SSC CHSL Tier-1 2023: Official Paper (Held On: 11 Aug, 2023 Shift 1) (Previous Year Paper)

SSC Combined Higher Secondary Level (CHSL) • 2023 • 100 questions • 60 minutes • Answer key and solutions

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ENGLISH LANGUAGE

Q1. In the following number-pairs, the second number is obtained by applying certain mathematical operations to the first number. Select the set in which the numbers are related in the same way as are the numbers of the following sets.

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

(7, 336)

(9, 722)

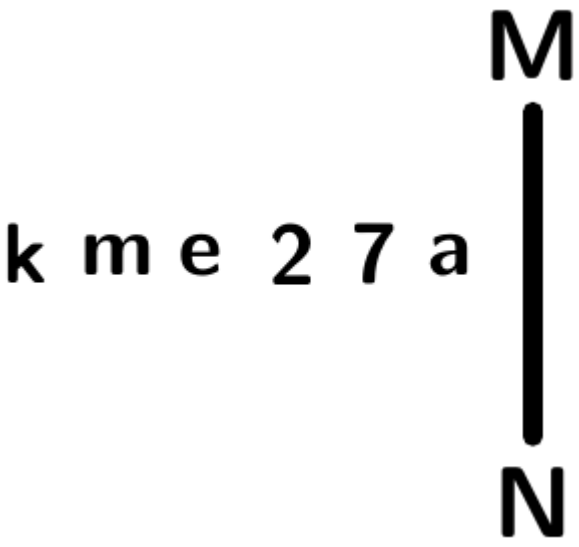
(a) (5, 132)

(b) (11, 1331)

(c) (4, 57)

(d) (12, 1735)

Q2. Select the correct mirror image of the given figure when the mirror is placed at MN as shown below.



(a)



(b)



(c)



(d)



Q3. Read the given statements and conclusions carefully. Assuming that the information given in the statements is true, even if it appears to be at variance with commonly known facts, decide which of the given conclusions logically follow(s) from the statements.

Statements:

Some daisies are lilies.

All roses are lilies.

Some tulips are daisies.

Conclusions:

(I) Some lilies are tulips.

(II) Some roses are daisies.

(a) Only conclusion (II) follows

(b) Only conclusion (I) follows

(c) Both conclusions (I) and (II) follow

(d) Neither conclusion (I) nor (II) follows

Q4. Select the option that is related to the fifth term in the same way as the second term is related to the first term and the fourth term is related to the third term.

6 : 295 :: 7 : 1400 :: 8 : ?

(a) 3099

(b) 3095

(c) 3093

(d) 3090

Q5. The position of how many letters will remain unchanged if each letter in the word NEUTRAL is arranged in alphabetical order?

(a) One

(b) None

(c) Two

(d) Three

Q6. If 'A' stands for '÷', 'B' stands for '×', 'C' stands for '+' and 'D' stands for '-', what will come in place of the question mark (?) in the following equation?

39 A 3 B 11 C 57 D 29 = ?

(a) 166

(b) 171

(c) 169
(d) 174

Q7. In a certain code language, 'blue black green grey pink' is written as 'mat fat tat bat gat', 'grey white orange green' is written as 'hat gat nat fat', 'orange green pink grey' is written as 'fat nat gat bat' and 'violet blue red' is written as 'tat lat dat'. How is 'black' written in that language?

(a) tat
(b) gat
(c) fat
(d) mat

Q8. If 'A' stands for '÷', 'B' stands for '×', 'C' stands for '+' and 'D' stands for '-', what will come in place of the question mark (?) in the following equation?

37 C 28 B 6 D 322 A 23 = ?

(a) 191
(b) 189
(c) 181
(d) 197

Q9. Which number will replace the question mark (?) to complete the given series?

17, 18, 20, ?, 27, 32

(a) 22
(b) 20
(c) 23
(d) 21

Q10. The position of how many letters will remain unchanged if each letter in the word DIALECT is arranged in alphabetical order?

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

Q11. In a certain code language, 'PELT' is coded as '8257' and 'TAPE' is coded as '5712'. What is the code for 'L' in the given code language?

(a) 8
(b) 7
(c) 5
(d) 2

Q12. Looking at a woman sitting next to him, Gaurav said, "She is the sister of the husband of my wife." How is the woman related to Gaurav?

(a) Daughter
(b) Mother
(c) Wife's sister
(d) Sister

Q13. In a certain code language,

A + B means 'A is the mother of B'

A - B means 'A is the brother of B'

A × B means 'A is the wife of B'

A ÷ B means 'A is the father of B'

Based on the above, how is M related to O if 'K ÷ L × M - N + O'?

(a) Mother's husband
(b) Mother's brother

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(c) Wife's father
(d) Daughter's husband

Q14. GMRW is related to TNID in a certain way based on a certain relationship between the given letters in the English alphabetical order. In the same way, AJQV is related to ZQJE. Which of the given options is ITZB related to following the same logic?

(a) GHLM
(b) RGAY
(c) TUVM
(d) YAGK

Q15. Which number from among the given options can replace the question mark (?) in the following series?

361, 306, ?, 208, 165, 126

(a) 235
(b) 216
(c) 298
(d) 255

Q16. Four number-pairs have been given, out of which three are alike in some manner and one is different. Select the one that is different.

(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.)

63 : 137

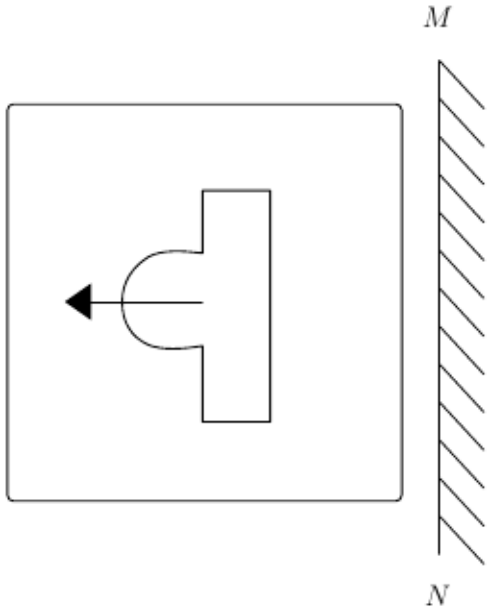
70 : 151

47 : 83

34 : 79

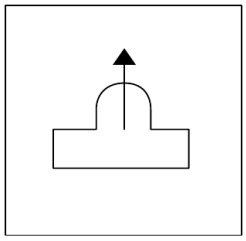
(a) 63 : 137
(b) 70 : 151
(c) 47 : 83
(d) 34 : 79

Q17. Select the correct mirror image of the given figure when the mirror is placed at MN as shown.

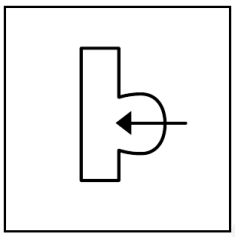


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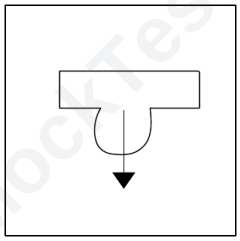
(a)



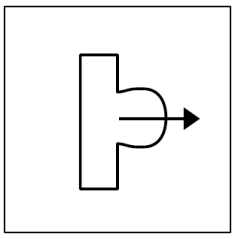
(b)



(c)



(d)



Q18. Select the term from among the given options that can replace the question mark (?) in the following series based on the English alphabetical order.

SLZ, PHW, ?, JZQ, GVN

(a) MDT
(b) NFS
(c) NES
(d) MFT

Q19. Select the pair of letter-clusters which follows the same pattern as that followed by the two sets of pair of letter-clusters given below. Both pairs of letter-clusters follow the same pattern.

CGJ : HLO

KPS : PUX

(a) FKL : KPQ
(b) WXY : GEF
(c) DEF : ABC
(d) HGK : SQP

Q20. Three of the following four are alike in a certain way and thus form a group. Which is the one that does NOT belong to that group?

(a) NOR
(b) LNP

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(c) DEH
(d) LMP

Q21. What should come in place of the question mark (?) in the given series based on the English alphabetical order?

ABZ, CDX, EFV, GHT, ?

(a) JKS
(b) IJT
(c) IJR
(d) JKT

Q22. Which term from among the given options can replace the question mark (?) in the following series to make it logically complete?

S 16 H, T 13 J, ?, V 23 N, W 46 P

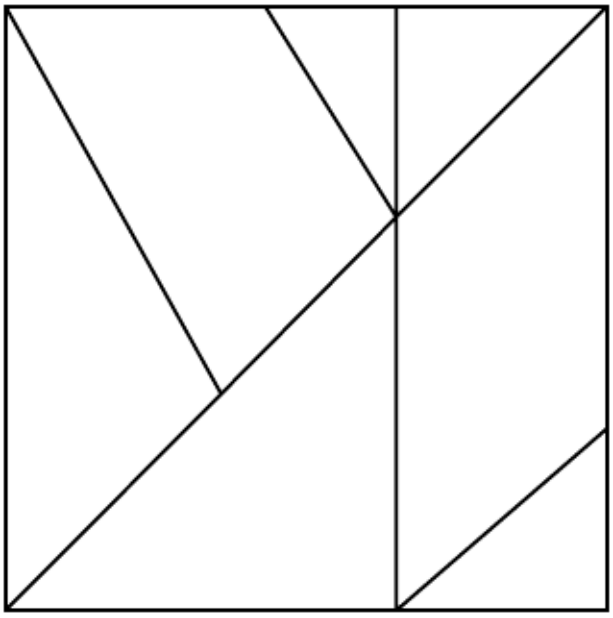
(a) U 39 L
(b) U 26 L
(c) U 10 K
(d) U 29 K

Q23. Four number-triads have been given, out of which three are alike in some manner and one is different. Select the one that is different.

(NOTE: The second and third numbers in the given number-triads are formed by performing a certain operation on the first number. The same operation is followed in all the number-triads except one. Find that odd number-triad.)

(a) 84 : 294 : 210
(b) 68 : 238 : 170
(c) 96 : 336 : 192
(d) 52 : 182 : 130

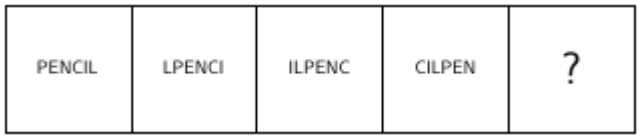
Q24. How many triangles are there in the given figure?



(a) 7
(b) 8
(c) 9
(d) 6

Q25. Identify the figure given in the options which when put in place of the question mark (?) will logically complete the series.

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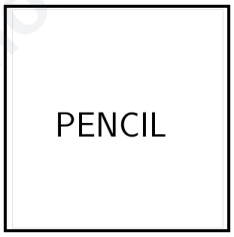
(a)



(b)



(c)



(d)



GENERAL INTELLIGENCE

Q26. In the middle of which century did the Arab traveler Sulaiman visit India?

