SSC CHSL Previous Paper 15 (Held On: 8 July 2019 Shift 2) (Previous Year Paper)

SSC Combined Higher Secondary Level (CHSL) • 2019 • 100 questions • 60 minutes • Answer key and solutions

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ENGLISH LANGUAGE

Q1. Identify the most appropriate option to substitute the underlined segment. If no substitution is required, select No substitution.

All the accident victims have been admitted and received attention.

(a) No substitution
(b) and have received
(c) so had received
(d) but are receiving

Q2. Select the most appropriate synonym of the given word.

PITFALL

(a) haven
(b) retreat
(c) refuge
(d) hazard

Q3. Select the most appropriate meaning of the given idiom.

In a pickle

(a) in jubilation
(b) in trouble
(c) in great pain
(d) in deep sorrow

Q4. Select the most appropriate word for the group of words.

Willing to be guided or controlled

(a) adamant
(b) abominable
(c) amenable
(d) adorable

Q5. Select the most appropriate word to fill in the blank.

_____ people are remembered even after death for their good deeds.

(a) Vicious
(b) Virtual
(c) Violent
(d) Virtuous

Q6. Select the most appropriate synonym of the given word.

VITAL

(a) essential
(b) trivial
(c) needless
(d) insignificant

Q7. Given below are four jumbled sentences. Out of the given options pick the one that gives their correct order.

A. We even fail to recognize that their call of duty keeps them away from their families.
B. Yet, we often fail to appreciate these sacrifices that they make.
C. They make countless sacrifices for the nation and keep us safe from our enemies.
D. The uniformed men and women are our unsung heroes.

(a) ABCD
(b) DCBA
(c) DABC
(d) CBAD

Q8. Select the most appropriate meaning of the given idiom.

Red-letter day

(a) a very special day
(b) a frightful day
(c) a very cold day
(d) a very hot day

Q9. Select the most appropriate indirect form of the given sentence.

She says, "I go for a walk every morning."

(a) She says that she goes for a walk every morning.
(b) She says that I go for a walk every morning.
(c) She said that she went for a walk every morning.
(d) She said that she goes for a walk every morning.

Q10. Select the most appropriate antonym of the given word.

Novel

(a) fresh
(b) new
(c) old
(d) original

Q11. Select the wrongly spelt word.

(a) receive
(b) grieve
(c) believe
(d) acheive

Q12. Identify the segment which contains the grammatical error.

He asked from me if I was interested in a career in modelling.

(a) I was interested
(b) in a career
(c) from me if
(d) He asked

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Q13. Select the correctly spelt word.

(a) persoue
(b) purseue
(c) perrsue
(d) pursue

Q14. Identify the segment which contains the grammatical error.

The picture of the king's is exactly like the king himself.

(a) the king himself
(b) is exactly like
(c) The picture
(d) of the king's

Q15. Select the most appropriate passive form of the given sentence.

He threw the ball towards his little brother.

(a) The ball is being thrown towards his little brother.
(b) The ball was thrown towards his little brother.
(c) His little brother's ball was thrown at him.
(d) The ball is thrown towards his little brother.

Directions

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

For two months I have been trying to decide who (1) ____ the best ice cream. I have (2) __ it down to my two favourite manufacturer.Let's start (3) __ Randolph Farms who have lots of (4) __ flavours. Then, we have Goodies who use natural (5) ____ to make excellent ice cream.

Q16. Select the most appropriate option to fill in blank number 5

(a) goods
(b) ingredients
(c) elements
(d) particles

Q17. Select the most appropriate option to fill in blank number 4

(a) different
(b) variety
(c) unlike
(d) various

Q18. Select the most appropriate option to fill in blank number 3

(a) by
(b) with
(c) from
(d) off

Q19. Select the most appropriate option to fill in blank number 2

(a) narrowed
(b) selected
(c) chosen
(d) cancelled

Q20. Select the most appropriate option to fill in blank number 1

(a) makes
(b) is making
(c) was making

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(d) make

Q21. Fill in the blank with the most appropriate word.

She was _____ with joy at winning the talent show.

(a) Overwhelmed
(b) Overpowered
(c) Overturned
(d) Overruled

Q22. Given below are four jumbled sentences. Out of the given options pick the one that gives their correct order.

A. As a result, he had gotten into a million activities and hobbies.

B. Thus, his parents were now reluctant to spend any more money on his hobbies.

C. John hated finishing things almost as much as he loved starting them.

D. But he never stuck with any of them for long.

(a) CADB
(b) BCAD
(c) CDBA
(d) ADCB

Q23. Identify the most appropriate option to substitute the underlined segment. If no substitution is required, select No substitution.

The commander of the ship as well as the crew are caught by the storm.

(a) are caught in
(b) are being caught by
(c) is caught in
(d) No substitution

Q24. Select the most appropriate antonym of the given word.

OMINOUS

(a) Foreboding
(b) Auspicious
(c) Threatening
(d) Baleful

Q25. Select the most appropriate word for the group of words.

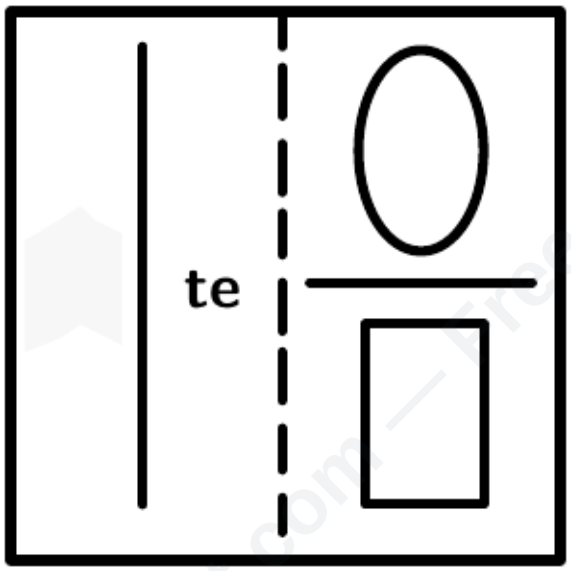
That which cannot be seen through

(a) opaque
(b) invisible
(c) magical
(d) transparent

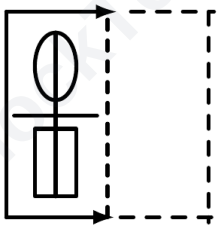
GENERAL INTELLIGENCE

Q26. A figure of the transparent sheet with a pattern is given below. Select the option that shows how the pattern would appear when the transparent sheet is folded at the dotted line.

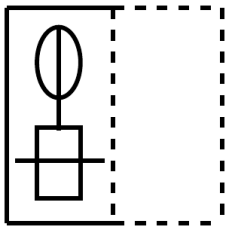
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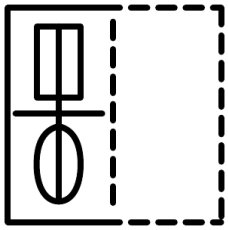
(a)



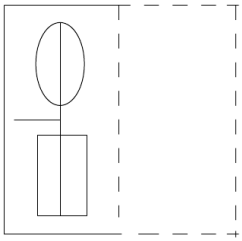
(b)



(c)

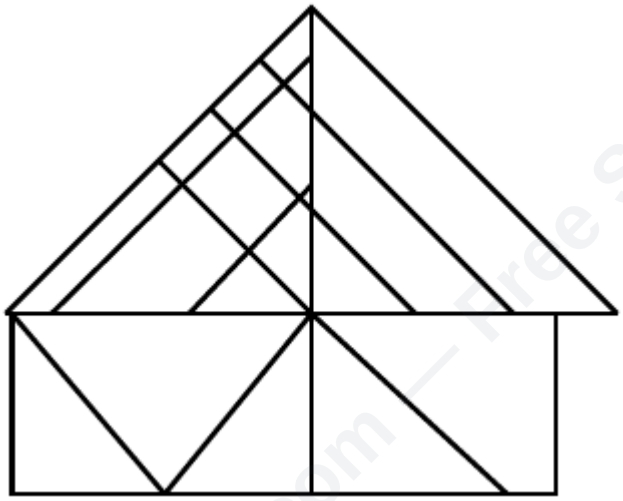


(d)



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Q27. How many triangles are present in the given figure?



(a) 27
(b) 25
(c) 24
(d) 26

Q28. Select the set in which the numbers are related in the same way as are the numbers of the following set.
(145, 65, 115)
(a) (185, 65, 170)
(b) (130, 70, 100)
(c) (185, 70, 95)
(d) (80, 50, 110)

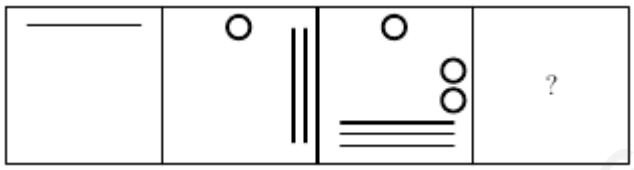
Q29. Three of the following four letter-clusters are alike in a certain way and one is different. Pick the odd one out.
(a) DGJM
(b) BDGJ
(c) TWZC
(d) KNQT

Q30. Select the set in which the numbers are related in the same way as are the numbers of the following set.
(8, 39, 5)
(a) (11, 67, 8)
(b) (9, 55, 4)
(c) (14, 115, 9)
(d) (10, 60, 6)

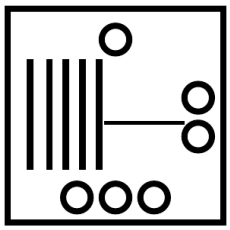
Q31. A + B means ‘A is sister of B’
A - B means ‘A is son of B’
A × B means ‘A is father of B’
A ÷ B means ‘A is brother of B’
If S × M ÷ U + L × Z - I, then how is L related to I?
(a) Husband
(b) Son
(c) Brother
(d) Father

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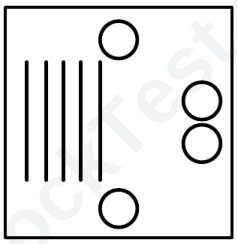
Q32. Select the figure that will come next in the following figure series.



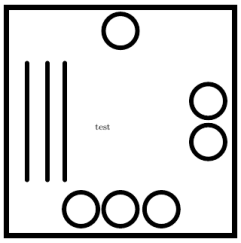
(a)



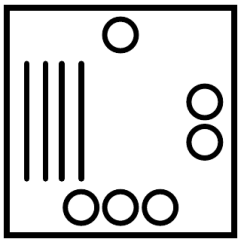
(b)



(c)



(d)



Q33. Select the word-pair in which the two words are related in the same way as are the two words in the following word-pair.

Temple : Worship

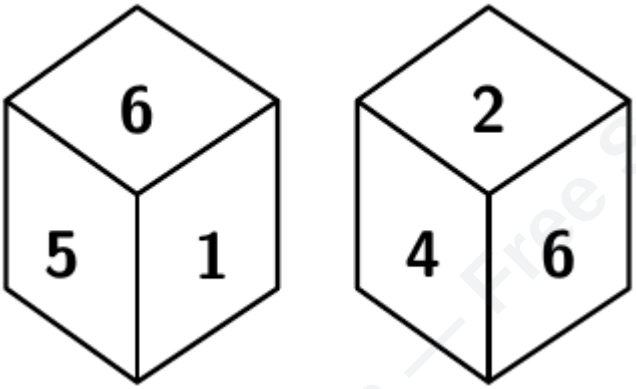
(a) Hotel : Expenditure
(b) Hospital : Doctor
(c) School : Education
(d) University : Professor

Q34. Three of the following four numbers are alike in a certain way and one is different. Pick the number that is different from the rest.

(a) 336
(b) 224
(c) 448
(d) 226

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Q35. Two different positions of the same dice are shown below, the six faces of which are numbered 1 to 6. Find the number opposite to the face having 3.



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

Q36. Which number will replace the question mark (?) in the following series?

55, 56, 64, 91, 155, ?

(a) 275
(b) 265
(c) 270
(d) 280

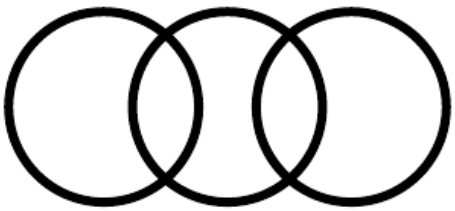
Q37. 'Mercury' is related to 'Metal' in the same way as 'Frog' is related to '_____'.

(a) Rodent
(b) Amphibian
(c) Reptilian
(d) Mammal

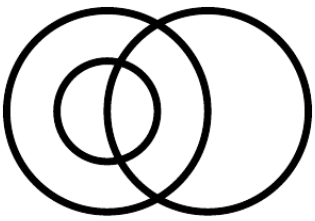
Q38. Select the Venn diagram that best illustrates the relationship between the following classes.

Women, Lawyers, Sons

(a)

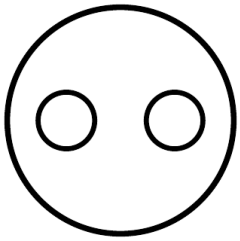


(b)

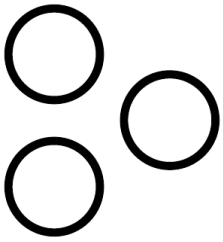


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(c)



(d)



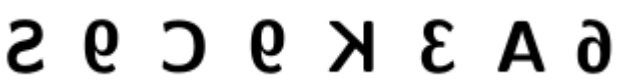
Q39. In a code language, PROXIMITY is written as ZQTRKAVKO. How will ILLOGICAL be written as in that language?

(a) RNNLINCEK
(b) QNNKINCEK
(c) QNNLINBEL
(d) QMMKIMCEK

Q40. Select the correct mirror image of the given figure when the mirror is placed to the right of the figure.



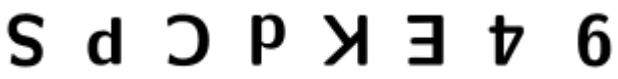
(a)



(b)



(c)



(d)

Q41. Select the number-pair in which the two numbers are related in the same way as are the two numbers of the following number-pair.

11 : 120

(a) 2 : 3
(b) 12 : 144
(c) 8 : 65
(d) 17 : 289

Q42. Two statements are given, followed by three conclusions numbered I, II and III. Assuming the statements to be true, even if they seem to be at variance with commonly known facts, decide which of the conclusions logically follow(s) from the statements.

Statements:

Some plants are vegetables.

All vegetables are vitamins.

Conclusions:

I. Some vitamins are plants.

II. Some vitamins are vegetables.

III. No vitamin is plant.

(a) Either conclusion I or III follows.
(b) Only conclusions I and II follow.
(c) Only conclusions I and III follow.
(d) Only conclusions II and III follow.

Q43. Which two numbers should be interchanged in the following equation to make it correct?

779 + 14 × 21 - 532 ÷ 41 = 807

(a) 21 and 41
(b) 532 and 779
(c) 532 and 41
(d) 779 and 21

Q44. Arrange the following activities in a logical and meaningful order.

1. Setting up alarm clock
2. Solving question paper
3. Alarm Bell ringing
4. Reach examination center
5. Getting dressed and be ready
6. Returning answer book

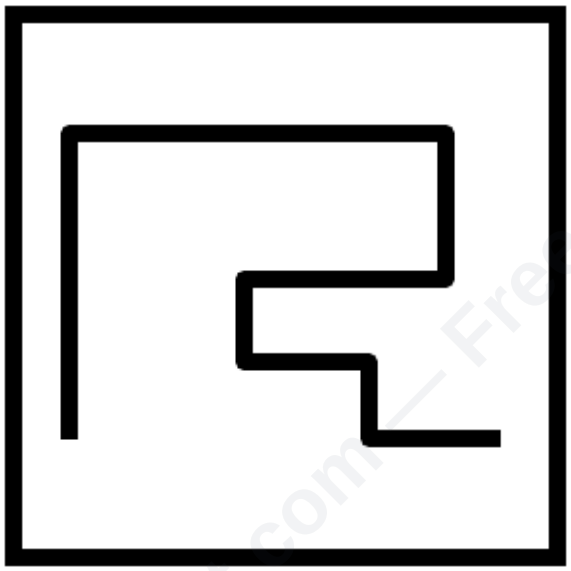
(a) 3, 1, 5, 4, 2, 6
(b) 1, 3, 5, 4, 2, 6
(c) 1, 3, 5, 4, 6, 2
(d) 1, 3, 4, 5, 2, 6

Q45. Three of the following four words are alike in a certain way and one is different. Pick the odd word out.

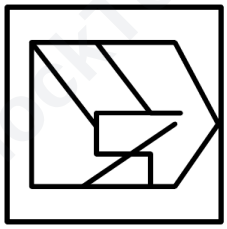
(a) Ulcer
(b) Hypertension
(c) Hormone
(d) Anaemia

Q46. Select the option in which Figure-X is embedded. (Rotation is not allowed)

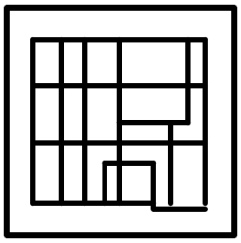
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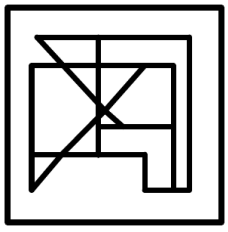
(a)



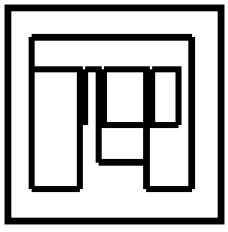
(b)



(c)



(d)



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Q47. If CALLOSUM is coded as 31336134, then how will CEREMONY be coded as?

(a) 35954547
(b) 35854656
(c) 25945757
(d) 35954657

Q48. Three friends A, B and C have different amounts of rupees with them. If A takes Rs. 10 from B, then A will have Rs. 4 less than C, A and C together have total Rs. 330. How many rupees does C have?

(a) 174
(b) 172
(c) 176
(d) 170

Q49. Select the combination of letters that when sequentially placed in the gaps of the given letter series will complete the series.

u _ _ m p m _ _ u u c m _ m m j _ u c _ p m m _

(a) u c u j p m m j
(b) p c j m p u m j
(c) u c m j p u m j
(d) u c m j u u m m

Q50. Select the option that is related to the third letter-cluster in the same way as the second letter-cluster is related to the first letter-cluster.

DHMR : BJKT : : XCOE : ?

(a) VEMG
(b) UENG
(c) VENG
(d) VFMH

QUANTITATIVE APTITUDE

Q51. If $\sin\theta = 3x$ and $\cos\theta = 3/x$, $(x \neq 0)$ then the value of $6(x^2 + 1/x^2)$ is:

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

Q52. The value of $1 \div [11/8 \div ((31/5 + 3/5) \div 8/5)/(\{5/8 + (1/8 \div 1/3)\})]$ is:

(a) 19/16
(b) 19/7
(c) 19/9
(d) 19/64

Q53. Two numbers are in the ratio 3 : 4. On increasing each of them by 30, the ratio becomes 9 : 10. The numbers are:

(a) 12, 16
(b) 30, 40
(c) 15, 20
(d) 18, 24

Q54. The distance between the centers of two circles of radii 4 cm, and 2 cm is 10 cm. The length (in cm) of a transverse common tangent is:

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

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(d) 6

Q55. If each side of a rectangle is increased by 13%, then its area will increased by:

(a) 26%
(b) 27.69%
(c) 21.69%
(d) 13%

Q56. If $4(\text{cosec}^2 66° - \tan^2 24°) + 1/2 \sin 90° - 4 \tan^2 66°.y.\tan^2 24° = y/2$, then the value of y is:

(a) -12
(b) 1
(c) 12
(d) -1

Q57. If in a ΔABC, the bisectors of angle B and angle C meet at O, inside the triangle. If angle BOC = 156°, then the measure of angle A is:

(a) 156°
(b) 132°
(c) 66°
(d) 84°

Q58. Chords AB and CD of a circle intersect externally at P. If AB = 6 cm, CD = 3 cm and PB = 4 cm, then the length (in cm) of PC = ?

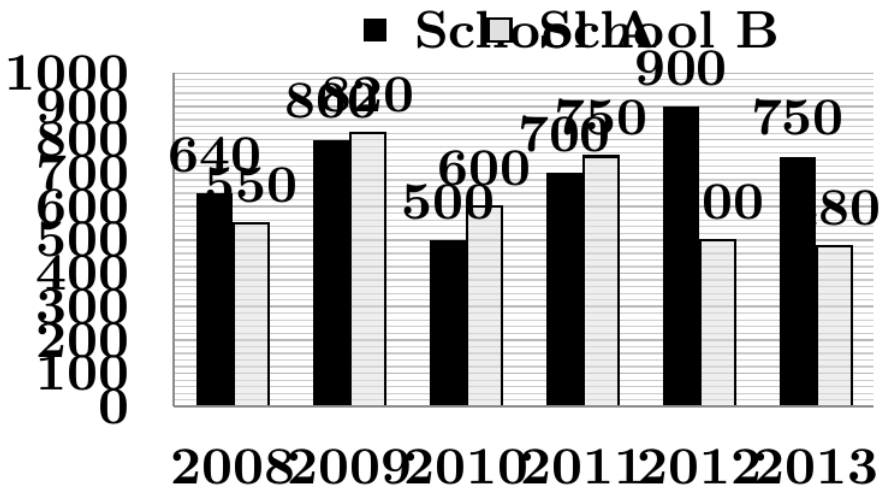
(a) 7
(b) 8
(c) 6
(d) 5

Q59. If $(x - 7)^3 + (2x + 8)^3 + (2x - 3)^3 = 3(x - 7)(2x + 8)(2x - 3)$, then what is the value of x?

(a) 2.4
(b) 1.6
(c) 1.2
(d) 0.4

Directions

Directions: The given Bar Graph presents the number of students of two schools for six years.



Q60. What is the ratio of the number of students taken for all years together from school A to that from school B?

(a) 401 : 417
(b) 429 : 370
(c) 370 : 429
(d) 417 : 401

Q61. In which year, the percentage increase of students in school A is the highest in comparison to its previous year?

(a) 2011
(b) 2012
(c) 2010
(d) 2009

Q62. What is the average of the number of students from school A during the six year period?

(a) 700
(b) 715
(c) 760
(d) 765

Q63. In which year, the absolute difference of the students in two schools is the lowest?

(a) 2012
(b) 2009
(c) 2011
(d) 2008

Q64. A and B can complete a piece of work in 15 days and 10 days respectively. They got a contract to complete the work for Rs. 35000. The share of B (in Rs.) in the contracted money will be:

(a) Rs. 21000
(b) Rs. 14000
(c) Rs. 7000
(d) Rs. 15000

Q65. Given n is an integer, what is the remainder when $(6n + 3)^2$ is divided by 9?

(a) 3
(b) 0
(c) 1
(d) 2

Q66. If then the 6^(4√x) + 8^(4√x) = 10^(4√x) value of x is:

(a) 2
(b) 4
(c) 8
(d) 16

Q67. The average age of fifteen persons is 32 years. If two more persons are added then the average is increased by 3 years. The new persons have an age difference of 7 years between them. The age (in years) of the youngest among the new persons is:

(a) 58
(b) 50
(c) 54
(d) 61

Q68. If $\cos x = (-\sqrt{3}/2)$ and $\pi < x < 3\pi/2$ then the value of $2\cot^2 x + 3\sec^2 x$ is:

(a) 10
(b) 16
(c) 8

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(d) 4

Q69. There is a polygon of 11 sides. How many triangles can be drawn by only using the vertices of the polygon?

(a) 165
(b) 175
(c) 150
(d) 180

Q70. The ratio between the speeds of two trains is 2 : 5. If the first train runs 350 km in 5 hours, then the sum of the speed (in km/h) of both the trains is:

(a) 350
(b) 180
(c) 245
(d) 265

Q71. Two students, A and B, appeared for an examination. A secured 8 marks more than B and the marks of the former was 60% of the sum of their marks. The sum of the marks obtained by A and B is:

(a) 75
(b) 40
(c) 50
(d) 45

Q72. If $x = 2 + \sqrt{3}$, then the value of $x^3 – x^{(-3)}$ is:

(a) -52
(b) 52
(c) $30\sqrt{3}$
(d) $-30\sqrt{3}$

Q73. The sum of the salaries of A and B together is Rs. 43000. A spends 95% of his salary and B, 80% of his salary. If now their savings are the same, what is B’s salary (in Rs.)?

(a) 8600
(b) 8000
(c) 10600
(d) 34400

Q74. A dealer buys an article marked at Rs. 20000 with two successive discounts of 10% and 8%. He spends Rs. 1440 on repairs and sells it for Rs. 20000, what is his profit/loss percent (correct to one decimal place)?

(a) 11.1% Profit
(b) 11.1% loss
(c) 12.3% Profit
(d) 12.3% loss

Q75. The compound interest on a certain sum of money at 11% for 2 years is Rs. 6963. Its simple interest (in Rs.) at the same rate and for the same period is:

(a) Rs. 6500
(b) Rs. 6750
(c) Rs. 6600
(d) Rs. 6000

GENERAL AWARENESS

Q76. _____ attacked the southern coast of Kathiawar along the Arabian Sea, where he sacked the city of Somnath and its renowned Hindu temple in 1026.

(a) Mahmud of Ghazni
(b) Ahmed Shah Tugalaq

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(c) Muhammad Ghori
(d) Firoz Shah Tugalaq

Q77. In May 2019, Former Miss World Priyanka Chopra visited _____ as UNICEF's Goodwill Ambassador for humanitarian work.
(a) Kenya
(b) Democratic Republic Of Congo
(c) Ethiopia
(d) Uganda

Q78. _____ is the process by which water vapour in the air is changed into liquid water.
(a) Precipitation
(b) Evaporation
(c) Decantation
(d) Condensation

Q79. In 2018, Bharat Vatwani and _____ were the two Indians awarded with the Ramon Magsaysay award.
(a) Sonam Wangchuk
(b) Arvind Kejriwal
(c) Sathyabhama Das Biju
(d) Rajendra Singh

Q80. A _____ is the main printed circuit board (PCB) in a computer.
(a) Motherboard
(b) CPU (Central Processing Unit)
(c) Hard disk
(d) RAM (Random Access Memory)

Q81. In May 2019, Pakistan successfully test-fired a surface-to-surface ballistic missile named _____.
(a) Watan I
(b) Salaam III
(c) Shaheen II
(d) Musafir II

Q82. In Economics, buying an asset in one market and simultaneously selling an identical asset in another market at a higher price is termed as _____.
(a) Mortgage
(b) Arbitrage
(c) Devaluation
(d) Depreciation

Q83. Chakri is a type of traditional music that is popular in the Indian state of _____.
(a) Jammu and Kashmir
(b) Madhya Pradesh
(c) Rajasthan
(d) Punjab

Q84. _____ is the first Indian gymnast to win a Gold medal at a Global Event in the World Challenge Cup in Turkey.
(a) Rakesh Patra
(b) Ashish Kumar
(c) Aruna Reddy
(d) Dipa Karmakar

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Q85. The historical Sher Shah Suri Marg is called as:

(a) National Highway Number 11
(b) National Highway Number 1
(c) National Highway Number 8
(d) National Highway Number 23

Q86. Jawaharlal Nehru port is located in:

(a) Kerala
(b) Maharashtra
(c) West Bengal
(d) Andra Pradesh

Q87. Members of Parliament Local Area Development Scheme (MPLADS) was introduced in December _____.

(a) 2004
(b) 1991
(c) 2014
(d) 1993

Q88. World Metrology Day was celebrated in India on _____ in 2019.

(a) 25th January
(b) 18th April
(c) 20th May
(d) 17th February

Q89. The powers, privileges and immunities of either House of Parliament and of its Committees and Members have mainly been laid down in article _____ of the Constitution of India.

(a) 107
(b) 102
(c) 105
(d) 115

Q90. With which of the following sports is the term 'bib' associated?

(a) Hockey
(b) Football
(c) Running
(d) Lawn Tennis

Q91. _____ is a large mass of snow and ice at an high altitude that slides down mountain slopes.

(a) Cyclone
(b) Volcano
(c) Avalanche
(d) Hurricane

Q92. To which of the following states does the folk song 'Bhawaiya' belong?

(a) Chhattisgarh
(b) Jharkhand
(c) Odisha
(d) West Bengal

Q93. What was India's rank in the year 2018 in world Crude Steel production according to Steel Users Federation of India?

(a) Second
(b) Third
(c) First
(d) Fourth

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Q94. Kalumar Peak is the highest point in _____ range.

(a) Vindhaya
(b) Satpura
(c) Aravalli
(d) Karakoram

Q95. Who wrote the book 'An Era of Darkness: The British Empire in India'?

(a) Shashi Tharoor
(b) Ramchandra Guha
(c) A P J Abdul Kalam
(d) Sudha Murthy

Q96. Google was founded in 1998 by Larry Page and _____.

(a) Peter Thiel
(b) Sergey Brin
(c) Steve Wozniak
(d) Elon Musk

Q97. The Chola Empire was invaded by _____ in the early 14th century A.D.

(a) Muhammad Ghori
(b) Malik Kafur
(c) Genghis Khan
(d) Taimur

Q98. What is the chemical name of slaked lime?

(a) Calcium Chloride
(b) Calcium Hydroxide
(c) Calcium Nitrate
(d) Sodium Chloride

Q99. After going through the processes of scouring and bleaching, 99% of cotton is made up of which polymer?

(a) Teflon
(b) Proteins
(c) Cellulose
(d) Epoxy

Q100. With which of the following sports is the term 'tumble turns' associated?

(a) Cycling
(b) Long Jump
(c) Swimming
(d) Running

ANSWER KEY

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

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81	c	82	b	83	a	84	d	85	b	86	b	87	d	88	c	89	c	90	c
91	c	92	d	93	a	94	a	95	a	96	b	97	b	98	b	99	c	100	c

SOLUTIONS

Q1. Answer: (b) and have received

• The correct answer is Option 2.
• The given sentence is in Present perfect tense so the underlined phrase should also be in the present perfect tense.
• Therefore, option 1 gets eliminated.
• Option 3 is wrong because it is in the past perfect tense.
• Option 4 is wrong because it is in the present continuous tense.
• Therefore, the correct answer is 'and have received' which is in the present perfect tense.

Q2. Answer: (d) hazard

Pitfall: Potential problem, hazard, or danger.
(The store fell into one of the major pitfalls of small business, borrowing from suppliers by paying bills late)
• Haven: A place of safety; a refuge or sanctuary.
(The garden was a haven from the noise and bustle of the city.)
• Retreat: The act of pulling back or withdrawing.
Attacks by enemy aircraft forced the tanks to retreat (from the city).
• Refuge: A state of safety, protection or shelter.
She had fled from her violent husband to a women's refuge.
• Hazard: An obstacle, to risk, the chance if suffering harm.
The busy traffic entrance was a hazard to pedestrians.
Therefore, out of given alternatives, the word 'hazard' gives the most appropriate meaning of the given word.

Q3. Answer: (b) in trouble

• The correct answer is Option 2.
• The meaning of the given idiom 'In a Pickle' means 'In a troublesome or difficult situation'.
• Option 1 is wrong because 'in jubilation' means 'to be very happy' which is opposite to the meaning of the given idiom.
• Option 3 'in great pain' means 'an ache or bodily suffering' which gives nearest meaning to the idiom but not the exact meaning of the idiom.
• Option 4 'in deep sorrow' means 'unhappiness, to express grief' also gives nearest meaning to the idiom but not the exact meaning of the idiom.
• Therefore, the correct answer is 'in trouble' which gives the exact meaning of the given idiom.

Q4. Answer: (c) amenable

• The correct answer is Option 3.
• The meaning of the given words:
• Adamant: firm, unshakeable, determined.
• Abominable: hateful, detestable; loathsome.
• Amenable: Willing to respond, agreeable.
• Adorable: Befitting of being fond of, cute od loveable.
• Therefore, out of given options, the word 'Amenable' satisfies the meaning of the given context.

Q5. Answer: (d) Virtuous

• The correct answer is Option 4.
• The sentence is talking about the person with good deeds, so the blank should be filled with a word that is positive or which gives the meaning of having a good character.
• The meaning of the given words:
• Vicious: Violent, destructive and cruel.
• Virtual: In effect or essence.
• Violent: Involving extreme force or motion, involving physical conflict.

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• Virtuous: full of moral principles, good, righteous.

• 'Virtuous' is the most appropriate word that fits the blank because such people with good, moral principles are remembered even after death.

Q6. Answer: (a) essential

• The correct answer is Option 1.

• The meaning of the given words:

• Vital: very important, that which is necessary.

• Essential: very important, necessary.

• Trivial: Ignorable, negligible.

• Needless: Unnecessary,

• Insignificant: Not important.

• Therefore, out of given options, the word 'essential' gives the most appropriate meaning of the given word. All other options are opposite to the given word.

Q7. Answer: (b) DCBA

• The correct answer is Option 2.

• The answer does not begin from sentences A, B & C because these sentences are beginning with pronouns(We, they) and conjunction(yet).

• The only independent sentence we have is D which is our first sentence.

• Sentence D is talking about two subjects i.e. 'men' and 'women'. Sentence C is beginning with a pronoun 'they' which refers to 'men and women'.

• Sentence C is talking about the sacrifices made by men and women which is continued by sentence B saying that we fail to appreciate these sacrifices. Sentence A beginning with 'we even fail to' shows that this is a continuation of sentence B.

• This sequence of DCBA is given in option 2.

Q8. Answer: (a) a very special day

Key Points

• The meaning of the given idiom 'Red letter day' means 'any day of special significance or opportunity'.

• Therefore, option 1 'a very special day' satisfies the meaning of the given idiom.

• Example: Tomorrow is her red-letter day, she always celebrates it with a big party.

Additional Information

• Origin: The term came into wider use in 1549 when the first Book of Common Prayer included a calendar with holy days marked in red ink; for example, Annunciation (Lady Day), 25th March, was designated in the book as a red-letter day.

The correct answer is Option 1.

Q9. Answer: (a) She says that she goes for a walk every morning.

• When the Reporting Verb is in the Present Tense of Future Tense, there is no change in the Verb of the Reported Speech.

• The given sentence is in present indefinite tense, hence, 'She says' will remain same (not be changed into 'said to').

• If there is any Universal Truth or Habitual Truth in the Reported Speech, there is no change in the Reported Speech.

• The reported speech is a routine action, hence, it will not be changed.

• PRONOUN change - According to the First-Person=Subjective form, according to the Second Person=Object form and in Third Person=No change.)

• 'First-person' changes to the subject i.e. 'I' changes to 'she'.

• Singular "she" will take 's/es' with its verb i.e. 'go' changes to 'goes'.

Therefore, this structure is followed in Option 1 'She says that she goes for a walk every morning'.

Q10. Answer: (c) old

• The correct answer is Option 3.

• The meaning of the given words:

• Novel: Something new; A work of prose fiction.

• Fresh: Newly produced or obtained; recent.

• New: Recently made or created.

• Old: of an earlier time.

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• Original: relating to the origin or beginning.
• Therefore, out of given options the word 'old' is the most opposite word and all other words are synonyms of the given word.

Q11. Answer: (d) acheive

• The correct answer is Option 4.
• The correct spelling of 'acheive' is 'achieve' which means 'to succeed, accomplish'.
• The meaning of the other words:
• Receive: to incur, take what is offered.
• Grieve: To feel very sad, to mourn.
• Believe: To accept as true.

Q12. Answer: (c) from me if

• The correct answer is Option 3.
• Omit 'from'. The word 'asked' does not take any prepositions with it.
• Therefore, the correct sentence is 'He asked me if I was interested in a career in modelling'.

Q13. Answer: (d) pursue

The correct answer is option 4) i.e. pursue.
• pursue: follow or chase (someone or something).

Q14. Answer: (d) of the king's

The correct answer is option 4) i.e. of the king's.
• In the given sentence both 'of ' and apostrophe with 'king' has been used which is wrong.
• Because both 'of' and apostrophe are used to show possession, hence, 'the picture of the king' will be used.
• So, the correct sentence will be: The picture of the king is exactly like the king himself.

Q15. Answer: (b) The ball was thrown towards his little brother.

The correct answer is option 2) i.e. the ball was thrown towards his little brother.
• The given sentence is in the past indefinite tense, hence, while changing it into the passive voice, was+thrown will be used.
• And the object i.e. ball will be made the subject.
• All these rules are followed in option 2), hence, it will be the correct answer.

Q16. Answer: (b) ingredients

The correct answer is option 2) i.e. ingredients.
• 'Ingredients' means one of the 'substances present in a mixture, especially food'.
• In the given sentence, we are talking about making ice cream, hence, 'ingredients' is the most appropriate word to be used in the blank.
• 'Elements' means 'an important part of something abstract'.
• 'Particles' means 'a minute/extremely small portion of matter'.
• 'Goods' means 'Possessions' or 'general articles'.
Hence, option 2)

Q17. Answer: (a) different

The correct answer is option 1) i.e. 'different.'
• 'Different' means 'dissimilar in forms, state, uniformity'. For example, 'A book', 'black colored trousers'.
• The given phrase talks about ice cream and the word after the blank is 'flavors (the plurality of 'flavors), hence, the word that will come in the blank will talk about the 'variety' of flavors.
• But in the option, we do not 'variety of', so, the most appropriate word from the given options is 'different' which makes the sentence grammatically and contextually correct.
• 'Unlike' represents 'inequality' of things'.
• 'Various' represents an 'indefinite number of things/commodities'. It does not fit in the context as the number of flavors are 'fixed' and 'definite'.
• 'Variety' is 'absence of uniformity', 'different in same things'. For example, 'a blue colored sweater and a white-colored sweater'.
• Hence, option 1)

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Q18. Answer: (b) with

The correct answer is option 2) i.e. 'With'.

• The phrase 'Let's start' can also mean 'Let's start with...' because the phrase needs a help of a subject to commence'.

• 'With' is also used to express 'togetherness', 'to carry on with something', 'to move further with a subject'.

• 'From' as a preposition represents 'starting point (of time and of place)'. The phrase does not expresses about any starting point.

• 'By' as a preposition represents 'Agent', 'An action of agent'.

• 'Off' represents 'separation' or 'disconnection' that is not relevant in this case.

Hence, option 2)

Q19. Answer: (a) narrowed

The correct answer is option 1) i.e. narrowed.

• 'Narrow/Narrowed' means 'to reduce the number of possibilities'.

• This fits best in the context of the given sentence as the phrase conveys the idea 'I have' and 'down to my two favourite manufacturers.' 'Down' means 'Narrowed' or 'Narrowed down'.

Hence, option 1)

Q20. Answer: (a) makes

The correct answer is option 1) i.e. makes.

• The given sentence should be in the present indefinite tense because it talks about a routine action i.e. making of ice cream on a daily basis.

• Hence, options 2 and 3 cannot be the correct answer.

• In the given sentence we have to choose one option, hence, the subject is singular and it will take a singular verb with it, hence, option 1) i.e. makes is the most appropriate option to fill in blank 1.

Q21. Answer: (a) Overwhelmed

The correct answer is option 1) i.e. overwhelmed.

• overwhelmed: have a strong emotional effect on.

• The given sentence talks about a strong emotion of joy, hence, the most appropriate word to fill in the blank is overwhelmed.

• Overpower: defeat or overcome with superior strength.

• Overturned: turn over and come to rest upside down.

• Overruled: reject the decision or opinion of.

Q22. Answer: (a) CADB

The correct answer is option 1) i.e. CADB.

• The only independent sentence from the given sentences is 'C', hence, it will be the first sentence.

• So, options 2 and 4 cannot be the correct answer.

• The sentence, A, talks about the hobbies and in sentence D, the pronoun 'them' has been used for 'activities and hobbies'. This makes the 'AD' a correct pair here.

• The word 'thus' used in the sentence 'B' shows the conclusion, hence, it will be the last sentence.

• So, the correct sequence is CADB.

Q23. Answer: (c) is caught in

The correct answer is option 3) i.e. is caught in.

• When two subjects are connected with 'as well as' the verb always agrees with the first subject.

• In the given sentence, the first subject is 'the commander' and that is a singular subject, hence, a singular verb i.e. 'is' will be used for it.

• So, the correct substitution is 'is caught in'.

• Note: other words with which this rule is followed are: unlike, along with, with, besides, in addition to, but, etc.

Q24. Answer: (b) Auspicious

The correct answer is option 2) i.e. auspicious.

• ominous: giving the worrying impression that something bad is going to happen.

• auspicious: giving or being a sign of future success/ Suggesting a positive, hence, this is the most appropriate antonym of the given word.

• foreboding: a feeling that something bad will happen.

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• threatening: having a hostile or deliberately frightening quality or manner.
• baleful: having a harmful or destructive effect.

Q25. Answer: (a) opaque

The correct answer is option 1) i.e. opaque
Let's look at the meaning of the given options-
• Opaque: not able to be seen through
• Invisible: unable to be seen.
• Magical: relating to, using, or resembling magic.
• Transparent: allowing light to pass through so that objects behind can be distinctly seen.
Hence from the above-given meanings, we find that the correct answer is option 1 i.e. opaque

Q26. Answer: (a) [figure]

When the paper is folded it will appear as in the following figure:
Hence, the correct answer is option 1.

Q27. Answer: (b) 25

The total number of triangles is: ABP, PSN, PKT, PGA, PGB, PUN, PUS, PVT, PVK, PAI, PJA, PJI, PLH, PYL, PYH, PMR, PXM, PXR, PQO, PWO, PWQ, PBZ, BCD, ABI, PEF.
Hene, there are total 25 triangles present in the figure.

Q28. Answer: (c) (185, 70, 95)

Given series:
(145, 65, 115)
The pattern followed here is,
145 + 115 = 260; 260 ÷ 4 = 65
Option 1:
(185, 65, 170) = 185 + 170 = 355; 355 ÷ 4 = 88.75 ≠ 65
Option 2:
(130, 70, 100) = 130 + 100 = 230; 230 ÷ 4 = 57.5 ≠ 70
Option 3:
(185, 70, 95) = 185 + 95 = 280 ÷ 4 = 70
Option 4:
(80, 50, 110) = 80 + 110 = 190 ÷ 4 = 47.5 ≠ 50
Except option 3 all options do not follow the given series.
Hence, the correct answer is (185, 70, 95).

Q29. Answer: (b) BDGJ

The pattern followed here is,
Hence, BDGJ is the odd one out.

Q30. Answer: (c) (14, 115, 9)

Given series: (8, 39, 5)
The pattern followed here is,
(Difference between squares of first and last term = Middle term)
$8^2 \rightarrow 64$; $5^2 \rightarrow 25$;
64 - 25 = 39
Option 1:
$11^2 \rightarrow 121$; $8^2 \rightarrow 64$;
121 - 64 = 57 ≠ 67
Option 2:
$9^2 \rightarrow 81$; $4^2 \rightarrow 36$;
81 - 36 = 45 ≠ 55
Option 3:

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$14^2 \rightarrow 196$; $9^2 \rightarrow 81$;

196 - 81 = 115

Option 4:

$10^2 \rightarrow 100$; $6^2 \rightarrow 36$;

100 - 36 = 64 ≠ 60

Hence, the correct answer is (14, 115, 9).

Q31. Answer: (a) Husband

The family tree is drawn

A is				
symbols	•	•	×	÷
meaning	sister	son	father	brother
Of B				

S × M ÷ U + L × Z - I means S is the father of M, M is the brother of U, U is the sister of L, L is the father of Z and Z is the son of I.

As per the diagram I is the wife of L so L is the husband of I.

Hence, the correct answer is husband

Q32. Answer: (d) [figure]

The lines are added up and rotated in the clockwise direction in every step,

Similarly, the circles are added up in every step in the clockwise direction.

Hence, the correct answer is option 4.

Q33. Answer: (c) School : Education

Here, the temple is a place of worship. Similarly, School is a place of education.

Hence, the correct answer is School : Education

Q34. Answer: (d) 226

The pattern followed here is,

336 = 3 + 3 = 6

224 = 2 + 2 = 4

448 = 4 + 4 = 8

226 = 2 + 2 = 4 ≠ 6

Hence, the correct answer is 226.

Q35. Answer: (c) 6

6 is a common number in both dices so, now if we rotate the dice from 6 anticlockwise or clockwise directions. From the above diagram, it is evident that “1 is opposite to 4 and 2 is opposite to 5”.

Therefore, “6 is opposite to 3”

Hence, the correct answer is 6.

Q36. Answer: (d) 280

The pattern followed here is,

Hence, the correct answer is 280.

Q37. Answer: (b) Amphibian

‘Mercury’ is one kind of metal,

Similarly, “Frog” is one kind of amphibian.

Hence, the correct answer is amphibian.

Q38. Answer: (a) [figure]

Some women are lawyers and some sons are also lawyers.

Hence, the correct answer is option 1.

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Q39. Answer: (b) QNNKINCEK

In a code language,

Similarly,

Hence, the correct answer is QNNKINCEK.

Q40. Answer: (a) [figure]

Hence, the correct answer is option 1.

Q41. Answer: (a) 2 : 3

The given series is

11 : 120 i.e. $11^2 = 121$; 121 - 1 = 120

Similarly,

Option 1:

$2^2 = 4$; 4 - 1 = 3 (it follows).

Option 2:

$12^2 = 144$ (does not follow).

Option 3:

$8^2 = 64 + 1 = 65$ (does not follow).

Option 4:

$17^2 = 289$ (does not follow).

So, except option 1, all options do not follow the given series.

Hence, the correct answer is 2 : 3.

Q42. Answer: (b) Only conclusions I and II follow.

Conclusions:

I. Some vitamins are plants → true (as per the diagram, some vitamins are plants, hence, it is true)

II. Some vitamins are vegetables → true (as all vegetables are vitamins, some vitamins will definitely be the vegetables).

III. No vitamin is plant → False (It is not possible).

Hence, only conclusions I and II follow.

Q43. Answer: (b) 532 and 779

The given expression is

$779 + 14 \times 21 - 532 \div 41 = 807$

Option 1: 21 and 41

We get,

$779 + 14 \times 41 - 532 \div 21$

$= 779 + 14 \times 41 - 532 \div 21$

$= 779 + 574 - 25.33$

$= 1353 - 25.33$

$= 53.41 \neq 807$

Option 2: 532 and 779

$532 + 14 \times 21 - 779 \div 41$

$= 532 + 14 \times 21 - 19$

$= 532 + 294 - 19$

$= 826 - 19$

$= 807$

Option 3: 532 and 41

$779 + 14 \times 21 - 41 \div 532$

$= 779 + 294 - 0.077$

$=1073 - 0.077$

$= 1072.92 \neq 807$

Option 4: 779 and 21

$21 + 14 \times 779 - 532 \div 41$

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= 21 + 10906 - 12.97

= 10927 - 12.97

= 10914.03 ≠ 807

Hence, the correct answer is 532 and 779.

Q44. Answer: (b) 1, 3, 5, 4, 2, 6

The logical meaningful order is followed by

Setting up alarm clock → Alarm Bell ringing → Getting dressed and be ready → Reach examination center → Solving question paper → Returning answer book.

Hence, the correct answer is 1, 3, 5, 4, 2, 6.

Q45. Answer: (c) Hormone

Here all options are the names of diseases except option 3.

Hence, 'Hormone' is the odd one out.

Q46. Answer: (d) [figure]

The option in which the given figure is embedded is,

Hence, the correct answer is option 4.

Q47. Answer: (d) 35954657

According to the alphabetical positions of the letters,

The code for CALLOSUM can be written as,

Letters	**C**	**A**	**L**	**L**	**O**	**S**	**U**	**M**	
Positions	3	1	12 = 1 + 2 = 3	12 = 1 + 2 = 3	15 = 1 + 5 = 6	19 = 1 + 9 = 10; 1 + 0 = 1	21 = 2 + 1 = 3	13 = 1 + 3 = 4	31336134

Similarly,

The code for CEREMONY is

Letters	**C**	**E**	**R**	**E**	**M**	**O**	**N**	**Y**	
Positions	3	5	18 = 1 + 8 = 9	5	13 = 1 + 3 = 4	15 = 1 + 5 = 6	14 = 1 + 4 = 5	25 = 2 + 5 = 7	35954657

Hence, the correct answer is 35954657.

Q48. Answer: (b) 172

Given: A + C = 330 ---- (1)

Now, in the question, it is mentioned that A takes Rs. 10 from B

Therefore Amount of A will be (A + 10), then A will have Rs. 4 less than C

=> A + 10 = C - 4

=> A + 14 = C ---- (2)

From equation (1) and (2)

=> C - 14 + C = 330

=> 2C = 330 + 14

=> C = 344/2 = 172

Hence, C have 172 rupees.

Q49. Answer: (c) u c m j p u m j

The series is followed

u u c m- p m m j/ u u c m- p m m j/ u u c m- p m m j

Therefore, the series is "u u c m-p m m j"

Hence, the correct answer is ucmjpumj.

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Q50. Answer: (a) VEMG

The pattern followed here is,

For DHMR : BJKT,

Similarly, for XCOE,

Hence, the correct answer is VEMG.

Q51. Answer: (c) 2/3

Given:

$\sin\theta = 3x$ and $\cos\theta = 3/x$, $(x \neq 0)$

Calculation:

$\sin^2\theta + \cos^2\theta = (3x)^2 + (3/x)^2$

$1 = 9(x^2 + 1/x^2)$

$1/9 = (x^2 + 1/x^2)$

Therefore the value of $6(x^2 + 1/x^2) = 6 \times 1/9 = 2/3$.

Q52. Answer: (c) 19/9

Calculation:

Follow the BODMAS rule to solve this question, as per the order given below,

Step-1-Parts of an equation enclosed in 'Brackets' must be solved first,

Step-2-Any mathematical 'Of' or 'Exponent' must be solved next,

Step-3-Next, the parts of the equation that contain 'Division' and 'Multiplication' are calculated,

Step-4-Last but not least, the parts of the equation that contain 'Addition' and 'Subtraction' should be calculated.

Now, given the expression:

=> 1 ÷ [11/8 ÷ ((31/5 + 3/5) ÷ 8/5)/({5/8 + (1/8 ÷ 1/3)})]

=> 1 ÷ [9/8 ÷ ((16/5 + 3/5) ÷ 8/5)/({5/8 + (1/8 × 3/1)})]

=> 1 ÷ [9/8 ÷ (19/5 × 5/8)/(5/8 + 3/(8))]

=> 1 ÷ [9/8 × 8/19

=> 1÷ [9/19]

=> 19/9

Q53. Answer: (c) 15, 20

Calculation:

Let the numbers be 3a and 4a.

According to the question,

(3a + 30)/(4a + 30) = 9/10

=> a = 5

Therefore Numbers = 15 and 20.

Q54. Answer: (c) 8

Shortcut Trick

The formula for the length of the transverse common tangent (TCT) is $\sqrt{(d^2 - (R + r)^2)}$.

Here, distance (d) = 10 cm, R = 4 cm, and r = 2 cm.

=> Sum of radii (R + r) = 4 + 2 = 6 cm.

=> Length of TCT = $\sqrt{(10^2 - 6^2)}$

=> Length of TCT = $\sqrt{(100 - 36)} = \sqrt{64} = 8$ cm.

Therefore The correct answer is 8 cm.

Alternate Method

Given:

Radius of 1^(st) circle (R) = 4 cm

Radius of 2^(nd) circle (r) = 2 cm

Distance between centers (d) = 10 cm

Formula Used:

Length of transverse common tangent = $\sqrt{[(\text{Distance between centers})^2 - (\text{Radius1} + \text{Radius2})^2]}$

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Calculations:

=> Let the length of the transverse common tangent be L.

=> $L = \sqrt{[10^2 - (4 + 2)^2]}$

=> $L = \sqrt{[100 - 6^2]}$

=> $L = \sqrt{[100 - 36]}$

=> $L = \sqrt{64}$

=> L = 8 cm

Therefore The correct answer is 8 cm.

Additional Information

Direct Common Tangent (DCT)

The length of the direct common tangent is given by $\sqrt{[d^2 - (R - r)^2]}$, where circles lie on the same side of the tangent.

Existence of TCT

A transverse common tangent exists only if the distance between the centers (d) is greater than the sum of the radii (R + r).

Number of Common Tangents

If d > R + r, there are 4 common tangents (2 DCT and 2 TCT). If d = R + r, there are 3 common tangents.

Q55. Answer: (b) 27.69%

Calculation:

Let the length and breadth of the rectangle both be 10 units.

Area of rectangle = L × B = 10 × 10 = 100 units

New length and breadth of the rectangle be = 10 + 10 × 13/100 = 11.3 units

New area of rectangle = 11.3 × 11.3 = 127.69 units

Percentage change = (127.69 - 100)/100 × 100 = 27.69%

Therefore The percentage change is 27.69%

Q56. Answer: (b) 1

Given:

4(cosec2 66° - tan2 24°) + 1/2 sin 90° - 4 tan266°.y.tan2 24° = y/2

Calculation:

$4[\text{cosec}^2 66° - \tan^2(90° - 66°)] + 1/2 \sin 90° - 4 \tan^2 66°.y.\tan^2 (90° - 66°) = y/2$

Because tan (90 - θ) = cotθ

=> $4[\text{cosec}^2 66° - \cot^2 66°] + 1/2 \sin 90° - 4 \tan^2 66° \times y \times \cot^2 66° = y/2$

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

=> 4[1] + 1/2 – 4y = y/2

=> 4 + 1/2 = 9y/2

=> 9/2 = 9y/2

=> y = 1.

Q57. Answer: (b) 132°

Calculation:

From the above figure,

Theorem: If in a ΔABC, the bisectors of angle B and angle C meet at O then

angle BOC = 90° + (angle A/2)

=> 156° = 90° + x/2

=> 66° = x/2

=> x = 132°

Q58. Answer: (b) 8

Using basic proportionality theorem,

PB × PA = PD × PC

=> 4 × 10 = PD × (PD + 3)

=> $(PD)^2 + 3PD - 40 = 0$

=> PD = 5 or - 8

PC = CD + DP

PC = 3 + 5 = 8 cm

Q59. Answer: (d) 0.4

Given:

(x - 7)3 + (2x + 8)3 + (2x - 3)3 = 3(x - 7) (2x + 8) (2x - 3)

Calculation:

Let (x - 7), (2x + 8), and (2x - 3) be a, b, and c.

Now the equation can be written as,

=> $a^3 + b^3 + c^3 = 3abc$

=> a3 + b3 + c3 - 3abc = 0

=> a3 + b3 + c3 - 3abc = (a + b + c)(a2 + b2 + c2 - ab - ac - bc)

=> (a + b + c) = 0

=> (x - 7) + (2x + 8) + (2x - 3) = 0

=> 5x = 2

=> x = 0.4

Q60. Answer: (b) 429 : 370

The number of students taken for all years together from school A = (640 + 800 + 500 + 700 + 900 + 750) = 4290

The number of students taken for all years together from school B = (550 + 820 + 600 + 750 + 500 + 480) = 3700

Required ratio = 4290 : 3700 = 429 : 370

Q61. Answer: (a) 2011

The percentage increase in students in school A from year 2008-2009 = (800 – 640)/640 × 100 = 25%

The percentage decrease in students in school A from year 2009-2010 = (800 - 500)/800 × 100 = 37.5%

The percentage increase in students in school A from year 2010-2011 = (700 - 500)/500 × 100 = 40%

The percentage increase in students in school A from year 20011-2012 = (900 - 700)/700 × 100 = 28.57%

The percentage increase in students in school A from year 20012-2013 = (900 - 750)/900 × 100 = 16.66%

Therefore The percentage increase of students in school A is the highest in comparison to its previous year 2011.

Q62. Answer: (b) 715

The average of the number of students from school A during the six year period = (640 + 800 + 500 + 700 + 900 + 750)/6 = 4290/6 = 715

Q63. Answer: (b) 2009

The absolute difference of the students in two schools in year 2008 = 640 – 550 = 90

Difference between the numbers of students in year 2009 = 820 – 800 = 20

Difference between the numbers of students in year 2010 = 600 – 500 = 100

Difference between the numbers of students in year 2011 = 750 – 700 = 50

Difference between the numbers of students in year 2012 = 900 – 500 = 400

Difference between the numbers of students in year 2013 = 750 – 480 = 270

The absolute difference between the numbers of students in two schools is the lowest in year 2009.

Q64. Answer: (a) Rs. 21000

Calculation:

Total work = LCM of the time taken by A and B.

Total work = 30

Efficiency = total work/time taken

Efficiency of A = 30/15 = 2 units/day

Efficiency of B = 30/10 = 3 units/day

The share was given in the ratio of their efficiencies = 2 : 3

(2 + 3) units = 35000

1 unit = 7000

Therefore B’s share = 3 × 7000 = 21000

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Q65. Answer: (b) 0

Calculation:

Check using n = 1, 2, 3….. and so on.

Number = $(6n + 3)^2 = (6 \times 1 + 3)^2 = 81$

The remainder on dividing 81 by 9 is 0.

Q66. Answer: (d) 16

Calculation:

By eliminating options 1 and 3 the square root of 2 and 8 can not be calculated.

Now by going through rest options,

=> 6^(4√x) + 8^(4√x) = 10^(4√x)

=> 3^(4√x) + 4^(4√x) = 5^(4√x)

=> $3^2 + 4^2 = 5^2$

=> 25 = 25

So value of x = 16

Q67. Answer: (c) 54

Calculation:

The average age of 15 persons = 32

Sum of age of 15 persons = 32 × 15 = 480

The average age of 17 persons = 32 + 3 = 35

Sum of age of 15 persons = 35 × 17 = 595

Sum of age of 2 new persons = 595 – 480 = 115

Difference of 2 new persons = 7

Therefore Age of youngest person = (115 – 7)/2 = 54

Q68. Answer: (a) 10

Calculation:

cos x = (-√3/2) = cos(180° + 30°) (Because π < x < 3π/2)

x = 210°

Therefore The value of $(2\cot^2 x + 3\sec^2 x) = 2 \times (\sqrt{3})^2 + 3 \times 4/3$

=> 6 + 4 = 10

Q69. Answer: (a) 165

Calculation:

To make a triangle 3 points are needed

Therefore The number of triangles that can be drawn = $^{11}C3$

=> 11!/(8! × 3!)

=> 11 × 10 × 9 × 8!/(8! × 3!) = 165

Q70. