoomar	Rajasthan
Bihu	Assam
Lavani	Maharashtra
Raut Nacha	Chattisgarh
Ghumura	Odisha
Pulikali	Kerala
Karakattam	Tamil Nadu
Dollu Kunitha	Karnataka
Veernatyam	Andhra Pradesh
Nati	Himachal Pradesh

Q49. Answer: (c) Static > Sliding > Rolling

Correct Answer Static > Sliding > Rolling

Key PointsConcept:

• The opposing forces that are experienced by objects when moving against each other are termed friction.

• Static friction(Fs): The opposing force that is active when the body tends to move over the surface, but the actual motion is yet not started.

• Kinetic friction or Sliding friction (Fk): Sliding friction is an opposing force that is active when the body is actually moving on another surface.

• Rolling friction is friction that acts on objects when they are rolling over a surface. Rolling friction is much weaker than sliding friction and static friction.

Explanation:

• Static friction, sliding friction, and rolling friction are the resistances experienced by stationary, moving, and rolling objects respectively.

• μRolling < μSliding < μStatic

• Rolling friction on the other hand provides the least resistance as the contact time and contact area between the two surfaces is the least.

• Therefore, static friction is the strongest form of frictional force followed by sliding friction which is weaker than static but stronger than rolling friction.

Therefore Static friction > Sliding friction > Rolling friction

Q50. Answer: (a) 36^(th)

Correct Answer 36th

Key PointsThe Constitution (36th Amendment) Act, 1975:

• The act provides that the Legislative assembly of Sikkim shall not consist of more than 32 members.

• The Assembly of Sikkim unanimously adopted a resolution on 10th April 1974 with 32 members.

• It is then proposed to include Sikkim as a full-fledged state in the First Schedule to the Constitution.

• And allot to Sikkim one seat in the council of states and one seat in the House of People.

• It is also proposed to insert a new article containing the provisions considered necessary to meet the special circumstances and needs of Sikkim.

• This Act made Sikkim a full-fledged state of the Indian Union and Omitted the Tenth schedule.

Additional Information30th Constitutional amendment act:

• Abolished provision to appeal Supreme Court on a civil case related to a certain amount.

The 42nd Amendment of the Constitution of India was enacted in the year 1976:

• It is officially known as the Constitution Act, 1976.

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• It was enacted during the Emergency by the Indian National Congress Head Indira Gandhi.

• It is considered as the most controversial Constitutional Amendments in Indian history.

• Added three new Directive Principles viz., equal justice and free legal aid, the participation of workers in the management of industries and protection of the environment, forests, and wildlife.

• Provided for the creation of the All-India Judicial Service.

Shortened the procedure for disciplinary action by taking away the right of a civil servant to make representation at the second stage after the inquiry (i.e., on the penalty proposed).

• It is often called a "mini-Constitution".

The Constitution (51st Amendment) Act, 1984:

• It was enacted to provide for reservation of seats in the house of the people for scheduled tribes in Nagaland, Meghalaya, Mizoram and Arunachal Pradesh and also for reservation of seats for scheduled tribes in the legislative assemblies of Nagaland and Meghalaya by suitably amending articles 330 and 332.

• The number of seats reserved for Scheduled Castes and Scheduled Tribes in the Legislative Assembly of any State under article 332 of the constitution will have to be determined having regard to the provisions of Article 332 (3) of the Constitution.

Q51. Answer: (d) 9 m/s

Shortcut Trick

Speed of the first train = Distance ÷ Time = 300 ÷ 20 = 15 m/s

Relative speed of both trains (opposite direction) = Total Distance ÷ Time = (300 + 300) ÷ 25 = 600 ÷ 25 = 24 m/s

Speed of the second train = Relative Speed − Speed of first train = 24 − 15 = 9 m/s

Therefore The correct answer is 9 m/s.

Alternate Method

Given:

Length of Train 1 (L1) = 300 m

Time to cross a tree = 20 s

Length of Train 2 (L2) = 300 m

Time to cross each other = 25 s

Formula Used:

Speed = Distance ÷ Time

Relative speed in opposite direction = S1 + S2

Calculations:

=> Speed of Train 1 (S1) = 300 ÷ 20 = 15 m/s

=> Total distance to cross each other = L1 + L2 = 300 + 300 = 600 m

=> Relative speed = Total Distance ÷ Crossing Time

=> S1 + S2 = 600 ÷ 25

=> 15 + S2 = 24

=> S2 = 24 − 15

=> S2 = 9 m/s

Therefore The correct answer is 9 m/s.

Additional Information

Relative Speed in Same Direction

When two trains travel in the same direction, their relative speed is the difference of their individual speeds: S = S1 − S2 (where S1 > S2).

Relative Speed in Opposite Direction

When two trains travel towards each other, their relative speed is the sum of their individual speeds: S = S1 + S2.

Crossing a Stationary Object

If a train crosses a pole, standing man, or tree, the distance covered is equal to the length of the train alone: D = L1.

Crossing a Platform/Bridge

If a train crosses a platform or another train, the total distance covered is the sum of their lengths: D = L1 + L2.