(a) 15^(th)
(b) 9^(th)
(c) 11^(th)
(d) 6th

Q27. Ramnad V Raghavan is associated with which of the following musical instruments?

(a) Mridangam
(b) Flute
(c) Sitar
(d) Sarod

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Q28. Who among the following is the first Indian paddler who won a medal at the International Table Tennis Federation (ITTF)-Asian Table Tennis Union (ATTU) Asia Cup 2022?

(a) Mouma Das
(b) Manika Batra
(c) Manti Ghosh
(d) Naina Jaiswal

Q29. Padma Shri Award 2022 was given to whom among the following Kuchipudi dancers?

(a) Pallavi Krishnan
(b) Sunanda Nair
(c) Padmaja Reddy
(d) Sitara Devi

Q30. The correct order of electron affinity of halogens is:

(a) F < I < Br < Cl
(b) I < Br < Cl < F
(c) I < Br < F < Cl
(d) I > Br > F < Cl

Q31. The government is bound to ensure observance of social welfare and labour laws enacted to secure for workmen a life compatible with human dignity, under _____ of the Indian Constitution.

(a) Article 17
(b) Article 15
(c) Article 19
(d) Article 21

Q32. Which great leader died due to his injuries in the Anti-Simon Commission Protest of 1928?

(a) Lala Lajpat Rai
(b) Lala Hardayal
(c) Bhagat Singh
(d) Bal Gangadhar Tilak

Q33. The estimation of the poverty line in India is based on the survey conducted by which of the following?

(a) Ministry of Finance
(b) Reserve Bank of India (RBI)
(c) Ministry of Rural Development
(d) National Statistical Office (NSO)

Q34. Match the columns.

	States		**Cultural festivals**
(A)	Bihar	I.	Bihu
(B)	Arunachal Pradesh	II.	Tam Ladu
(C)	Assam	III.	Fatorpa Zatra
(D)	Goa	IV.	Chhath

(a) A - IV, B - II, C - I, D - III
(b) A - III, B - I, C - IV, D - II
(c) A - I, B - IV, C - III, D - II
(d) A - I, B - II, C - III, D - IV

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Q35. According to the Indian Minerals Yearbook 2020, which state in India has the highest share of limestone production?

(a) Telangana
(b) Chhattisgarh
(c) Madhya Pradesh
(d) Rajasthan

Q36. As of March 2023 India men's Soccer team captain Sunil Chhetri became the _____ highest goal Scorer in International Football appearances.

(a) Tenth
(b) Eighth
(c) Fifth
(d) Fourth

Q37. The era of five-year plans began in India with the establishment of _____.

(a) The NITI Aayog
(b) The Parliament
(c) The Finance Commission
(d) The Planning Commission

Q38. Which of the following principles was added by the 42nd Constitutional Amendment in the Indian Constitution?

(a) The State shall provide free and compulsory education
(b) To organise agriculture and animal husbandry on modern and scientific lines
(c) To protect and improve the environment and to safeguard forests and wildlife
(d) Reservation of SC's and ST's in services

Q39. In which months is the Rabi crop sown?

(a) April - May
(b) October - December
(c) February - March
(d) September - October

Q40. The periodic growth and drop in seawater level is known as:

(a) wave
(b) sea current
(c) tide
(d) flood

Q41. In which of the following years did the East India Company abolish the diarchy system of Bengal?

(a) 1772
(b) 1765
(c) 1757
(d) 1779

Q42. In India, which Ministry issues the coins of all denominations?

(a) Ministry of External Affairs
(b) Ministry of Home Affairs
(c) Ministry of Mines
(d) Ministry of Finance

Q43. Which of the following statements is/are true about currency notes?

i. They do not have intrinsic value.
ii. They can be called fiat money.
iii. They are not legal tenders.

(a) Only ii
(b) Only i

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(c) Only i and ii
(d) Only ii and iii

Q44. Net domestic product is calculated as _____.
(a) GDP - Depreciation
(b) GNP - Depreciation
(c) GDP - Net income earned from abroad
(d) GNP - Net income earned from abroad

Q45. Which of the following claims concerning the magnetic lines of force inside a bar magnet is true?
(a) Do not exist
(b) From S-pole to N-pole of the magnet
(c) Depends on the cross-sectional area of the bar magnet
(d) From N-pole to S-pole of the magnet

Q46. Which of these is a component of the tertiary sector of an economy?
(a) Mining and quarrying
(b) Water supply
(c) Electricity
(d) Hotels and restaurants

Q47. Which Asian country was the host of the first Asian Games?
(a) Thailand
(b) Indonesia
(c) India
(d) Japan

Q48. Sleeping sickness is a vector-borne disease caused by the infection of which microscopic parasite of the species?
(a) Trypanosoma brucei
(b) Balantioides coli
(c) Giardia duodenalis
(d) Cyclospora cayetanensis

Q49. The Chari Folk dance is primarily performed by women of which Indian state?
(a) Odisha
(b) Karnataka
(c) Jharkhand
(d) Rajasthan

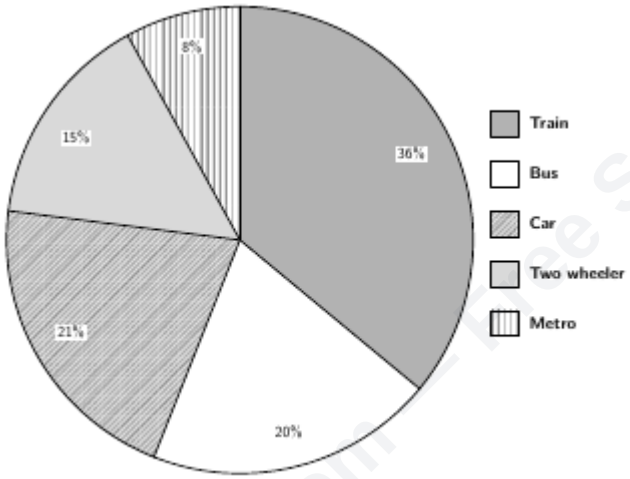
Q50. In 2023, the Government of India launched the nationwide 'Sarva Dawa Sevan' or mass drug administration to eliminate the disease _____.
(a) lymphatic filariasis
(b) thalassemia
(c) Zika virus
(d) multi drug resistant tuberculosis

QUANTITATIVE APTITUDE

Q51. A man invested Rs. 4,400 at 10% and Rs. 7,500 at 8% simple interest. What amount (in Rs.) will he get from his investments after 12 years?
(a) 24,830
(b) 24,380
(c) 28,380
(d) 28,840

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Q52. Pie chart represents the modes of transport used by different employees in a university.



The number of employees who use the bus if there are total of 150 employees is:

(a) 25
(b) 20
(c) 18
(d) 30

Q53. Two cities P and Q are 181 km apart on a straight road. One man starts from P at 8:30 A.M. and travels toward Q at 30 km/h. If another man starts from Q at 8:54 A.M. and travels towards P at a speed of 35 km/h, then at what time will they meet?

(a) 11:30 A.M.
(b) 10:00 A.M.
(c) 10:30 A.M.
(d) 11:00 A.M.

Q54. The angle subtended by an arc at the circumference of the circle is 55°. Find the angle subtended by it at the centre.

(a) 35°
(b) 110°
(c) 125°
(d) 27.5°

Q55. The ratio of the father's age to his son's age is 5 : 3. The product of the numbers representing their ages is 960. The ratio of their ages after 6 years will be:

(a) 23 : 15
(b) 23 : 17
(c) 21 : 15
(d) 21 : 17

Q56. The cost price of an article is 72% of the marked price. The profit percentage after allowing a discount of 6% on the marked price is (rounded off to 2 decimal places):

(a) 32.50%
(b) 28.23%
(c) 30.56%
(d) 35.65%

Q57. Simplify $(36a^2 - 49b^2)/(6a + 7b)$.

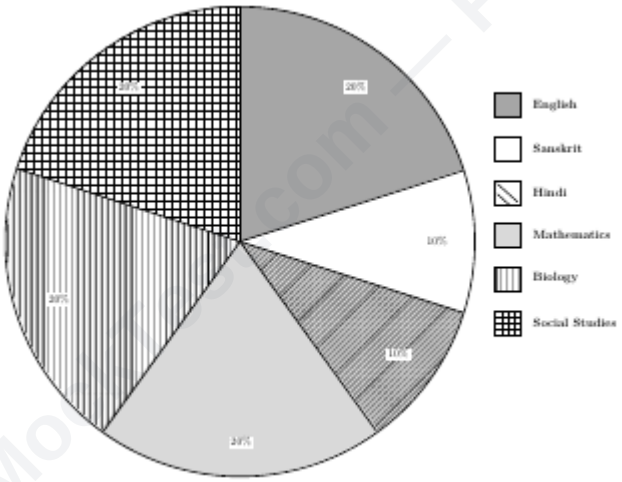
(a) 7b - 6a
(b) 6a + 7b
(c) 6a - 7b
(d) 1/(6a - 7b)

Q58. A shopkeeper does a faulty weighing of an item of 930 gram instead of 1 kg and sells it at its cost price. Find his profit percentage on selling 15 kg of the item.

(a) 879/93 %
(b) 521/93 %
(c) 749/93 %
(d) 619/93 %

Q59. Study the given pie-chart and answer the question that follows.

Percentage-wise distribution of teachers in six different subjects in a school is given in the pie-chart. The total number of teachers is 600. The ratio of male and female teachers is 3 : 1.



Find the total number of teachers in Mathematics, Biology and Social Studies.

(a) 320
(b) 420
(c) 360
(d) 400

Q60. Rohita offers a discount of 20% on the marked price of an object. Due to recession of market, she further offers a discount of 30% on its sale. What is the equivalent single discount percentage corresponding to these two successive discounts offers?

(a) 42%
(b) 56%
(c) 40%
(d) 44%

Q61. Following table shows the details of students, from universities A, B, C about Applied (App), Qualified (Qual), selected (sel) in various competitive examinations:

Year	University A	University B	University C						
	App	Qual	Sel	App	Qual	Sel	App	Qual	Sel
2016	6500	1000	190	7500	720	182	6800	900	178
2017	5000	450	148	8400	900	114	5500	830	185
2018	8000	1200	128	6500	600	128	6000	500	148
2019	10000	1800	190	7200	1000	155	7500	750	154
2020	8500	1500	170	9000	1200	110	9000	1000	180

The percentage of students qualified over the applied number of students, from University B, is highest in the year:

(a) 2016
(b) 2020

(c) 2018
(d) 2019

Q62. If four-fifths of five-sixths of one-eighth of a certain number is 4365, what is 65% of the number?
(a) 36,375
(b) 53,280
(c) 34,047
(d) 52,380

Q63. Let ABC be a right-angled triangle where angle A = 90° and angle C = 45°. Find the value of sec C + sin C sec C.
(a) 1
(b) 1 - √2
(c) 1 + √2
(d) √2 - 1

Q64. If $(3y+3/y)=8$, find the value of $(y^2+1/(y^2))$.
(a) 51/9
(b) 45/6
(c) 71/9
(d) 91/9

Q65. If $(4 \sin \theta + 5 \cos \theta) = 3$, then the value of $(4 \cos \theta - 5 \sin \theta)$ is:
(a) 3√2
(b) 4√2
(c) 2√3
(d) 2√5

Q66. The total surface area of a solid hemisphere of diameter 14 cm is (use π = 22/7):
(a) 522 cm2
(b) 462 cm2
(c) 428 cm2
(d) 584 cm2

Q67. 30 women working 5 hours a day can complete a work in 18 days. In how many days will 21 women working 8 hours a day complete the same work?
(a) 187/13 days
(b) 1711/13 days
(c) 161/14 days
(d) 133/14 days

Q68. The distance between two parallel chords of length 6 cm each, in a circle of diameter 10 cm is:
(a) 12 cm
(b) 8 cm
(c) 6 cm
(d) 4 cm

Q69. The sum of the cubes of two given numbers is 10234, while the sum of the two given numbers is 34. What is the positive difference between the cubes of the two given numbers?
(a) 3484
(b) 3488
(c) 3356
(d) 8602

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Q70. If Cosec θ - cot θ = 7/2, then the value of cosec θ will be:

(a) 49/28
(b) 21/28
(c) 47/28
(d) 53/28

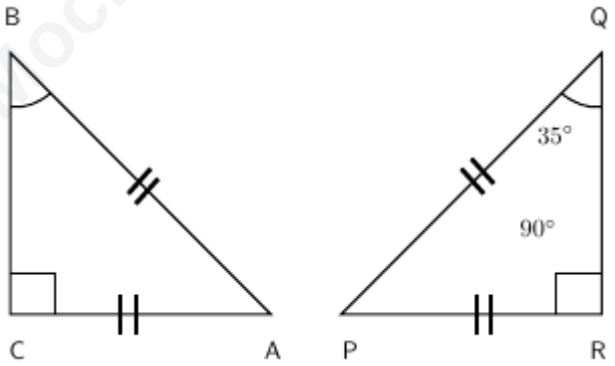
Q71. The population of a city was 12,50,000 in the year 2010. It increased at the rate of 2% per annum during the years 2011 and 2012. In the year 2013, it decreased by 1%. Find the population of the city at the end of 2013.

(a) 1,28,54,952
(b) 13,50,000
(c) 13,87,495
(d) 12,87,495

Q72. The average weight of a class of 30 students is 45 kg. One of the students whose weight is 48.5 kg is replaced by another student and the average weight was increased by 200 g. Find the weight of the new student.

(a) 54.5 kg
(b) 50 kg
(c) 55 kg
(d) 51 kg

Q73. If ΔABC ~= ΔPQR, then the value of angle A is:



(a) 55°
(b) 90°
(c) 35°
(d) 45°

Q74. The perimeter of a minor sector of a circle of radius 5 cm is 15.5 cm. Find the area of the minor sector (use π = 22/7).

(a) 17.53 cm²
(b) 13.75 cm²
(c) 13.57 cm²
(d) 17 35 cm²

Q75. Find the least value for * in the number 3*7440 such that it is divisible by 12.

(a) 0
(b) 2
(c) 1
(d) 4

GENERAL AWARENESS

Q76. Select the most appropriate idiom for the underlined segment in the sentence given below.

Richa was provoking her neighbours against her maid Shanta who spoke against her but none of them responded.

(a) Smelling a rat
(b) Egging on
(c) Carrying the conviction
(d) Rising like a phoenix

Q77. Select the most appropriate synonym of the underlined word in the given sentence.

The chubby player was clearly told to bring his corpulent body into a good shape

(a) rotund
(b) lanky
(c) deformed
(d) plush

Q78. Sentences of a paragraph are given below in jumbled order. Arrange the sentences in the correct order to form a meaningful and coherent paragraph.

A) Human relationships are a matter of great concern for every one of us.

B) Nevertheless, social scientists have attached many other elements that actually help us for a good social life.

C) As it helps us all to have a coordinated, balanced and approachable life.

D) The present generation fails to take cognisance of all such elements and fall prey to a lonely life risking happiness.

(a) ADBC
(b) DABC
(c) ABCD
(d) ACBD

Q79. Select the most appropriate option that can substitute the underlined segment in the given sentence.

Tourists from all around the world visit Agra to see the Taj mahal.

(a) Ever and anon
(b) Cut and dried
(c) Few and far
(d) Far and wide

Q80. Select the option that expresses the given sentence in active voice.

When will the results of the dance competition be announced?

(a) When will they are announcing the results of the dance competition?
(b) When will they announce the results of the dance competition?
(c) When will they announced the results of the dance competition?
(d) Will they announce the results of the dance competition?

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

The old castle, with its towering walls, creaky gates, and secret passages, was the perfect example of a medieval fortress.

(a) epicentre
(b) crux
(c) epitome
(d) antithesis

Q82. Select the most appropriate option to fill in the blank.

The _____ of the new legislation has sparked a heated debate among lawmakers.

(a) affectation
(b) effection
(c) effect
(d) affect

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Q83. Select the INCORRECTLY spelt word.

(a) Appreciate
(b) Passenger
(c) Complaint
(d) Personel

Q84. Select the most appropriate option that can substitute the underlined words in the given sentence.

She was not allowed for going outside by her mother.

(a) not allowed to go
(b) not allowed to going
(c) not allowed by going
(d) not allowing to go

Q85. Select the most appropriate option that can substitute the underlined segment in the given sentence.

Her determination impressed all of the other colleagues and inspires them to continue pursuing their dreams.

(a) inspires them in continuing pursuing their
(b) inspired them to continue pursuing their
(c) inspires them to continue pursuing her
(d) inspires them to continue pursuing there

Q86. Select the option that expresses the following sentence in passive voice.

Do you obey your elders?

(a) Are your elders obeyed by you?
(b) Are you obeying by your elders?
(c) Have your elders obeyed by you?
(d) Do your elders obeyed by you?

Q87. Select the most appropriate ANTONYM of the word given in brackets to fill in the blank.

I can’t believe that you’re _____ (resolute) enough to not even decide what you want for dinner.

(a) reluctant
(b) indecisive
(c) disinclined
(d) gullible

Q88. Parts of a sentence are given below in jumbled order. Arrange the parts in the correct order to form a meaningful sentence.

A. We must not complain
B. thorns bear flowers
C. but rather be grateful that
D. that roses have thorns

(a) ADCB
(b) ADBC
(c) ACDB
(d) ABCD

Q89. Choose the sentence that contains an error.

(a) I need to buy an new iPhone.
(b) The cat sat on the windowsill
(c) She is the best singer in the choir.
(d) He is an artist who paints landscapes.

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Q90. Select the most appropriate option to fill in the blanks.

(Ø = No article)

_____ year ago, Arihant decided to join _____ NCC.

(a) A; an
(b) The; Ø
(c) The; a
(d) A; the

Q91. Select the most appropriate ANTONYM of the underlined word in the following sentence.

The singer's performance captivated the audience and left them mesmerised.

(a) Enthralled
(b) Disillusioned
(c) Horrified
(d) Resisted

Q92. Select the most appropriate ANTONYM of the given word.

Punctual

(a) Dependable
(b) Precise
(c) Late
(d) Ready

Q93. Select the option with the correct spellings to replace the underlined words in the given sentence.

His charesmatic attitude is admirble.

(a) karismatic; admerable
(b) charismatic; admarable
(c) karismatic; admirable
(d) charismatic; admirable

Q94. Select the option that can be used as a one-word substitute for the given group of words/phrase.

Spoken or done without preparation

(a) Elocution
(b) Extempore
(c) Debate
(d) Declamation

Q95. Select the most appropriate ANTONYM of the given word from the following sentence.

Empowered

People feel liberated in modern democracies, yet it is believed they are enslaved in their minds.

(a) liberated
(b) enslaved
(c) minds
(d) modern

Directions

In the following passage some words have been deleted. Fill in the blanks with the help of the alternatives given. Select the most appropriate option for each blank.

Communication is very important for us humans in our daily lives. It means talking to others, (1) _____ our thoughts and feelings, and listening to what others have to say. When we communicate well, we can understand each other better and work together more (2) _____. Communication is especially important at work, where we need to work as a team and achieve common goals. Good communication helps us to avoid misunderstandings and (3) _____, and makes us more productive. In our personal relationships, communication helps us to express our feelings and needs to our friends, family and partners. When we communicate well, we can build stronger relationships and understand each other better. Communication is also important for society as a whole. It helps us to share information, ideas and knowledge, and to understand different cultures and (4) _____.

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Communication can also help us to make positive changes in our communities and (5) _____ for important causes. Overall, communication is a very important skill that we all need to learn and practice. It can help us in many different ways and make our lives more fulfilling and successful.

Q96. Select the most appropriate option to fill in blank no. 1.

(a) sharing
(b) modifying
(c) classifying
(d) converging

Q97. Select the most appropriate option to fill in blank no. 2.

(a) economically
(b) effectively
(c) sufficiently
(d) vibrantly

Q98. Select the most appropriate option to fill in blank no. 3.

(a) distractions
(b) justifications
(c) mistakes
(d) quizzes

Q99. Select the most appropriate option to fill in blank no. 4.

(a) fears
(b) assumptions
(c) perspectives
(d) biases

Q100. Select the most appropriate option to fill in blank no. 5.

(a) propagate
(b) advocate
(c) inoculate
(d) recommend

ANSWER KEY

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

SOLUTIONS

Q1. Answer: (c) (4, 57)

Logic : (Cube of 1st number - 7) = 2nd number

Given :

• (7, 336)
$(7)^3 - 7 = 336$
$343 - 7 = 336$
$336 = 336$ (LHS = RHS)
And,
• (9, 722)
$(9)^3 - 9 = 722$
$729 - 7 = 722$
$722 = 722$ (LHS = RHS)
So,
• Option - (1) : (5, 132)
$(5)^3 - 7 = 132$
$125 - 7 = 132$
$118 \neq 132$ (LHS ≠ RHS)
• Option - (2) : (11, 1331)
$(11)^3 - 7 = 1331$
$1331 - 7 = 1331$
$1324 \neq 1331$ (LHS ≠ RHS)
• Option - (3) : (4, 57)
$(4)^3 - 7 = 57$
$64 - 7 = 57$
$57 = 57$ (LHS = RHS)
• Option - (4) : (12, 1735)
$(12)^3 - 7 = 1735$
$1728 - 7 = 1735$
$1721 \neq 1735$ (LHS ≠ RHS)
Hence, "Option - (3)" is the correct answer.

Q2. Answer: (b) [figure]

The correct mirror image of the given combination when mirror is placed at MN is as shown below:
Detailed Explanation:
• The line MN is the mirror
• The word "kme27a" the second letter is "m". So, the mirror image should be "
" => Option 1 is eliminated.
• The word "kme27a" the first letter is "k". So, the mirror image should be "
" => Option 3 is eliminated..
• The word "kme27a" the third letter is "e". So, the mirror image should be "
" => Option 4 is eliminated.
Hence, the correct answer is "Option - (2)".

Q3. Answer: (d) Neither conclusion (I) nor (II) follows

The least possible Venn diagram for the given statements is as shown below :
Conclusions:
I. Some lilies are tulips → Does not follow (As some daisies are lilies and some tulips are daisies. So, it is possible but not definitely true)
II. Some roses are daisies → Does not follow (As some daisies are lilies and all roses are lilies. So, it is possible but not definitely true)
Therefore Here, Neither conclusion (I) nor (II) follows.
Hence, the correct answer is "Neither conclusion (I) nor (II) follows".

Q4. Answer: (b) 3095

Logic : (1st number)^4 - 1001 = 2nd number
So,

• 6 : 295
(6)^4 - 1001 = 295
1296 - 1001 = 295
295 = 295 (LHS = RHS)
And,
• 7 : 1400
(7)^4 - 1001 = 1400
2401 - 1001 = 1400
1400 = 1400 (LHS = RHS)
Similarly,
• 8 : ?
(8)^4 - 1001 = ?
4096 - 1001 = ?
3095 = ?
Hence, "3095" is the correct answer.

Q5. Answer: (c) Two

Given : word → NEUTRAL
So, according to question rearranging the word in alphabetic :

Word before rearrangement	N	E	U	T	R	A	L
After rearrangement	A	E	L	N	R	T	U

Thus, according to the final arrangement two letter i.e 'E' and 'R' remains unchanged.
Hence, "Two" is the correct answer.

Q6. Answer: (b) 171

According to the question,

Symbol	A	B	C	D
Meaning	÷	×	•	•

Given that: 39 A 3 B 11 C 57 D 29 = ?
After replacing the symbols with their meanings, we get :-
39 ÷ 3 × 11 + 57 - 29 = ?
13 × 11 + 57 - 29 = ?
143 + 57 - 29 = ?
200 - 29 = ?
171 = ?
Hence, the correct answer is "171".

Q7. Answer: (d) mat

According to the given information,
Thus, according to the given codes 'mat' is the code for the word 'black'.
Hence, the correct answer is "mat".

Q8. Answer: (a) 191

According to the question,

Symbol	A	B	C	D
Meaning	÷	×	•	•

Given that: 37 C 28 B 6 D 322 A 23 = ?
After replacing the symbols with their meanings, we get :-
37 + 28 × 6 - 322 ÷ 23 = ?

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37 + 28 × 6 - 14 = ?

37 + 168 - 14 = ?

205 - 14 = ?

191 = ?

Hence, the correct answer is "191".

Q9. Answer: (c) 23

Logic : Consecutive whole number series is added subsequently.

Hence, "23" is the correct answer.

Q10. Answer: (c) One

Given : word → DIALECT

So, according to question rearranging the word in alphabetic :

Word before rearrangement	D	I	A	L	E	C	T
After rearrangement	A	C	D	E	I	L	T

Thus, according to the final arrangement only one letter i.e 'T' remains unchanged.

Hence, "One" is the correct answer.

Q11. Answer: (a) 8

Logic : No specific pattern is followed here, random codes are assigned to each letter.

So,

• 'PELT' is coded as '8257'

• 'TAPE' is coded as '5712'

As some letters are common, so the codes will be :

Letters	P / E / T	L	A
Codes	2 / 5 / 7	8	1

Therefore,

• 'L' will be coded as:

'L' is coded as '8'.

Hence, "8" is the correct answer.

Q12. Answer: (d) Sister

So,

• Looking at a woman sitting next to him, Gaurav said, "She is the sister of the husband of my wife."

As, it is clear from the family tree that the women is the sister of Gaurav.

Hence, "Sister" is the correct answer.

Q13. Answer: (b) Mother's brother

Given :

A is				
Symbol	•	•	×	÷
Meaning	Mother	Brother	Wife	Father

Given statement : K ÷ L × M - N + O

So,

• K ÷ L → K is the father of L.

• L × M → L is the wife of M.

• M - N → M is the brother of N.

• N + O → N is the mother of O.

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Thus, according to the final family tree M is the maternal uncle i.e mother's brother of O.
Hence, "Mother's brother" is the correct answer.

Q14. Answer: (b) RGAY

Logic : Opposite letter according to English alphabetic series.
So,
• GMRW is related to TNID

And,
• AJQV is related to ZQJE

Similarly,
• ITZB is related to ?

Hence, "RGAY" is the correct answer.

Q15. Answer: (d) 255

Logic : Decreasing odd number series is subtracted from each number along with common difference of (4).
Hence, "255" is the correct answer.

Q16. Answer: (c) 47 : 83

Logic : (1st number × 2) + 11 = 2nd number
So,
• Option - (1) : 63 : 137
(63 × 2) + 11 = 137
126 + 11 = 137
137 = 137 (LHS = RHS)
• Option - (2) : 70 : 151
(70 × 2) + 11 = 151
140 + 11 = 151
151 = 151 (LHS = RHS)
• Option - (3) : 47 : 83
(47 × 2) + 11 = 83
94 + 11 = 83
105 ≠ 83 (LHS ≠ RHS)
• Option - (4) : 34 : 79
(34 × 2) + 11 = 79
68 + 11 = 79
79 ≠ 79 (LHS ≠ RHS)
Hence, "Option - (3)" is the correct answer.

Q17. Answer: (d) [figure]

The correct mirror image of the given figure when mirror is placed at MN is as shown below:
Hence, the correct answer is "Option - (4)".

Q18. Answer: (a) MDT

Logic :
• First and third letter → (3) is subtracted from the position value according to English alphabetic series.
• Second letter → (4) is added to the position value according to English alphabetic series.
So,

Hence, "MDT" is the correct answer.

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Q19. Answer: (a) FKL : KPQ

Logic :- (5) is added to the position value according to English alphabetic series.

Given :

• CGJ : HLO

And,

• KPS : PUX

So,

• Option - (1) : FKL : KPQ

• Option - (2) : WXY : GEF

• Option - (3) : DEF : ABC

• Option - (4) : HGK : SQP

Thus, out of all options only 'FKL : KPQ' follows the same logic as given.

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

Q20. Answer: (b) LNP

Logic :

• Difference between first letter and second letter position value according to English alphabetic series is (1).

• Difference between second letter and third letter position value according to English alphabetic series is (3).

So,

• Option - (1) : NOR

• Option - (2) : LNP

• Option - (3) : DEH

• Option - (4) : LMP

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

Hence, "DJP" is the correct answer.

Q21. Answer: (c) IJR

Logic :

• First and second letter → (2) is added to the position value according to English alphabetic series.

• Third letter → (2) is subtracted from the position value according to English alphabetic series.

So,

Hence, "IJR" is the correct answer.

Q22. Answer: (b) U 26 L

Logic :

• First letter → (1) is added to the position value according to English alphabetic series.

• Number → Alternately (3) is subtracted and multiplied by (2).

• Third letter → (2) is added to the position value according to English alphabetic series.

So,

Hence, "U 26 L" is the correct answer.

Q23. Answer: (c) 96 : 336 : 192

Logic : (1st number + 3rd number) = 2nd number

So,

• Option - (1) : 84 : 294 : 210

84 + 210 = 294

2 = 30 (LHS = RHS)

• Option - (2) : 68 : 238 : 170

68 + 170 = 238

238 = 238 (LHS = RHS)

• Option - (3) : 96 : 336 : 192

96 + 192 = 336

288 ≠ 336 (LHS ≠ RHS)

• Option - (4) : 52 : 182 : 130

52 + 130 = 182

182 = 182 (LHS = RHS)

Hence, "Option - (3)" is the correct answer.

Q24. Answer: (c) 9

The number of triangles in the given figure is shown below :

Thus, there are total 9 triangles in the given figure.

Hence, "9" is the correct answer.

Q25. Answer: (a) [figure]

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

1) For 'P' element → Shifting in the forward direction subsequently.

2) For 'E' element → → Shifting in the forward direction subsequently.

3) For 'N' element → Shifting in the forward direction subsequently.

4) For 'C' element → Shifting in the forward direction subsequently.

5) For 'I' element → Shifting in the forward direction subsequently.

6) For 'L' element → Shifting diagonally and then diagonally in downward direction subsequently.

Final series is

Hence, ‘option - (1)’ is the correct answer.

Q26. Answer: (b) 9^(th)

The correct answer is 9th.

Key Points

• Sulaiman, also known as Sulaiman al-Tajir, visited India in the 9^(th)century.

• He was an Arab traveler and merchant who wrote about his travels in a book called "Kitab al-Masalik wa al-Mamalik" (Book of Roads and Kingdoms).

• Sulaiman's account of his journey provides valuable information about the political, social, and economic conditions of India during that time.

Additional Information

• The 15^(th) century was a significant period in Indian history, marked by the rise of the Vijayanagara Empire and the arrival of the Portuguese.

• The 11^(th) century saw the reign of King Rajendra Chola, who expanded the Chola Empire through conquest and trade.

• The 6^(th) century was a time of political and social upheaval in India, with the decline of the Gupta Empire and the emergence of regional kingdoms.

Q27. Answer: (a) Mridangam

The correct answer is Mridangam.

Key Points

• Ramnad V Raghavan is associated with the Mridangam, which is a percussion instrument commonly used in Carnatic music.

• In Madurai, Tamil Nadu, India, he was born into P. Vaidyanatha Ayyar and Brhannayaki, in the Kooniyur village of the Tirunelveli district.

• Renowned Carnatic vocalist Ramnad Krishnan was his older brother.

Additional Information

• The flute is a wind instrument that is used in many different types of music, including classical, folk, and popular music.

• The bansuri gained international recognition thanks to the performances and compositions of Indian flutist Hariprasad Chaurasia.

• The sitar is a stringed instrument that is commonly used in Hindustani classical music.

• Indian musician, sitarist, composer, and National Orchestra of India founder Ravi Shankar had a significant impact in promoting Western awareness of Indian music.

• The sarod is another type of stringed instrument that is also commonly used in Hindustani classical music.

• In India, Amjad Ali Khan is a well-known sarod player.

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Q28. Answer: (b) Manika Batra

The correct answer is Manika Batra.

Key Points

• Manika Batra is the first Indian paddler who win a medal at the ITTF-ATTU Asia Cup 2022.

• The International Table Tennis Federation (ITTF) is the governing body of table tennis worldwide.

• Asian Table Tennis Union (ATTU) is the governing body of table tennis in Asia.

Additional Information

• Mouma Das is a former Indian table tennis player from Kolkatta.

• At the 2018 Commonwealth Games, Das took home several medals, including a gold in the women's team competition.

• Manti Ghosh is an Indian table tennis player who has won several national level tournaments.

• Naina Jaiswal is not a known Indian table tennis player.

