

SSC CHSL Free Mock

Q1. Choose the word that can best substitute the given group of words.

The study of the origin, evolution, and structure of the universe as a whole.

- (a) Geology
- (b) Astronomy
- (c) Anthropology
- (d) Cosmology

Q2. Fill in the blank with the most suitable word.

The chef will _____ the ingredients before starting to cook.

- (a) Chop
- (b) Gaze
- (c) Shuffle
- (d) Recite

Q3. Select the most appropriate antonym of the given word.

Extant

- (a) Extinct
- (b) Present
- (c) Immediate
- (d) Around

Q4. Choose the correct passive form of the given sentence.

The international team of scientists will have completed the research study by the end of the year.

- (a) By the end of the year, the research study will have been completed by the international team of scientists.
- (b) By the end of the year, the research study has been completed by the international team of scientists.
- (c) By the end of the year, the research study will have completed by the international team of scientists.
- (d) By the end of the year, the research study will have been completing by the international team of scientists.

Q5. Choose the word that means the same as the given word.

Quixotic

- (a) Pragmatic
- (b) Idealistic
- (c) Obsolete
- (d) Plausible

Q6. Select the word that is closest in meaning (SYNONYM) to the word given below.

Obfuscate

- (a) Illuminate
- (b) Clarify
- (c) Discombobulate
- (d) Simplify

Q7. In the following question, out of the given four alternatives, select the alternative which best expresses the meaning of the Idiom or Phrase.

To pull someone's leg.

- (a) To perform a dance move.
- (b) To deceive someone as a joke.
- (c) To criticize someone.
- (d) To help someone walk.

Q8. Given below are four jumbled sentences. Pick the option that gives their correct order.

P. The fire gutted the medieval City of London inside the old Roman city wall.

Q. The Great Fire of London was a major conflagration that swept through central parts of London from 2 to 6 September 1666.

R. It threatened, but did not reach, the aristocratic district of Westminster, Charles II's Palace of Whitehall, and most of the suburban slums.

S. The death toll is unknown but was traditionally thought to have been small, as only six verified deaths were recorded.

- (a) PQRS
- (b) QPSR
- (c) QPRS
- (d) PRQS

Q9. Choose the most appropriate option to fill in the blank.

The book provides a detailed _____ into the workings of the human mind.

- (a) Insight
- (b) Hindsight
- (c) Sight
- (d) Foresight

Q10. Choose the most appropriate option to fill in the blank.

The _____ child refused to share his toys with his friends.

- (a) Generous
- (b) Ardent
- (c) Playful
- (d) Joyful

Q11. Choose the incorrectly spelled word.

- (a) Accommodate
- (b) Harass
- (c) Separate
- (d) Defenately

Q12. Choose the option that is the correct indirect form of the sentence.

John exclaimed, "What a fantastic performance that was!"

- (a) John exclaimed that what a fantastic performance that was.
- (b) John exclaimed that it was a fantastic performance.
- (c) John exclaimed that what a fantastic performance it had been.
- (d) John exclaimed that it had been a fantastic performance.

Q13. Rearrange the parts of the sentence in correct order.

In the realm of

P. Are breaking new ground

Q. Artificial intelligence and machine learning,

R. Researchers and scientists

S. Every single day

- (a) QPSR
- (b) QRPS
- (c) PRQS
- (d) RPSQ

Q14. Choose the appropriate option to fill in the blank.

She spoke _____ during the presentation, making sure everyone could hear her.

- (a) Loudly
- (b) Softly
- (c) Quickly
- (d) Lazily

Q15. Find the part of the given sentence that has an error in it. If there is no error, choose 'No error'.

The teacher insisted to complete the assignment before the deadline.

- (a) The teacher insisted
- (b) to complete the assignment
- (c) before the deadline.
- (d) No error

Q16. Select the most appropriate meaning of the given idiom. Pay lip service.

- (a) Pretend to regard.
- (b) To say something that is exactly right or accurate.
- (c) To be involved in a construction project.
- (d) To make a sudden and forceful impact.

Q17. Identify the part of the following sentence that contains a grammatical error. If there is no error, select 'No error'.

If I would have studied harder, I would have passed the exam.

- (a) If I would have studied harder,
- (b) I would have
- (c) Passed the exam.
- (d) No error

Q18. Select the word that is closest in meaning (SYNONYM) to the word given below.

Assuage

- (a) Aggravate
- (b) Alleviate
- (c) Exacerbate
- (d) Intensify

Q19. Choose the correctly spelled word.

- (a) Bambozle
- (b) Bambuzle
- (c) Bambosle
- (d) Bamboozle

Q20. Choose the word that can substitute the given group of words.

Protection of or authority over someone.

- (a) Guardianship
- (b) Entrepreneurship
- (c) Partnership
- (d) Sponsorship

Directions (21-25): In the following passage, some of the words have been left out. Carefully read the passage and choose the most suitable answer for each blank from the four options provided.

Himachal Pradesh is a picturesque state in northern India, known for its stunning landscapes and (1) _____. Every year, thousands of tourists visit Himachal Pradesh to (2) _____ its natural beauty and experience thrilling adventures. The state is home to majestic mountains, lush green valleys, gushing rivers, and serene lakes. One of the most popular destinations in Himachal Pradesh is Shimla, the state capital. Shimla (3) _____ visitors with its colonial charm, scenic viewpoints, and pleasant weather. Another must-visit place is Manali, famous for its snow-capped peaks, apple orchards, and exciting trekking trails. Himachal Pradesh offers a wide range of outdoor activities for adventure enthusiasts. Tourists can indulge in (4) _____ like paragliding, river rafting, skiing, and mountaineering. The region is also known for its rich cultural heritage, with vibrant festivals and traditional handicrafts that showcase the local artistry. Exploring Himachal Pradesh is a delight for nature lovers, (5) _____ breathtaking views and a serene atmosphere. It is truly a paradise for those seeking a memorable and adventurous trip.

Q21. Select the most appropriate option to fill in blank number 1.

- (a) Biodiversity
- (b) Wildlife
- (c) Sunsets
- (d) Waterfalls

Q22. Select the most appropriate option to fill in blank number 2.

- (a) Explore
- (b) Ignore
- (c) Enrich
- (d) Endanger

Q23. Select the most appropriate option to fill in blank number 3.

- (a) Charms
- (b) Excites
- (c) Disappoints
- (d) Isolates

Q24. Select the most appropriate option to fill in blank number 4.

- (a) Activities
- (b) Monuments
- (c) Museums
- (d) Restaurants

Q25. Select the most appropriate option to fill in blank number 5.

- (a) Enchanting
- (b) Crowded
- (c) Ordinary
- (d) Exhausting

Q26. Select the option in which the words share the same relationship as that shared by the give pair of words.

Deer : Fawn

- (a) Bee : Queen
- (b) Kangaroo : Joey
- (c) Shark : Lamb
- (d) Cow : Kitten

Q27. Arrange the following words in order in which they appear in an English dictionary:

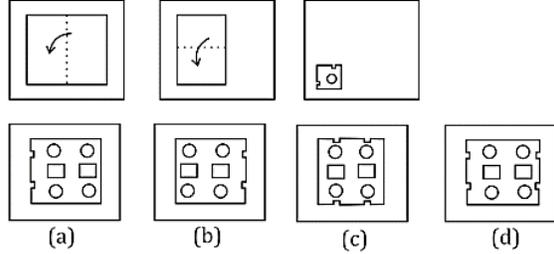
- 1. Bystander
- 2. Byron
- 3. Byte
- 4. Bygone
- 5. Byproduct

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

Q28. Select the option in which the numbers are related in the same way as the numbers of the following set are related.

- (5, 3, 52)
- (a) (3, 9, 404)
- (b) (4, 8, 940)
- (c) (6, 8, 584)
- (d) (9, 6, 297)

Q29. A piece of paper is folded and punched as shown below in the question figures. From the given answer figures, indicate how it will appear when opened?



- (a) a
- (b) b
- (c) c
- (d) d

Q30. Select the option that is related to the fourth number in the same way as the first number is related to the second number and the fifth number is related to the sixth number.

6 : 63 :: ? : 108 : 11 : 198

- (a) 8
- (b) 6
- (c) 4
- (d) 5

Q31. Four words have been given, out of which three are like in some manner and one is different. Select the word that is different.

- (a) Prologue
- (b) Epitaph
- (c) Dialogue
- (d) Monologue

Q32. Read the given statements and conclusion carefully. Assuming that the information given in the statement is true, even if it appears to be at variance with commonly known facts, decide which of the given conclusion logically follows from the statements.

Statement :

- 1. All papers are Pen.
- 2. Some Boys are Paper.
- 3. All Teacher are Boys.

