SSC CHSL 2020 Official Paper 2 (Held On: 12 April 2021 Shift 2) (Previous Year Paper)

SSC Combined Higher Secondary Level (CHSL) • 2020 • 100 questions • 60 minutes • Answer key and solutions

Take this paper as a timed mock test

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

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ENGLISH LANGUAGE

Q1. Select the most appropriate synonym of the given word.

PRIORITY

(a) Inference
(b) Deference
(c) Subservience
(d) Preference

Q2. Select the most appropriate one-word substitution for the given group of words.

A large bundle bound for storage or transportation

(a) Bevy
(b) Bouquet
(c) Bale
(d) Brood

Q3. Select the INCORRECTLY spelt word.

(a) definately
(b) existence
(c) mischievous
(d) violence

Q4. Fill in the blank with the most appropriate option.

She was greatly _____ by the nightmare she had.

(a) feared
(b) perturbed
(c) dreaded
(d) trembled

Q5. Select the correct indirect form of the given sentence.

"I like having South Indian breakfast," said Arun to the receptionist.

(a) Arun tells the receptionist that he has liked South Indian breakfast.
(b) Arun is telling the receptionist than he likes South Indian breakfast.
(c) Arun told the receptionist that he will like South Indian breakfast.
(d) Arun told the receptionist that he liked having South Indian breakfast.

Q6. In the given sentence, identify the segment which contains the grammatical error.

Airlines have increased fares because according to the new rules only limiting passengers are allowed.

(a) the new rules only limiting
(b) because according to
(c) Airlines have increased fares

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(d) passengers are allowed

Q7. Select the most appropriate ANTONYM of the given word.

VITIATE

(a) Violate
(b) Affirm
(c) Annul
(d) Cancel

Q8. Examine the four jumbled sentences. Out of the given options, pick the one that gives their correct order.

A. We found both to be very quiet and subdued.

B. Later when we became good friends, they told us about their tragic loss.

C. The Mehras were newcomers to the neighbourhood.

D. My wife and I called on them to ask if they needed any help.

(a) CDAB
(b) BDAC
(c) DBAC
(d) ACDB

Q9. Directions: Each of the following questions has underlined idioms/phrases. Each sentence is followed by four options. Choose the option that best describes the meaning of the underlined idiom/phrase.

She may be the Principal but it is the school administrator who rules the roost.

(a) is proved right
(b) is in complete control
(c) is totally submissive
(d) is dependent upon her

Q10. Select the most appropriate option to improve the underlined segment in the given sentence. If there is no need to improve it, select ‘No improvement required’.

My hands were eager for tore up that awful letter.

(a) for tearing upon
(b) of tearing up
(c) No substitution
(d) to tear up

Q11. Select the misspelt word.

(a) exceed
(b) address
(c) annax
(d) attempt

Q12. Select the option that will improve the underlined segment in the given sentence. In case no improvement is needed, select 'No improvement'

Make a list of most the things you would like to do once this lockdown is over.

(a) each
(b) No improvement
(c) many
(d) all

Q13. Select the most appropriate ANTONYM of the given word.

AUGMENT

(a) multiply
(b) amplify
(c) decrease

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(d) increase

Q14. Select the most appropriate synonym of the given word.

PRECISION

(a) accuracy
(b) vagueness
(c) estimation
(d) neglect

Q15. Identify the segment in the given sentence which contains the grammatical error.

Einstein's school teachers thought he would never success in life.

(a) in life
(b) thought he would
(c) never success
(d) Einstein's school teachers

Q16. Select the most appropriate meaning of the given idiom.

To put one's foot in one's mouth

(a) To deliberately provoke someone
(b) To gather all of one's resources
(c) To be disorderly and stupid
(d) To accidentally embarrass or upset someone

Q17. Select the correct passive form of the given sentence.

The disaster management team rescued the flood victims.

(a) The flood victims are being rescued by the disaster management team.
(b) The flood victims have been rescued by the disaster management team.
(c) The flood victims were rescued by the disaster management team.
(d) The flood victims are rescued by the disaster management team.

Q18. Select the option which means the same as the group of words given.

Doctor who deals with bone problems.

(a) orthodontist
(b) chiropodist
(c) orthopaedist
(d) dermatologist

Q19. Select the most appropriate option to fill in the blank.

Shekhar Gupta is one of the _____ journalists of India.

(a) imminent
(b) exponent
(c) eminent
(d) pertinent

Q20. Given below are four sentences in jumbled order. Pick the option that gives their correct order.

A. Her face had the most extraordinary expression of horror and amusement.

B. My mother looked up in time to see me fall.

C. But I missed and went sprawling across the kitchen floor.

D. My hand reached out to grab the handle of the door that led into the kitchen.

(a) CBDA
(b) DCBA
(c) BDAC
(d) ABCD

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Directions

Direction: 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 number.

The doctor left some medicines with the instructions for giving them. One was to (1) _____ down the fever and another to overcome an acid condition. "The germs (2) ___ influenza can exist only in acid condition," he explained. He said there was (3) ___ to worry if the fever did not go up above 103 degrees. This was an (4) ___ of flu and there was no danger if pneumonia could be (5) _____.

Q21. Select the most appropriate option to fill in the blank no.1

(a) bring
(b) shrink
(c) reduce
(d) decrease

Q22. Select the most appropriate option to fill in the blank no.2

(a) on
(b) at
(c) to
(d) of

Q23. Select the most appropriate option to fill in the blank no.3.

(a) nothing
(b) anything
(c) nobody
(d) everything

Q24. Select the most appropriate option to fill in the blank no.4.

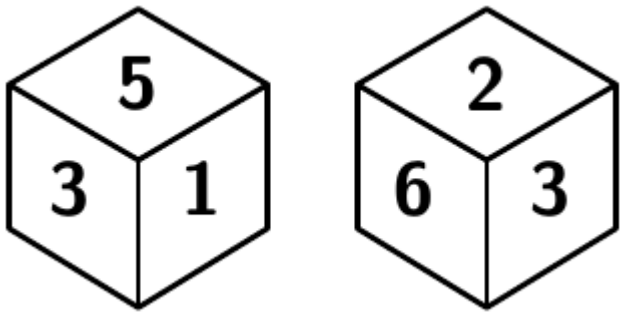
(a) explosion
(b) erosion
(c) epidemic
(d) epidermis

Q25. Select the most appropriate option to fill in the blank no.5.

(a) prevented
(b) postponed
(c) protected
(d) preserved

GENERAL INTELLIGENCE

Q26. Two different positions of the same dice are shown. Select the number that will be at the top if '1' is at the bottom.



(a) 4
(b) 5
(c) 6
(d) 2

Q27. Vineet is the husband of Antima. Dev is the brother of Kusha. Shalini is the mother of Kusha's mother. Dev is the son of Vineet. How is Antima related to Shalini?

(a) Mother
(b) Maternal aunt
(c) Daughter
(d) Sister

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

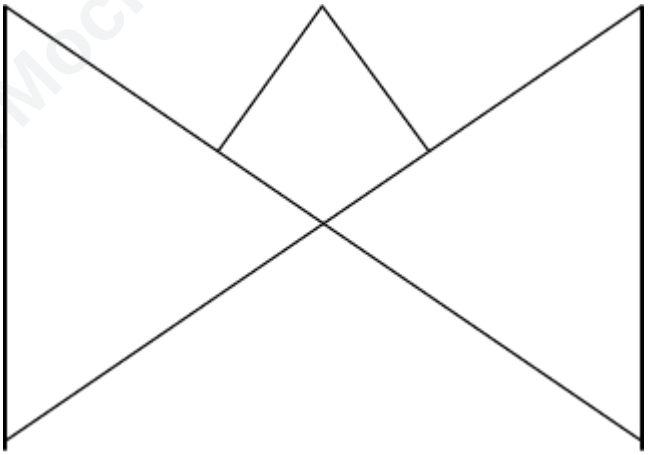
{8, 17, 15}

(a) {7, 25, 24}
(b) {3, 8, 5}
(c) {6, 10, 9}
(d) {9, 15, 11}

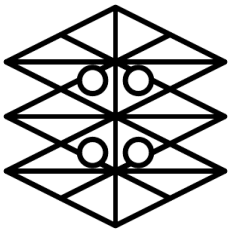
Q29. In a certain code language, SEMANTIC is coded as 14485293. How will PRACTICE be coded in that language?

(a) 29137934
(b) 81943145
(c) 79832934
(d) 79132935

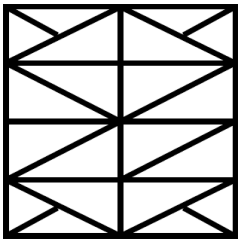
Q30. Select the option in which the given figure is embedded (rotation is NOT allowed).



(a)

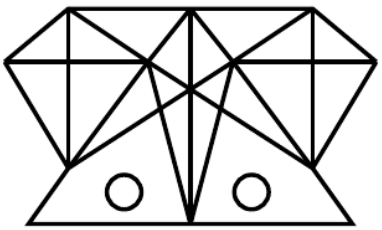


(b)

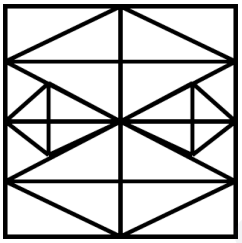


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(c)



(d)



Q31. 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) BASK
(b) SPIT
(c) TRAM
(d) MOVE

Q32. Select the number from among the given options that can replace the question mark (?) in the following series.

10, 13, 19, 31, ?, 103

(a) 55
(b) 61
(c) 73
(d) 49

Q33. Select the option in which the numbers share the same relationship as that shared by the given pair of numbers.

6 : 54

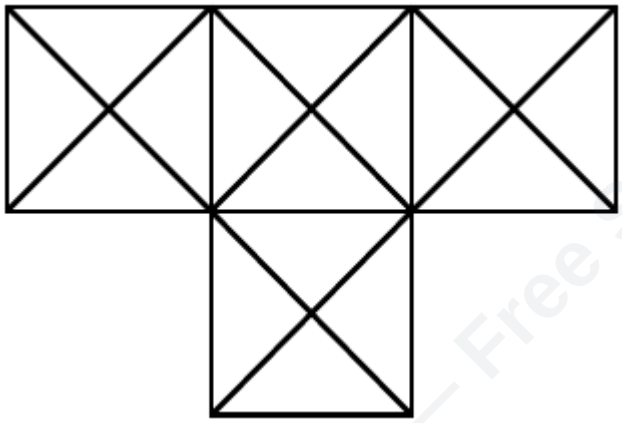
(a) 10 : 108
(b) 4 : 16
(c) 2 : 9
(d) 8 : 76

Q34. Four words have been given, out of which three are alike in some manner and one is different. Select the word that is different.

(a) Termination
(b) Conclusion
(c) Progression
(d) Valediction

Q35. How many triangles are there in the following figure?

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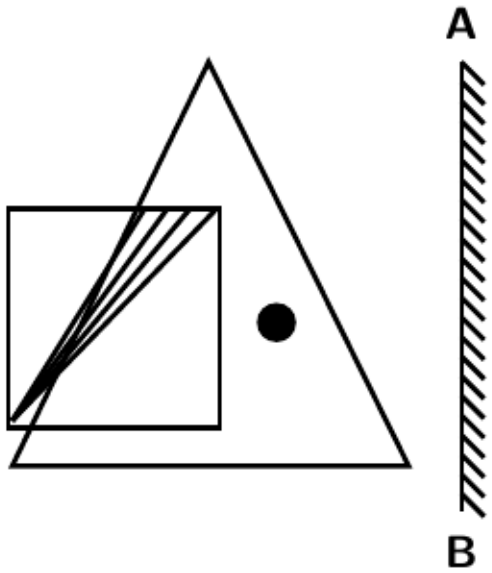
(a) 32
(b) 24
(c) 20
(d) 28

Q36. Select the option in which the words share the same relationship as that shared by the given pair of words.

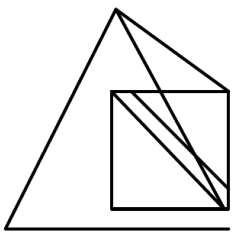
Trust : Faith

(a) Fair : Wholesome
(b) Joy : Success
(c) Disgust : Distaste
(d) Salary : Employment

Q37. Select the correct mirror image of the given figure when the mirror is placed at the right side of the figure.

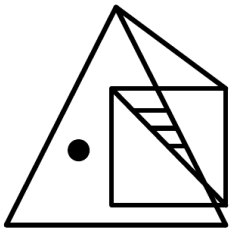


(a)

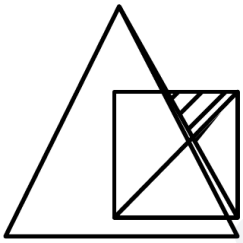


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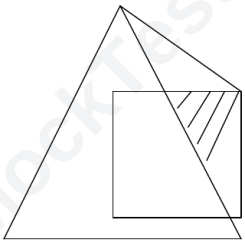
(b)



(c)



(d)



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

REST, SEST, SFST, ?, SFTU

(a) SFUT
(b) SFRT
(c) SFTT
(d) SGTT

Q39. Select the correct option that indicates the arrangement of the given words in a logical and meaningful order.