Q52. Answer: (c) Only II

Calculation:

The rate of population of S1 in year Y1 = 300

The rate of population of S2 in year Y1 = 600
Ratio = 1: 2
Statement I is wrong
The population of S1 in year Y3 = 350
The population of S2 in year Y3 = 250
Percentage = 350/250 × 100 = 140%
Statement II is correct.
Therefore Option 3 is the correct answer.

Q53. Answer: (b) 36 cm

Given Data:
YX = 12 cm.
Formula:
The centroid (Y) divides the median (MX) in the ratio 2 : 1.
Solution:
=> Length of MY = 2 × YX = 2 × 12 = 24 cm.
=> Length of MX = MY + YX = 24 + 12 = 36 cm.
Therefore, the length of MX is 36 cm.

Q54. Answer: (c) Only I

Calculation:
Statement I:
=> 1/2+1/6+1/12=3/4
=> (6 + 2+1)/12=3/4
=> 9/12=3/4
=> 3/4=3/4
LHS = RHS
Statement I is correct.
Statement II:
=> (10 + 5+3)/60=3/5
=> 18/60=3/5
=> 3/10=3/5
LHS ≠ RHS
Statement II is wrong.
Therefore Option 1 is the correct answer.

Q55. Answer: (b) 13√22/44

Given Data:
cos θ = 9/13
Formula:
$Cosec^2\theta = 1 + cot^2\theta$
Solution:
=> Sin θ = √(1 - $cos^2\theta$)
=> Sin θ = √(1 - $(9/13)^2$)
=> Sin θ = √(1 - 81/169)
=> Sin θ = √(88/169) = 2√22/13
=> Cosec θ = 1/sin θ = 13/2√22 = 13√22/44
Therefore, the value of cosec θ is 13√22/44.

Q56. Answer: (b) 22 cm^2

Shortcut Trick
Ratio of Length to Breadth = 3 : 1 => Sum = 4 units.
Given 4 units = 4 cm => 1 unit = 1 cm, so L = 3 cm and B = 1 cm.

Height (H) = 4 ÷ 2 = 2 cm.
Total Surface Area = 2(LB + BH + HL) = 2(3×1 + 1×2 + 2×3) = 2 × 11 = 22 cm².
Therefore The correct answer is 22 cm².
Alternate Method
Given:
=> Sum of Length (L) and Breadth (B) = 4 cm
=> Length (L) = 3 × Breadth (B)
=> Height (H) = 1/2 × (L + B)
Calculations:
=> L + B = 4
=> 3B + B = 4
=> 4B = 4 => B = 1 cm
=> L = 3 × 1 = 3 cm
=> H = 4 ÷ 2 = 2 cm
=> Total Surface Area (TSA) = 2(LB + BH + HL)
=> TSA = 2 × (3 × 1 + 1 × 2 + 2 × 3)
=> TSA = 2 × (3 + 2 + 6) = 2 × 11 = 22 cm²
Therefore The correct answer is 22 cm².
Additional Information
Volume of a Cuboid
The total space occupied by a cuboid is given by the formula: Volume = L × B × H.
Lateral Surface Area
The area of the four vertical faces of the cuboid is: LSA = 2 × H × (L + B).
Diagonal of a Cuboid
The length of the longest rod that can be placed inside a cuboid is: D = √(L² + B² + H²).

Q57. Answer: (a) 3 : 2

Shortcut Trick
Find the Cost Price (CP) of the mixture: CP = 80 × (100 / 125) = Rs. 64.
Apply the Alligation Rule directly with the three Cost Prices (60, 70, and 64).
Ratio = (70 − 64) : (64 − 60) = 6 : 4 = 3 : 2.
Therefore The correct answer is 3 : 2.
Alternate Method
Given:
Cost Price of first variety (CP1) = Rs. 60 per kg
Cost Price of second variety (CP2) = Rs. 70 per kg
Selling Price of mixture (SP_(mix)) = Rs. 80 per kg
Profit percentage = 25%
Formula Used:
Cost Price = [Selling Price × 100] / [100 + Profit %]
Alligation Ratio (Cheaper : Dearer) = (CP_(Dearer) − CP_(Mean)) : (CP_(Mean) − CP_(Cheaper))
Calculations:
=> Mean CP = [80 × 100] / [100 + 25]
=> Mean CP = [80 × 100] / 125
=> Mean CP = 80 × (4 / 5)
=> Mean CP = 16 × 4 = Rs. 64 per kg
=> Using Alligation method:
=> (Quantity of Rs. 60 tea) / (Quantity of Rs. 70 tea) = (70 − 64) / (64 − 60)
=> Ratio = 6 / 4 = 3 / 2
Therefore The correct answer is 3 : 2.
Additional Information
Rule of Alligation

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It is used to find the ratio in which two ingredients at given prices must be mixed to produce a mixture of a desired Mean Price. All values must be in the same unit (all CP or all SP).

Mean Price Calculation

The Mean Price is always the Cost Price of the mixture. If the selling price and profit percentage are given, the CP must be calculated before applying alligation.

Profit and Loss Relation

When profit occurs, SP = CP × (1 + P/100). When loss occurs, SP = CP × (1 − L/100).

Q58. Answer: (b) 60

Given Data:

Average marks of 120 students = 50.

Average marks of passed students = 70.

Average marks of failed students = 30

Formula:

Total marks = number of students * average marks

Solution:

=> Total marks of 120 students = 120 * 50 = 6000.

=> Let the number of students who passed be x.