Conclusion :

- I. All Teachers are Pen.
- II. Some Teachers are Pen.
- III. Some Boys are Teachers.
- IV. All Boys are Pen.
- (a) Only conclusion III follows
- (b) Both conclusion I and II follows.
- (c) Both conclusion II and III follows.
- (d) Only conclusion I follows.

Q33. Four number-pairs have been given out of which three are like in some manner and one is different. Select the number pair that is different.

- (a) 251 : 384
- (b) 632 : 765
- (c) 426 : 559
- (d) 688 : 819

Q34. Anjali is the daughter of Pramod's only sister Komal. Pramod's mother is Himani. Seema is Himani's mother. Seema's husband is Pankaj. Priya is the mother – in – law of Pankaj. How is Anjali related to Himani ?

- (a) Daughter
- (b) Grand Daughter
- (c) Grand mother
- (d) Mother

Q35. Select the combination of letters that when sequentially placed in the blanks of the given series will complete the series

P _ K _ S _ _ K T _ _ Q _ T S

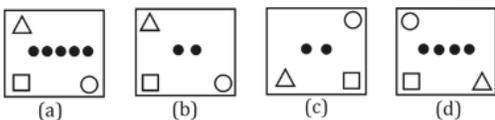
- (a) QTPSQSP
- (b) QPTQSKP
- (c) QTPQSPK
- (d) QPTQSPK

Q36. Study the given pattern carefully and select the number that can replace the question mark (?) in it.

17	8	150
18	6	?
13	7	120

- (a) 160
- (b) 144
- (c) 154
- (d) 150

Q37. Select the figure that will come next in the following series.



- (a) a
- (b) b
- (c) c
- (d) d

Q38. Select the letter-cluster from among the given options that can replace question mark(?) in the following series.

HQT, NUU, TYV, ZCW, ?

- (a) FGJ
- (b) FGX
- (c) GFX
- (d) GJY

Q39. Select the option that is related to the third word in the same way as the second word is related to the first word.

Hypothesis : Theory :: Comprehend : ?

- (a) Analyze
- (b) Contradict
- (c) Misunderstand
- (d) Understand

Q40. Select the number from among the given options that can replace the question mark(?) in the following series.

12, 8, 37, 13, 62, 18, ?

- (a) 88
- (b) 25
- (c) 87
- (d) 64

Q41. Select the correct combination of mathematical signs that can sequentially replace the * signs and balance the equation.

$126 * 7 * 4 * 64 * 60 * 76$

- (a) $\times, \div, -, +, =$
- (b) $\times, -, +, \div, =$
- (c) $\div, \times, +, -, =$
- (d) $\div, \times, -, +, =$

Q42. In a certain code language, 'COMEDY' is written as 'AJKZBT'. How will 'MOVIE' be written in that language?

- (a) KLTDC
- (b) KJTDC
- (c) KJSDB
- (d) KLSCD

Q43. Four letter-clusters have been given, out of which three are alike in some manner and one is different. Select the letter-cluster that is different.

- (a) SXOT
- (b) PUZE
- (c) FKPU
- (d) OTYD

Q44. What will come in the place of question mark in the following number series.

10, 20, 32, 44, 54, ?

- (a) 78
- (b) 60
- (c) 64
- (d) 72

Q45. Pick the odd word out.

- (a) Joyful
- (b) Ecstatic
- (c) Gloomy
- (d) Delighted

Q46. Which number will replace the question mark in the following series?

12, 13, 21, 48, 112, ?

- (a) 314
- (b) 248
- (c) 235
- (d) 237

Q47. Select the correct alternative from the given ones that will complete the series.

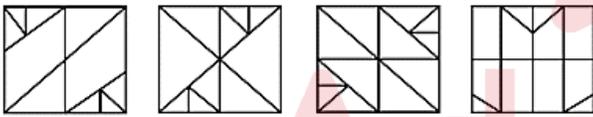
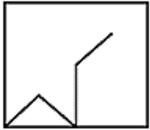
D7W, C11X, E13V, L17O, ?

- (a) H8S
- (b) I9R
- (c) G10T
- (d) K19P

Q48. Kamal walks 25km towards south. He takes a right turn and walks 35km. He takes a right turn and walks 20km. In which direction is he from his starting point?

- (a) South-West
- (b) South
- (c) North-East
- (d) West

Q49. From the given answer figure, select the one in which the question figure is hidden / embedded.



- (a) a
- (b) b
- (c) c
- (d) d

Q50. Choose the correct alternative from the given ones that will complete the series.

CGK, EKQ, GOW, ISC, KWI, ?

- (a) MBT
- (b) NAQ
- (c) MAO
- (d) NBP

Q51. Simplify the following expression:

$16 \div 8 \text{ of } 9 \times 36 + 7 \div 49 \text{ of } 2 \times 6 - 4 \div 4 \times 2$

- (a) $2\frac{7}{6}$
- (b) $3\frac{7}{9}$
- (c) $6\frac{3}{7}$
- (d) $9\frac{3}{7}$

Q52. A can complete a piece of work in 28 days and B can complete it in 91 days. They worked together for 12 days and then A left, B complete the remaining work. For how many total numbers of days did B work to finish the work completely?

- (a) 58 days
- (b) 52 days
- (c) 55 days
- (d) 48 days

Q53. O is the center of a circle with diameter 40 cm. T is a point outside the circle and TA is a tangent to a circle. If OT is 29 cm. What is the length (in cm) of the tangent TA?

- (a) 19 cm
- (b) 22 cm
- (c) 21.25 cm
- (d) 21 cm

Q54. Find the value of

$$\frac{1}{72} + \frac{1}{90} + \frac{1}{110} + \frac{1}{132} + \frac{1}{156}$$

- (a) 5/208
- (b) 15
- (c) 1/208
- (d) 5/104

Q55. If the average of 29, 38, 43, a and b is 47 and 39, 51, 49, 54, 52, c and d is 78, What is the average of a, b, c and d ?

- (a) 106.5
- (b) 169.5
- (c) 128
- (d) 172.5

Q56. A sum kept under simple interest after 5 year the amount received is 4 times of the sum. In how many years will we get an amount of 10 times the original sum at the same rate.

- (a) 9 years
- (b) 12 years
- (c) 8 years
- (d) 15 years

Q57. 37 liters of 60% concentration of acid solution is added to 35liters to 50% concentration of acid solution. What is the concentration of acid in the new solution?

- (a) 49.43 %
- (b) 55%
- (c) 51 %
- (d) 55.13%

Q58.

If $\frac{a}{b} + \frac{b}{a} - 2 = 0$, ($a, b \neq 0$), then the value of $(a - 2b)$ is:

- (a) 1
- (b) -1
- (c) -2
- (d) 2

Q59. A person has two articles which he decided to sell. The selling price of the 1st article is equal to the cost price of the second article. The 1st article is sold at 40% profit whereas the second article is sold at 20% loss. What is his overall profit/loss percentage?

- (a) 2.2% loss
 (b) 2.2% profit
 (c) 5% profit
 (d) 5% loss

Q60. The volume of a room wall in which its height is 6 times of its width and length is 5 times of its height is 4860m³. What is the cost of painting the wall on one side, taking length one of it's sides at the rate of Rs 13.5/m²?

- (a) Rs. 21,870
 (b) Rs. 22,725
 (c) Rs. 27,600
 (d) Rs. 19,335

Q61. If two pipe P and Q can fill an empty tank in 10 hours and 12 hours respectively. They are opened alternately for two and half hour each, opening pipe Q first. In which hour, will the empty tank be filled?

- (a) 9th
 (b) 10th
 (c) 11th
 (d) 12th

Q62. If the difference of 65% and 32% of a number is 82.5, then the 27% of that number is:

- (a) 67.5
 (b) 45.6
 (c) 65
 (d) 57.5

Q63. The volumes of two cubes are in the ratio of 343 : 512. If the volume of the larger cube is 1352 cm³ more than that of the smaller cube. Find the surface area of the smaller cube.

- (a) 84 cm²
 (b) 72cm²
 (c) 1176 cm²
 (d) 144 cm²

Q64. The value of $\cos 120^\circ + \sin 150^\circ + \sin 90^\circ + \tan 120^\circ$ is:

- (a) $\frac{\sqrt{2}+2}{\sqrt{3}}$
 (b) $\frac{\sqrt{3}+1}{2}$
 (c) $\frac{\sqrt{3}-2}{\sqrt{2}}$
 (d) $1-\sqrt{3}$

Q65. Two chords 4 cm apart, at the same side of the centre of a circle are of length 12 cm and 6 cm respectively. Find the diameter of the circle.

- (a) $\frac{5}{2}\sqrt{97}$ cm
 (b) $\frac{3}{4}\sqrt{97}$ cm
 (c) $\frac{5}{4}\sqrt{97}$ cm
 (d) $\frac{3}{2}\sqrt{97}$ cm

Directions (66-69): The table below shows the number of students enrolled in five colleges over the five years?

Colleges Year	A	B	C	D	E
2010	200	175	195	210	250
2011	230	150	180	250	280
2012	180	125	140	255	210
2013	170	165	165	235	230
2014	210	150	140	240	270

Q66. What is the average number of students studying in college E over the given years?

- (a) 248
 (b) 235
 (c) 255
 (d) 250

Q67. In the year 2012, what percent of students were enrolled in college B?

- (a) 15.9%
 (b) 11.3%
 (c) 13.73%
 (d) 14.15%

Q68. What is the ratio of the total students enrolled in college A and C in the year 2011 to the total students enrolled in college B and E in the year 2013?

- (a) 69 : 83
 (b) 67 : 85
 (c) 82 : 79
 (d) 71 : 88

Q69. The number of students studying in college D in the year 2012 is approximately what percent of the number of students studying in college B, D and E taken together in year 2014?

- (a) 46.02%
 (b) 38.06%
 (c) 38.63%
 (d) 40.70%

Q70.

If $\cot\theta = \frac{8}{6}$, θ is an acute angle, then find the value of $\frac{(1-\sin\theta)(3+3\sin\theta)}{(3-3\sin\theta)}$.

- (a) 9/4
 (b) 7
 (c) 8/5
 (d) 1

Q71. What is the sum of the digits of the largest five digits number which is divisible by 6, 30, 45 and 60?

- (a) 45
 (b) 33
 (c) 27
 (d) 18

Q72. A and B enter into a partnership with investments of Rs. 21000 and Rs.33000 respectively. They share half of the profit equally for running the business and the remaining profit in the ratio of their investments. If the difference in their shares of profits is Rs. 39, what is the total profit?

- (a) Rs.351
- (b) Rs.354
- (c) Rs.404
- (d) Rs.504

Q73. A shopkeeper gives a discount of 20% once in 4 months. If a man purchases an article in this scheme for Rs. 19968 in November, then what was the initial price in December?

- (a) Rs.40000
- (b) Rs.35000
- (c) Rs.45000
- (d) Rs.39000

Q74. Calculate the HCF of $18/5$, $21/15$ and $15/17$.

- (a) $4/255$
- (b) $2/255$
- (c) $3/255$
- (d) $1/255$

Q75. If two lines $3x + 4y + 2 = 0$ and $ax + 3y + 3 = 0$ are perpendicular to each other. Find the value of 'a'.

- (a) 0
- (b) -4
- (c) -2
- (d) $-\frac{1}{2}$

Q76. Which part of soil has organic materials incorporated with the mineral matter, nutrients, and water?

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

Q77. In which of the following states is Sabarimala Sree Dharma Sastha Temple located?

- (a) Telangana
- (b) Andhra Pradesh
- (c) Karnataka
- (d) Kerala

Q78. Who among the following became the first Lokpal of India?

- (a) Ajay Kumar Tripathi
- (b) Dilip B Bhosale
- (c) Pradip Kumar Mohanty
- (d) Pinaki Chandra Ghose

Q79. Identify the Indian state which was known as 'Pragjyotisha' during the epic period.

- (a) Assam
- (b) Odisha
- (c) Kerala
- (d) Bihar

Q80. _____ plains are formed due to the weathering of soluble rocks such as limestone and dolomite.

- (a) Karst
- (b) Glacial
- (c) Deposition
- (d) Desert

Q81. 'Kati Bihu' in Assam is celebrated by lighting a lamp in front of a _____ tree/plant.

- (a) banana
- (b) banyan
- (c) tulsi
- (d) neem

Q82. Who among the following personalities has written the National Song 'Vande Mataram'?

- (a) Sarojini Naidu
- (b) Bankim Chandra Chattopadhyay
- (c) Rabindra Nath Tagore
- (d) Sri Aurobindo

Q83. Identify the element that helps to trap light energy that is essential for photosynthesis.

- (a) Cristae
- (b) Amyloplasts
- (c) Carotenoid
- (d) Vacuoles

Q84. Which of the following novels is NOT written by Amitav Ghosh?

- (a) The Circle of Reason
- (b) A Suitable Boy
- (c) Sea of Poppies
- (d) The Shadow Lines

Q85. What type of forests are found north and south of the equator between 40° and 60° where rainfall is high, between 500-1500 mm in a year?

- (a) Taiga forests
- (b) Coniferous forests
- (c) Mediterranean forests
- (d) Temperate deciduous forests

Q86. What type of rocks were once igneous or sedimentary, but have metamorphosed as a result of intense heat and/or pressure within the Earth's crust?

- (a) Granite
- (b) Quartzite
- (c) Sandstone
- (d) Basalt

Q87. Who among the following is the author of 'Set the Boy Free'?

- (a) David Niven
- (b) Johnny Marr
- (c) Paul Kalanithi
- (d) Bill Browder

Q88. Which of the following artificial colouring agents is used in dietary supplements, sauces, soups and broths, bakery, dairy fats and oils, seafood, condiments, breath fresheners, desserts, convenience foods, and beverages?

- (a) Acid fuchsin
- (b) Orange G
- (c) Oil red O
- (d) Quinoline yellow

Q89. Which group of Articles relates to the relationship of the President and the Council of Ministers?

- (a) 71, 75 and 78
- (b) 72, 75 and 78
- (c) 74, 75 and 78
- (d) 73, 75 and 78

Q90. The President can declare a national emergency

- (a) only in the event of foreign invasion
- (b) only in the event of armed rebellion
- (c) in both (a) and (b)
- (d) None of the above

Q91. Which of the following pairs is correctly matched?

- | | |
|---------------|----------------------|
| A. Radium | 1. Alexander Fleming |
| B. Penicillin | 2. Madan Curie |
| C. X-ray | 3. Edward Jenner |
| D. Smallpox | 4. W.K. Roentgen |

Code:

- | | A | B | C | D |
|-----|---|---|---|---|
| (a) | 2 | 1 | 4 | 3 |
| (b) | 2 | 3 | 4 | 1 |
| (c) | 3 | 4 | 1 | 2 |
| (d) | 4 | 1 | 2 | 3 |

- (a) a
- (b) b
- (c) c
- (d) d

Q92. The wave length extension of visible light is-

- (a) Between 200–900 nm
- (b) Between 250–850 nm
- (c) Between 300–800 nm
- (d) Between 390–780 nm

Q93. Shakoore Khan, Pandit Ram Narayan, Ramesh Mishra, Sultan Khan and Ustad Binda

Khan are noted players of which of the following instruments?

- (a) Rudra veena
- (b) Santoor
- (c) Sarangi
- (d) Jal-tarang

Q94. Who is recognised as the founder of the Lucknow Gharana of Kathak?

- (a) Birju Maharaj
- (b) Ishwari Prasad
- (c) Rukmini Devi
- (d) Sitara Devi

Q95. Where is the headquarters of the Food Corporation of India located?

- (a) Kolkata
- (b) New Delhi
- (c) Hyderabad
- (d) Bhubaneswar

Q96. Who has been appointed as the new president and managing director for SAP Indian Subcontinent, succeeding Kulmeet Bawa?

- (a) Manish Prasad
- (b) Paul Marriott
- (c) Kulmeet Bawa
- (d) Satish Sivan

Q97. Who were honored at the annual 'India-UK Achievers' awards in London?

- (a) Zoya Akhtar and Asma Khan
- (b) Javed Akhtar and Honey Irani
- (c) Rishi Sunak and S Somnath
- (d) None of the above

Q98. Panama has officially become the _____ member of the International Solar Alliance (ISA).

- (a) 97th
- (b) 98th
- (c) 99th
- (d) 100th

Q99. Which Indian Armed Force is conducting the 'Bharat-Shakti' exercise at Asia's largest field firing range in Jaisalmer?

- (a) Indian Army
- (b) Indian Navy
- (c) Indian Air Force
- (d) All three forces (Army, Navy, and Air Force)

Q100. Who inaugurated the Agriculture Integrated Command and Control Center?

- (a) Shri Arjun Munda
- (b) Shri Narendra Modi
- (c) Shri Hardeep S Puri
- (d) Shri Rajendra Prasad Goyal

Solutions

S1. Ans.(d)

Sol. Option d, "Cosmology" can substitute the given group of words.

The study of the origin, evolution, and structure of the universe as a whole- Cosmology.

Meaning of other options-

- **Geology:** The study of the Earth's structure, history, and the processes that shape it.
- **Astronomy:** The study of celestial objects, such as stars, planets, galaxies, and their phenomena.
- **Anthropology:** The study of human societies, cultures, and their development throughout history.

S2. Ans.(a)

Sol. Option a, "Chop" is the most suitable word to fill in the blank.

"Chop" is the best option because it accurately describes the action of cutting the ingredients into smaller pieces. When cooking, chopping refers to using a sharp tool, such as a knife, to divide food into smaller parts.