Q29. Answer: (c) Padmaja Reddy

The correct answer is Padmaja Reddy.

Key Points

• Padma Shri Award 2022 was given to Padmaja Reddy, a Kuchipudi dancer from Telangana.

• She presents ballets that explore modern societal challenges and mythological themes.

• She directed the Kuchipudi visual dance style known as Kakatiyam.

• Padma Shri Award is one of the highest civilian awards given by the Government of India.

• Kuchipudi is a classical dance form of Andhra Pradesh, India.

Additional Information

• Pallavi Krishnan is a Bharatanatyam dancer.

• She is from Kerala.

• Sunanda Nair is a Mohiniyattam dancer.

• She is also from Kerala.

• Sitara Devi was a Kathak dancer from Uttar Pradesh.

• She passed away in 2014.

Q30. Answer: (c) I < Br < F < Cl

The correct answer is I < Br < F < Cl.

Key Points

• The electron affinity of halogens is the energy change that occurs when an electron is added to a neutral atom to form a negative ion.

• The correct order of electron affinity of halogens is I < Br < F < Cl.

• This is because as we move down the group, the atomic radius increases, and the distance between the nucleus and the valence electrons increases, leading to a decrease in the attraction between the nucleus and the added electron.

Additional Information

• The chemical element iodine has the atomic number 53 and the symbol I.

• The heaviest stable halogen, it is a semi-lustrous, non-metallic solid at ordinary circumstances.

• At normal temperature, bromine is a naturally occurring liquid element.

• It dissolves in water and has a brownish-red color and bleach-like smell.

• The chemical element fluorine has an atomic number of nine and the symbol F.

• Fluorine is a gas at room temperature and is categorized as a halogen.

• The chemical element chlorine has the atomic number 17 and the symbol Cl.

• The second-lightest of the halogens, it is found on the periodic table between fluorine and bromine, with most of its properties falling in the middle of the two.

Q31. Answer: (d) Article 21

The correct answer is Article 21.

Key Points

• Article 21 of the Indian Constitution guarantees the right to life and personal liberty, which includes the right to live with dignity.

• The government is responsible for ensuring the protection of fundamental rights and the welfare of its citizens, especially those who are vulnerable and marginalized.

Additional Information

• Article 17 of the Indian Constitution abolishes the practice of untouchability and prohibits its enforcement in any form.

• Article 15 prohibits discrimination on the grounds of religion, race, caste, sex, or place of birth.

• This article is important for ensuring social justice and equality.

• Article 19 protects the freedom of speech and expression, the right to assemble peaceably and without arms, the right to form associations or unions, and the right to move freely throughout the territory of India.

Q32. Answer: (a) Lala Lajpat Rai

The correct answer is Lala Lajpat Rai.

Key Points

• Lala Lajpat Rai was a prominent Indian freedom fighter and leader of the Indian National Congress.

• He was a vocal opponent of British rule in India and played a key role in the Indian independence movement.

• In 1928, he led a protest against the Simon Commission, a British government initiative to review the Indian constitution, which was seen as an attempt to prolong British rule.

• During the protest, Lala Lajpat Rai was brutally beaten by the police and sustained serious injuries.

• He died a few weeks later.

• His death sparked widespread outrage and further fuelled the Indian independence movement.

Additional Information

• Lala Hardayal was another Indian freedom fighter and founder of the Ghadar Party, which was dedicated to the overthrow of British rule in India.

• He died March 4, 1939.

• Bhagat Singh was a revolutionary socialist who played a key role in the Indian independence movement.

• He was executed by the British government in 1931.

• Bal Gangadhar Tilak was a prominent Indian nationalist and social reformer who advocated for Indian self-rule and played a key role in the Indian National Congress.

• He died in 1920.

Q33. Answer: (d) National Statistical Office (NSO)

The correct answer is National Statistical Office (NSO).

Key Points

• The National Statistical Office (NSO) conducts a survey on household consumption expenditure every five years to estimate the poverty line in India.

• The poverty line is defined as the minimum level of income required to meet the basic needs of an individual.

• The survey collects data on various parameters such as food and non-food consumption, health and education expenditure, and housing conditions.

• The poverty line is calculated based on the cost of a minimum food basket plus expenditure on non-food items.

• The poverty line is used to identify households that are eligible for various welfare schemes such as food subsidies, rural employment guarantee schemes, and housing programs.

Additional Information

• Ministry of Finance:

• It is responsible for preparing the Union Budget of India and managing the country's public finances.

• Reserve Bank of India (RBI):

• It is the central bank of India and is responsible for regulating the country's monetary policy and managing its foreign exchange reserves.

• Ministry of Rural Development:

• It is responsible for implementing various rural development programs such as the Mahatma Gandhi National Rural Employment Guarantee Scheme, Pradhan Mantri Gram Sadak Yojana, and Swachh Bharat Abhiyan.

• The National Sample Survey Office (NSSO) is a wing of the Ministry of Statistics and Programme Implementation and is responsible for conducting large-scale sample surveys in diverse fields on an All India basis.

Q34. Answer: (a) A - IV, B - II, C - I, D - III

The correct answer is A - IV, B - II, C - I, D - III.

Key Points

• The correct answer matches Bihar with Chhath, Arunachal Pradesh with Tam Ladu, Assam with Bihu, and Goa with Fatorpa Zatra.

• Chhath is a popular festival in Bihar, where people worship the sun god and take dips in rivers and ponds.

• Tam Ladu is a festival in Arunachal Pradesh that celebrates the harvest season, and people offer prayers and sacrifices to the deities.

• Bihu is a set of three cultural festivals in Assam that mark the beginning of the agricultural season and involve dance, music, and feasting.

• Fatorpa Zatra is a carnival-like festival in Goa that honors the village deity and includes parades, music, and fireworks.

Additional Information

• Bihar is also known for other festivals like Makar Sankranti, Holi, and Diwali.

• Arunachal Pradesh has several other festivals like Losar, Dree, and Si-Donyi.

• Assam also celebrates festivals like Durga Puja, Eid, and Christmas.

• Goa is famous for its Carnival, Christmas, and New Year celebrations.

Q35. Answer: (d) Rajasthan

The correct answer is Rajasthan.

Key Points

• Rajasthan has the highest share of limestone production in India, accounting for about 29% of the total production in the country.

• With 27% of the total resources, Karnataka is the most resource-rich state, followed by Rajasthan and Andhra Pradesh (12% each), Gujarat (10%), and Meghalaya (9%).

• Limestone is a sedimentary rock composed mainly of calcium carbonate and is used in various industries, including cement, steel, and chemicals.

• The two minerals that make up limestone's majority are aragonite and calcite, which are distinct crystal forms of CaCO3.

• When these minerals separate from water that has dissolved calcium, limestone is created.

Additional Information

• Telangana has only a small share of about 1% of the total production.

• Chhattisgarh is the second-largest producer of limestone in India.

• It is accounting for about 17% of the total production.

• Madhya Pradesh is also a significant producer of limestone.

• It has a share of about 13% of the total production.

Q36. Answer: (c) Fifth

The correct answer is Fifth.

Key Points

• Sunil Chhetri became the fifth-highest goal scorer in international football appearances as of March 2023.

• He surpassed the legendary Lionel Messi, who was in the sixth position with 72 goals.

• Sunil Chhetri has scored 74 goals in 117 appearances for India.

• He is regarded as one of the greatest footballers in Indian history and has won numerous awards and accolades.

• Sunil Chhetri is known for his exceptional skills, speed, and agility on the field.

Additional Information

• Football is a family of team sports where goal-scoring is achieved through kicking a ball to differing degrees.

• The Football League, the first of many professional football associations, was established in England in 1888.

• The worldwide governing organization of futsal, beach soccer, and association football is called the Fédération internationale de football association.

• It was established in 1904 to supervise national associations from Belgium, Denmark, France, Germany, the Netherlands, Spain, Sweden, and Switzerland in their international rivalry.

• 211 national associations currently make up its membership, which is headquartered in Zürich, Switzerland.

Q37. Answer: (d) The Planning Commission

The correct answer is The Planning Commission.

Key Points

• The Planning Commission was established in 1950 to formulate and implement economic plans and policies for the country.

• It was responsible for creating five-year plans for the development of various sectors in India.

• The first five-year plan was launched in 1951 and focused on agriculture, irrigation, power, and transport.

• Subsequent plans addressed issues such as poverty alleviation, industrialization, and education.

Additional Information

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• The Planning Commission was replaced by the NITI Aayog in 2015.

• The new organization is responsible for providing strategic and technical advice to the government on various policy matters.

• The Parliament is the supreme legislative body of India, consisting of the President, the Rajya Sabha (Council of States), and the Lok Sabha (House of the People).

• It is responsible for enacting laws and overseeing the functioning of the government.

• The Finance Commission is a constitutional body that is responsible for recommending the distribution of tax revenues between the central and state governments.

• It is also responsible for recommending measures to improve the financial position of the states.

Q38. Answer: (c) To protect and improve the environment and to safeguard forests and wildlife

The correct answer is To protect and improve the environment and to safeguard forests and wildlife.

Key Points

• The 42nd Constitutional Amendment was passed in 1976 during the emergency period in India.

• It was a controversial amendment as it granted more powers to the central government and curtailed the powers of the state governments.

• The amendment added several new principles to the Indian Constitution, including the protection and improvement of the environment.

• This principle is important as India is a country with diverse ecological systems and wildlife, and environmental degradation has become a major issue in recent years.

Additional Information

• The State shall provide free and compulsory education - which was added by the 86th Constitutional Amendment in 2002.

• This amendment made education a fundamental right for children aged 6-14 years.

• Organizing agriculture and animal husbandry on modern and scientific lines - is a directive principle of state policy (DPSP) in the Indian Constitution.

• DPSPs are non-justiciable principles that the state is expected to follow but cannot be enforced by courts.

• Reservation of SCs and STs in services - is a provision made in the Indian Constitution to provide affirmative action to historically marginalized communities.

Q39. Answer: (b) October - December

The correct answer is 'October - December'

Key Points

• Rabi crops:

• Rabi crops are typically sown at the beginning of the winter season, around October, and harvested in spring, around March or April.

• The sowing period is crucial because the crops depend on the winter rains brought by the western disturbances.

• Common rabi crops include wheat, barley, peas, gram, and mustard, which are suited to the cooler growing conditions.

Additional Information

• Kharif crops:

• Kharif crops are sown with the onset of the monsoon in different parts of India, usually from June to July, and harvested from September to October.

• These crops depend largely on rainwater and include paddy, maize, sorghum, and millets.

• Zaid crops:

• This season includes crops like watermelon, cucumber, and other vegetables and fruits that are heat-tolerant and require short growing periods.

Q40. Answer: (c) tide

The correct answer is tide.

Key Points

• Tides are the periodic rise and fall of sea water levels caused by the gravitational pull of the moon and the sun.

• The cycle of high tides and low tides occurs twice a day, with a period of about 12 hours and 25 minutes.

• Tides are important for navigation, fishing, and other marine activities.

• They also play a role in shaping coastlines and ecosystems.

Additional Information

• Waves are the movement of energy through the water caused by wind, earthquakes, or other disturbances.

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• They can be large or small and travel long distances.
• Sea currents are the continuous flow of water in the ocean caused by differences in temperature, salinity, and wind patterns.
• They can be surface currents or deep currents and have a significant impact on climate and marine life.
• A brief influx of water onto ordinarily dry terrain is known as flooding.
• Rain, snow, storm surges, coastal storms, river overflows, and dam failure can all cause flooding.
• Floods are not always safe.

Q41. Answer: (a) 1772

The correct answer is 1772.

Key Points

• East India Company abolished the diarchy system of Bengal in 1772.
• The Diarchy system refers to the dual system of administration where the British East India Company shared power with the Nawabs of Bengal.
• The diarchy system was abolished due to various reasons, including the Company's desire for more direct control over Bengal and the inefficiency and corruption of the system.
• The Company's officials believed that the system was hindering their efforts to extract maximum revenue from Bengal.
• After the abolition of the diarchy system, the Company took direct control over Bengal's administration and introduced various reforms to improve the efficiency and transparency of the system.

Additional Information

• The system was introduced in 1765 through the Treaty of Allahabad signed between the Company and the Mughal Emperor.
• The diarchy system gave the Company control over revenue collection and civil administration, while the Nawabs retained control over the police and criminal justice system.
• Year 1757 is the year when the Battle of Plassey took place and the Company gained control over Bengal.

Q42. Answer: (d) Ministry of Finance

The correct answer is the Ministry of Finance.

Key Points

• The Ministry of Finance is responsible for issuing coins of all denominations in India.
• The coins are minted by the government-owned Security Printing and Minting Corporation of India Limited (SPMCIL) and its four mints located in Mumbai, Kolkata, Hyderabad, and Noida.
• The coins are issued on behalf of the Reserve Bank of India (RBI), which is the country's central bank.
• The coins are legal tender and can be used for transactions in India.

Additional Information

• The Ministry of External Affairs is responsible for India's foreign policy, diplomatic relations with other countries, and international trade and cooperation.
• It was formed on 2 September 1946.
• The Ministry of Home Affairs is responsible for maintaining internal security, law and order, disaster management, and border management.
• It was formed on 15 August 1947.
• The Ministry of Mines is responsible for the development and regulation of the mining sector, including exploration, production, and marketing of minerals.
• Its headquarter is in New Delhi.

Q43. Answer: (c) Only i and ii

The correct answer is Only i and ii.

Key Points

• Currency notes do not have intrinsic value, meaning they are not valuable in and of themselves, but rather are valuable because they are widely accepted as a medium of exchange.
• Currency notes are often referred to as fiat money because their value is derived from government decree rather than being backed by a physical commodity such as gold or silver.
• Currency notes are legal tender, meaning they must be accepted as payment for debts and taxes.

Additional Information

• The official currency of India is the rupee.
• One rupee is divided into one hundred paise.

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• The Reserve Bank of India is in charge of currency issuance.

• The Reserve Bank of India Act, of 1934, provides the Reserve Bank of India with the authority to manage money in India.

Q44. Answer: (a) GDP - Depreciation

The correct answer is GDP - Depreciation.

Key Points

• Net domestic product (NDP) is the total value of goods and services produced within a country's borders, minus the depreciation of capital goods.

• Depreciation is the decrease in value of an asset over time due to wear and tear, obsolescence, or other factors.

• GDP - Depreciation is the correct answer because it subtracts the amount of capital goods that have been consumed or used up in the production process from the gross domestic product (GDP).

Additional Information

• GNP - Depreciation is incorrect because it subtracts the amount of capital goods used up in the production process from the gross national product (GNP), which measures the total value of goods and services produced by a country's residents, regardless of their location.

• Gross domestic product (GDP) is the total value of goods and services produced within a country's borders, regardless of the nationality of the producers.

• Gross national product (GNP) is the total value of goods and services produced by a country's residents, regardless of their location.

• Net income earned from abroad is the difference between the income earned by a country's residents from abroad (such as from foreign investments or employment) and the income earned by foreigners within the country.

• Depreciation is an important factor to consider in calculating NDP because it reflects the decrease in the value of capital goods over time and the need for reinvestment in new capital goods to maintain or increase production levels.

Q45. Answer: (b) From S-pole to N-pole of the magnet

The correct answer is From S-pole to N-pole of the magnet.

Key Points

• The magnetic lines of force inside a bar magnet run from the South pole to the North pole of the magnet.

• This is because the magnetic field is oriented in such a way that it flows from the South pole to the North pole.

• The strength of the magnetic field is greatest at the poles of the magnet and gradually decreases as you move away from them.

• The orientation of the magnetic field is determined by the orientation of the magnetic domains within the magnet, not its shape or size.

Additional Information

• Magnetic lines of force are also known as magnetic field lines or flux lines.

• They represent the direction and strength of the magnetic field at each point in space.

• The direction of the magnetic field is defined as the direction that a compass needle would point if placed at that point in space.

• The strength of the magnetic field is proportional to the density of the magnetic field lines, with more lines indicating a stronger field.

• Magnetic fields are created by the movement of electric charges, such as the flow of electrons in a wire or the spinning of electrons within atoms.

Q46. Answer: (d) Hotels and restaurants

The correct answer is Hotels and restaurants.

Key Points

• Hotels and restaurants are a component of the tertiary sector of an economy.

• The tertiary sector is also known as the service sector, and it includes all activities that provide services to consumers and other businesses.

• In the three-sector model, the third economic sector is the tertiary sector.

• The primary and secondary sectors are the others.

Additional Information

• Mining and quarrying is a component of the primary sector of an economy, which includes all activities related to natural resources extraction.

• Water supply is a component of the utility sector of an economy, which includes all activities related to the provision of public utilities such as water, electricity, and gas.

• Electricity is also a component of the utility sector of an economy, as it is a public utility that is essential for many other economic

activities.

• All operations with the ultimate goal of using up natural resources—agricultural, fishing, forestry, mining, and deposits—are included in the primary sector.

• The portion of the economy centered on manufacturing is known as the secondary sector.

• Construction, fabrication, assembly, distillation, and purification are examples of secondary sector activities.

Q47. Answer: (c) India

The correct answer is India.

Key Points

• The first Asian Games were held in India in 1951.

• The event was officially called the First Asian Games, and it was held in New Delhi.

• The Indian Olympic Association was responsible for organizing the event.

• The Asian Games are now held every four years, and they feature athletes from all over Asia.

Additional Information

• Thailand hosted the Asian Games in 1966 and 1998.

• Indonesia hosted the Asian Games in 1962, and 2018.

• Japan hosted the Asian Games in 1958 and 1994.

• The most recent iteration of the games took place from September 23, 2023, to October 8, 2023, in Hangzhou, China.

• With the most medals earned, People's Republic of China is in the lead in the medal standings.

• India has so far taken home 107 medals, including 28 gold ones.

Q48. Answer: (a) Trypanosoma brucei

The correct answer is Trypanosoma brucei.

Key Points

• Sleeping sickness is caused by the microscopic parasite Trypanosoma brucei.

• The disease is transmitted to humans through the bite of infected tsetse flies, which are found in sub-Saharan Africa.

• If left untreated, sleeping sickness can cause serious neurological damage and eventually lead to death.

• Treatment involves medication that targets the parasite, but early diagnosis is critical as the disease becomes more difficult to treat as it progresses.

Additional Information

• Balantioides coli is a protozoan parasite.

• It can infect humans and animals.

• Giardia duodenalis is a parasite that causes a diarrheal illness called giardiasis.

• These have a pear-like form and are between 10 and 20 micrometers long.

• Cyclospora cayetanensis is another parasitic pathogen that can cause diarrhea.

• Numerous fresh vegetable varieties, such as raspberries, mesclun and romaine lettuce, snow peas, basil, and cilantro, have been connected to foodborne outbreaks.

Q49. Answer: (d) Rajasthan

The correct answer is Rajasthan.

Key Points

• Chari dance is a popular folk dance of Rajasthan, which is mainly performed by women of the Kanjar community.

• It is a celebratory dance that is performed during weddings and other festive occasions.

• The word "chari" means a pot or a vessel, and in this dance form, the women balance brass pots on their heads while dancing.

• The pots are often lit with cotton and ghee, which creates a beautiful effect in the dark.

• The dance is accompanied by traditional Rajasthani music, which is played on instruments like dholak, harmonium, and manjeera.

• The dancers move in a circular formation, and the dance is characterized by graceful movements and twirls.

• Chari dance is also considered a form of worship, as it is performed to please the deity Baba Ramdeo, who is believed to have magical powers.

• The dance is often performed in his honor at his temple in Rajasthan.

Additional Information

• Odisha is known for its rich cultural heritage and has several traditional dance forms like Odissi, Chhau, and Gotipua.

• Karnataka is famous for its classical dance form, Bharatanatyam, as well as folk dances like Yakshagana and Dollu Kunitha.

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• Jharkhand has a rich tribal culture and is known for its folk dances like Jhumar, Paika, and Chhau.

Q50. Answer: (a) lymphatic filariasis

The correct answer is lymphatic filariasis.

Key Points

• Lymphatic filariasis is a parasitic infection that can cause severe swelling and disability, known as elephantiasis.

• It is spread by mosquitoes and affects over 120 million people worldwide, with the majority of cases in India.

• The Sarva Dawa Sevan program aims to eliminate lymphatic filariasis by administering drugs to entire populations in high-risk areas, regardless of whether they are infected or not.

• This approach is known as mass drug administration.

Additional Information

• Thalassemia is a genetic blood disorder.

• It affects the production of hemoglobin, which can lead to anemia.

• Zika virus is a mosquito-borne virus.

• It can cause birth defects and neurological problems.

• Multi-drug resistant tuberculosis (MDR-TB) is a form of tuberculosis that is resistant to the two most powerful anti-TB drugs.

• It is a serious public health threat in India.

Q51. Answer: (b) 24,380

Given:

1st principal (P1) = Rs.4400

Rate (R1) = 10% ; Time (T) = 12 years

2nd principal (P2) = 7500

Rate (R2) = 8% ; Time (T) = 12 years

Formula used:

S.I = (P × R × T)/100

Where, S.I = simple interest

R = rate% ; T = time

Calculation:

Total S.I = (4400 × 10 × 12)/100 + (7500 × 8 × 12)/100

=> 440 × 12 + 75 × 96

=> 5280 + 7200

=> Rs.12480

Total amount = total S.I + total principal

=> 12480 + 4400 + 7500

=> Rs.24380

Therefore The correct answer is Rs.24380.

Q52. Answer: (d) 30

Calculation:

The number of employees who use bus = 150 × 20% = 30

Therefore The correct answer is 30.

Q53. Answer: (a) 11:30 A.M.

Given:

Distance between cities P and Q = 181 km

Speed of P = 30 km/h

Speed of Q = 35 km/h

Formula used:

Distance = relative speed × time

Calculation:

Distance covered by P in 24 minutes = (30 × 24)/60 = 12 km

Remaining distance between P and Q = 181 - 12 = 169 km

Distance = relative speed × time
=> 169 = (35 + 30) × time
=> Time = 169/65
=> Time = 13/5 = 2 hours 36 minutes
Required time = 8 hours 54 minute + 2 hours 36 minutes
=> 11 hours 30 minutes
Therefore The correct answer is 11:30 A.M.

Q54. Answer: (b) 110°

Given:
The angle subtended by an arc at circumference = 55°
Concept used:
The angle subtended by an arc at the circumference is half the angle subtended by it at the centre of the circle.
Calculation:
angle ACB = 55°
angle AOB = 2 × angle ACB
=> 2 × 55 = 110°
Therefore The correct answer is 110°.

Q55. Answer: (a) 23 : 15

Given:
Father's age : son's age = 5 : 3
Father's age × son's age = 960
Calculation:
Let father's age = 5x
And son's age = 3x
According to the question:
=> 5x × 3x = 960
=> $15x^2 = 960$
=> $x^2 = 960/15 = 64$
=> $x = \sqrt{64} = 8$
Father's age = 5x = 5 × 8 = 40 years
Son's age = 3x = 3 × 8 = 24 years
Required ratio = 40 + 6 : 24 + 6
=> 46 : 30 = 23 : 15
Therefore The correct option is 1.

Q56. Answer: (c) 30.56%

Given:
Cost price (C.P) = 72% marked price (M.P)
Discount% = 6%
Formula used:
If discount = D% then
Selling price (S.P) = M.P × (100 - D)%
Profit = S.P - C.P
Profit% = (profit × 100)/C.P
Calculation:
=> C.P = 72% × M.P
=> C.P/M.P = 72/100
So, C.P = 72 and M.P = 100
Selling price (S.P) = 100 × (100 - 6)%
=> 100 × 94% = Rs.94

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Profit% = {(94 -72) × 100}/72
=> (22 × 100)/72
=> 275/9 = 30.55 ≈ 30.56%
Therefore The correct answer is 30.56%.

Q57. Answer: (c) 6a - 7b

Formula used:
$(a^2 - b^2) = (a + b) \times (a - b)$
Calculation:
$(36a^2 - 49b^2)/(6a + 7b)$
$=> \{(6a)^2 - (7b)^2\}/(6a + 7b)$
$=> \{(6a + 7b) \times (6a - 7b)\}/(6a + 7b)$
=> (6a - 7b)
Therefore The correct answer is (6a - 7b).

Q58. Answer: (c) 749/93 %

Given:
A shopkeeper sells 930 grams instead of 1000 grams
Formula used:
Gain = (S.P - C.P)
Gain % = (P × 100)/C.P
Where, C.P = cost price
S.P = selling price ; P = profit
Calculation:
Let the price of 1 gram = Rs.1
The price of 1000 grams = Rs.1000
The price of 930 grams = Rs.930
Profit % = {(1000 - 930) × 100}/930
=> 700/93 = 749/93 %
Therefore The correct answer is 749/93 %.

Q59. Answer: (c) 360

Calculation:
Total number of teachers in Mathematics = 600 × 20% = 120
Total number of teachers in Biology = 600 × 20% = 120
Total number of teachers in Social Studies = 600 × 20% = 120
Total number of teachers in Mathematics, Biology and Social Studies:
120 + 120 + 120 = 360
Therefore The correct answer is 360.

Q60. Answer: (d) 44%

Given:
First discount (D1)% = 20%
Second discount (D2) = 30%
Formula used:
Equivalent discount% = D1% + D2% - (D1 × D2)/100
Calculation:
Equivalent discount% = D1% + D2% - (D1 × D2)/100
=> 20 + 30 - (20 × 30)/100
=> 50 - 6 = 44%
Therefore The correct answer is 44%.

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Q61. Answer: (d) 2019

Calculation:

The % number of students qualified to applied from University B in the year 2016

=> (720 × 100)/7500 = 144/15 = 9.6%

The % number of students qualified to applied from University B in the year 2017

=> (900 × 100)/8400 = 225/21 = 10.71%

The % number of students qualified to applied from University B in the year 2018

=> (600 × 100)/6500 = 120/13 = 9.23%

The % number of students qualified to applied from University B in the year 2019

=> (1000 × 100)/7200 = 125/9 = 13.88%

The % number of students qualified to applied from University B in the year 2020

=> (1200 × 100)/9000 = 40/3 = 13.33%

Therefore The correct answer is 2019.

Q62. Answer: (c) 34,047

Given:

(4/5) × (5/6) × (1/8) × certain number = 4365

Calculation:

Let the number be N.

According to the question:

=> (4/5) × (5/6) × (1/8) × N = 4365

=> N = 4365 × 12

Now,

N × 65% = 4365 × 12 × 65%

=> 52380 × 65% = 34047

Therefore The correct answer is 34047.

Q63. Answer: (c) 1 + √2

Shortcut Trick

Simplify the trigonometric expression: sec C + sin C sec C = sec C + tan C.

Given angle C = 45°, substitute the standard values.

sec 45° = √2 and tan 45° = 1.

Result = √2 + 1.

Therefore The correct answer is 1 + √2.

Alternate Method

Given: In a right-angled ΔABC, angle A = 90° and angle C = 45°.

Formula Used: sec θ = 1 / cos θ and sin θ / cos θ = tan θ.

=> In ΔABC, angle C = 45°.

=> Expression = sec C + sin C × (1 / cos C)

=> Expression = sec C + tan C

=> Value = sec 45° + tan 45°

=> Value = √2 + 1

Therefore The correct answer is 1 + √2.

Additional Information

Trigonometric Ratios for 45°

For a 45° angle, sin 45° = 1/√2, cos 45° = 1/√2, and tan 45° = 1.

Fundamental Identity

The relation $\sec^2 \theta - \tan^2 \theta = 1$ implies $\sec \theta + \tan \theta = 1 / (\sec \theta - \tan \theta)$.

Angle Sum Property

In any triangle, the sum of all internal angles is 180°. In a right triangle, the two acute angles are complementary.

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Q64. Answer: (a) 51/9

Given:

(3y+3/y)=8

Concept used:

If x + 1/x = P then,

$x^2 + (1/x^2) = P^2 - 2$

Calculation:

(3y+3/y)=8

=> 3 × {y + (1/y)} = 8

=> {y + (1/y)} = 8/3

=> $\{y^2 + (1/y^2)\} = (8/3)^2 - 2$

=> {y2 + (1/y2)} = (64/9) - 2

=> {y2 + (1/y2)} = (64 - 18)/9

=> {y2 + (1/y2)} = 46/9 = 5 1/9

Therefore The correct answer is 5 1/9.

Q65. Answer: (b) 4√2

Given:

(4 sin θ + 5 cos θ) = 3

Concept used:

a sinθ + b cos θ = c then

a cosθ - b sin θ = $\sqrt{(a^2 + b^2 - c^2)}$

Calculation:

(4 sin θ + 5 cos θ) = 3

(4 cos θ - 5 sin θ) = $\sqrt{\{(4)^2 + (5)^2 - (3)^2\}}$

=> $\sqrt{\{16 + 25 - 9\}}$

=> $\sqrt{32} = 4\sqrt{2}$

Therefore The correct answer is 4√2.

Q66. Answer: (b) 462 cm2

Given:

Diameter of hemisphere = 14 cm

Formula used:

Total surface area of hemisphere = 3 × π × r^2

Calculation:

Radius of hemisphere = 14/2 = 7 cm

Total surface area of hemisphere = 3 × π × r2

=> 3 × (22/7) × 7 × 7

=> 3 × 22 × 7 = 462 cm^2

Therefore The correct answer is 462 cm2.

Q67. Answer: (c) 161/14 days

Given:

30 women working 5 hours can complete a work = 18 days

Concept used:

W1 × H1 × D1 = W2 × H2 × D2

Total work = efficiency × time

Calculation:

Let the efficiency of a woman = W

According to the question:

=> 21W × 8 × D = 30W × 5 × 18

=> D = (30 × 5 × 18)/(21 × 8)

=> D = (5 × 5 × 9)/14

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=> D = 16 1over 14 days

Therefore The correct answer is 16 1over 14 days.

Q68. Answer: (b) 8 cm

Given:

Length of chords = 6 cm

Diameter of circle = 10 cm

Concept used:

Equal chords of a circle are equidistant from the centre.

The perpendicular drawn from the centre of a circle bisects the chord.

Calculation:

Diameter = 10 cm

Radius = 10/2 = 5 cm.

OF perpendicular to AB

AF = AB/2 = 6/2 = 3 cm

In triangle AOF

$AO^2 = OF^2 + AF^2$

=> $(5)^2 = OF^2 + (3)^2$

=> 25 = OF2 + 9

=> OF2 = 25 - 9

=> OF = √16 = 4 cm

Distance between chords = 2 × 4 = 8 cm

Therefore The correct answer is 8 cm.

Q69. Answer: (a) 3484

Given:

Sum of the cubes of two numbers = 10234

Sum of the two given numbers = 34

Formula used:

(a + b)3 = a3 + b3 + 3ab × (a + b)

a3 - b3 = (a - b) × (a2 + ab + b2)

(a + b)2 = a2 + b2 + 2ab

(a - b)2 = a2 + b2 - 2ab

Calculation:

Let 1st number = a

And second number = b

From question:

$a^3 + b^3 = 10234$

and a + b = 34

Using algebraic identity:

=> $(a + b)^3 = a^3 + b^3 + 3ab \times (a + b)$

=> $(34)^3 = 10234 + 3ab \times 34$

=> 39304 = 10234 + 102ab

=> 102ab = (39304 - 10234)

=> ab = 29070/102 = 285

Now,

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

=> (34)² = a2 + b2 + 2 × 285

=> 1156 - 570 = a2 + b2

=> a2 + b2 = 586

and

=> (a - b)2 = a2 + b2 - 2ab

=> 586 - 2 × 285

=> 586 - 570

=> (a - b) = √16 = 4

Putting the required value in the equation:

=> $a^3 - b^3 = (a - b) \times (a^2 + ab + b^2)$

=> 4 × (586 + 285)

=> 4 × 871

=> 3484

Therefore The correct answer is 3484.

Q70. Answer: (d) 53/28

Shortcut Trick

If cosec θ − cot θ = x, then cosec θ = (x + 1/x) ÷ 2.

Here, x = 7/2.

=> cosec θ = (7/2 + 2/7) ÷ 2

=> cosec θ = (49/14 + 4/14) ÷ 2

=> cosec θ = (53/14) ÷ 2 = 53/28

Therefore The correct answer is 53/28.

Alternate Method

Given:

cosec θ − cot θ = 7/2

Formula Used:

$\text{cosec}^2 \theta - \cot^2 \theta = 1$

Calculations:

=> (cosec θ − cot θ) × (cosec θ + cot θ) = 1

=> (7/2) × (cosec θ + cot θ) = 1

=> cosec θ + cot θ = 2/7

=> Adding the given equation and the derived equation:

=> (cosec θ − cot θ) + (cosec θ + cot θ) = 7/2 + 2/7

=> 2 × cosec θ = (49 + 4) ÷ 14

=> 2 × cosec θ = 53 / 14

=> cosec θ = 53 / 28

Therefore The correct answer is 53/28.

Additional Information

Core Trigonometric Identities

$\sin^2 \theta + \cos^2 \theta = 1$ | $\sec^2 \theta - \tan^2 \theta = 1$ | $\text{cosec}^2 \theta - \cot^2 \theta = 1$.

Secant & Tangent Shortcut Pattern

Similar to the relation between cosec and cot, if sec θ + tan θ = x, then sec θ − tan θ = 1/x. From this, we can easily deduce sec θ = (x + 1/x) ÷ 2.

Reciprocal Functions

cosec θ = 1 ÷ sin θ | sec θ = 1 ÷ cos θ | cot θ = 1 ÷ tan θ.

Q71. Answer: (d) 12,87,495

Given:

The population of a city = 12,50,000

Increment in population in the years 2011 & 2012 = 2%

Decrement in population in the year 2013 = 1%

Concept used:

If population increment = P% then,

Increased % = population × (100 + P)%

If population decrement = D% then,

Decreased % = population × (100 - D)%

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Calculation:

Population of city at the end of 2013 = 1250000 × 102% × 102% × 99%

=> 5 × 51 × 51 × 99 = 12,87,495

Therefore The correct answer is 12,87,495.

Q72. Answer: (a) 54.5 kg

Shortcut Trick

Total increase in weight = 30 × 200 g = 6000 g = 6 kg

Weight of new student = Weight of replaced student + Total increase

New weight = 48.5 kg + 6 kg = 54.5 kg

Therefore The correct answer is 54.5 kg.

Alternate Method

Given:

Total number of students in the class = 30

Weight of the replaced student = 48.5 kg

Increase in average weight = 200 g = 0.2 kg

Formula Used:

Weight of new person = Weight of replaced person + (Total members × Increase in average)

Old Weight = 48.5 kg

Increase = 6 kg

30 × 0.2 kg

New Student Weight = 54.5 kg

Calculation:

=> Total weight increase = Total students × Increase in average weight

=> Total weight increase = 30 × 0.2 kg

=> Total weight increase = 6 kg

=> Weight of the new student = Weight of the replaced student + Total weight increase

=> Weight of the new student = 48.5 kg + 6 kg

=> Weight of the new student = 54.5 kg

Therefore The correct answer is 54.5 kg.

Additional Information

Replacement Concept in Averages

When one person is replaced by another, the total change in the group's aggregate value depends entirely on the difference between the new and old person. If the average increases, it implies the new person brings more value (is heavier). If the average decreases, the new person brings less value.

Average Decrease Scenario

If the average had decreased by a value 'x', the formula would simply reverse the sign: New Weight = Old Weight − (Total Members × x).

Combined Average

If two distinct groups of sizes N1 and N2 have their respective averages as A1 and A2, their combined class average is calculated using the formula: (N1A1 + N2A2) ÷ (N1 + N2).

Q73. Answer: (a) 55°

Given:

ΔABC ~= ΔPQR

angle Q = 35° ; angle R = 90°

Concept used:

If two triangles are congruent then their angles are equal.

The sum of all angles of a triangle is 180°.

Calculation:

In ΔPQR,

=> angle P + angle Q + angle R = 180°

=> angle P + 35 + 90 = 180°

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=> angle P = 180 - 125 = 55°

=> angle P = angle A = 55° (Because ΔABC ~= ΔPQR)

Therefore The correct answer is 55°.

Q74. Answer: (b) 13.75 cm²

Given:

Radius of circle = 5 cm

The perimeter of a minor sector = 15.5 cm

Formula used:

Perimeter of minor sector = 2 × radius + length of arc

Area of minor sector = (1/2) × radius × length of arc

Calculation:

Perimeter of minor sector = 2 × radius + length of arc

=> 2 × 5 + length of arc = 15.5

=> Length of arc = 15.5 - 10 = 5.5 cm

Area of minor sector = (1/2) × radius × length of arc

=> (1/2) × 5 × 5.5

=> 27.5/2 = 13.75 cm²

Therefore The correct answer is 13.75 cm2.

Q75. Answer: (a) 0

Calculation:

Let the missing number = x

3x7440 number is already divisible by 4.

We have to check the divisibility rule for 3.

3x7440 = 3 + x + 7 + 4 + 4 + 0 = 18 + x

The least value that should be added is 0.

Therefore The correct option is 0.

Q76. Answer: (b) Egging on

The solution is in Hindi. Read it online.

Q77. Answer: (a) rotund

The solution is in Hindi. Read it online.

Q78. Answer: (d) ACBD

The correct answer is: ACBD

Key Points

• Sentence A: This sentence introduces the central theme of the paragraph, highlighting the importance of human relationships.

• Sentence C: This sentence provides a reason for the significance of human relationships, emphasizing the positive impact they have on our lives.

• Sentence B: This sentence introduces the idea that social scientists have identified various elements contributing to a good social life, expanding on the notion mentioned in the previous sentence.

• Sentence D: This sentence concludes the paragraph by suggesting that the current generation, despite the insights of social scientists, may neglect these elements, leading to a risk of loneliness and jeopardizing happiness.

Thus, option 4 is the correct answer.

Q79. Answer: (d) Far and wide

The solution is in Hindi. Read it online.

Q80. Answer: (b) When will they announce the results of the dance competition?

The correct answer is: When will they announce the results of the dance competition?

Key Points

• The given sentence is in the passive voice.

• To convert it to active voice, we need to identify the subject (the doer of the action) and make it the grammatical subject of the sentence.

• Passive Sentence Structure: Interrogative word + Modal verb + Subject + Main verb + '?'
• Active Sentence Structure: Subject + Modal verb + Main Verb + Object + Interrogative word + '?'
• In this format, the subject "They" is placed before the auxiliary/modal verb "will," and the main verb "announce" follows.
• The rest of the sentence structure remains similar to the original interrogative sentence.

Therefore, option 2 is the correct answer.

Q81. Answer: (c) epitome

The solution is in Hindi. Read it online.

Q82. Answer: (c) effect

The solution is in Hindi. Read it online.

Q83. Answer: (d) Personel

The solution is in Hindi. Read it online.

Q84. Answer: (a) not allowed to go

The correct answer is: not allowed to go

Key Points

• The correct phrase is "not allowed to go", which means that she was prohibited from leaving the house.
• The use of "for going" is grammatically incorrect.
• The verb "allow" is often followed by an infinitive (base form of the verb), which is "to" plus the base form of the verb.
• In this case, "to go" is the correct construction.

Thus, option 1 is the correct answer.

Corrected sentence: She was not allowed to go outside by her mother.

Q85. Answer: (b) inspired them to continue pursuing their

The correct answer is: Inspired them to continue pursuing their.

Key Points

• The original sentence is in the past tense ("impressed" and "inspired"), so the correct option should also be in the past tense.
• The use of "them" and "their" indicates that the colleagues are the ones pursuing their dreams, so the correct option should reflect this.
• "Inspired" is the correct verb to use in this context, as it means to fill someone with the urge or ability to do or feel something.
• "To continue pursuing their" is the correct phrasing, as it indicates that the colleagues were already pursuing their dreams and the determination of the subject encouraged them to keep going.

Therefore, option 2 is the correct answer.

Corrected sentence: Her determination impressed all of the other colleagues and inspired them to continue pursuing their dreams.

Q86. Answer: (a) Are your elders obeyed by you?

The correct answer is: "Are your elders obeyed by you?"

Key Points

• Passive voice changes the order of the sentence to subject + auxiliary verb + past participle + object.
• In this case, "you" is the subject in the active sentence, so it becomes the object in the passive sentence.
• "Elders" becomes the subject in the passive sentence, and "obeyed" is the past participle of the verb "obey."
• The auxiliary verb "are" is used to form the passive voice in the present tense.

Therefore, option 1 is the correct answer.

Q87. Answer: (b) indecisive

The solution is in Hindi. Read it online.

Q88. Answer: (a) ADCB

The correct answer is: ADCB

Key Points

• Part A: This part provides the main directive or advice, instructing that complaining is not the appropriate response.
• Part D: This part introduces a fact about roses having thorns, setting the context for the advice given in part A. It establishes the idea that there is a negative aspect to something generally perceived as positive.
• Part C: This part introduces a contrasting perspective. Instead of complaining about the negative aspect, it suggests adopting a

more positive mindset by being grateful for something else.

• Part B: This part concludes the sentence by providing a metaphorical or symbolic explanation. It reinforces the idea that even though there are negative aspects (thorns), they can lead to something beautiful or positive (flowers).

• So, when arranged in the sequence ADCB, the parts form a coherent and meaningful sentence with a clear flow of thought.

Thus, option 1 is the correct answer.

Q89. Answer: (a) I need to buy an new iPhone.

The correct answer is: "I need to buy an new iPhone."

Key Points

• The correct article to use before "new" is "a" instead of "an".

• The word "an" is used before words starting with a vowel sound, while "a" is used before words starting with a consonant sound.

• In this case, "new" starts with a consonant sound, so the correct article to use is "a".

• The correct sentence should be "I need to buy a new iPhone."

Thus, option 1 is the correct answer.

Q90. Answer: (d) A; the

The correct answer is: A; the

Key Points

• "A" is used before a singular noun that starts with a consonant sound.

• "The" is used before a singular or plural noun that has already been mentioned or is clear from the context.

• In this sentence, "year" is a singular noun starting with a consonant sound, so "A" is appropriate.

• However, "NCC" has not been mentioned before, so "the" is needed to specify which NCC Arihant decided to join.

Thus, option 4 is the correct answer.

Complete sentence: A year ago, Arihant decided to join the NCC.

Q91. Answer: (b) Disillusioned

The solution is in Hindi. Read it online.

Q92. Answer: (c) Late

The solution is in Hindi. Read it online.

Q93. Answer: (d) charismatic; admirable

The solution is in Hindi. Read it online.

Q94. Answer: (b) Extempore

The solution is in Hindi. Read it online.

Q95. Answer: (b) enslaved

The solution is in Hindi. Read it online.

Q96. Answer: (a) sharing

The solution is in Hindi. Read it online.

Q97. Answer: (b) effectively

The solution is in Hindi. Read it online.

Q98. Answer: (c) mistakes

The solution is in Hindi. Read it online.

Q99. Answer: (c) perspectives

The solution is in Hindi. Read it online.

Q100. Answer: (b) advocate

The solution is in Hindi. Read it online.

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