=> Total marks of passed students + total marks of failed students = Total marks of all students.

=> 70x + 30(120-x) = 6000.

=> 40x = 2400.

=> x = 2400 / 40 = 60.

Therefore, the number of students who passed the examination is 60.

Q59. Answer: (d) 30 cm

Given data:

OY = 50 cm

XY = 40 cm

Concept:

In a circle, the radius drawn to the point of tangency is perpendicular to the tangent. This forms a right-angled triangle with the radius, the line segment from the center circle to the external point, and the line segment from the external point to the point of tangency.

Solution:

By the problem, OY is the hypotenuse and OX is one of the sides of a right-angled triangle OXY.

Use Pythagorean theorem to find the length of OX, which is the radius of the circle.

=> $OY^2 = OX^2 + XY^2$

=> $OX^2 = OY^2 - XY^2$

=> $OX^2 = (50\ cm)^2 - (40\ cm)^2$

=> $OX^2 = 2500\ cm^2 - 1600\ cm^2 = 900\ cm^2$

=> $OX = \sqrt{900\ cm^2} = 30\ cm$

Therefore, the radius of the circle is 30 cm.

Q60. Answer: (c) Rs. 1,000

Shortcut Trick

Difference in the given discount percentages = 9% − 6% = 3%

The difference in profit corresponds exactly to the difference in the discount amount.

=> 3% of Marked Price = Rs. 30

=> Marked Price = 30 × (100 ÷ 3) = 1000

Therefore The correct answer is Rs. 1000.

Alternate Method

Given:

Initial Discount = 9%

New Discount = 6%

Increase in profit = Rs. 30

Formula Used:

Selling Price (SP) = Marked Price (MP) − Discount

Profit = Selling Price − Cost Price (CP)

MP

SP2 (6% off)

SP1 (9% off)

6% off

3% diff = Rs. 30

9% Total Discount

Calculations:

=> Let Marked Price = MP and Cost Price = CP

=> Selling Price in Case 1 (SP1) = MP − 9% of MP = 0.91 MP

=> Profit in Case 1 = 0.91 MP − CP

=> Selling Price in Case 2 (SP2) = MP − 6% of MP = 0.94 MP

=> Profit in Case 2 = 0.94 MP − CP

=> Difference in profit = Profit in Case 2 − Profit in Case 1

=> (0.94 MP − CP) − (0.91 MP − CP) = 30

=> 0.03 MP = 30

=> MP = 30 ÷ 0.03 = 1000

Therefore The correct answer is Rs. 1000.

Additional Information

Marked Price and Discount

Discount is an allowance given to the buyer on the catalog price. It is always calculated on the Marked Price (MP) of an article. Selling Price = MP − Discount.

Successive Discounts

If two successive discounts of a% and b% are given, the equivalent single effective discount is calculated using the formula: (a + b − (a × b) ÷ 100)%.

Profit and Loss Baseline

Unlike discounts which are based on Marked Price, profit or loss is inherently always calculated on the Cost Price (CP) unless specifically stated otherwise.

Q61. Answer: (b) $(p^2 + q^2 - 2)/2$

Given:

sin m + sin n = p

cos m + cos n = q

Concept Used:

$(a + b)^2 = a^2 + b^2 + 2ab$

Calculation:

sin m + sin n = p

Square both sides

$(\sin m + \sin n)^2 = p^2$

$1 - \cos2\ m + 1 - \cos2\ n + 2 \times \sin m \times \sin n = p^2$ .....(i)

cos m + cos n = q

Square both sides

$\cos2\ m + \cos2\ n + 2 \times \cos m \times \cos n = q2$.....(ii)

Add equation (i) and (ii)

$2 + 2 \times \sin m \times \sin n + 2 \times \cos m \times \cos n = q^2 + p2$

$2(\sin m \times \sin n + \cos m \times \cos n) = q2 + p^2 - 2$

$\sin m \times \sin n + \cos m \times \cos n = (q2 + p2 - 2)/2$

Therefore Option 2 is the correct answer.

Q62. Answer: (a) 5√5 cm

Given data:

Median NA = 15 cm

Median OB = 15 cm

Medians intersect at right angles at point S.

Concept:

The medians of a triangle intersect each other at the centroid, which divides each median in the ratio 2:1.

Solution:

As S is the point where the medians intersect, it divides each median in a 2:1 ratio, with the longer section towards the midpoint of the side. Therefore, the length of OS (longer

section of OB) is 2/3 × 15 = 10 cm, and SA (shorter section of NA) is 1/3 × 15 = 5 cm.

Since the medians intersect at right angles, by the Pythagorean theorem, we can find OA as follows:

=> $OA^2 = OS^2 + SA^2$

=> $OA^2 = (10\ cm)^2 + (5\ cm)^2$

=> $OA^2 = 100\ cm^2 + 25\ cm^2 = 125\ cm^2$

=> $OA = \sqrt{125}\ cm^2$

=> $OA = 5\sqrt{5}$ cm.

Therefore, the length of OA is 5√5 cm.

Q63. Answer: (b) 10

Shortcut Trick

In Simple Interest, the interest earned is directly proportional to the time period.

Direct Formula: (n1 − 1) ÷ t1 = (n2 − 1) ÷ t2

Given: n1 = 4, t1 = 5 years, t2 = 15 years.

=> (4 − 1) ÷ 5 = (n2 − 1) ÷ 15

=> 3 ÷ 5 = (n2 − 1) ÷ 15 => n2 − 1 = 9 => n2 = 10

Therefore The correct answer is 10 times.

Alternate Method

Given:

A sum becomes 4 times of itself in 5 years at simple interest.

Formula Used:

Simple Interest (SI) = (P × R × T) ÷ 100

Amount (A) = P + SI

P

4P

7P

10P

0 Yrs

5 Yrs

10 Yrs

15 Yrs

• 3P (SI)

• 3P (SI)

• 3P (SI)

Total Amount at 15 Years = 10P (10 times)

Calculations:

=> Let the principal sum be P.

=> Amount after 5 years = 4P

=> Simple Interest earned in 5 years = 4P − P = 3P

=> Rate of Interest (R) = (SI × 100) ÷ (P × T)

=> R = (3P × 100) ÷ (P × 5) = 60%

=> Now, we need to find the amount after T = 15 years at R = 60%:

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=> SI = (P × 60 × 15) ÷ 100

=> SI = 900P ÷ 100 = 9P

=> New Amount = Principal + SI = P + 9P = 10P

=> Thus, the sum will become 10 times of itself.

Therefore The correct answer is 10 times.

Additional Information

Simple Interest Constant Growth

Unlike compound interest, simple interest grows by a constant amount every year. If a sum earns 3P interest in 5 years, it will earn exactly 3P interest in every subsequent 5-year period.

Direct Formula for Multipliers

When a sum becomes n1 times in t1 years and n2 times in t2 years at simple interest, use the relation: (n1 − 1) ÷ t1 = (n2 − 1) ÷ t2.

Principal and Amount Relation

The amount (A) is the sum of Principal (P) and Simple Interest (SI). Always subtract 1 from the number of times it becomes to get the interest multiplier: SI = (n − 1)P.

Q64. Answer: (b) 60 degree

Given Data:

angle POR = 120 degree

Formula:

The incenter of a triangle is equally inclined to all the sides of the triangle.

Angle at incentre = 90° + vertex angle/2

Solution:

=> angle POR = 120°

=> angle POR = 90° + angle PQR/2

=> 120° = 90 + angle PQR/2

=> angle PQR/2 = 120 - 90

=> angle PQR = 30° × 2 = 60°

Hence, ΔPQR is 60°.

Q65. Answer: (a) 2

Shortcut Trick

The sum of digits must be a multiple of 9.

Sum of digits of 84pp153p = 8 + 4 + p + p + 1 + 5 + 3 + p = 21 + 3p.

Check for the smallest value of p from options: If p = 2, sum = 21 + 3(2) = 27.

Since 27 is divisible by 9, the least value of p is 2.

Therefore The correct answer is 2.

Alternate Method

Given: The number is 84pp153p and it is divisible by 9.

Formula Used: For a number to be divisible by 9, the sum of its digits must be divisible by 9.

=> Sum of digits = 8 + 4 + p + p + 1 + 5 + 3 + p

=> Sum = 21 + 3p

=> For the number to be divisible by 9, (21 + 3p) should be 27, 36, 45, ...

=> Case 1: 21 + 3p = 27

=> 3p = 27 − 21

=> 3p = 6

=> p = 2

=> Case 2: 21 + 3p = 36

=> 3p = 15 => p = 5

=> Case 3: 21 + 3p = 45

=> 3p = 24 => p = 8

=> The possible values for p are 2, 5, and 8. The least possible value is 2.

Therefore The correct answer is 2.

Additional Information

Divisibility Rule of 3

A number is divisible by 3 if the sum of its digits is divisible by 3.

Divisibility Rule of 9

A number is divisible by 9 if the sum of its digits is divisible by 9. Every number divisible by 9 is also divisible by 3.

Divisibility Rule of 11

A number is divisible by 11 if the difference between the sum of digits at odd places and the sum of digits at even places is either 0 or a multiple of 11.

Q66. Answer: (a) 7

Given Data:

$m^2 - n^2 = 21$

$m - n = 3$

Formula:

The difference of squares: $a^2 - b^2 = (a+b)(a-b)$

Solution:

=> $m^2 - n^2 = (m+n)(m-n) = 21$.

=> As $m - n = 3$, $m + n = 21/3 = 7$.

Therefore, the value of m + n is 7.

Q67. Answer: (a) 68 percent

Shortcut Trick

Assume Q's Income = 100 → Q's Savings = 20 → Q's Expenditure = 80.

P's Income = 150% of 100 = 150.

P's Expenditure = 60% of 80 = 48.

P's Savings = 150 − 48 = 102.

P's Saving Percentage = (102 ÷ 150) × 100 = 68%.

Therefore The correct answer is 68%.

Alternate Method

Given:

Income of P = 150% of Income of Q

Expenditure of P = 60% of Expenditure of Q

Savings of Q = 20% of his Income

Calculations:

Let Income of Q = 100x

=> Savings of Q = 20% of 100x = 20x

=> Expenditure of Q = 100x − 20x = 80x

=> Income of P = 150% of 100x = 150x

=> Expenditure of P = 60% of 80x = 48x

=> Savings of P = Income of P − Expenditure of P

=> Savings of P = 150x − 48x = 102x

=> P's Savings Percentage = (102x ÷ 150x) × 100

=> P's Savings Percentage = (102 ÷ 1.5) = 68%

Therefore The correct answer is 68%.