1. Journey
2. Return
3. Destination
4. Reservation
5. Guided tour

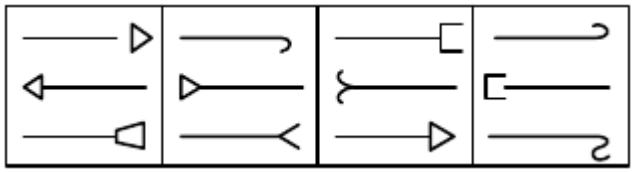
(a) 3, 4, 1, 5, 2
(b) 3, 5, 4, 2, 1
(c) 4, 5, 3, 1, 2
(d) 3, 4, 2, 1, 5

Q40. In a certain code language, INTERACT is written as TNIRETCA. How will SATURDAY be written in that language?

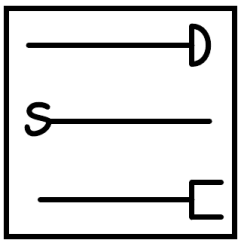
(a) UTASYADR
(b) ASUTDRYA
(c) TASURYDA
(d) TASRUYAD

Q41. Select the figure that will come next in the following series.

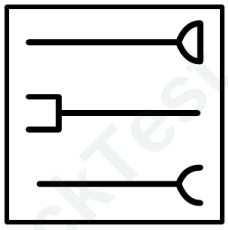
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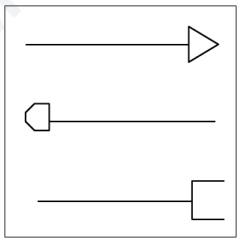
(a)



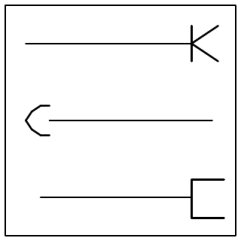
(b)



(c)



(d)



Q42. Select the option that is related to the third letter-cluster in the same way as the second letter-cluster is related to the fist letter-cluster.

DJHF : JPNL :: KTQN : ?

(a) QWUS
(b) QHKN
(c) PZWS
(d) QZWT

Q43. Which two signs should be interchanged to make the following equation correct?

8 + 12 ÷ 6 × 8 - 9 = 8

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

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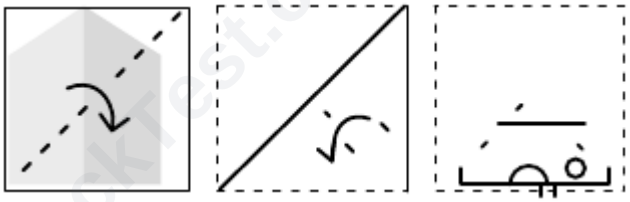
Q44. Four numbers have been given, out of which three are alike in some manner and one is different. Select the number that is different.

(a) 245
(b) 385
(c) 59
(d) 315

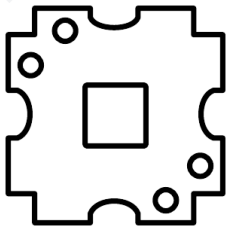
Q45. 85 apples are to be distributed in a class consisting of boys and girls. If each boy gets 5 apples, then each girl will get 7 apples, and if each boy gets 4 apples, then each girl will get 9 apples. How many students are there in the class?

(a) 15
(b) 14
(c) 19
(d) 17

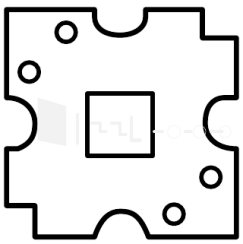
Q46. The sequence of folding a piece of paper and the manner in which the folded paper has been cut is shown below. How would this paper look when unfolded?



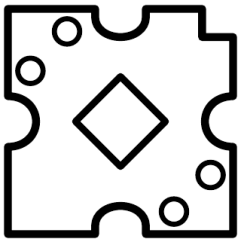
(a)



(b)

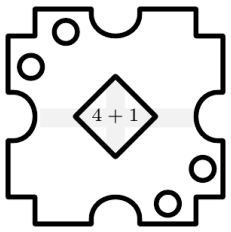


(c)



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(d)



Q47. 'Musician' is related to 'Piano' in the same way as 'Farmer' is related to '_____'.

(a) Bullock
(b) Plough
(c) Field
(d) Cultivation

Q48. Select the option in which the numbers are related in the same way as are the numbers of the following set.

{14, 44, 8}

(a) {12, 36, 9}
(b) {18, 54, 13}
(c) {5, 32, 11}
(d) {9, 38, 12}

Q49. 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 vehicles are cars.

All cars are four-wheelers.

Some four-wheelers are trucks.

Conclusions:

I. Some vehicles are trucks.

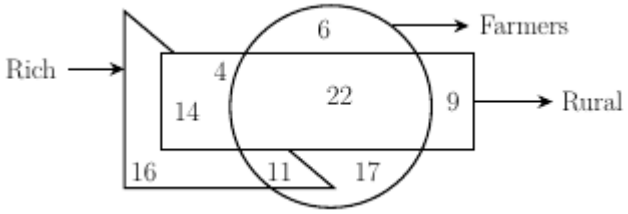
II. Some four-wheelers are vehicles.

III. Some trucks are cars.

(a) Only conclusion II and III follow
(b) None of the conclusions follow
(c) Only conclusion I follows
(d) Only conclusion II follows

Q50. In the given diagram, the circle stands for 'farmers', the rectangle stands for 'rural', and the triangle stands for 'rich'. The numbers given in the different segments represent the number of persons of that category.

How many rural people are either farmers or rich but NOT both?



(a) 28
(b) 36
(c) 25
(d) 47

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QUANTITATIVE APTITUDE

Q51. What is the value of x, if 25% of 480 + 30% of 500 + x% of 90 = 35% of 900?

(a) 45
(b) 50
(c) 55
(d) 40

Q52. If the number A9257B684 is divisible by 11, then what is the least value of A - B?

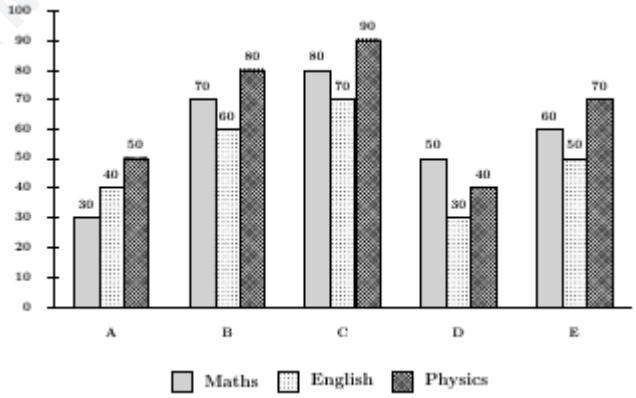
(a) 14
(b) 0
(c) -8
(d) 3

Q53. If $3\cot^2 x - 7\text{cosec}^2 x + 7 = 0$, then the value of $x(0 \le x \le 90°)$ is:

(a) 30°
(b) 0°
(c) 90°
(d) 60°

Q54. Study the following graph and answer the question the follows.

Marks scored by five students A, B, C, D and E in three subjects (Maths, English and Physics). Total marks for each subject are 100.



What is the percentage marks obtained by E in all three subjects together? (Assuming maximum marks for each subject are 100.)

(a) 40
(b) 50
(c) 70
(d) 60

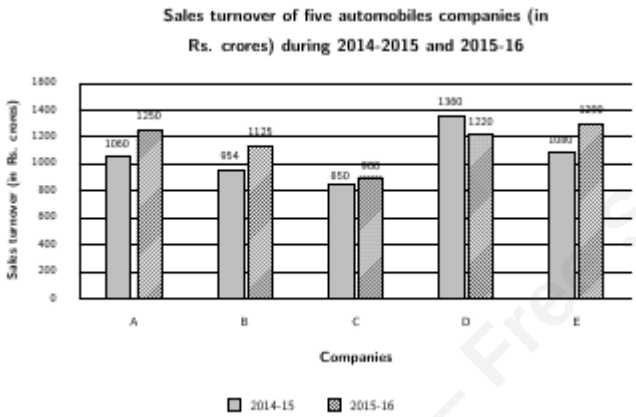
Q55. Find the area (in cm^2) and the diameter (in cm), respectively, of a circle whose circumference is 40π cm?

(a) 400 π and 40
(b) 40 and 400 π
(c) 400 and 40
(d) 40 and 400

Q56. Study of given bar graph and answer the question that follows.

The given bar graph represents the Sales Turnover (in Rs. crore) of five automobile companies A, B, C, D and E during 2014-2015 and 2015-2016. The X-axis represents the Companies, and the Y-axis shows the Sales Turnover (in Rs. crore).

(The data shown here is only for mathematical exercise. They do not represent the actual figure of the company.)



If there was an increase of 25% in the average of the sales turnover of all the companies together in 2014-2015 from that in 2013-2014, then what was the average (in Rs.crore, up two decimal places) of the sales turnover of all the companies together in 2013-2014?

(a) 848.64
(b) 588.96
(c) 806.21
(d) 985.67

Q57. If the difference between two numbers is 5 and the difference between their cubes is 1850, then the difference between their squares is:

(a) 5√484
(b) 5√482
(c) 5√485
(d) 5√483

Q58. If (a + b + c) = 0 and (abc) = 12, then what is the value of ($a^3 + b^3 + c^3$)?

(a) 6
(b) 12
(c) 72
(d) 36

Q59. In General store, an item with an MRP of Rs.35,600 is on the discount counter with a special price of Rs.34,888. What is the percentage of discount given for the item?

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

Q60. The compound interest (in Rs., to the nearest integer) on Rs.8,950 for 2 years at the rate of 9% per annum, compounded annually, is:

(a) 1,523
(b) 1,683
(c) 1,685
(d) 1,468

Q61. AB and AC are tangents to a circle with centre O from an external point A. The tangents AB and AC touch the circle at B and C, respectively, such that angle BAC = 118°. Find the measures of angle OCB.

(a) 59°
(b) 62°
(c) 60°
(d) 54°

Q62. Varun and Syan can do a work in 3 days. Syan and Anil can do it in 4 days, and Anil and Varun can do it in 6 days. How many days will Anil alone take to do the work?

(a) 22
(b) 18
(c) 20
(d) 24

Q63. What is the value of $\sin^2 60° + \tan^2 45° + \sec^2 45° - \text{cosec}^2 30°$?

(a) 4
(b) 1/4
(c) -1/4
(d) -4

Q64. Two trains start at the same time from two stations and proceed towards each other at speeds of 90 km/h and 70 km/h, respectively. When they meet, it is found that one train has travelled 140 km more than the other. What is the distance (in km) between the two stations?

(a) 1100
(b) 1120
(c) 980
(d) 1200

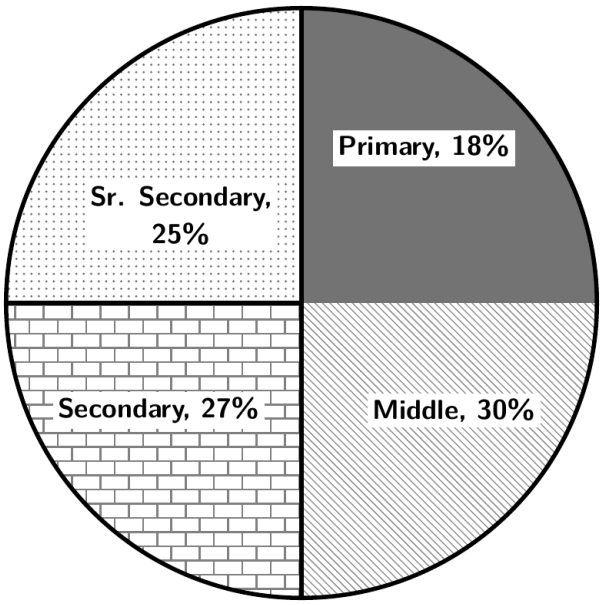
Q65. What is the area (in m^2, up to 1 place of decimal) of an equilateral triangular field of side 8.5 m?

(a) $18.1/\sqrt{3}$
(b) $18.1\sqrt{3}$
(c) $72.25/\sqrt{3}$
(d) $72.25\sqrt{3}$

Q66. A's salary increases in the ratio 8 : 11. If his new salary is Rs.33,000, then what was his original salary (in Rs.)?

(a) 20,000
(b) 18,000
(c) 22,000
(d) 24,000

Q67. Students of Primary, Middle, Secondary and Sr. Secondary classes collected donation for a Relief Fund as shown in the pie chart. If the donation collected from Middle classes was Rs.6,750, then what would be the total amount of money collected by Secondary and Sr.Secondary classes?



(a) Rs.9,675
(b) Rs.11,700

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(c) Rs.9,450
(d) Rs.12,825

Q68. The sum of two numbers is 59 and their product is 1150. Find the sum of their squares.
(a) 1183
(b) 1178
(c) 1176
(d) 1181

Q69. A shopkeeper sells two refrigerator sets at the same price. He gains 40% on one refrigerator and loses 40% on the other. What is his net loss percentage in the whole transaction?
(a) 18%
(b) 14%
(c) 12%
(d) 16%

Q70. If $2\tan x + 3\cot x = 5$, then the value of $4\tan^2 x + 9\cot^2 x$ is:
(a) 11
(b) 15
(c) 17
(d) 13

Q71. The length of a rectangle is five times of its breadth. If the area of the rectangle is 3125 cm^2, then what is the length of the rectagle?
(a) 125 cm
(b) 120 cm
(c) 135 cm
(d) 130 cm

Q72. The centroid of an equilateral triangle ΔABC is O. If AB = 27 cm, then the length of AO is:
(a) $9\sqrt{3}$ cm
(b) $6\sqrt{3}$ cm
(c) $7\sqrt{3}$ cm
(d) $8\sqrt{3}$ cm

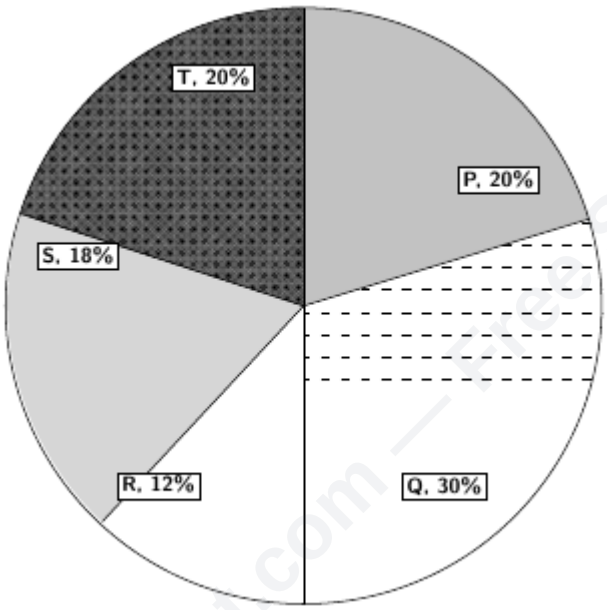
Q73. 30 people went to a restaurant for a dinner party, 20 of them paid Rs.880 each and each of the rest of them paid Rs.110 more than the average of the total expenses. What was the total expense (in Rs.) for the dinner?
(a) 27,840
(b) 29,360
(c) 28,050
(d) 24,580

Q74. What is the value of 9% of 5500 + 2.4% of 1100 - 40% of 1600?
(a) • 118.6
(b) 181.6
(c) • 181.6
(d) 118.6

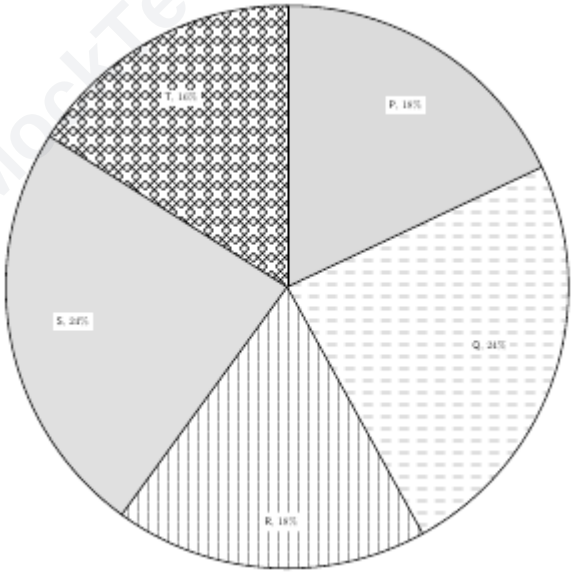
Q75. The given pie charts represent the distribution of candidates who enrolled for a bank clerical examination and the candidates (out of those enrolled) who passed the examination, from five different institutes P, Q, R, S and T. Study the pie charts and answer the question that follows.

i. Total number of candidates who enrolled for the examination from five institutes = 5500

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ii. Total number of candidates who passed the examination from five institutes = 3300



The average number of candidates passed from institutes P and Q together is what percentage of the total number of candidates enrolled from institutes P and Q together?

(a) 30%
(b) 25.2%
(c) 25.8%
(d) 24.6%

GENERAL AWARENESS

Q76. In which state is Renuka Lake located?

(a) Arunachal Pradesh
(b) Uttar Pradesh
(c) Himachal Pradesh
(d) Madhya Pradesh

Q77. In the context of computers, what is Ubuntu?

(a) An open-source operating system sponsored by Canonical Ltd.
(b) A search engine by Mozilla Foundation.
(c) An android-based search engine by Microsoft.

(d) An anti-virus software by Microsoft.

Q78. Who among the following won the men's title in the 77th Senior National Squash Championship, held in February 2020?

(a) Abhay Singh
(b) Harinder Pal Singh Sandhu
(c) Abhishek Pradhan
(d) Saurav Ghosal

Q79. Who among the following was NOT a ruler of the Kushana dynasty?

(a) Nahapana
(b) Vasishka
(c) Vasudeva
(d) Huvishka

Q80. Who among the following was appointed as the Chief Vigilance Commissioner of India in April 2020?

(a) Sharad Kumar
(b) Suresh N Patel
(c) Sanjay Kothari
(d) Rajnish Kumar

Q81. With which sport are Vijay Amritraj and Anand Amritraj associated?

(a) Lawn tennis
(b) Football
(c) Table tennis
(d) Cricket

Q82. According to a forecast by Oxford Economics Global Cities Research 2018, which Indian city tops the list of the top ten fastest-growing cities in the world between 2019 and 2035?

(a) Agra
(b) Surat
(c) Hyderabad
(d) Bengaluru

Q83. Which of the following is measured in the unit called Gauss?

(a) Radius of the nuclei
(b) Magnetic induction
(c) Marine depth
(d) Force

Q84. In which of the following states/union territories has the Border Roads Organisation (BRO) constructed a 440-m-long tunnel to boost the Char Dham Project?

(a) Jammu and Kashmir
(b) Himachal Pradesh
(c) Uttarakhand
(d) Laddakh

Q85. Which of the following pigments causes the red colour in onions?

(a) Carotenoids
(b) Anthocyanins
(c) Chlorophylls
(d) Betalains

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Q86. When was the First Law Commission set up in independent India?

(a) 1952
(b) 1955
(c) 1956
(d) 1951

Q87. In which of the following neighbouring countries of India is the famous Katas Raj Temple complex, with shrines of multiple faiths, located?

(a) Myanmar
(b) Afghanistan
(c) Sri Lanka
(d) Pakistan

Q88. A soft currency is one that is expected to _____ in value relative to other currencies.

(a) reduce
(b) dynamic
(c) increase
(d) constant

Q89. Which was the first Union Territory in India to be declared 100% organic by the Ministry of Agriculture in 2020?

(a) Lakshadweep
(b) Ladakh
(c) Chandigarh
(d) Puducherry

Q90. Which Mughal emperor built the city called 'Maksudabad' later popularly known as Murshidabad?

(a) Bahadur Shah Zafar
(b) Shah Jahan
(c) Humayun
(d) Akbar

Q91. Which of the following Indian state has the famous tourist destination called Pamban Island?

(a) Odisha
(b) Kerala
(c) Andhra Pradesh
(d) Tamil Nadu

Q92. According to the World Population Review Report, released in February 2020, the Indian economy emerged as the world's _____ largest economy in 2019.

(a) 5th
(b) 6th
(c) 7th
(d) 4th

Q93. Who among the following became the first ever Indian female wrestler to win an Olympic medal?

(a) Vinesh Phogat
(b) Kavita Devi
(c) Babita Kumari
(d) Sakshi Malik

Q94. Which Article of the Constitution of India affirms the right to move the Supreme Court by appropriate proceedings for the enforcement of the rights conferred in Part III of the Constitution?

(a) Article 21
(b) Article 32
(c) Article 37

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(d) Article 46

Q95. What do you call an event where a computer becomes unresponsive due to either a program or the system itself becoming unresponsive and no longer taking input?

(a) Booting
(b) Ejecting
(c) Moving
(d) Hanging

Q96. Through which of the following states does the Rushikulya river pass?

(a) Kerala
(b) Andhra Pradesh
(c) Tamil Nadu
(d) Odisha

Q97. Which of the following is an animal trading festival of Gujarat?

(a) Vautha Mela
(b) Madhavpur Mela
(c) Ambubachi Mela
(d) Kumbh Mela

Q98. In February 2020, the armed forces of Indian and the UK held a joint exercise in the UK. The exercise was named _____.

(a) Ghatak Prahari
(b) Mitra Prahar
(c) Ajeya Warrior
(d) Surya Kiran

Q99. As per the standards set by the Department of Telecom, Government of India, for all the new designs of mobile handsets, the permissible Specific Absorption Rate (SAR) limit is _____ averaged over 1 gram of human tissue with effect from 1st September 2012.

(a) 1.8 W/kg
(b) 2.1 W/kg
(c) 2.2 W/kg
(d) 1.6 W/kg

Q100. Who among the following is the author of the book 'Amnesty'?

(a) Vikram Seth
(b) Aravind Adiga
(c) Chetan Bhagat
(d) Amish Tripathi

ANSWER KEY

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

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91 d	92 a	93 d	94 b	95 d	96 d	97 a	98 c	99 d	100 b

SOLUTIONS

Q1. Answer: (d) Preference

The solution is in Hindi. Read it online.

Q2. Answer: (c) Bale

The solution is in Hindi. Read it online.

Q3. Answer: (a) definately

The solution is in Hindi. Read it online.

Q4. Answer: (b) perturbed

The solution is in Hindi. Read it online.

Q5. Answer: (d) Arun told the receptionist that he liked having South Indian breakfast.

The solution is in Hindi. Read it online.

Q6. Answer: (a) the new rules only limiting

The solution is in Hindi. Read it online.

Q7. Answer: (b) Affirm

The solution is in Hindi. Read it online.

Q8. Answer: (a) CDAB

The correct answer is 'CDAB'.

Key Points

• The given question is an example of a Sentence Jumble.

• We know that the first statement of a sentence jumbled question is usually an independent general statement, a noun, a universal fact, starting of an incident, or it starts with 'most' or 'once'.

• Sentence C in the given question is the starting of an incident. It talks about 'the Mehras'.

• Sentence D will be the next sentence because the author and his wife asked them for any help as 'the Mehras' were the newcomers.

• Sentence A will be the next sentence because after talking to 'the Mehras' the author found that they were very quiet in nature.

• Lastly, Sentence D will be used.

• Thus, the sequence becomes:

• C: The Mehras were newcomers to the neighbourhood.

• D: My wife and I called on them to ask if they needed any help.

• A: We found both to be very quiet and subdued.

• D: Later when we became good friends, they told us about their tragic loss.

• Therefore, as per the points mentioned above, we find that the correct answer is Option 1.

Correct Sequence: The Mehras were newcomers to the neighbourhood. My wife and I called on them to ask if they needed any help. We found both to be very quiet and subdued. Later when we became good friends, they told us about their tragic loss.

Q9. Answer: (b) is in complete control

The solution is in Hindi. Read it online.

Q10. Answer: (d) to tear up

The solution is in Hindi. Read it online.

Q11. Answer: (c) annax

The solution is in Hindi. Read it online.

Q12. Answer: (d) all

The solution is in Hindi. Read it online.

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Q13. Answer: (c) decrease

The solution is in Hindi. Read it online.

Q14. Answer: (a) accuracy

The solution is in Hindi. Read it online.

Q15. Answer: (c) never success

The solution is in Hindi. Read it online.

Q16. Answer: (d) To accidentally embarrass or upset someone

The correct answer is 'To accidentally embarrass or upset someone'.

Key Points

• The meaning of the given idiom 'To put one's foot in one's mouth' means 'to accidentally embarrass or upset someone'.

• To put one's foot in one's mouth: say or do something tactless or embarrassing.

• Example: He just tends to put his foot in his mouth when he's forced to speak for too long, so try to get him off stage as soon as possible.

• Therefore, as per the points mentioned above, we find that the correct answer is Option 4.

Correct Answer: To accidentally embarrass or upset someone.

Additional Information

• Let's look at some idioms:

Idiom	Meaning	Example
A piece of the action	a part of the profits or advantages that come from an activity.	When it comes to lawsuits, everyone seems to want a piece of the action.
A piece of the pie	a share of something.	When the business started making money, everyone in his family wanted a piece of the pie.

Q17. Answer: (c) The flood victims were rescued by the disaster management team.

The solution is in Hindi. Read it online.

Q18. Answer: (c) orthopaedist

The solution is in Hindi. Read it online.

Q19. Answer: (c) eminent

The solution is in Hindi. Read it online.

Q20. Answer: (b) DCBA

The correct answer is 'DCBA'.

Key Points

• The given question is an example of a Sentence Jumble.

• We know that the first statement of a sentence jumbled question is usually an independent general statement, a noun, a universal fact, starting of an incident, or it starts with 'most' or 'once'.

• Sentence D in the given question is the starting of an incident. The author is talking about an incident that happened when he was going into the kitchen.

• Sentence C will be the next sentence because while he was trying to open the door of the kitchen he couldn't grab the handle properly.

• Sentence B will be the next sentence because his mother saw that he was falling.

• Lastly, Sentence A will be used.

• Thus, the sequence becomes:

• D: My hand reached out to grab the handle of the door that led into the kitchen.

• C: But I missed and went sprawling across the kitchen floor.

• B: My mother looked up in time to see me fall.

• A: Her face had the most extraordinary expression of horror and amusement.

• Therefore, as per the points mentioned above, we find that the correct answer is Option 2.

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Correct Sequence: My hand reached out to grab the handle of the door that led into the kitchen. But I missed and went sprawling across the kitchen floor. My mother looked up in time to see me fall. Her face had the most extraordinary expression of horror and amusement.

Q21. Answer: (a) bring

The solution is in Hindi. Read it online.

Q22. Answer: (d) of

The correct answer is 'of'.

Key Points

• The given passage is about a medical emergency.

• In the second filler, 'of' should be used.

• We know that the preposition 'of' is used to show possession.

• Example: the president of the United States, a habit of mine, employees of the company, etc.

• In the given context 'influenza' possess those germs.

• Therefore, as per the points mentioned above, we find that the correct answer is Option 4.

The complete passage is:- The doctor left some medicines with the instructions for giving them. One was to (1) bring down the fever and another to overcome an acid condition. "The germs (2) of influenza can exist only in acid condition," he explained. He said there was (3) nothing to worry if the fever did not go up above 103 degrees. This was an (4) epidemic of flu and there was no danger if pneumonia could be (5) prevented.

Q23. Answer: (a) nothing

The solution is in Hindi. Read it online.

Q24. Answer: (c) epidemic

The solution is in Hindi. Read it online.

Q25. Answer: (a) prevented

The solution is in Hindi. Read it online.

Q26. Answer: (d) 2

Logic: If two dice have the same face value in the given image then their clockwise or anticlockwise wise number are known as opposite numbers in dice.

As 3 is the common face on both the dice, keeping it constant and then rotating in clockwise direction, we get the faces opposite to each other:

3	5	1
3	6	2

Clearly, '2' will be at the top if '1' is at the bottom.

Hence, ‘2’ is the correct answer

Q27. Answer: (c) Daughter

By using the symbols in the table given below, we can draw the following family tree:

1) Vineet is the husband of Antima.

2) Dev is the son of Vineet.

3) Dev is the brother of Kusha.

4) Shalini is the mother of Kusha's mother.

Clearly, Antima is daughter of Shalini.

Q28. Answer: (a) {7, 25, 24}

The logic is:

{8, 17, 15} → $8^2 = 17^2 - 15^2$ => 64 = 289 - 225 => 64 = 64 (Pythagorean Triplets)

Similarly,

{7, 25, 24} → $7^2 = 25^2 - 24^2$ => 49 = 625 - 576 => 49 = 49 (Pythagorean Triplets)

Hence, ‘{7, 25, 24}’ is the correct answer.

Q29. Answer: (c) 79832934

The pattern followed here is:

According to the alphabetical positions of the letters,

Letter	S	M	N	T	C
Place Value	19	13	14	20	3
Code of Consonants	1 + 9 = 10 → 1 + 0 = 1	1 + 3 = 4	1 + 4 = 5	2 + 0 = 2	3

Code of Vowels: Vowels are replaced with their opposite alphabet.

A ↔ Z → 26 → 2 + 6 = 8

E ↔ V → 22 → 2 + 2 = 4

I ↔ R → 18 → 1 + 8 = 9

O ↔ L → 12 → 1 + 2 = 3

U ↔ F → 6

Therefore, code of SEMANTIC → 14485293

Similarly,

P	R	A	C	T	I	C	E
16 → 1 + 6 = 7	18 → 1 + 8 = 9	8	3	20 → 2 + 0 = 2	9	3	4

Hence, '79832934' is the correct answer.

Mistake Points Vowels are replaced with their opposite alphabet, and the sum of the position of that alphabet is taken.

So, E → V = 22 → 2 + 2 = 4

Q30. Answer: (c) [figure]

The option in which the given figure is embedded when rotation is NOT allowed is shown below:

Hence, 'option 3' is the correct answer.

Q31. Answer: (d) MOVE

The logic is:

1. BASK → 3 Consonants, 1 Vowel
2. SPIT → 3 Consonants, 1 Vowel
3. TRAM → 3 Consonants, 1 Vowel
4. MOVE → 2 Consonants, 2 Vowels

Hence, 'MOVE' is the odd one out.

Q32. Answer: (a) 55

The logic is:

Hence, '55' is the correct answer.

Q33. Answer: (b) 4 : 16

The logic is:

6 : 54 → 5 + 4 = 9 and 9 - 6 = 3

Similarly,

4 : 16 → 1 + 6 = 7 and 7 - 4 = 3

Hence, '4 : 16' is the correct answer.

Alternate Method

Method 1:

6 : 54 → 54 is completely divisible by 6

Similarly;

4 : 16 → 16 is completely divisible by 4.

Method 2:

The logic is:

(First Number ÷ 2)^3 × 2 = Second Number

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6 : 54 →
$(6 \div 2)^3 \times 2 = 3^3 \times 2 = 27 \times 2 = 54$
Similarly,
4 : 16 →
$(4 \div 2)^3 \times 2 = 2^3 \times 2 = 8 \times 2 = 16$
Hence, '4 : 16' is the correct answer.
Method 3:
Second number = (First number)$^3 \div 4$
6 : 54 →
Second number = $(6)^3 \div 4 = 216 \div 4 = 54$
Similarly,
4 : 16 →
Second number = $(4)^3 \div 4 = 64 \div 4 = 16$
Hence, the correct answer is "4 : 16".

Q34. Answer: (c) Progression

The description is as follows:

Option	Description	
1.	Termination	To end, the action of terminating something or the fact of being terminated.
2.	Conclusion	The end or finish of an event, process, or text.
3.	Progression	To begin, the process of developing or moving gradually towards a more advanced state.
4.	Valediction	The action of saying farewell.

Hence, 'Progression' is the odd one out.

Q35. Answer: (a) 32

The number of triangles in the figure is shown below:
Hence, '32' is the correct answer.

Q36. Answer: (c) Disgust : Distaste

The logic is:
Trust : Faith → Trust and Faith are synonyms of each other.
Similarly,
Disgust : Distaste → Disgust and Distaste are synonyms of each other.
Hence, 'Disgust : Distaste' is the correct answer.

Q37. Answer: (a) [figure]

The correct mirror image of the given figure when the mirror is placed at the right side of the figure is shown below:
Hence, 'option 1' is the correct answer.

Q38. Answer: (c) SFTT

The pattern followed here is:
According to the alphabetical positions of the letters,
Hence, 'SFTT' is the correct answer.

Q39. Answer: (a) 3, 4, 1, 5, 2

The correct option that indicates the arrangement of the given words in a logical and meaningful order is:
3. Destination
4. Reservation
1. Journey

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5. Guided tour

2. Return

We decide a Destination when we plan to travel, then Reserve out tickets for the Journey. Sometimes, we take a Guided Tour and once the tour is complete, we Return back.

Hence, '3, 4, 1, 5, 2' is the correct answer.

Q40. Answer: (d) TASRUYAD

The logic is:

Similarly,

Hence, 'TASRUYAD' is the correct answer.

Q41. Answer: (a) [figure]

The logic is:

Images at the top in each figure shift their position as it is from 1st to 2nd and then 2nd to third as we move along the series.

In each figure, a new image is introduced as we move along the series.

Clearly, option 1 will complete the series.

Hence, 'option 1' is the correct answer.

Q42. Answer: (d) QZWT

The pattern followed here is:

According to the alphabetical positions of the letters,

Similarly,

Hence, 'QZWT' is the correct answer.

Q43. Answer: (b) × and ÷

1. ÷ and +

Given equation: 8 + 12 ÷ 6 × 8 - 9 = 8

After interchanging the signs, the equation becomes:

L.H.S = 8 ÷ 12 + 6 × 8 – 9

= 0.67 + 48 – 9

= 48.67 – 9

= 39.67 ≠ R.H.S

2. × and ÷

Given equation: 8 + 12 ÷ 6 × 8 - 9 = 8

After interchanging the signs, the equation becomes:

L.H.S = 8 + 12 × 6 ÷ 8 - 9

= 8 + 12 × 0.75 - 9

= 8 + 9 – 9

= 17 – 9

= 8 = R.H.S

3. + and ×

Given equation: 8 + 12 ÷ 6 × 8 - 9 = 8

After interchanging the signs, the equation becomes:

L.H.S = 8 × 12 ÷ 6 + 8 - 9

= 16 + 8 – 9

= 24 – 9

= 15 ≠ R.H.S

4. × and –

Given equation: 8 + 12 ÷ 6 × 8 - 9 = 8

After interchanging the signs, the equation becomes:

L.H.S = 8 + 12 ÷ 6 - 8 × 9

= 8 + 2 - 8 × 9

= 8 + 2 – 72

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= 10 – 72

= -62 ≠ R.H.S

Hence, '× and ÷' is the correct answer.

Q44. Answer: (c) 59

The logic is:

1. 245 → The given number is divisible by 5.
2. 385 → The given number is divisible by 5.
3. 59 → The given number is not divisible by 5.
4. 315 → The given number is divisible by 5.

Hence, '59' is the odd one out.

Alternate MethodThe logic followed here is:

All the given options except option (3) is a composite number whereas option (3) is a prime number.

Option (1): 245 → It is a composite number.

Option (2): 385 → It is a composite number.

Option (3): 59 → A Prime Number.

Option (4): 315 → It is a composite number.

Here, Option (3) is NOT the same as the other.

Hence, the correct answer is "59".

Additional Information

• The priority will always be the prime number in the exams.

• There are some standard rules which need to be followed while selecting the priority.

• priority lists to be followed in exams according to their preferences are:

1. Prime number.
2. Square.
3. Cube.
4. Multiplication and divisions
5. Addition and subtraction.

• A prime number can be divided, without a remainder, only by itself and by 1.

• Some facts about the Prime numbers:

1. The only even prime number is 2. All other even numbers can be divided by 2.
2. If the sum of a number's digits is a multiple of 3, that number can be divided by 3.
3. No prime number greater than 5 ends in a 5. Any number greater than 5 that ends in a 5 can be divided by 5.
4. Zero and 1 are not considered prime numbers.
5. Except for 0 and 1, a number is either a prime number or a composite number. A composite number is defined as any number, greater than 1, that is not prime.

Q45. Answer: (a) 15

Let the number of boys be 'x' and number of girls be 'y'.

So, total number of students in the class = x + y

If each boy gets 5 apples, then each girl will get 7 apples.

According to question:

5x + 7y = 85 _____ (i)

And, if each boy gets 4 apples, then each girl will get 9 apples.

4x + 9y = 85 _____ (ii)

Equating equation (i) and (ii), we get:

5x + 7y = 4x + 9y

=> 5x – 4x = 9y – 7y

=> x = 2y

Putting the value of 'x' in equation (i), we get:

5(2y) + 7y = 85

=> 10y + 7y = 85

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=> 17y = 85

=> y = 85 ÷ 17

=> y = 5

As x = 2y and y = 5

The value of x = 2 × 5 = 10

Therefore, total number of students in the class = x + y = 10 + 5 = 15

Hence, '15' is the correct answer.

Q46. Answer: (a) [figure]

The paper when unfolded will appear as shown below:

Hence, 'option 1' is the correct answer.

Q47. Answer: (b) Plough

The logic is:

Piano is a musical instrument played by a musician.

Similarly,

The process of loosening and turning the soil is called ploughing (tilling). Farmers plough the field before sowing.

As the Piano is an instrument played by musicians just like the plough is an instrument used by the farmer.

Hence, 'Plough' is the correct answer.

Q48. Answer: (c) {5, 32, 11}

The logic is:

{14, 44, 8} → 14 + 8 = 22 and 22 × 2 = 44

Similarly,

{5, 32, 11} → 5 + 11 = 16 and 16 × 2 = 32

Hence, '{5, 32, 11}' is the correct answer.

Q49. Answer: (d) Only conclusion II follows

The least possible Venn diagram is:

Conclusions:

I. Some vehicles are trucks. → False (As, there is no definite relation between vehicles and trucks. Hence, false)

II. Some four-wheelers are vehicles. → True (As, Some vehicles are cars and All cars are four-wheelers → Some four-wheelers are vehicles)

III. Some trucks are cars. → False (As, there is no definite relation between trucks and cars. Hence, false)

Hence, only conclusion II follows.

Q50. Answer: (b) 36

The number of rural people who are either farmers or rich but NOT both is shown below:

Number of rural people who are either farmers or rich but NOT both = 22 + 14 = 36

Hence, '36' is the correct answer.

Q51. Answer: (b) 50

Calculations :

25% of 480 + 30% of 500 + x% of 90 = 35% of 900

=> (25/100) of 480 + (30/100) of 500 + (x/100) of 90 = (35/100) of 900

=> 120 + 150 + (9x/10) = 315

=> (9x/10) = 45

=> x = 50

Therefore The correct choice will be option 2.

Q52. Answer: (c) -8

Concept used:

For a number to be divisible by 11, the difference between the sum of digits at an even place and odd place either be 0 or 11.

Calculation:

For a number A9257B684

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Sum of digits at even place = 9 + 5 + B + 8 = 22 + B

Sum of digits at odd place = A + 2 + 7 + 6 + 4 = 19 + A

Case (1) - When both sums are equal

A + 19 = B + 22

=> A - B = 3

Case(2) - When the difference of the sums is 11

A + 19 - (B + 22) = 11

=> A + 19 - B- 22 = 11

=> A - B - 3 = 11

=> A - B = 14

Case(3) - When the difference of the sums is 11

B + 22 - (A + 19) = 11

=> B + 22 - A - 19 = 11

=> B - A + 3 = 11

=> A - B = -8

Therefore The smallest value of (A - B) will be -8.

Q53. Answer: (c) 90°

Formula used :

$1 + \cot^2 x = \operatorname{cosec}^2 x$

Calculation:

3cot2x - 7cosec2x + 7 = 0

=> $3\cot^2 x - 7 (1 + \cot^2 x) + 7 = 0$

=> $3\cot^2 x - 7 - 7 \cot^2 x + 7 = 0$

=> $-4 \cot^2 x + 0 = 0$

=> $4 \cot^2 x = 0$

=> Cot x = 0

=> x = 90° (cot x = 0 at x = 90°)

Therefore Correct choice will be option 3.

Alternate Methodby hit and trial with options,

Put x = 90°

3cot2x - 7cosec2x + 7 = 0

=> 3cot290- 7cosec290 + 7 = 0

=> 3(0) - 7(1) + 7 = 0

=> 0 = 0

Therefore The value of x is 90°

Q54. Answer: (d) 60

Calculations :

Marks of E in Maths = 60

Marks of E in English = 50

Marks of E in Physics = 70

Total marks of E = 60 + 50 + 70 = 180

Percentage marks of E = (Marks obtained/Total marks) × 100

=> (180/300) × 100

=> 60

Therefore The Correct choice will be option 4.

Alternate MethodSince the maximum marks is 100. We can say marks obtained is the percentage obtained.

Average percentage is 60% as 50, 60 and 70 are in A.P and the number of terms is odd. Then the average will be the middle term which is 60.

Therefore The average is 60%.

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Q55. Answer: (a) 400 π and 40

Given :

The circumference of the circle is 40 π cm

Formula used:

Circumference of circle =2.π.r (where r is the radius)

Area of circle=π r²

Diameter = 2r

Calculation:

Let the radius of circle be 'r'

According to the question

Circumference (2π r) = 40π

=> r = 20

Diameter of circle = 2r = 40cm

Area of circle = π r² = π × (20 × 20)

=> 400π

Therefore The correct choice will be option 1.

Q56. Answer: (a) 848.64

Given :

Average sales increased by 25% in 2014 - 2015 from the previous year.

Calculations :

Average sales turnover in 2014 - 15 = (1060 + 954 + 850 + 1360 + 1080)/5

=>1060.8

Now according to the question

Sales of 2013-2014 + 25% of sales of 2013 - 2014 = average sales of year 2014 - 2015

Sales of 2013-2014 + 25% of sales of 2013 - 2014 = 125% of 2013-2014 sales = 1060.8

Average sales of 2013- 2014 = 1060.8 × (100 × 125)

=> 1060.8 × (4/5)

=> Rs.848.64 crore

Therefore The correct choice will be option 1

Alternate Method25% increment means value becomes (5/4) of itself

Let the sales in 2013 - 2014 be x

Sales in 2014 - 2015 = 5304

Average sales in 2014 - 2015 = 1060.8

So,

=> x × (5/4) = 1060.8

=> x = 848.64 crore rupees.

Q57. Answer: (c) 5√485

Given :

The difference between numbers is 5

The difference between their cubes is 1850

Formula used :

$(x - y)^3 = x^3 - y^3 - 3xy(x - y)$

$x^3 - y^3 = (x - y)(x^2 + y^2 + xy)$

$x^2 - y^2 = (x + y)(x - y)$

Calculations

Let the numbers be x and y

According to the problem

$x - y = 5$ and $x^3 - y^3 = 1850$

Now

$\Rightarrow (x - y)^3 = x^3 - y^3 - 3xy(x - y)$

=> 125 = 1850 - 3xy(5)
=> 125 - 1850 = 3xy (5)
=> 15xy = 1725
=> xy = 115
=> $x^3 - y^3 = (x - y)(x^2 + y^2 + xy)$
=> 1850 = (5) $(x^2 + y^2 + 115)$
=> $x^2 + y^2 = 255$,
Now
$(x + y)^2 = x^2 + y^2 + 2xy$
=> 255 + 2 × 115 = 485
$x + y = \sqrt{485}$
Finally
$x^2 - y^2 = (x + y)(x - y)$
=> 5 × √485
=> 5√485
Therefore The correct choice will be option 3.

Q58. Answer: (d) 36

Given :
a + b + c = 0 and abc = 12
Formula used :
$a^3 + b^3 + c^3 = 3abc$ when, a + b + c = 0
Calculations:
$a^3 + b^3 + c^3 = 3abc$ (a + b+c=0)
=> $a^3 + b^3 + c^3 = 3abc$
=> $a^3 + b^3 + c^3 = 36$
Therefore The correct choice is option 4.
Shortcut TrickPut, a = 4, b = -3, c = -1
Now,
Required value = 64 - 27 - 1 = 36

Q59. Answer: (d) 2%

Given :
The marked price is Rs 35600
Discounted price Rs. 34,888
Formula used:
Marked price - % discount of marked price = Discounted price (selling price)
Calculations:
According to the question
=> 35600 - Discount % of 35600 = 34888
=> Discount % of 35600 = 712
=> Discount = (712/356) = 2%
So discount will be 2%
The correct choice will be option 4
Alternate Method
Let the discount percent be x
As per this method
Marked price (100 - discount percent)/100) = Selling price
=> 35600 × [(100 - x)/100] = 34888
=> 100 - x = 98
=> x = 2
So the discount will be 2%.

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Shortcut Trick

Discount = 35600 - 34888 = Rs. 712

Required discount percentage = 712/35600 * 100 = 2%

Therefore The correct answer is 2%.

Q60. Answer: (b) 1,683

Given:

The principle amount is Rs 8950

The interest rate is 9%

The time period is 2 years

Formula used:

When the interest rate is compounded per year at r%

Total interest rate = [r + r + (r × r)/100]%

Calculations:

Total interest in 2 years = 9 + 9 + (9 × 9)/100 =18.81%

Compound interest on Rs.8950 = 18.81% of 8950 = Rs.1683.45

Therefore The correct choice will be option 2.

Q61. Answer: (a) 59°

Shortcut Trick

For tangents AB and AC drawn from an external point A to a circle with centre O, the angle angle OCB is always exactly half of the vertex angle angle BAC.

Logic: angle OCB = angle BAC ÷ 2

=> angle OCB = 118° ÷ 2

=> angle OCB = 59°

Therefore The correct answer is 59°.

Alternate Method

Given: angle BAC = 118° and tangents AB, AC.

Formula Used: Sum of angles in quadrilateral = 360°; Tangent perpendicular to Radius property; Isosceles triangle property.

In quadrilateral ABOC:

=> angle ABO = angle ACO = 90° (Radius is perpendicular to the tangent at point of contact)

=> angle BAC + angle ABO + angle BOC + angle ACO = 360°

=> 118° + 90° + angle BOC + 90° = 360°

=> angle BOC = 360° − 298° = 62°

In triangle OBC:

=> OB = OC (Radii of the same circle)

=> angle OBC = angle OCB (Angles opposite to equal sides are equal)

=> angle BOC + angle OBC + angle OCB = 180°

=> 62° + 2 × angle OCB = 180°

=> 2 × angle OCB = 180° − 62° = 118°

=> angle OCB = 59°

Therefore The correct answer is 59°.

Additional Information

Tangent Properties

Tangents from an external point to a circle are equal in length (AB = AC) and subtend equal angles at the centre.

Supplementary Angles

The angle between two tangents and the angle subtended by the radii at the centre are supplementary (angle BAC + angle BOC = 180°).

Alternative Segment Theorem

The angle between a tangent and a chord through the point of contact is equal to the angle in the alternate segment.

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Q62. Answer: (d) 24

Given:

Varun and syan can do work in 3 days

Syan and anil in 4 days

Anil and varun can do in 6 days

Concept used :

Per day work = total work/days required to complete the total work

Calculations:

Let the total work = LCM of (3,4,6) = 12 units

Varun and syan per day work = 12/3 = 4 units

Syan and anil per day work = 12/4 = 3 units

Anil and varun per day work = 12/6 = 2 units

Adding their per day work

2 × (Varun's, syan's and Anil's) total work = 4 + 3 + 2 = 9 units

Their total work per day = 4.5 units

Anil per day work = Total work by all - per day work of Syan and Varun

Anil per day work = 4.5 - 4 = 0.5 units

Time required by Anll to complete the work = 12/0.5

=> 24 days

Therefore Option 4 is the correct choice.

Q63. Answer: (c) -1/4

Calculations :

$\sin^2 60° + \tan^2 45° + \sec^2 45° - \text{cosec}^2 30°$

$\Rightarrow (\sqrt{3}/2)^2 + (1)^2 + (\sqrt{2})^2 - (2)^2$

$\Rightarrow (3/4) + 1 + 2 - 4$

$\Rightarrow (3/4) + 3 - 4$

$= (3/4) - 1 = -1/4$

Therefore The correct choice is option 3.

Q64. Answer: (b) 1120

Given:

Speed of trains are respectively 90 km/ hr and 70 km / hr

One train travelled 140 km more than other

Formula used:

Distance= Speed × Time

Calculations :

Let the time of traveling be ' t ' hour's

Distance travelled by train with speed 90 km/h = 90 × t = 90t

Distance travelled by train with speed 70 km/h = 70 × t = 70t

According to the question

Difference in distance traveled by two train = 140 km

90 × t - 70 × t = 140

=> 90t - 70t = 140

=> 20t = 140

=> t = 7 hours

Distance between stations = 90 × 7 + 70 × 7

=> 160 × 7

=> 1120 km

Therefore The correct choice is option 2.

Alternate MethodIf time is constant then

Ratio of speed = ratio of distance

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So, Ratio of speed = 90 : 70 = 9 : 7
Ratio of Distance = 9 : 7
=> (9 - 7) = 2 units = 140 km
=> 1 unit = 70 km
Then total distance = (70 × 9) + (70 × 7)
=> 630 + 490 = 1120 km
Therefore The correct answer is 1120 km.
Shortcut Trick We know that
Distance = Time × Speed
That means the distance will be the factor of speed.
Now the relative speed = 90 + 70 = 160 km/hr
Now we will check whether option will be divisible by 160.
Only the second option is the factor of the given speed.
Hence, the distance is 1120 km.

Q65. Answer: (b) 18.1√3

Given:
Length of side of an equilateral triangle is 8.5 m.
Formula used :
Area of equilateral triangle = √3/4 a^2 (where a is the side of the triangle)
Calculations :
Area of triangle = (√3/4) × $(8.5)^2$
=> (√3/4) 72.25
=> √3 × (18.06)
=> 18.1 √3
Therefore The correct choice will be option 2.

Q66. Answer: (d) 24,000

Given ;
Salary increases in the ratio 8 : 11
New salary is Rs. 33000
Calculations:
Let the original salary be S
According to the question
=> 8 : 11 = S : 33000
=> S = 24000 rupees
Therefore The correct choice will be option 4.
Shortcut TrickConcept used:
The number represents its ratio will be divisible by that ratio.
11 = 33000
1 = 3000
8 = 24000
Hence, the original salary is Rs. 24000.

Q67. Answer: (b) Rs.11,700

Given :
Collection from primary, middle, secondary and senior secondary is respectively 18%, 30%, 27% & 25%.
Calculations :
Let the total amount be x Rupees
According to the questions
30% of x = 6750 (collection of middle classes)
=> x = 6750 × (100/30)
=> 22500 rupees

Total calculation of secondary & senior secondary= 52% of x

=> 52% of 22500

=> (52/100) of 22500

=> Rs 11700

Therefore The correct choice will be option 2.

Shortcut Trick 30% = 6750

1% = 225

(27+25)% = 225*52

= 11700

Q68. Answer: (d) 1181

Shortcut Trick

To find the sum of squares when sum and product are given:

Sum of Squares = $(Sum)^2 - 2 \times (Product)$

=> Sum of Squares = $(59)^2 - 2 \times 1150$

=> Sum of Squares = $3481 - 2300 = 1181$

Therefore The correct answer is 1181.

Alternate Method

Given:

Sum of two numbers $(x + y) = 59$

Product of two numbers $(xy) = 1150$

Formula Used:

Algebraic identity: $(x + y)^2 = x^2 + y^2 + 2xy$

Calculations:

=> $(x + y)^2 = x^2 + y^2 + 2xy$

=> $(59)^2 = x^2 + y^2 + 2 \times 1150$

=> $3481 = x^2 + y^2 + 2300$

=> $x^2 + y^2 = 3481 - 2300$

=> $x^2 + y^2 = 1181$

Therefore The correct answer is 1181.

Additional Information

Difference of Squares Formula

The expression $x^2 - y^2$ is factored as $(x - y)(x + y)$.

Square of a Difference

The identity $(x - y)^2 = x^2 + y^2 - 2xy$ can be used to find the difference between numbers when their sum of squares and product are known.

Relation between Identities

The two main identities are related as: $(x + y)^2 - (x - y)^2 = 4xy$.

Q69. Answer: (d) 16%

Given:

A shopkeeper sells two refrigerator sets at the same price.

He gains 40% on one refrigerator and loses 40% on the other.

Concept used:

Selling price at profit = cost price + profit on the cost price

Selling price (at loss) = cost price - loss on the cost price

Calculations:

Let the selling price of refrigerator be '100x'

For 1st refrigerator

Cost price + 40 % of cost price = 100x

=>140 % cost price = 100x

=> Cost price = (100x) × (100/140)

=> 500/7 x

Similarly cost price of 2nd refrigerator

Cost price - 40 % cost price = 100x

=> 60% of cost price = 100x

=> Cost price = (500/3)x

=> Total cost price = (500/3)x + (500/7)x

=> (3500+1500)/21)x

=> (5000/21)x

Total selling price = 100x + 100x

=> 200x

=> (4200/21)x

So,

Loss% = [(cost price - selling price)/ cost price)] × 100

=> (800/5000) × 100

=> 16%

Therefore The correct choice will be option 4.

Shortcut Trick

Loss% = 40 - 40 - (40 × 40)/100

=> Loss% = 16

Q70. Answer: (d) 13

Shortcut Trick

For an expression of the form a tan x + b cot x = k, the value of $a^2 \tan^2 x + b^2 \cot^2 x$ is given by $k^2 - 2ab$.

In this problem, a = 2, b = 3, and k = 5.

Applying the formula: $5^2 - 2(2 \times 3)$

=> 25 − 12 = 13.

Hence, the correct value is 13, which corresponds to option (4).

Therefore The correct answer is 13.

Alternate Method

Given:

2 tan x + 3 cot x = 5

Formula Used:

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

2. tan x × cot x = 1

Calculations:

=> $(2 \tan x + 3 \cot x)^2 = 5^2$

=> $(2 \tan x)^2 + (3 \cot x)^2 + 2(2 \tan x \times 3 \cot x) = 25$

=> $4 \tan^2 x + 9 \cot^2 x + 12(\tan x \times \cot x) = 25$

=> $4 \tan^2 x + 9 \cot^2 x + 12(1) = 25$

=> $4 \tan^2 x + 9 \cot^2 x = 25 - 12$

=> $4 \tan^2 x + 9 \cot^2 x = 13$

Therefore, the value is 13, and option (4) is correct.

Therefore The correct answer is 13.

Additional Information

Reciprocal Trigonometric Ratios

The tangent and cotangent functions are reciprocals of each other, meaning $\tan \theta = 1 \div \cot \theta$ or $\tan \theta \times \cot \theta = 1$.

Algebraic Identity for Reciprocals

For any expression (ax + b/x) = k, squaring gives $a^2x^2 + b^2/x^2 = k^2 - 2ab$. This is widely used in trigonometry where x and 1/x are tan and cot.

Minimum Value Property

The minimum value of an expression like $a \tan^2 x + b \cot^2 x$ is $2\sqrt{(ab)}$ based on the AM-GM inequality for positive terms.

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Q71. Answer: (a) 125 cm

Given:

Length is 5 times the breadth of the rectangle

Are of the rectangle is 3125 cm²

Formula used:

Area of rectangle= length × breadth

Calculations:

Let the breadth & length of length of rectangle be b & 5b respectively (length is 5 times the breadth)

According to the question

=> b × 5b = 3125

=> 5b² = 3125

=> b² = 625

=> b = 25 cm

So, Length = 5b = 125

Therefore The correct choice will be option 1.

Q72. Answer: (a) 9√3 cm

Given :

The centroid of a triangle ABC is O

The length of the side of the triangle is 27 cm

Concept used :

Centroid divides the upper part & lower part of the perpendicular inside an equilateral triangle in 2 : 1

Height of triangle = (√3/2)× side

Calculations :

Height of triangle = (√3/2) × 27

=> (27√3)/2

Now the length of AO

=> AO = 2/3 of perpendicular × (Height)

=> 2/3 of (27√3/2)

=> 9√3 cm

Therefore The correct choice will be option 1.

Q73. Answer: (c) 28,050

Given :

30 people went to a restaurant for a dinner party, 20 of them paid Rs.880 each and each of the rest of them paid Rs.110 more than the average of the total expenses

Formula used :

Average = (Total value of all observation/Number of observation)

Calculations :

Let the Average bill per person be ' A ' Rs

Bill paid by 20 people = 20 × 880 = Rs.17600

Total bill paid by other 10 people

=> 10(A + 110)

=> 10A + 1100

Total bill paid = 17600 + 10A + 1100

=> 18700 + 10A

According to question

Average bill (A) = (18700+10A)/30

=> 30A = 18700 + 10A

=> 20A = 18700

=> A = Rs 935

Total bill paid = 30 × A

=> 30× 935

=> Rs. 28050

Therefore The correct choice will be option 3.

Q74. Answer: (a) • 118.6

Calculations :

9% of 5500 + 2.4 % of 1100 - 40 % of 1600

=> (9/100) of 5500 + (2.4/100) of 1100 - (40/100) of 1600

=> 495 + 26.4 - 640

=> - 640 + 521.4

=> - 118.6

Therefore Option 1 will be the correct choice.

Q75. Answer: (b) 25.2%

Given :

Total students enrolled are 5500

Total students passed are 3300

Calculations :

Number of students enrolled in P = 20% of 5500 = 1100

Number of students enrolled in Q = 30% of 5500 = 1650

Number of students passed in P = 18% of 3300 = 594

Number of students passed in Q = 24% of 3300 = 792

Average of students passed in P & Q = (594 + 792)/2 = 693

The required percentage = (693/2750) × 100 = 25.2%

The correct choice is option 2.

Q76. Answer: (c) Himachal Pradesh

The correct answer is Himachal Pradesh.

Key Points

• Renuka lake is situated in the Sirmour district of Himachal Pradesh.

• It is 672 m above sea level.

• Renuka Lake is located at a distance of 37 km from Nahan and 60 km from Paonta Sahib covering an area of 2.5 km.

• One of the popular temples of Himachal Pradesh, Renukaji is situated on the bank of this lake.

Additional Information

• Some facts about Himachal Pradesh:

• The state was incepted on 15^(th) April 1948 by the integration of 28 princely states with four districts of Chamba, Mandi, Sirmour, and Mahasu.

• On the 25^(th) of January, 1971, it got complete statehood as the 18^(th) state of the country.

• The animal symbol of Himachal Pradesh is the snow leopard.

• The Indian Cedar or Himalayan cedar is the tree symbol of Himachal Pradesh.

Q77. Answer: (a) An open-source operating system sponsored by Canonical Ltd.

The correct answer is An open-source operating system sponsored by Canonical Ltd.

Key Points

Ubuntu is sponsored by Canonical Ltd.

• It is an open-source operating system.

• Ubuntu is a complete Linux operating system, freely available with both community and professional support.

• An operating system is system software that tackles computer hardware, and software resources, and tenders common services for computer programs.

• The Ubuntu community is erected on the ideas elevated in the Ubuntu Manifesto:

• that software should be free,

• that software should be available to people in their local language and without any difficulties,

• that people should be free to customize and change their software however they want.

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• Ubuntu is fully committed to the principles that govern open-source software development.

• Open-source software is software that is released under a license in which the copyright holder permits the users to use, study, change and distribute the software and its source code to anyone and for any reason.

• Ubuntu is useful for both desktop and server use.

• Ubuntu includes thousands of software, starting with the Linux kernel version 5.4 and GNOME 3.28, and comprising every standard desktop application from word processing and spreadsheet to internet access applications, web server software, email software, programming languages and tools and several games.

• The Ubuntu Project is sponsored by Canonical Ltd.

• Canonical's business model is to tender technical support and professional services concerning Ubuntu.

Q78. Answer: (d) Saurav Ghosal

The correct answer is Sourav Ghosal.

Key Points

• Saurav Ghosal won the men's title in the 77th Senior National Squash Championship.

• The championship was held in February 2020.

• The Squash Rackets Federation of India (SRFI)-77th Senior National squash championships was held at Chennai, Tamil Nadu.

• Ace Indian squash player Joshna Chinappa clinched the women’s title by beating Tanvi Khanna.

• While Saurav Ghosal bagged the men’s title by defeating Abhishek Pradhan.

• The champions were awarded prize money of Rs. 1,25,000 each.

Q79. Answer: (a) Nahapana

The correct answer is Nahapana.

Key Points

• Nahpana was an important ruler of the Western Kshatrapas, a descendant of the Indo-Scythians, in northwestern India.

• He ruled during the 1st or 2nd century CE.

• According to one of his coins, he was the son of Bhumaka.

• So, Nahapana was not a ruler of the Kushana dynasty.

Additional Information

• Kushans were one of the five Great Yueh-chi tribes.

• The Great Yuezhi-Chi tribes dwelled in the valley of Oxus.

• A century later the Kushans of Yuehi-Chi gained dominance over the others.

• They were led by Kadphises.

• In the 1st century CE, Kujula Kadphises (Kadphises I) brought these five tribes together and founded the Kushan Empire.

• They are referred to as Guishuang in the Chinese sources.

• They moved east towards India by defeating the Parthians and the Sakas in the 1st century AD.

• Kujula Kadphises was the first Yuezhi chief to lay the establishment of the Kushana Empire in India.

• He substantiated his supremacy over Kabul, Kandahar and Afghanistan.

• His successor was his son Vima Taktu or Sadashkana (AD 80 -AD 95) who amplified the empire into northwest India.

• Ruler Vima Kadphises was the son of Vima Taktu and the father of Kanishka.

• Kanishka of Kushan Dynasty (127 AD – 150 AD)

• Kanishka was by far the most powerful sovereign of the Kushana dynasty.

• His capital was Purushpura (Peshawar).

• During his rule, the Kushana Empire expanded from Uzbekistan, Tajikistan to Mathura and Kashmir.

• It was during his reign that Buddhism got divided into Mahayana and Hinayana.

• He founded the Shaka Era of A.D. 78.

• Kanishka patronized Buddhism and organized the 4th Buddhist council in the Kundalvana of Kashmir in 78 AD.

• The scholars in Kanishka’s court included Vasumitra, Asvaghosa, Nagarjun, Charaka and Parsva.

• Kanishka battled against King Han Ho-ti, the king of the Han dynasty of China.

• Kanishka defeated him in the second attempt.

• He invaded Patliputra and took the Buddhist monk Asvaghosa to Purushpura.

• Ashvoghosha is considered to be the first Sanskrit dramatist.

• The Kushana dynasty's decline commenced after his death.

• Kanishka was succeeded by his son Vasishka.

• Vasishka was succeeded by Huvishka and Kanishka II (son of Vasishka).
• Kanishka II was succeeded by Vasudeva I.
• Vasudeva I was the last great ruler of the Kushanas.
• After his death, the empire disintegrated.

Q80. Answer: (c) Sanjay Kothari

The correct answer is Sanjay Kothari.

Key Points

• Sanjay Kothari was appointed as the Chief Vigilance Commissioner in April 2020.
• He left the office in June 2021.
• Suresh N. Patel is the incumbent (as of September 2021) Chief Vigilance Commissioner of India.

Additional Information

• Central Vigilance Commission is the apex vigilance institution, free of control from any executive authority, monitoring all vigilance activity under the Central Government.
• It also advises various authorities in Central Government organizations in planning, executing, reviewing and reforming their vigilance work.
• Vigilance means to ensure clean and prompt administrative action towards achieving efficiency and effectiveness of the employees in particular and the organization in general.
• The CVC was set up by the Government in February 1964 on the recommendations of the Committee on Prevention of Corruption, headed by Shri K. Santhanam.
• In 2003, the Parliament enacted CVC Act conferring statutory status on the CVC.
• After the enactment of the CVC Act, 2003, the Commission became a multi-member body.
• The Central Vigilance Commissioner and not more than two Vigilance Commissioners are appointed by the President.
• The President appoints them on the recommendations of a Committee consisting of the Prime Minister (Chairperson), the Minister of Home Affairs (Member) and the Leader of the Opposition in the House of the People (Member).
• The term of office of the Central Vigilance Commissioner and the Vigilance Commissioners is four years from the date on which they enter their office or till they attain the age of 65 years, whichever is earlier.
• The CVC is not controlled by any Ministry/Department.
• It is an independent body that is only responsible to the Parliament.
• Functions:
• The CVC receives complaints on corruption or misuse of office and recommends appropriate action.
• It is not an investigating agency.
• The CVC either gets the investigation done through the CBI or chief vigilance officers (CVO) in government offices.
• It is empowered to inquire into offences alleged to have been committed under the Prevention of Corruption Act, 1988 by certain categories of public servants.
• Its annual report gives the details of the work done by the commission and points to systemic failures which lead to corruption in government departments.
• Although CVC is “relatively independent” in its functioning, it neither has the resources nor the power to take action on complaints of corruption.

Q81. Answer: (a) Lawn tennis

The correct answer is Lawn Tennis.

Key Points

• Vijay Amritraj and Anand Amritraj are associated with Lawn Tennis.
• Vijay Amritraj and his brothers, Anand Amritraj and Ashok Amritraj, were among the first Indians to play in top-flight international tour tennis.
• In 1976, the brothers, Vijay and Anand, were semi-finalists in the Wimbledon men's doubles.
• Amritraj was the captain of the Indian Davis Cup for much of the late 1970s and 1980s, helping India reach the finals in 1974 and 1987.
• For almost two decades, Vijay Amritraj was one of the most famous tennis players in the world and was the top tennis player in Asia for 14 straight years.

Q82. Answer: (b) Surat

The correct answer is Surat.

Key Points

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• Surat tops the list of the top 10 fastest growing cities in the world between 2019 and 2035.

• Indian cities will make up most of the fastest-growing cities in the world between 2019 and 2035, considering the year-on-year Gross Domestic Product (GDP) growth, said a report by Oxford Economics.

• Over 17 of the 20 top cities on the list will be Indian.

• Surat, a commercial centre for textiles in Gujarat, will witness the fastest GDP growth, by an average exceeding 9% year on year.

• The report said that Indian cities including Bengaluru, Hyderabad, and Chennai will be among the strongest performers across the globe.

• The top 10 cities to make up the fastest-growing cities globally include Surat (9.17%), Agra (8.58%), Bengaluru (8.5%), Hyderabad (8.47%), Nagpur (8.41%), Tirupur (8.36%), Rajkot (8.33%), Tiruchirappalli (8.29%), Chennai (8.17%) and Vijayawada (8.16%).

• However, in comparison to the world's biggest metropolises, India's economic output is expected to remain small.

• On the flip side, when it comes to the total size of the economies, New York will continue to be the largest urban economy due to its growing finance & business service sector.

• Oxford Economics also revealed that, over the period 2019-2035, the cities will lead the growth of the global economy, with the global economy growing by an average of 2.6% a year.

Q83. Answer: (b) Magnetic induction

The correct answer is Magnetic induction.

Key Points

• Gauss is the SI unit of Magnetic induction.

• The gauss (G) is used for the measurement of magnetic induction, also known as magnetic flux density.

• In the CGS system or the centimetre gram second system of various physical units, gauss is the unit of magnetic induction.

• Generally, an electromotive force will be induced by the application of magnetic flux density.

• The unit was named after a German scientist by the name of Carl Friedrich Gauss.

Additional Information

• Magnetic induction was discovered by Michael Faraday in 1831.

• Magnetic induction, also called electromagnetic induction refers to the production of voltage (or EMF) across an electrical conductor placed inside a varying magnetic field.

• According to Faraday's law, for a closed circuit, the induced electromotive force is equal to the rate of change of the magnetic flux enclosed by the circuit.

• Electromagnetic Induction is a current produced because of voltage production (electromotive force) due to a changing magnetic field.

• This either happens when a conductor is placed in a moving magnetic field (when using an AC power source) or when a conductor is constantly moving in a stationary magnetic field.

Q84. Answer: (c) Uttarakhand

The correct answer is Uttarakhand.

Key Points

• Border Roads Organisation (BRO) has constructed a 440-metre long tunnel in Uttarakhand to boost the Char Dham Project.

• The BRO constructed the tunnel below the densely populated Chamba town on Rishikesh-Dharasu road (NH-94).

• The Chamba tunnel is a horse-shoe type tunnel with a 10 m carriageway width and 5.5 m vertical clearance.

Additional Information

• Char Dham Project

• The Ministry of Road Transport and Highways has taken up a separate programme for connectivity Improvement for Char-Dham (Kedarnath, Badrinath, Yamunotri & Gangothri) in Uttarakhand.

• There are a total of 53 civil works covering a distance of 889 kilometres.

• It is a proposed two-lane express National Highway with a minimum width of 10 metres in the state of Uttarakhand.

• The BRO develops and maintains road networks in India's border areas and friendly neighbouring countries and functions under the Ministry of Defence.

• It is entrusted with the construction of Roads, Bridges, Tunnels, Causeways, Helipads and Airfields along the borders.

• Under the "Char Dham" project costing about Rs 12,000 crore, BRO is constructing 250 km of National Highway leading to holy shrines of Gangotri and Badrinath.

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Q85. Answer: (b) Anthocyanins

The correct answer is Anthocyanins.

Key Points

• The red colour of the onion is due to the presence of anthocyanins and anthoxanthins which belong to the class of Flavonoids.

• Anthocyanins impart orange, yellow or purple colouration while anthoxanthins impart pale yellow or white colour.

• These pigments are present in the cell sap and are water-soluble.

• The inner epidermis of red onions is characteristically white, small patches of cells sometimes redden, containing vacuolar anthocyanin.

• Anthocyanins are flavonoid pigments present in the vacuoles of higher plant cells that generate a wide diversity of colours ranging from orange and red to violet and blue.

Additional Information

• Carotenoids are a class of more than 750 naturally occurring pigments synthesized by plants, algae, and photosynthetic bacteria

• These richly coloured molecules are the sources of the yellow, orange, and red colours of many plants.

• Fruit and vegetables provide most of the 40 to 50 carotenoids found in the human diet.

• Chlorophyll is a pigment that gives plants their green colour.

• It also helps plants create their food through photosynthesis.

• Betalains are unique nitrogen-containing pigments found exclusively in families of the Caryophyllales order and some higher-order fungi, where they replace anthocyanin pigments.

• Betalains, consisting of betacyanins and betaxanthins are generally used as colour additives in food.

Q86. Answer: (b) 1955

The correct answer is 1955.

Key Points

• The Government of India established the First Law Commission of Independent India in 1955.

• The then Attorney-General of India, Mr M. C. Setalvad was the chairman of this commission.

• Since then twenty one more Law Commissions have been appointed, each with a three-year term.

Additional Information

• Law Commissions were constituted by the Government from time to time and were empowered to recommend legislative reforms to clarify, consolidate and codify particular branches of law where the Government felt the necessity for it.

• The first such Commission was established in 1834 under the Charter Act of 1833 under the Chairmanship of Lord Macaulay which recommended codification of the Penal Code and the Criminal Procedure Code.

• Thereafter, the second, third and fourth Law Commissions were constituted in 1853, 1861 and 1879 respectively.

• The Indian Code of Civil Procedure, the Indian Contract Act, the Indian Evidence Act, the Transfer of Property Act. etc. are products of the first four Law Commissions.

• After independence, the Constitution stipulated the continuation of pre-Constitution Laws under Article 372 until they are amended or repealed.

• The Functions of Law commission:

• The Law Commission, on a reference made to it by the Central Government or suo-motu, undertakes research in law and review of existing laws in India for making reforms therein and enacting new legislations.

• It also undertakes studies and research for bringing reforms in the justice delivery systems for elimination of delay in procedures, speedy disposal of cases, reduction in the cost of litigation etc.

• It Identifies laws that are no longer relevant and recommends the repeal of obsolete and unnecessary enactments.

• It examines the laws which affect the poor and carries out post-audit for socio-economic legislations.

• It suggests the enactment of new legislation as may be necessary to implement the Directive Principles and to attain the objectives set out in the Preamble of the Constitution.

• It examines the existing laws with a view of promoting gender equality and suggesting amendments thereto.

• It prepares and submits to the Central Government, from time to time, reports on all issues, matters, studies and research undertaken by it and recommends in such reports for effective measures to be taken by the Union or any State.

• It performs such other functions as may be assigned to it by the Central Government from time to time.

• The recommendations of the commission are not binding on the government.

• They may be accepted or rejected.

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Q87. Answer: (d) Pakistan

The correct answer is Pakistan.

Key Points

• The famous Katas Raj Temples complex is located in Pakistan.

• The Katas Raj Temples near Chakwal in the Punjab province of Pakistan are attributed to the eras of the Hindu Shahis (kings) dating from about 615-950 CE.

• This splendid complex of temples is dedicated to Lord Ram, Lord Hanuman and Lord Shiva.

• It is believed that the site was visited by the Pandawa brothers of "Mahabharta" fame and this complex of temples was constructed to commemorate their visit.

• Katas Raj is not just a sacred Hindu site, though.

• A little distance from the pond is the remains of a gurdwara which Guru Nanak is believed to have stayed in during his journey around the world.

• There are also shrines associated with different religions.

• After Partition, while ancient Buddhist sites were preserved, and promoted, as part of the country's rich history, the Hindu heritage was ignored as the trauma of Partition.

• In 1992, after the demolition of the Babri Masjid in Ayodhya in India, many Hindu temples in Pakistan were destroyed.

• Katas Raj has a collection of buildings and ruins that stretch in an unbroken line from the Buddhist era down to British rule, thereby, preserving at least 1500 years worth of history in that particular space.

Q88. Answer: (a) reduce

The correct answer is to reduce.

Key Points

• A soft currency is expected to reduce in value relative to other currencies.

• A soft currency is one with a value that fluctuates, predominantly lower relative to other currencies.

• It reduces because there is less demand for that currency in the forex markets.

• A soft currency struggles to maintain its value against other currencies.

• This happens because traders and investors seek to hold other currencies more than the soft currency.

• This weak demand is most often a result of the country's political or economic instability, which in turn makes the price of the currency more volatile.

• In financial markets, analysts and traders will also refer to a soft currency as a "weak currency."

• Currencies from most developing countries are considered to be soft currencies.

Q89. Answer: (a) Lakshadweep

The correct answer is Lakshadweep.

Key Points

• Lakshadweep is the first Union Territory in India to be declared 100% organic by the Ministry of Agriculture in 2020.

• The entire Lakshadweep group of islands has been declared as an organic agricultural area under the Participatory Guarantee System (PGS) of India.

• All farming activity in the UT is carried out without the use of synthetic fertilisers and pesticides.

• This provides access to safer food choices and makes agriculture a more environment-friendly activity.

Additional Information

• Lakshadweep is second only to Sikkim, which was India's first state to be declared completely organic.

• This comes after the UT received proper certifications and declarations under the Centre's Paramparagat Krishi Vikas Yojana (organic farming improvement programme).

• Participatory Guarantee System:

• PGS is a process of certifying organic products, which ensures that their production takes place per laid-down quality standards.

• The certification is in the form of a documented logo or a statement.

• It is implemented by the Ministry of Agriculture and Farmers' Welfare.

• It is only for farmers or communities that can organise and perform as a group within a village or a cluster of contiguous villages, and is applicable only to farm activities such as crop production, processing, and livestock rearing, and off-farm processing "by PGS farmers of their direct products".

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Q90. Answer: (d) Akbar

The correct answer is Akbar.

Key Points

• Murshidabad originally called Makhsudabad was reputedly founded by the Mughal emperor Akbar in the 16th century.

• In 1704 the nawab (ruler) Murshid Qulī Khan (following Aurangzeb's orders) transferred the capital there from Dacca (now Dhaka, Bangladesh) and renamed the town Murshidabad.

Additional Information

• Akbar (1542- 1605)

• He reigned from 1556 to 1605.

• He constructed Fatehpur Sikri and made it his capital in 1569.

• Buland Darwaza was constructed at the gate.

• He started a new religion Din-i Ilahi in 1582.

• Abul Fazl wrote his biography titled Akbarnama.

• Nine of his courtiers were known as Navratnas.

• They were Todar Mal, Abul Fazal, Faizi, Birbal, Tansen, Abdur Rahim Khana-i-Khana, Mullah-do-Pyaza, Raja Man Singh, and Fakir Aziao-Din.

• He married a Hindu princess Harka Bai who is commonly known as Jodha Bai.

• Akbar captured the historic fortress of Chitor in 1568.

• He abolished the pilgrimage tax by Hindus in 1563.

• He also abolished the Jizyah tax in 1564.

• He also introduced the Mansabdari System or the rank-holder system to organize the nobility and army.

Q91. Answer: (d) Tamil Nadu

The correct answer is Tamil Nadu.

Key Points

• Pamban Island is a famous tourist destination in the Indian state of Tamil Nadu.

• Although this exotic island is not a part of mainland India, yet is a popular tourist destination.

• Pamban Island is a part of the Ramanathapuram district of Tamil Nadu.