Meaning of other options-

- **Gaze:** To look steadily or intently at something or someone.
- **Shuffle:** To move things around in a random or disorganized manner.
- **Recite:** To repeat or say aloud from memory, often in a formal or ritualistic manner.

S3. Ans.(a)

Sol. Option a, "Extinct" is the most appropriate antonym of the given word.

Extant- means currently existing, still in existence, or surviving.

Synonyms- Existing, Surviving, Current, Remaining.

Antonyms- **Extinct**, Nonexistent, Defunct, Lost.

Meaning of other given options-

- **Extinct:** No longer in existence or living.
- **Present:** Existing or occurring in the current time or place.
- **Immediate:** Occurring or done without delay; instant.
- **Around:** In the vicinity; nearby or approximately.

S4. Ans.(a)

Sol. Option a is the correct passive form of the given sentence.

- **Active Voice-** Active voice is a grammatical structure in which the subject of the sentence performs the action expressed by the verb.
- **Passive Voice-** Passive voice refers to a grammatical construction where the subject of a sentence undergoes an action rather than performing it. In passive voice sentences, the emphasis is on the recipient or object of the action.

The given sentence is future perfect tense.

Rule for converting active to passive voice or vice-versa.

Subject + will, shall + have + V₃ + object → Object + will, shall + have + been + past participle + by + subject.

Therefore, according to the given rule, Option a, "By the end of the year, the research study will have been completed by the international team of scientists." is the correct passive voice of the given sentence.

- In option b, use of "has" is inappropriate.
- In option c, "been" is missing.
- In option d, verb "completing" is incorrect.

S5. Ans.(b)

Sol. Option b, "Idealistic" means the same as the given word.

Quixotic- means idealistic, impractical, or marked by extravagant romanticism or visionary ideals.

Synonyms- **Idealistic**, Romantic, Utopian, Visionary.

Antonyms- Pragmatic, Realistic, Practical, Sensible.

Meaning of other words-

- **Pragmatic:** Practical, dealing with things sensibly and realistically.
- **Idealistic:** Characterized by pursuit of noble ideals or perfection, often without regard to practicality.
- **Obsolete:** No longer in use or outdated.
- **Plausible:** Seemingly reasonable or probable, appearing to be true or valid.

S6. Ans.(c)

Sol. Option c, "Discombobulate" is the synonym of the given word.

Obfuscate- means to make something unclear, confusing, or difficult to understand.

Synonyms- Confuse, Befuddle, Mystify, **Discombobulate**.

Antonyms- Clarify, Illuminate, Explain, Elucidate.

Meaning of other given options-

- **Illuminate:** To provide light or clarity; to make something clear or understandable.
- **Clarify:** To make something clear or easier to understand; to remove confusion or ambiguity.
- **Discombobulate:** To confuse, disorient, or upset someone; to throw into a state of confusion.
- **Simplify:** To make something simpler or easier to understand; to reduce complexity or difficulty.

S7. Ans.(b)

Sol. Option b is the correct meaning of the given idiom.

To pull someone's leg- To deceive someone as a joke.

Idiom used in sentence- John loves to pull his sister's leg by pretending to be a ghost and scaring her when she least expects it.

S8. Ans.(c)

Sol. QPRS is the correct sequence.

- **Sentence Q** will be the first sentence. This sentence introduces the main event, which is the Great Fire of London that occurred during a specific period.
- **Sentence P** will be second. Following the introduction, this sentence explains the impact of the fire, stating that it severely damaged or destroyed the medieval City of London, which was located within the old Roman city wall.

- **Sentence R** will be third. This sentence provides additional details about the fire's reach, mentioning the areas it threatened but did not ultimately reach, such as the aristocratic district of Westminster, Charles II's Palace of Whitehall, and the suburban slums.
- **Sentence S** will be the last sentence. The final sentence in the sequence provides information about the death toll resulting from the fire. It states that while the exact number is unknown, it was traditionally believed to be small, with only six verified deaths recorded.

Therefore, QPRS is the correct sequence.

S9. Ans.(a)

Sol. Option a, "Insight" is the most appropriate option to fill in the blank.

The word "insight" means a deep understanding or perception of a particular subject or situation. In the given sentence, the book is described as providing a detailed understanding or exploration into the workings of the human mind.

Therefore, "insight" is the most suitable word to convey the intended meaning.

Meaning of other given options-

- **Hindsight:** Understanding or knowledge of an event or situation after it has occurred.
- **Sight:** The ability to see or perceive with the eyes.
- **Foresight:** The ability to predict or anticipate future events or outcomes.

S10. Ans.(b)

Sol. Option b is the most appropriate option to fill in the blank. The word "ardent" means having intense or passionate feelings towards something. In the context of the sentence, if the child is refusing to share his toys with his friends, it suggests that he is deeply attached to his toys and is unwilling to part with them.

Meaning of other given options-

- **Generous:** Willing to give or share things with others.
- **Playful:** Inclined to play or have fun.
- **Joyful:** Feeling or expressing great happiness or pleasure.

S11. Ans.(d)

Sol. Option d, "Defenately" is incorrectly spelt. Correct spelling is "Definitely".

Meaning of the given options-

- **Accommodate:** To provide lodging or make adjustments to fit someone's needs.
- **Harass:** To persistently bother or torment someone.
- **Separate:** To divide or set apart things or people.
- **Definitely:** Without any doubt or uncertainty.

S12. Ans.(d)

Sol. Option d is the correct indirect form of the given sentence.

Direct speech - is a form of speech where the exact words of the speaker are quoted. This usually involves quotation marks to signify the exact words the speaker used.

Indirect speech- also known as reported speech, is when the words or meaning of a speaker are reported without using the exact words. Instead of quotation marks, indirect speech often uses 'that' to introduce the reported speech. It generally involves changing tenses and pronouns to fit with the context of the reporting speech.

Rule for Converting Direct to Indirect Speech

When converting from direct to indirect speech, it is necessary to follow certain rules:

- Remove quotation marks.
- Use a conjunction like "that" to connect the reporting verb to the reported speech.
- Change the pronouns according to the context.
- Adjust the verb tense to match the context of the reporting speech. In this case, simple past tense will be changed to past perfect tense.

In the case of exclamation sentences like "What a fantastic performance that was!", the rules of conversion to indirect speech include the following steps:

- Convert the introductory verb (like "exclaimed") to a verb that expresses the speaker's sentiment.
- Change the exclamation words to a statement form.
- Adjust pronouns and verb tenses as necessary.

Therefore, according to above rules-

Option d, "John exclaimed that it had been a fantastic performance." is the correct indirect form of the given sentence.

S13. Ans.(b)

Sol. Sentence Q ("Artificial intelligence and machine learning,") continues the opening prepositional phrase that begins with "In the realm of", making it the logical next part of the sentence.

- Then R ("Researchers and scientists") logically follows because it clarifies who is operating in the realm of artificial intelligence and machine learning.
- Next, P ("Are breaking new ground") fits because it describes what these researchers and scientists are doing in the field of AI and machine learning.
- Finally, S ("Every single day") naturally ends the sentence, providing information on how often these advancements are occurring.

So, the correct option is (b) QRPS.

S14. Ans.(a)

Sol. The appropriate option to fill in the blank is (a) Loudly. The sentence reads: "She spoke loudly during the presentation, making sure everyone could hear her."

The sentence context implies that the speaker made an effort to ensure that everyone in the audience could hear her. Out of the given options, 'loudly' is the most suitable option.

Meaning of other options-

- **Softly:** In a gentle, quiet manner, not loudly.
- **Quickly:** At a fast pace, swiftly, without delay.
- **Lazily:** In a slow, relaxed manner, showing a lack of effort or care.

S15. Ans.(b)

Sol. Option b, contains an error.

- The correct form is "insisted on completing the assignment" instead of "insisted to complete the assignment."
- The verb "insist" is followed by the preposition "on" when referring to an action or request.
- The correct sentence would be: "The teacher insisted on completing the assignment before the deadline."

S16. Ans.(a)

Sol. Pay lip service- Pretend to regard.

Idiom used in sentence- Despite claiming to support environmental conservation, the company only pays lip service to the cause without implementing any substantial changes in their practices.

S17. Ans.(a)

Sol. The part of the following sentence that contains a grammatical error is (a) "If I would have studied harder,".

- The correct form should be "If I had studied harder," instead of "If I would have studied harder,".
- When expressing a hypothetical or unreal condition in the past, we use the third conditional, which requires the past perfect tense in the "if" clause.
- Therefore, the correct sentence would be: "If I had studied harder, I would have passed the exam."
- Using "would have" in the second part of the sentence (b) "I would have" is correct because it indicates the result of the hypothetical condition in the past.
- The remaining part of the sentence (c) "Passed the exam." is also error-free.
- Therefore, the correct answer is (a) "If I would have studied harder,".

S18. Ans.(b)

Sol. Option b is the correct synonym of the given word.