Additional Information

Basic Income Formula

Income = Expenditure + Savings. This is the fundamental equation for all budget-related problems.

Savings Percentage

Savings % = (Savings ÷ Income) × 100. This measures what portion of the total earnings is retained after expenses.

Ratio of Income & Expenditure

If the ratio of Income, Expenditure, and Savings is known for one person, it can be scaled using multipliers to compare with another person.

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Q68. Answer: (a) 1536

Given Data:

a + b = 24

8ab = 256

Formula:

The square of the sum of two numbers is equal to the sum of their squares plus twice their product $(a+b)^2 = a^2 + b^2 + 2ab$

Solution:

=> ab = 256/8 = 32.

=> $(a+b)^2 = 24^2 = 576$.

=> $a^2 + b^2 = (a+b)^2 - 2ab = 576 - 64 = 512$.

=> $3a^2 + 3b^2 = 3(a^2 + b^2) = 3*512 = 1536$.

Therefore, the value of $3a^2 + 3b^2$ is 1536.

Q69. Answer: (b) 180%

Given:

Notebooks sold = 14

Profit = Selling price of 9 notebooks

Formula Used:

Selling price = Cost price + Profit

Profit% = Profit/(Cost Price) × 100

Calculation:

Let assume that the selling price of 1 notebook is 'SP'

And cost price of 1 notebook is 'CP'

The selling price of 14 notebooks = 14 SP

The cost price of 14 notebooks = 14 CP

According to the question:

Profit = Selling Price - Cost Price

=> 9 SP = 14 SP - 14 CP

=> CP/SP = 5/14

CP = 5 units

SP = 14 units

Profit = 9 unit

Now,

=> Profit% = 9/5 × 100

=> Profit% = 180%

Therefore Option 2 is the correct answer.

Q70. Answer: (c) 2020

Calculation:

Production in company Z is more to that of company X only in 2018 and 2020.

Percentage of production in company Z to that of company X in 2018 = 65/45 × 100 = 144.44

=> 44.44 % more

Percentage of production in company Z to that of company X in 2020 = 65/50 × 100 = 130

=> 30 % more

Total production in company Z is 30 percent more than that of company X in year 2020.

Q71. Answer: (c) 64 : 73

Calculation:

The average production of Company O in the period 2019-2021 = (15 + 18 + 31)/3 = 64/3

The average production of Company M in the period 2019-2021 = (21 + 33 + 19)/3 = 73/3

Ratio = 64/3 : 73/3 = 64 : 73

Therefore Option 3 is the correct answer.

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Q72. Answer: (a) Only II

Calculation:

Total number of male teachers in all 5 schools = 260 + 280 + 270 + 250 + 230 = 1290

Total number of female teachers in all 5 schools = 280 + 270 + 220 + 210 + 230 = 1210

Percentage = 1290/1210 × 100 = 106.61

Statement I is correct

The number of female teachers in school E = 280

The number of male teachers in school I = 230

Percentage = 280/230 × 100 = 121.73%

means 21.73% more.

Statement II is wrong.

Therefore Option 1 is the correct answer.

Q73. Answer: (a) 14 days

Shortcut Trick

Total Work = LCM(30, 15) = 30 units

Efficiency of A = 30 ÷ 30 = 1 unit/day, B = 30 ÷ 15 = 2 units/day

Work done by B in 8 days = 8 × 2 = 16 units

Remaining work = 30 − 16 = 14 units

Time taken by A alone = 14 ÷ 1 = 14 days

Therefore The correct answer is 14 days.

Alternate Method

Given:

Time taken by A alone = 30 days

Time taken by B alone = 15 days

B worked alone for 8 days.

Formula Used:

Total Work = Time × Efficiency

Person	Days	Total Work	Efficiency
A	30	30	1
B	15	2	

Calculations:

=> Work done by B in 8 days = Efficiency of B × Days

=> Work done by B = 2 × 8 = 16 units

=> Remaining work = Total work − Work done by B

=> Remaining work = 30 − 16 = 14 units

=> Time taken by A to complete remaining work = Remaining work ÷ Efficiency of A

=> Time taken by A = 14 ÷ 1 = 14 days

Therefore The correct answer is 14 days.

Additional Information

Combined Work Formula

If A can do a piece of work in x days and B can do it in y days, then both working together can complete it in (x × y) ÷ (x + y) days.

Work and Wages

Wages are distributed in direct proportion to the amount of work done by each individual. If they work for the same duration, wages are distributed in the ratio of their efficiencies.

Alternate Day Work

When two people work on alternate days, calculate the total work done in a 2-day cycle. Then multiply this cycle to get as close to the total work as possible without exceeding it.

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Q74. Answer: (b) 0

Shortcut Trick

Equate all parts to a constant k: 6^x = 3^y = 2^z = k.

Express bases in terms of k: 6 = k^(1/x), 3 = k^(1/y), and 2 = k^(1/z).

Use the mathematical relation: 6 = 3 × 2.

Substitute k: k^(1/x) = k^(1/y) × k^(1/z) => k^(1/x) = k^((1/y + 1/z)).

Comparing powers: 1/x = 1/y + 1/z => 1/y + 1/z − 1/x = 0.

Therefore The correct answer is 0.

Alternate Method

Given: 6^x = 3^y = 2^z

Formula Used: If a^m = b, then a = b^(1/m); and a^m × aⁿ = a^(m+n).

=> Let 6^x = 3^y = 2^z = k

=> 6 = k^(1/x) --- (i)

=> 3 = k^(1/y) --- (ii)

=> 2 = k^(1/z) --- (iii)

=> We know that 6 = 3 × 2

=> Substituting the values from (i), (ii), and (iii):

=> k^(1/x) = k^(1/y) × k^(1/z)

=> k^(1/x) = k^((1/y + 1/z))

=> 1/x = 1/y + 1/z

=> 1/y + 1/z − 1/x = 0

Therefore The correct answer is 0.

Additional Information

Product Rule of Exponents

When multiplying two powers with the same base, add the exponents: a^m × aⁿ = a^(m+n).

Power Conversion

To isolate a base, move the exponent to the other side as its reciprocal: if x^a = y, then x = y^(1/a).

Equality of Bases

If a^m = aⁿ and a ≠ 1, 0, or −1, then the exponents must be equal: m = n.

Q75. Answer: (d) (cosec θ + cot θ)

Shortcut Trick

Put a specific value for θ, say θ = 45°, where cot 45° = 1 and cosec 45° = √2.

Expression = (1 + √2 − 1) / (1 − √2 + 1) = √2 / (2 − √2)

Rationalize: √2 / [√2(√2 − 1)] = 1 / (√2 − 1) = √2 + 1.

Evaluating (cosec θ + cot θ) at 45°: √2 + 1. Both values match perfectly.

Therefore The correct answer is (cosec θ + cot θ).

Alternate Method

Given: The trigonometric expression (cot θ + cosec θ − 1) / (cot θ − cosec θ + 1).

Formula Used: We use the fundamental trigonometric identity: cosec²θ − cot²θ = 1 and the algebraic identity a² − b² = (a − b)(a + b).

=> [(cot θ + cosec θ) − (cosec²θ − cot²θ)] / (cot θ − cosec θ + 1)

=> [(cosec θ + cot θ) − (cosec θ − cot θ)(cosec θ + cot θ)] / (cot θ − cosec θ + 1)

=> {(cosec θ + cot θ) [1 − (cosec θ − cot θ)]} / (cot θ − cosec θ + 1)

=> {(cosec θ + cot θ) [1 − cosec θ + cot θ]} / (1 − cosec θ + cot θ)

=> Cancelling the common term (1 − cosec θ + cot θ) from numerator and denominator:

=> cosec θ + cot θ

Therefore The correct answer is (cosec θ + cot θ).

Additional Information

Trigonometric Identities

Standard identities: sin²θ + cos²θ = 1, 1 + tan²θ = sec²θ, and 1 + cot²θ = cosec²θ.

Reciprocal Property

The difference of squares yields (cosec θ − cot θ) = 1 / (cosec θ + cot θ).

Symmetry in Simplification

Similar expressions involving (tan θ + sec θ − 1) / (tan θ − sec θ + 1) simplify to (sec θ + tan θ).

Q76. Answer: (d) Explicate

The solution is in Hindi. Read it online.

Q77. Answer: (b) An animal that carries luggage

The solution is in Hindi. Read it online.

Q78. Answer: (d) The criminal has been apprehended by the police.

The correct answer is 'Option 4'.

Key Points

• The correct passive form of the sentence "The police have apprehended the criminal." is "The criminal has been apprehended by the police."

• In converting an active sentence to its passive form, the object in the active sentence becomes the subject in the passive sentence.

• The verb "have apprehended" changes to "has been apprehended" in the passive voice to maintain the present perfect tense.

• The original subject "the police" becomes the agent of the action, introduced by the preposition "by".

Therefore, the correct sentence is: 'The criminal has been apprehended by the police.'

Additional Information

• Let's go through each of the options:

• "The criminal had been apprehended by the police." Incorrect because the verb tense has changed from present perfect (have apprehended) to past perfect (had been apprehended).

• "The criminal had been apprehend by the police." Incorrect because of the grammar mistake in the verb form, it should be "apprehended" not "apprehend".

• "The criminal was apprehended by the police." Incorrect because this sentence is in the simple past tense, not the present perfect.

Q79. Answer: (a) QSRP

The correct answer is 'Option 1'.

Key Points

• The correct arrangement for the sentence is QSRP.

• Q. "80th birthday in February next year, Hill's"

• S. "writing has lost none of its immediate"

• R. "relevance and urgency this time focusing"

• P. "upon the impacts of county lines drug-running networks"

Therefore, the correct sentence after rearranging is: "Approaching her 80th birthday in February next year, Hill's writing has lost none of its immediate relevance and urgency this time focusing upon the impacts of county lines drug-running networks."

Q80. Answer: (c) is too much

The correct sentence is 'Option 3'.

Key Points

• The part of the sentence with an error is "is too much".

• The issue lies with the phrase "too much painful".

• In English, we don't usually use "much" with adjectives that don't have a comparative or superlative form.

• We say "too painful", not "too much painful".

Therefore, the corrected sentence should be: "Her failure in life is too painful for me."

Q81. Answer: (b) To lose one's self-control

The correct answer is 'Option 2'.

Key Points

• The idiom "To lose one's head" means "To lose one's self-control", particularly in a situation of pressure or crisis.

• It suggests a person behaving in a panicked or confused manner, rather than remaining calm and composed.

Therefore, the correct answer is: 'To lose one's self control'.

Additional Information

• Let's explain each option:

• "To reach nowhere": This phrase typically refers to making no progress or getting no results after significant effort. However, this isn't a suitable meaning for "To lose one's head".

• "To have bad memory": This phrase describes a person who tends to forget things. It doesn't fit the idiom "To lose one's head".

• "To lose the track of time": This typically describes a situation where a person becomes so engrossed in something that they don't notice how much time has passed. It doesn't align with the meaning of "To lose one's head".

Q82. Answer: (c) PRSQ

The correct answer is 'Option 3'.

Key Points

• The correct sequence of the sentence parts is PRSQ.

• Starting with 'P' sets the subject of the sentence: 'we found that thyroid hormones regulate white bar formation'.

• 'R' follows naturally from 'P' because it adds an additional detail about what the thyroid hormones are doing, i.e., 'and that a shift in hormone levels, associated with ecological'.

• 'S' continues the idea introduced in 'R' by discussing the result of the shift in hormone levels: 'differences, result in divergent colour patterns in different'.

• Finally, 'Q' closes the sentence by specifying where this phenomenon is occurring: 'sea anemone species in which the young fish is recruited'.

Therefore, the correct sentence after rearranging is: "We found that thyroid hormones regulate white bar formation and that a shift in hormone levels, associated with ecological differences, result in divergent colour patterns in different sea anemone species in which the young fish is recruited."

Q83. Answer: (d) can see

The correct answer is 'Option 4' i.e. 'Can see'.

Key Points

• The correct improvement for the sentence "I 'can sees' the mountains in the distance." would be "I 'can see' the mountains in the distance."

• The verb "see" is being used with the modal verb "can", and when a verb is used with a modal verb, it should be in its base form.

• The base form of "sees" is "see". Therefore, "I can see the mountains in the distance" is the correct usage.

Therefore, the correct sentence is: 'I can see the mountains in the distance.'

Q84. Answer: (b) least expensive

The correct answer is 'Option 2'.

Key Points

• The correct improvement for the sentence "The early morning flight is the 'lest expensive.'" would be "The early morning flight is the 'least expensive.'"

• The correct word is "least", not "lest". "Least" is used as a superlative degree of little, and it means the smallest amount or degree.

• In this context, it's used to express that the early morning flight is the cheapest among all options.

Therefore, the correct sentence is: 'The early morning flight is the least expensive.'

Q85. Answer: (a) She ordered her maid to clean the utensils properly.

The correct answer is 'She ordered her maid to clean the utensils properly'.

Key Points

• The correct indirect form of the sentence "She said to her maid, 'Clean the utensils properly.'" is "She ordered her maid to clean the utensils properly."

• In the direct sentence, the speaker is giving an order or command.

• Therefore, in the indirect form, we use the verb "ordered" to reflect this.

• We also change the sentence structure to follow the pattern: "She + ordered + her maid + to-infinitive (to clean)".

• The words inside the quotes are changed from direct speech to indirect speech without the quotes.

Therefore, the correct answer is: "She ordered her maid to clean the utensils properly."

Additional Information

• Now, let's look at the incorrect options:

• Option 2 "She commanded her maid that kindly clean the utensils properly." - this sentence is grammatically incorrect as it does

not correctly follow the pattern for reported commands. We wouldn't use "that" after "commanded" in this context.

• Option 3 "She orders her maid to clean the utensils properly." - This sentence changes the tense from past (said) to present (orders), which is not accurate for reported speech.

• Option 4 "She commands her maid that clean the utensils properly." - This is incorrect for the same reason as option 2: it incorrectly uses "that" after "commands".

Q86. Answer: (b) Fantsy

The solution is in Hindi. Read it online.

Q87. Answer: (a) I thought I was going to die.

The correct answer is 'Option 1'.

Key Points

• The sentence with no spelling error is: "I thought I was going to die."

• "I thought I was going to die." is grammatically correct with all words correctly spelled.

• The errors in the other sentences are as follows:

• "Diye" should be spelled as "die". "Diye" is not a valid English word in this context.

• "Goinng" is incorrectly spelled. The correct spelling is "going".

• "Thught" is a misspelling. The correct spelling is "thought".

• In terms of grammar and spelling, the correct sentence "I thought I was going to die." is a simple past tense sentence where the speaker is expressing a past belief or feeling that they were going to die.

Therefore, the correct answer is: 'I thought I was going to die.'

Q88. Answer: (c) Illegal

The solution is in Hindi. Read it online.

Q89. Answer: (a) Versatile

The solution is in Hindi. Read it online.

Q90. Answer: (c) Credulous

The solution is in Hindi. Read it online.

Q91. Answer: (d) reproduce on its own.

The correct answer is 'Option 4'.

Key Points

• The sentence "Bacteria are single-celled organisms that can reproduce on its own." contains an error in the part "reproduce on its own."

• The correct form should be "reproduce on their own" because "bacteria" is a plural noun.

• Using "its" for a plural subject creates a subject-pronoun disagreement, which is a grammatical error.

• "Bacteria" refers to a large group of single-celled microorganisms that can thrive in diverse environments.

• The term "bacteria" is plural; the singular form is "bacterium."

Therefore, the corrected sentence should be: "Bacteria are single-celled organisms that can reproduce on their own."

Q92. Answer: (d) Extol

The solution is in Hindi. Read it online.

Q93. Answer: (b) SPRQ

The correct answer is 'Option 2'.

Key Points

• The correct order of the sentences to form a logical and coherent paragraph is SPRQ.

• Here's why:

• S. The tale of Julius Caesar involves jealous conspirators who convince Caesar's most trusted ally Brutus to join their assassination plot against Caesar.

• This sentence sets up the overall context for the story. It introduces the main characters and the central conflict: the plot to assassinate Caesar.

• P. To stop Caesar from gaining too much power, Brutus and the conspirators kill him on the Ides of March.

• This sentence logically follows the first, describing the execution of the plot mentioned in sentence S.

• R. Mark Antony drives the conspirators out of Rome and fights them in a battle.

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• After Caesar's assassination, sentence R describes the immediate fallout: Mark Antony, another key figure in the story, reacts to Caesar's death by driving out the conspirators and engaging them in battle.

• Q. Brutus and his friend Cassius lose and kill themselves, leaving Antony to rule in Rome.

• This final sentence describes the ultimate outcome of the story: Brutus and Cassius, having been defeated, take their own lives, leaving Antony to rule Rome.

Therefore, the correct answer is: 'SPRQ'.

Q94. Answer: (a) Archive

The solution is in Hindi. Read it online.

Q95. Answer: (c) Obsolete

The solution is in Hindi. Read it online.

Q96. Answer: (b) rare

The solution is in Hindi. Read it online.

Q97. Answer: (b) major

The solution is in Hindi. Read it online.

Q98. Answer: (b) have seen

The correct answer is 'Option 2'.

Key Points

• The correct answer is "have seen".

• The context of the sentence is in the present perfect tense, which is used to express an action that happened at an unspecified time before now.

• The present perfect tense is formed with "have/has" + past participle.

• Here, the past participle of the verb "see" is "seen".

Therefore, the correct sentence is: Sudden changes in the gilts market are rare, but when they do happen it can cause major problems for certain types of pension scheme, as UK pension savers have seen recently. In addition to raising borrowing costs for the government, the market mayhem following September's mini-budget (4) _____ many pension providers to quickly cash in some of their holdings to try to weather the (5) _____.

Additional Information

• Let's now look at the other options:

• "Seen" - This is the past participle of "see", but without "have" or "has" before it, it doesn't fit the sentence grammatically.

• "Has seen" - "Has" is used for third person singular subjects. However, "UK pension savers" is plural, so "have" should be used instead of "has".

• "Did saw" - This is incorrect because "did" is the past of "do", and it should be followed by the base form of the verb, which would be "see", not "saw".

Q99. Answer: (a) forced

The correct answer is 'Option 1' i.e. 'Forced'.

Key Points

• The correct answer is "forced".

• The sentence is talking about the effect of market mayhem on pension providers.

• The impact was so great that the providers were pushed or 'forced' to quickly cash in some of their holdings to weather the situation.

Therefore, the correct sentence is: Sudden changes in the gilts market are rare, but when they do happen it can cause major problems for certain types of pension scheme, as UK pension savers have seen recently. In addition to raising borrowing costs for the government, the market mayhem following September's mini-budget forced many pension providers to quickly cash in some of their holdings to try to weather the (5) _____.

Additional Information

• Here's a look at the other options:

• "Uncontrived" means not planned or artificial. This term doesn't fit in the context of the sentence as the market mayhem indeed prompted a reaction from the pension providers.

• "Seized" generally means to take hold of suddenly or forcibly; it can also mean to take legal possession of. It doesn't make sense in this context, because the pension providers are not taking hold of anything, but are instead being caused to act in a certain way due to the market conditions.

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• "Slated" generally means scheduled or planned for a certain time. This does not fit in the context because the act of cashing in their holdings was a reaction to market conditions, not something that was scheduled or planned.

Q100. Answer: (c) storm

The correct answer is 'Option 3' i.e. 'Storm'.

Key Points

• The correct answer is "storm".

• The phrase 'to weather the storm' is a common idiom in English.

• It means to survive or get through a difficult situation or period of time.

• The sentence is talking about the market turmoil which is a difficult situation for the pension providers.

• So, the word 'storm' fits best in the context.

Therefore, the correct sentence is: Sudden changes in the gilts market are rare, but when they do happen it can cause major problems for certain types of pension scheme, as UK pension savers have seen recently. In addition to raising borrowing costs for the government, the market mayhem following September's mini-budget forced many pension providers to quickly cash in some of their holdings to try to weather the storm.

Additional Information

• Let's look at the other options:

• "Cup" generally refers to a small round container, often used for drinking. This does not fit the context.

• "Pond" refers to a small body of water. Again, this doesn't make sense in this context.

• "Soil" refers to the upper layer of earth in which plants grow, a black or dark brown material typically consisting of a mixture of organic remains, clay, and rock particles. It's not applicable in this context.

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