• Pamban Island is the largest island in Tamil Nadu in terms of area and is known worldwide for the popular pilgrimage site Rameshwaram.

• Rameshwaram is the holy place in the Hindu text, as it is believed that Lord Rama built a bridge of stones across the sea to rescue his wife Sita from the demon king of Lanka, Ravana.

• Pamban Island is located between the Indian Peninsula and Sri Lanka.

• Pamban Island is connected to mainland India via the Pamban channel.

• Pamban rail bridge is India's first sea bridge built in 1914 and is 2065m long.

• The bridge was made to connect the Ramanathapuram district in Tamil Nadu to Pamban Island.

• The bridge can open up to let the ferry boats, and ships pass.

• Rama Setu or Adam's bridge is another tourist attraction for tourists who visit Pamban Island.

• As per popular beliefs, the bridge starts from Dhanuskodi and terminates at Mannar Island in Sri Lanka.

• The bridge is made of limestone shoals, which make them float on the water surface.

Q92. Answer: (a) 5th

The correct answer is 5th.

Key Points

• According to the World Population Review Report, released in February 2020, the Indian economy emerged as the world's 5^(th)largest economy in 2019.

• It overtook the United Kingdom and France.

• India's economy is the fifth-largest in the world with a gross domestic product (GDP) of $2.94 trillion.

• The size of the UK economy is $2.83 trillion and that of France is $2.71 trillion.

• In purchasing power parity (PPP), India's GDP is $10.51 trillion, exceeding that of Japan and Germany.

• According to the report, India's service sector is the fast-growing sector in the world accounting for 60% of the economy and 28% of employment.

Additional Information

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• Top 4 Countries in the list:
• The US has been wearing the crown as the world's largest economy for the last 149 years.
• The nominated GDP of the country stood at $21.44 trillion whereas GDP (PPP) was $21.44 trillion.
• China is the second-largest economy in the world and grew at an average of 9.52% between 1989 and 2019.
• China's nominal GDP stood at $14.14 trillion.
• With a nominal GDP of $5.15 trillion, Japan is the third-largest economy in the world.
• The size of Germany's economy is $4 trillion the fourth largest in the world.

Q93. Answer: (d) Sakshi Malik

The correct answer is Sakshi Malik.

Key Points

• Sakshi Malik became the first Indian women wrestler to win an Olympic medal.
• She won a bronze medal at the 2016 Rio Olympics.
• She was the fourth Indian woman to have won an Olympic medal in any field.

Additional Information

• The first Indian woman to win an Olympic medal was Karnam Malleshwari.
• She won a bronze medal in weightlifting at the 2000 Sydney Olympics.
• P.V. Sindhu became the first Indian woman to win an Olympic silver medal.
• She won at the 2016 Rio Olympics in Badminton.
• She became the youngest Indian woman to win an Olympic medal.

Q94. Answer: (b) Article 32

The correct answer is Article 32.

Key Points

• Article 32 gives individuals the right to go to the Supreme Court directly for the enforcement of the rights conferred in Part III of the Constitution.
• Article 32 gives the individuals the Right to Constitutional Remedies.
• It gives individuals the right to approach the Supreme Court to seek the enforcement of other fundamental rights recognised under the Constitution.
• The SC has the power to issue writs for the enforcement of any of the fundamental rights.
• The writs are viz. habeas corpus, mandamus, prohibition, certiorari and quo-warranto.
• The article is included in Part III of the Constitution with other fundamental rights.
• The other fundamental rights are viz. Equality, Freedom of Speech and Expression, Life and Personal Liberty, and Freedom of Religion.
• A person can approach the Supreme Court directly only if any of these fundamental rights are violated under Article 32.
• The right to move the SC can only be suspended as per the provisions provided in the constitution itself.
• As per article 359, the right to move any court for the enforcement of fundamental rights can only be suspended during a national emergency.
• The jurisdiction of the SC is original but not exclusive when it comes to the enforcement of fundamental rights.
• It is to be exercised concurrently with the high courts under Article 226.
• Since the right under Article 32 is in itself a fundamental right, the availability of alternative remedies is no bar to relief under Article 32.

Additional Information

• Article 21 states that no person shall be deprived of his life or personal liberty except according to the procedure established by law.
• The right is available to everyone i.e. both citizens and non-citizens.
• The right to life is not merely confined to animal existence or survival but also incorporates the right to live with dignity and all other aspects of life that makes the life meaningful, complete and worth living.
• Article 37 of the Indian Constitution deals with the application of the Directive Principles.
• It states that the provisions of this Part shall not be enforceable by any court, but the principles are however fundamental in the governance of the country and the State shall use these principles while making laws.
• These principles aim to ensure socio-economic justice to the people and establish India as a Welfare State.
• Article 46 states that the State shall promote educational and economic interests of the weaker sections of the people particularly that of the Scheduled Castes (SCs), Scheduled Tribes (STs) and other weaker sections.

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Q95. Answer: (d) Hanging

The correct answer is Hanging.

Key Points

• A hang is an event where a computer becomes unresponsive due to either a program or the system itself becoming unresponsive and no longer taking input.

• It is a blanket term for unresponsiveness, be it a small application or process, the operating system itself or a piece of hardware being unresponsive.

• Hangs have a variety of causes, from software encountering an error that it cannot handle, simple lack of resources, which means the system is just waiting, to more serious systemic problems such as driver incompatibility or hardware malfunction.

• Most hangs are minor and usually resolve themselves, especially if it is only a resource issue, meaning it only appears to be hung because it is waiting for a resource such as memory or CPU time.

Additional Information

• With removable disk drives, eject means to disengage the medium (removable disk) so it may be removed.

• The operating system completes any read or write operations on the drive, and unmounts it from the computer.

• With computers, to move is to permanently transfer text, data, or files from one location to another without duplicating them.

• In computing, booting is the process of starting a computer.

Q96. Answer: (d) Odisha

The correct answer is Odisha.

Key Points

• The Rushikulya River is one of the major rivers in the state of Odisha.

• It covers the entire catchment area in the districts of Kandhamal and Ganjam district of Odisha.

• The Rushikulya originates at an elevation of about 1000 metres from the Daringbadi hills of the Eastern Ghats range.

• The place from where the river originates, Daringbadi is called the ‘ Kashmir of Odisha.‘

• It meets the Bay of Bengal at Puruna Bandha in Ganjam.

• Its tributaries are the Bagua, the Dhanei, the Badanadi etc.

• It has no delta as such at its mouth.

Q97. Answer: (a) Vautha Mela

The correct answer is Vautha Mela.

Key Points

• Vautha Mela is an animal trading festival in the Indian state of Gujarat.

• It is organized in November in a village called Vautha.

• Hundreds of farmers and traders across India descend on the tiny village of Vautha to trade their decorated donkeys and camels during the Vautha Fair.

• The fair lasts for up to five days and includes stalls selling handicrafts, fairground rides and incredible local fare.

• Camper tents are set up near the venue, providing an unmissable opportunity to witness the trading and be a part of the festivities.

• This time is also religiously significant as the location happens to be the place where seven holy rivers unite.

Additional Information

• The Madhavpur Mela of Gujarat shares its connection to the Mishmi Tribe of Arunachal Pradesh.

• The festival celebrates the immortal journey which Rukmini undertook from Arunachal Pradesh to Gujarat with Lord Krishna.

• The Mishmi Tribe traces its ancestry to the legendary King Bhishmak and through him to his daughter Rukmini and Lord Krishna.

• This event is commemorated by a cultural fair held every year, commencing on Ram Navami.

• The Ambubachi Mela is an annual Mela held at Kamakhya Temple in Guwahati, Assam.

• This four-day festival is celebrated during the Assamese month of Ahaar (mid-June).

• The Maa Kamakhya Devi temple is one of Assam’s most well-known temples, and Goddess Kamakhya is worshipped here.

• It is believed that this festival is celebrated to mark the yearly menstruation course of Goddess Kamakhya.

• Kumbh Mela is a major pilgrimage and festival in Hinduism.

• It is celebrated in a cycle of approximately 12 years, to celebrate every revolution Brihaspati (Jupiter) completes, at four river-bank pilgrimage sites: the (Prayagraj (Ganges-Yamuna-Sarasvati rivers confluence), Haridwar (Ganges), Nashik (Godavari), and Ujjain (Shipra).

• The festival is traditionally credited to the 8th-century Hindu philosopher and saint Adi Shankara, as a part of his efforts to start major Hindu gatherings for philosophical discussions and debates along with Hindu monasteries

Q98. Answer: (c) Ajeya Warrior

The correct answer is Ajeya Warrior.

Key Points

• Exercise Ajeya Warrior is a joint exercise conducted by the armed forces of India and the United Kingdom.

• The fifth edition of India-UK joint military exercise 'Ajeya Warrior' was conducted at Salisbury Plains, the United Kingdom from 13th-26th February 2020.

• This exercise aims to conduct army level joint training with an emphasis on counter-terrorism operations.

• The exercise is conducted alternatively in the United Kingdom and India.

• Other joint exercises between India and UK:

• Navy: Konkan

• Air Force: Indradhanush

Additional Information

• The 6th Edition of India - UK Joint Company Level Military Training Exercise Ajeya Warrior was conducted at Chaubatia, Uttarakhand.

• It was conducted from 7th October 2021 to 20th October 2021.

• The exercise is part of an initiative to develop interoperability and share expertise with friendly foreign nations.

• During this exercise, an Infantry Company from Indian Army and an equivalent strength from UK Army would be sharing their experiences gained during the conduct of various military operations in their respective countries and overseas engagements.

• As part of the training, both the Armies would familiarise themselves with each other’s weapons, equipment, tactics, techniques and procedures for carrying out joint military operations.

• This joint military training will go a long way in improving bilateral relations and also will be a major step towards further strengthening the traditional bond of friendship between the two Nations.

Q99. Answer: (d) 1.6 W/kg

The correct answer is 1.6 W/kg.

Key Points

• As per the standards set by the Department of Telecom, Government of India, for all the new designs of mobile handsets, the permissible Specific Absorption Rate (SAR) limit is 1.6 W/kg averaged over 1 gram of human tissue with effect from 1st September 2012.

• India has adopted one of the most stringed Electro Magnetic Field (EMF) exposure norms in the world.

• The measures are taken by the Department of Telecommunications, Government of India, are:

• Mobile Towers- EMF Radiation Norms:

• EMF exposure limit (Base Station Emissions) is lowered to 1/10th of the existing ICNIRP exposure level effective from 1st Sept. 2012.

• India now has one of the most stringent EMF exposure norms in the world.

• Telecom Enforcement Resource & Monitoring (TERM) Cells of DOT have been entrusted with the job of conducting audits on the self-certification furnished by the Service Providers.

• TERM Cell shall carry out test audits up to 10% of the BTS site on a random basis and on all cases where there is a public complaint.

• Telecom Engineering Centre (TEC) has revised the Test Procedure for measurement of EMF for verification of EMF compliance for BTS towers per new standards effective from 1st Sept. 2012.

• For non-compliance with EMF standards, a penalty of Rs. 5 lakh is liable to be levied per BTS per Service Provider.

• Mobile Handsets

• All the new designs of mobile handsets shall comply with the SAR values of 1.6 W/kg averaged over 1 gram of human tissue w.e.f. 1st Sept. 2012.

• The mobile handsets with existing designs which are compliant with 2.0 W/kg averaged over 10 grams of human tissue, continue to co-exist up to 31st August 2013. From 1st Sept. 2013, only the mobile handsets with a revised SAR value of 1.6 W/kg would be permitted to be manufactured or imported in India.

• Specific Absorption Rate (SAR) value information is displayed on the mobile handsets like IMEI (International Mobile Equipment Identity) display.

• The information on SAR values is to be made available to the consumer at the point of sale.

• Mobile handsets manufactured and sold in India or imported from other countries shall be checked on a random basis for compliance with the SAR limit after TEC SAR Laboratory is set up by end of the year 2012.

• Test results from international accredited labs shall be acceptable in the interim period.

• All cell phone handsets sold in the market in India shall comply with relevant standards and shall be available in hand-free mode.

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Q100. Answer: (b) Aravind Adiga

The correct answer is Aravind Adiga.

Key Points

• Amnesty is a novel written by Aravind Adiga.

• It tells the story of a Sri Lankan migrant in Sydney who agonises over whether to tell the police about a murder and risk deportation.

• Amnesty tells the story of Danny, a Sri Lankan who has become an “illegal alien” after dropping out of his “ripoff” college.

• He is surprisingly content cleaning apartments in suburban Sydney when one of his clients is murdered by another.

• Over the next 24 hours, Danny contends with the dilemma of whether to risk deportation by informing the police.

• Amnesty lays bare Australia’s hypocrisies and contradictions.

• Immigration props up the economy and yet is subject to the most draconian restrictions in the west – a region the country claims a membership of against all geographic evidence.

• Adiga's debut novel, The White Tiger, won the 2008 Booker Prize and has been adapted into a Netflix original movie The White Tiger.

• Other books written by him are: Between the Assassinations, Last Man in Tower, Selection Day.

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