Assuage- To soothe, alleviate, or relieve (pain, distress, or tension).

Synonyms: Ease, mitigate, relieve, **alleviate**, mollify.

Antonyms: Aggravate, intensify, exacerbate, provoke, inflame.

Meaning of other words-

- **Aggravate:** To worsen, make more severe or intense.
- **Alleviate:** To relieve, lessen, or make something more bearable.
- **Exacerbate:** To make a problem, situation, or condition more severe or intense.
- **Intensify:** To make stronger, increase in degree, or enhance.

S19. Ans.(d)

Sol. Option d, "Bamboozle" is the correctly spelled word.

Bamboozle- To deceive, confuse, or trick someone through cunning or dishonest means.

S20. Ans.(a)

Sol. Option a is the correct substitution of the given group of words.

Protection of or authority over someone- Guardianship.

Meaning of other given words-

- **Entrepreneurship:** The activity of setting up and running a business or businesses, taking on financial risks in the hope of profit.
- **Partnership:** A cooperative relationship or association between two or more individuals or entities in which they share resources, responsibilities, and profits.
- **Sponsorship:** Financial or material support provided by an individual, organization, or company to fund or support an event, activity, or person in exchange for promotional benefits.

S21. Ans.(a)

Sol. The correct option to fill in blank number 1 is (a) Biodiversity.

Meanings of the options:

- **Biodiversity:** The variety of plant and animal life in a particular habitat or ecosystem.
- **Wildlife:** Animals living in their natural habitat, typically undomesticated and untamed.
- **Sunsets:** The daily disappearance of the sun below the horizon, often accompanied by colorful skies.
- **Waterfalls:** A cascade of water falling from a height, often found in mountainous or rocky areas.

As per the passage and meanings of the options given, 'Biodiversity' is the most appropriate option to fill in the blank.

S22. Ans.(a)

Sol. The correct option to fill in blank number 2 is (a) Explore.

Meanings of the options:

- **Explore:** To travel around or through a place to discover it or gain knowledge about it.
- **Ignore:** To pay no attention to or disregard something or someone.
- **Enrich:** To enhance or improve the quality or value of something.
- **Endanger:** To put someone or something at risk or in danger.

As per the passage and meanings of the options given, 'Explore' is the most appropriate option to fill in the blank.

S23. Ans.(b)

Sol. The correct option to fill in blank number 3 is (b) Excites.

Meanings of the options:

- **Charms:** To attract or delight someone with qualities such as beauty, grace, or personality.
- **Excites:** To cause someone to feel enthusiasm, eagerness, or interest.
- **Disappoints:** To fail to fulfill someone's expectations or hopes, leading to a feeling of sadness or dissatisfaction.
- **Isolates:** To cause someone or something to be alone, separated, or cut off from others.

As per the passage and meanings of the options given, 'Excites' is the most appropriate option to fill in the blank.

S24. Ans.(a)

Sol. The correct option to fill in blank number 4 is (a) Activities.

Meanings of the options:

- **Activities:** Actions or tasks that people engage in, often for recreation, enjoyment, or entertainment.
- **Monuments:** Structures or buildings of historical, cultural, or artistic significance.
- **Museums:** Institutions that collect, preserve, and display objects of artistic, historical, or scientific importance.
- **Restaurants:** Establishments where people go to eat meals prepared and served by professionals.

As per the passage and meanings of the options given, 'Activities' is the most appropriate option to fill in the blank.

S25. Ans.(a)

Sol. The correct option to fill in blank number 5 is (a) Enchanting.

Meanings of the options:

- **Enchanting:** Charming or captivating in a way that evokes delight, wonder, or fascination.
- **Crowded:** Filled or occupied by a large number of people or things, lacking space or room.
- **Ordinary:** Commonplace or average, lacking special or distinctive features.
- **Exhausting:** Physically or mentally draining, causing extreme tiredness or fatigue.

As per the passage and meanings of the options given, 'Enchanting' is the most appropriate option to fill in the blank.

S26. Ans.(b)

Sol. Babies of Deer are known as Fawn. Similarly, babies of Kangaroo are known as Joey.

S27. Ans.(d)

Sol. 4,5,2,1,3

S28. Ans.(d)

Sol.

$$\Rightarrow (5)^2 + (3)^3 = 25 + 27 = 52$$

Similarly,

$$\Rightarrow (9)^2 + (6)^3 = 81 + 216 = 297$$

S29. Ans.(d)

Sol.

S30. Ans.(a)

Sol.

$$6 \times (6 + 1) = 42$$

$$42 \times 1.5 = 63$$

And

$$8 \times (8 + 1) = 72$$

$$72 \times 1.5 = 108$$

Similarly,

$$11 \times (11 + 1) = 132$$

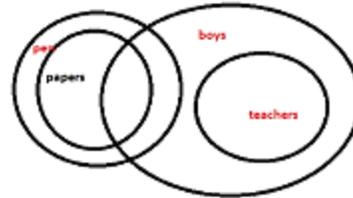
$$132 \times 1.5 = 198$$

S31. Ans.(b)

Sol. (c) Dialogue, (d) Monologue, and (a) Prologue are all related to a conversation or speech, while (b) Epitaph is related to a phrase or form of words written in memory of a person who has died, especially as an inscription on a tombstone. Therefore, (b) Epitaph is the different word.

S32. Ans.(a)

Sol.



I. ×

II. ×

III. ✓

IV. ×

S33. Ans.(d)

Sol.

$$(a) 384 - 251 = 133$$

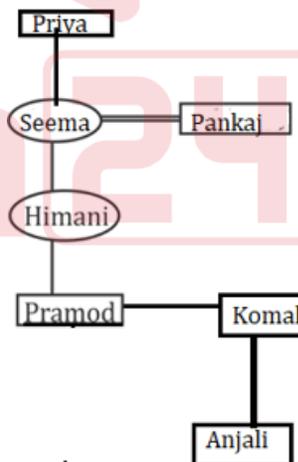
$$(b) 765 - 632 = 133$$

$$(c) 559 - 426 = 133$$

$$(d) 819 - 688 = 131 \text{ Not } 133$$

S34. Ans.(b)

Sol.

**S35. Ans.(c)**

Sol. P Q K T S / P Q K T S / P Q K T S

S36. Ans.(b)

$$\text{Sol. } (17 + 8) \times 6 = 150$$

And

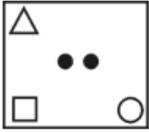
$$(13 + 7) \times 6 = 120$$

Similarly,

$$(18 + 6) \times 6 = 144$$

S37. Ans.(b)

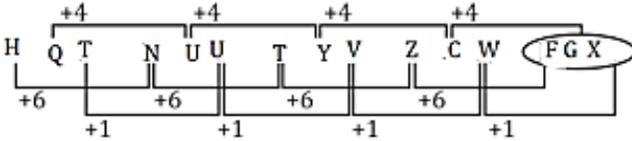
Sol.



Addition of 2 dots and removal of 1 dot.
Hence option (b) is correct answer.

S38. Ans.(b)

Sol.



S39. Ans.(d)

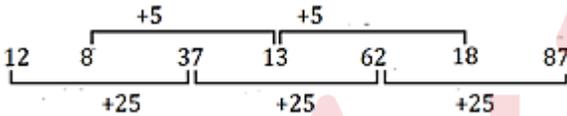
Sol. The correct answer is: (d) Understand

Explanation: The relationship between "hypothesis" and "theory" is that a hypothesis is an initial assumption or prediction, while a theory is a well-established explanation based on evidence and research.

Similarly, the relationship between "comprehend" and the understand should involve finding a word that represents a more advanced or higher level of understanding,

S40. Ans.(c)

Sol.



S41. Ans.(c)

Sol. $126 \div 7 \times 4 + 64 - 60 = 104$

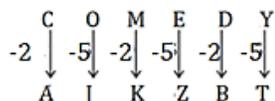
$18 \times 4 + 64 - 60 = 104$

$72 + 4 = 76$

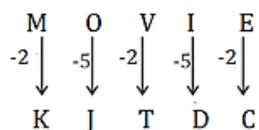
$76 = 76$

S42. Ans.(b)

Sol. The pattern is



Similarly,



S43. Ans.(a)

Sol. Except 'SXOT' all are following + 5.

S44. Ans.(b)

Sol. The logic here is

$10 \rightarrow 10 + (2 \times 5) = 20$

$20 \rightarrow 20 + (3 \times 4) = 32$

$32 \rightarrow 32 + (4 \times 3) = 44$

$44 \rightarrow 44 + (5 \times 2) = 54$

$54 \rightarrow 54 + (6 \times 1) = 60$

Hence, 60 is Answer.

S45. Ans.(c)

Sol. The odd word out is: (c) Gloomy

Explanation: All the other words (joyful, ecstatic, and delighted) express happiness, pleasure, or excitement.

However, "gloomy" means dark, sad, or lacking in light, which is the opposite of the other words' meanings.

S46. Ans.(d)

Sol. The pattern followed here is

$12 + 1^3 = 13$

$13 + 2^3 = 21$

$21 + 3^3 = 48$

$48 + 4^3 = 112$

$112 + 5^3 = 237$

S47. Ans.(d)

Sol. There is sequence of consecutive prime numbers.

7, 11, 13, 17, 19, 23

D is 4th in English alphabets. Similarly, W is 4th in reverse English alphabets.

C is 3rd in English alphabets. Similarly, X is 3rd in reverse English alphabets.

E is 5th in English alphabets. Similarly, V is 5th in reverse English alphabets.

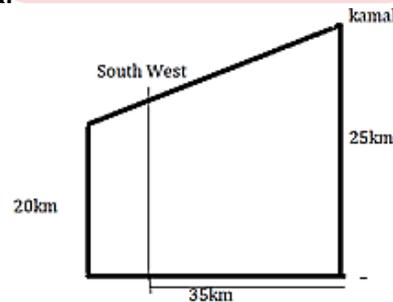
L is 12th in English alphabets. Similarly, O is 12th in reverse English alphabets.

K is 11th in English alphabets. Similarly, P is 11th in reverse English alphabets.

$\Rightarrow K19P$

S48. Ans.(a)

Sol.



He is South West direction from his starting point.

S49. Ans.(b)

S50. Ans.(c)

Sol. The pattern is

+2, +4, +6

CGK, EKQ, GOW, ISC, KWI, MAO

S51. Ans.(c)

Sol.

$$16 \div 8 \text{ of } 9 \times 36 + 7 \div 49 \text{ of } 2 \times 6 - 4 \div 4 \times 2$$

$$\Rightarrow 16 \div 72 \times 36 + 7 \div 98 \times 6 - 4 \div 4 \times 2$$

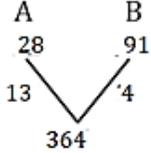
$$\Rightarrow \frac{2}{9} \times 36 + \frac{1}{14} \times 6 - 2 = 8 + \frac{3}{7} - 2$$

$$6 + \frac{3}{7} = \frac{45}{7}$$

$$6\frac{3}{7}$$

S52. Ans.(b)

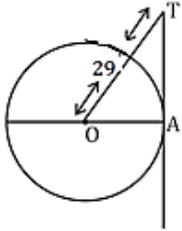
Sol.



They worked together = $(13 + 4) \times 12 = 204$ unit
 Remaining = $364 - 204 = 160$
 Remaining work complete by B = $\frac{160}{4} = 40$ days
 B worked Total = $40 + 12 = 52$ days

S53. Ans.(d)

Sol.



Diameter = 40 cm
 OA = 20 cm
 we know that
 $OT^2 = (OA)^2 + (AT)^2$
 $\Rightarrow (29)^2 = (20)^2 + (AT)^2$
 $\Rightarrow AT^2 = 841 - 400 = 441$
 AT = 21 cm

S54. Ans.(d)

Sol.

$$\frac{1}{72} + \frac{1}{90} + \frac{1}{110} + \frac{1}{132} + \frac{1}{156}$$

$$= \frac{1}{8 \times 9} + \frac{1}{9 \times 10} + \frac{1}{10 \times 11} + \frac{1}{11 \times 12} + \frac{1}{12 \times 13}$$

$$= \left[\frac{1}{8} - \frac{1}{9} + \frac{1}{9} - \frac{1}{10} + \frac{1}{10} - \frac{1}{11} + \frac{1}{11} - \frac{1}{12} + \frac{1}{12} - \frac{1}{13} \right]$$

$$= \left[\frac{1}{8} - \frac{1}{13} \right] = \frac{5}{104}$$

S55. Ans.(a)

Sol.

$$\text{Average} = \frac{29+38+43+a+b}{5} = 47$$

$$a + b = 125$$

$$\frac{39+51+49+54+52+c+d}{7} = 78$$

$$\Rightarrow c + d = 301$$

$$\text{Avg. of } a, b, c \text{ and } d = \frac{a+b+c+d}{4} = \frac{125+301}{4} = 106.5$$

S56. Ans.(d)

Sol.

$$S.I = \frac{P \times R \times T}{100}$$

Let x = Principal
 $(4x - x) = \frac{x \times R \times 5}{100}$
 $\Rightarrow 60\%$
 Now for 10 times the amount
 $10x - x = \frac{x \times 60 \times t}{100}$
 $\Rightarrow t = 15$ years

S57. Ans.(d)

Sol. By mixture allegation,

$$\Rightarrow x = \frac{37 \times 60 + 35 \times 50}{37 + 35} = 55.13\%$$

S58. Ans.(b)

Sol.

Let a = b = 1
 then,
 $\frac{a}{b} + \frac{b}{a} - 2 = 0$ (satisfy)
 so,
 $a - 2b = 1 - 2 = -1$

S59. Ans.(c)

Sol.

CP	SP
1 st Article	
(5 7) × 5	
2 nd Article	
(5 4) × 7	
25 35	
35 28	
60	63

Profit = $\frac{3}{60} \times 100 = 5\%$

S60. Ans.(a)

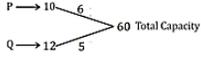
Sol.

Let the width of the wall = x meter
 then,
 height = 6x, Length = $5 \times 6x = 30x$
 Now,
 Volume of the room wall = $l \times b \times h$
 $= x \times 6x \times 30x$
 $4860 = x^3 \times 180$
 $x = 3$
 Now,
 Width = 3

Height = $6 \times 3 = 18$
 Length = $30 \times 3 = 90$
 Now, the surface area of wall = $90 \times 18 = 1620\text{m}^2$
 The cost of painting the wall
 $\Rightarrow 1620 \times 13.5 = \text{Rs. } 21,870$

S61. Ans.(c)

Sol.



1st \rightarrow Q \rightarrow 2.5 hours \rightarrow 12.5 units
 2nd \rightarrow P \rightarrow 2.5 hours \rightarrow 15 units.
 5 hour \rightarrow 27.5 unit
 10 hour \rightarrow 55 unit
 Q fills 5 units water in tank in 1 hours then, tank will be completely be filled in 11th hour approx.

S62. Ans.(a)

Sol.

Let a number be x then

$$x \times \frac{65}{100} - x \times \frac{32}{100} = 82.5$$

$$\frac{33x}{100} = 82.5 \Rightarrow 250$$

$$\text{Hence } 27\% \text{ of } 250 \Rightarrow \frac{250 \times 27}{100} = 67.5$$

S63. Ans.(c)

Sol.

Ratio of volume = $343x : 512x$

According to Question, $512x - 343x = 169x$

$169x \dots\dots\dots 1352$

$x = 8 \text{ cm}$

Volume of smaller cube = $343 \times 8 \text{ cm}^3$

Side of smaller cube = $7 \times 2 = 14 \text{ cm}$

Surface area = $6 \times (\text{side})^2$

$$= 6 \times (14)^2 = 1176 \text{ cm}^2$$

S64. Ans.(d)

Sol.

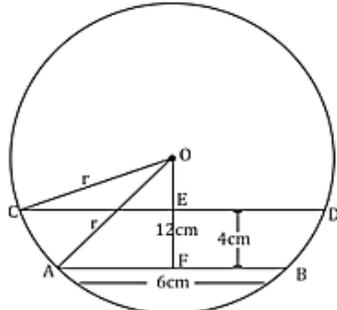
$$\cos 120^\circ + \sin 150^\circ + \sin 90^\circ + \tan 120^\circ$$

$$= -\frac{1}{2} + \frac{1}{2} + 1 - \sqrt{3} = 1 - \sqrt{3}$$

S65. Ans.(c)

Sol.

Let OE = x cm



In $\Delta OCE \Rightarrow$
 $r^2 = x^2 + 36$ _____ (1)

In ΔOAF
 $r^2 = (x + 4)^2 + 9$ _____ (2)

by (1) and (2),

$$x^2 + 36 = (x + 4)^2 + 9$$

$$x^2 + 36 = x^2 + 16 + 8x + 9$$

$$36 = 25 + 8x$$

$$x = \frac{11}{8}$$

$$r^2 = \left(\frac{11}{8}\right)^2 + 36 = \frac{121}{64} + 36$$

$$r = \sqrt{\frac{2425}{64}} = \frac{5}{8} \sqrt{97} \text{ cm}$$

$$\text{Diameter} = \frac{5}{4} \sqrt{97} \text{ cm}$$

S66. Ans.(a)

Sol.

Number of students in college E = 1240

$$\text{Required average} = \frac{1240}{5} = 248$$

S67. Ans.(c)

Sol.

Total in 2012 = 910

In college B = 125

$$= \frac{125}{910} \times 100 = 13.73\%$$

S68. Ans.(c)

Sol. A + C = 410

B + E = 395

$$(A + C) : (B + E) = 410 : 395 = 82 : 79$$

S69. Ans.(c)

Sol.

Students in college D in year 2012 = 255

Students in college B, D and E in year 2014 = 660

$$\text{Required average} = \frac{255}{660} \times 100 = 38.63\%$$

S70. Ans.(c)

Sol.

$$\cot \theta = \frac{8}{6} \rightarrow \text{Base}$$

$$\text{then } (\text{Hypotenuse})^2 = (8)^2 + (6)^2$$

$$= 64 + 36$$

$$\text{hypotenuse,} = \sqrt{100} = 10$$

Now,

$$\Rightarrow \frac{(1 - \sin \theta)(3 + 3 \sin \theta)}{(3 - 3 \sin \theta)}$$

$$\Rightarrow \frac{\left(1 - \frac{6}{10}\right)\left(3 + 3 \times \frac{6}{10}\right)}{\left(3 - 3 \times \frac{6}{10}\right)} = \frac{8}{5}$$

S71. Ans.(c)

Sol.

LCM of (6, 30, 45, 60) = 180

The largest five digit no. = 99999

The largest five digit no. which is divisible by 180 should be multiple of it also.

Now,

$$\frac{99999}{180} = 99 \text{ Remainder}$$

The largest 5 digit no. divisible by 6, 30, 45, and 60 = 99999 - 99 = 99900

The sum of the digits = 9 + 9 + 9 + 0 + 0 = 27

S72. Ans.(a)

Sol.

Ratio of investments of A and B = 21000 : 33000 = 7 : 11

As we know,

The profit is directly proportional to the investment.

Ratio of share of A and B = 7x : 11x

$$11x - 7x = 39$$

$$x = \frac{39}{4}$$

Therefore,

$$\text{Total profit} = 2 \times \frac{39}{4} \times (18) = \text{Rs. } 351$$

S73. Ans.(d)

Sol.

Let initial price of article in December = x

A.T.Q,

$$x \times \frac{80}{100} \times \frac{80}{100} \times \frac{80}{100} = 19968$$

$$x = \text{Rs. } 39000$$

S74. Ans.(c)

Sol.

$$\frac{18}{5}, \frac{21}{15}, \frac{15}{17}$$

$$\text{HCF} = \frac{3}{255} = \frac{\text{HCF of numerators}}{\text{LCM of denominators}}$$

S75. Ans.(b)

Sol.

Product of slope of perpendicular lines = -1

$$m_1 m_2 = -1$$

A.T.Q

$$4y = -3x - 2, \quad 3y = -ax - 3$$

$$m_1 = \frac{-3}{4}$$

$$m_2 = \frac{-a}{3}$$

$$\frac{-3}{4} \times \frac{-a}{3} = -1$$

$$a = -4$$

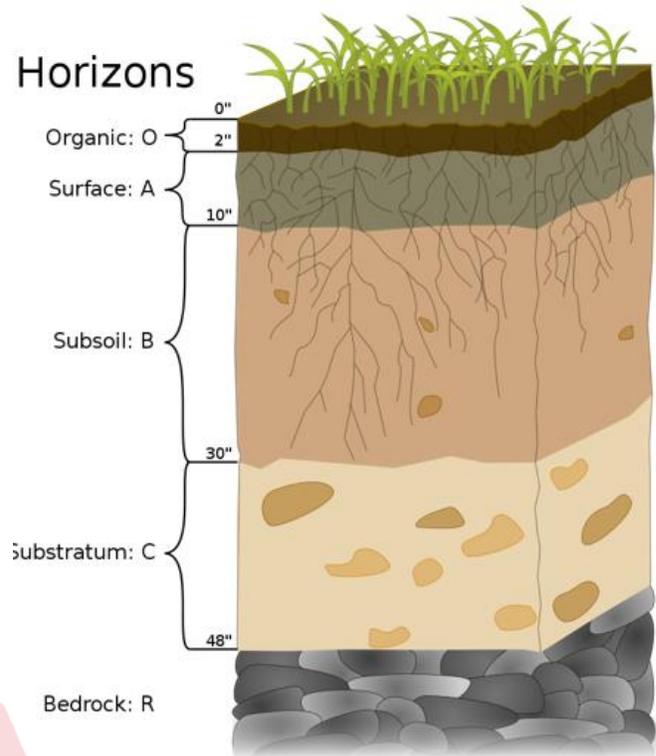
S76. Ans.(c)

Sol. Horizon A, also known as the topsoil, is the uppermost layer of soil where organic materials are incorporated with mineral matter, nutrients, and water. It is the most fertile layer of soil and contains a high concentration of organic matter, such as decomposed plant and animal material. This layer is vital for plant growth and supports the growth of vegetation due to its nutrient-rich composition.

- A soil horizon is a layer parallel to the soil surface whose physical, chemical, and biological characteristics differ from the layers above and beneath.

Soil Horizon	Description
O Horizon	Topmost layer of soil, composed of organic matter like leaves, twigs, and plant debris. Also known as humus.
A Horizon	Layer below O horizon, where plant roots grow. Rich in organic matter, nutrients, and soil organisms.
E Horizon	Layer below A horizon, characterized by loss of clay and fine particles. Also known as eluviated horizon.
B Horizon	Layer below E horizon, accumulation of clay and fine particles. Also known as illuvial horizon.
C Horizon	Layer below B horizon, made up of weathered bedrock. Also known as parent material.

Horizons



S77. Ans.(d)

Sol. Sabarimala Sree Dharma Sastha Temple is located in Kerala.

- Sabarimala temple complex located at Sabarimala hill inside the Periyar Tiger Reserve in the Perinad Village, Pathanamthitta district, Kerala, India.
- It is one of the largest annual pilgrimage sites in the world, with an estimate of over 10 to 15 million devotees visiting every year. The temple is dedicated to a Hindu Brahmachari (celibate) deity named Ayyappan also known as Dharma Shasta, who, according to one belief, is the son of Shiva and Vishnu.

S78. Ans.(d)

Sol. Pinaki Chandra Ghose was the first Lokpal of India, serving from 23 March 2019 to 27 May 2022. He is a retired judge of the Supreme Court of India.

- A Lokpal is an anti-corruption authority or body of the ombudsman who represents the public interest in the Republic of India.
- The Lokpal consists of a chairperson and eight members. Four of the judicial members have been former Chief Justices of different High Courts and the four non-judicial members have been from All India Services/Central Services.

Note - Pradip Kumar Mohanty is the current Acting Chairperson of the Lokpal. Pradip Kumar Mohanty, who was serving as a Member (Judicial) of Lokpal was given an additional charge of the Lokpal on 28 May 2022.

S79. Ans.(a)

Sol. Assam was known as 'Pragjyotisha' during the epic period.

- Pragjyotisha is a mythological kingdom that is mentioned in a multitude of Hindu Epics which later came to be associated with the historical Kamarup.
- It was located in the northeastern region of India, which corresponds to present-day Assam. The name 'Pragjyotisha' translates to "the eastern light" or "the place of the eastern sunrise."

S80. Ans.(a)

Sol. Karst plains are formed due to the weathering of soluble rocks such as limestone and dolomite. This weathering is caused by the dissolution of the rock by carbonic acid, which is formed when carbon dioxide from the air dissolves in water. The dissolution of the rock creates sinkholes, caves, and other characteristic features of karst topography.

Glacial plains are formed by the movement of glaciers, which are large masses of ice that flow slowly over the land. Deposition plains are formed by the deposition of sediment, which is material that is carried and deposited by water, wind, or ice. Desert plains are formed by the erosion of desert surfaces by wind and water.

S81. Ans.(c)

Sol. In Assam, during the celebration of Kati Bihu, a lamp is traditionally lit in front of a 'tulsi' tree/plant. Therefore, the correct answer is tulsi.

Kati Bihu, also known as Kongali Bihu, is a harvest festival celebrated in the Indian state of Assam. It marks the end of the harvesting season and the beginning of the sowing season. The festival is celebrated on the full moon day of the month of Kartik (October-November).

Tulsi is a sacred plant in Hinduism and is believed to be an incarnation of the goddess Lakshmi. The lighting of lamps is a way of welcoming Lakshmi into the home and asking for her blessings for a prosperous year ahead.

S82. Ans.(b)

Sol. Indian poet Bankim Chandra Chattopadhyay was the composer of Vande Mataram.

- Vande Mataram has been written in highly Sanskritized Bengali, personifying Bengal as a mother goddess and inspiring activists during the Indian Independence Movement.
- He was also the author of the 1882 Bengali language novel 'Anandamath', which is one of the landmarks of modern Bengali and Indian literature.

S83. Ans.(c)

Sol. Carotenoid helps to trap light energy that is essential for photosynthesis.

- Carotenoids, also called tetraterpenoids, are yellow, orange, and red organic pigments that are produced by plants and algae, as well as several bacteria, and fungi.
- Carotenoids serve two key roles in plants and algae: they absorb light energy for use in photosynthesis, and they provide photoprotection via non-photochemical quenching.

S84. Ans.(b)

Sol. From the given options, A Suitable Boy is not written by Amitav Ghosh.

- Amitav Ghosh is an Indian writer. He won the 54th Jnanpith Award in 2018, India's highest literary honor.
- His first novel The Circle of Reason was published in 1986. His other works are - The Shadow Lines and The Glass Palace etc.

S85. Ans.(d)

Sol. Temperate deciduous forests are found north and south of the equator between 40° and 60° where rainfall is high, between 500-1500 mm in a year.

- Temperate deciduous forests are located in the mid-latitude areas which means that they are found between the polar regions and the tropics.

S86. Ans.(b)

Sol. Quartzite Rocks were once igneous or sedimentary, but have metamorphosed as a result of intense heat and/or pressure within the Earth's crust.

- Quartzite is a hard, non-foliated metamorphic rock that was originally pure quartz sandstone. Sandstone is converted into quartzite through heating and pressure.

S87. Ans.(b)

Sol. Johnny Marr is the author of 'Set the Boy Free'.

- Johnny Marr is an English musician, songwriter, and singer.
- 'Set the Boy Free' is autobiography of Johnny marr.

S88. Ans.(d)

Sol. Quinoline yellow, an artificial colouring agent, is used in dietary supplements, sauces, soups, and broths, bakery, dairy fats and oils, seafood, condiments, breath fresheners, desserts, convenience foods, and beverages.

- Quinoline Yellow WS is a mixture of organic compounds derived from the dye Quinoline Yellow SS.
- It is a mixture of disulfonates, monosulfonates and trisulfonates of 2-indan-1,3-dione.

S89. Ans.(c)

Sol. The group of Articles that relates to the relationship of the President and the Council of Ministers in India is 74, 75, and 78.

Article 74-There shall be a council of ministers with the Prime Minister at the head to aid and advise the President who shall, in the exercise of his functions. Article 75- The Prime Minister shall be appointed by the President and the other ministers shall be appointed by the president on the advice of the Prime Minister.

Article 78-It shall be the duty of the Prime Minister to communicate decisions of the council of ministers, and to provide information relating to the administration to the president.

S90. Ans.(c)

Sol. The President of India can declare a national emergency in both cases: (a) in the event of a foreign invasion and (b) in the event of an armed rebellion. Therefore, the correct answer is in both (a) and (b).

According to Article 352 of the Indian Constitution, the President can declare a national emergency if the security of India or a part of it is threatened by war, external aggression, or armed rebellion.

The President can declare a national emergency only on the basis of a written request by the Cabinet headed by the Prime Minister. Such a proclamation must be laid before both houses of Parliament and the state of emergency expires after one month unless approved within that time by both houses sitting and voting separately.

S91. Ans.(a)

Sol. The correct pairs are:

- A. Radium - 2. Marie Curie
- B. Penicillin - 1. Alexander Fleming
- C. X-ray - 4. W.K. Roentgen
- D. Smallpox - 3. Edward Jenner

Marie Curie is credited with the discovery of radium and polonium. Alexander Fleming is credited with the discovery of penicillin. W.K. Roentgen is credited with the discovery of X-rays. Edward Jenner is credited with the development of the smallpox vaccine.

S92. Ans.(d)

Sol. The wavelength extension of visible light is generally considered to be between 390–780 nanometers (nm).

Visible light is a form of electromagnetic radiation that is visible to the human eye. It is made up of a spectrum of wavelengths, with each wavelength corresponding to a different color. The shortest wavelengths of visible light are violet, while the longest wavelengths are red. In between, we see the colors of the rainbow: orange, yellow, green, blue, and indigo.

Note - The human eye is most sensitive to light with wavelengths around 555 nanometers, which is in the green part of the spectrum. This is why green is often used for safety signs and other objects that need to be easily seen.

S93. Ans.(c)

Sol. Shakoore Khan, Pandit Ram Narayan, Ramesh Mishra, Sultan Khan, and Ustad Binda Khan are noted players of Sarangi.

Asad Ali Khan was an Indian musician who played the plucked string instrument Rudra Veena.

Pandit Shivkumar Sharma was a famous Santoor player.

Kanhere (Satara) who was a famous Jaltarang player influenced Milind in taking up this unusual dying instrument the JALTARANG.

S94. Ans.(b)

Sol. Ishwari Prasad is recognized as the founder of the Lucknow Gharana of Kathak. He was a Kathak dancer from Handia in Allahabad.

Birju Maharaj - son of Achhan Maharaj, who was the son of Kalka Prasad. Kalka Prasad and Bindadin Maharaj are considered the choreographers of the present form of Lucknow Gharana.

Rukmini Devi - a classical dancer and choreographer who founded the Kalakshetra Foundation in Chennai.

Sitara Devi - a famous Kathak dancer but not the founder of any Gharana. She was a representative of the Benaras Gharana of Kathak.

S95. Ans.(b)

Sol. The Food Corporation of India (FCI) is a statutory body created and run by the Government of India. It is under the ownership of the Ministry of Consumer Affairs, Food and Public Distribution, Government of India formed by the enactment of the Food Corporation Act, 1964[2] by the Parliament of India.

It was set up in 1965 with its initial headquarters in Chennai. Later this was moved to New Delhi. It also has regional centers in the capitals of the states.

S96. Ans.(a)

Sol. The Correct answer is (a)

Manish Prasad has taken over as the President and Managing Director of SAP Indian Subcontinent. He succeeds Kulmeet Bawa in leading the company's operations across the region. Prasad's appointment marks a significant step in SAP's strategy to enhance its market presence and drive digital transformation for its clients in India. With extensive experience in the technology sector, Prasad is expected to steer SAP India towards new heights of innovation and growth, catering to the evolving needs of businesses in the digital era.

S97. Ans.(a)

Sol. The Correct answer is (a)

Zoya Akhtar, a distinguished filmmaker, and Asma Khan, a renowned chef, were honored at the annual 'India-UK Achievers' awards in London for their remarkable contributions and achievements. The event, which celebrates the accomplishments of individuals in various fields who have contributed significantly to the India-UK relationship, recognized Akhtar and Khan for their outstanding work and the impact they have made in their respective industries. Zoya Akhtar is celebrated for her influential films that resonate with audiences both in India and internationally, while Asma Khan has gained acclaim for her culinary skills and her London restaurant, Darjeeling Express. Their recognition at the awards highlights their exceptional talent and the positive influence they have had on cultural and professional exchanges between India and the UK

S98. Ans.(a)

Sol. The Correct answer is (a)

Panama has officially become the 97th member of the International Solar Alliance (ISA). This information was confirmed by the Ministry of External Affairs, indicating Panama's ratification of the ISA and its official entry as a member nation .

About ISA:

The International Solar Alliance (ISA) is a coalition of solar resource-rich countries, which was jointly launched by India and France on November 30, 2015, during the 21st Conference of Parties (COP 21) of the United Nations Framework Convention on Climate Change held in Paris. The primary objective of the ISA is to work for efficient exploitation of solar energy to reduce dependence on fossil fuels. This global initiative aims to bring together countries to promote solar energy use, thereby contributing to the global fight against climate change.

S99. Ans.(d)

Sol. The Correct answer is (d)

- The 'Bharat-Shakti' exercise is being conducted by all three forces (Army, Navy, and Air Force) of India at Asia's largest field firing range located in the Jaisalmer district of Rajasthan. This tri-service exercise showcases the combined capabilities and firepower of the Indian Army, Air Force, and Navy, making it a significant demonstration of India's defense strength and readiness.

- Bharat Shakti is a significant tri-Service exercise showcasing the firepower of the Army, Air Force, and Navy.
- The three Indian Services will showcase the capability of indigenously manufactured weapons and platforms during the exercise.

S100. Ans.(a)

Sol. The Correct answer is (a)

Union Minister of Agriculture and Farmers' Welfare, Arjun Munda, unveiled the Agriculture Integrated Command and Control Centre at Krishi Bhawan, New Delhi. This initiative aims to empower farmers nationwide by providing them with essential information, services, and facilities.

Objectives of the Initiative:

1. Empowering Farmers: The primary goal is to enhance the self-reliance of farmers across the country.
2. Information Accessibility: Farmers will gain access to real-time data regarding their farms, enabling informed decision-making.
3. Addressing Agricultural Challenges: The initiative seeks to identify and tackle the genuine challenges within the agriculture sector.
4. Enhanced Capacity: Through data analysis and problem-solving, the capacity of farmers will be expanded.
5. Government Scheme Benefits: Farmers will have better access to and utilization of government schemes aimed at their welfare.

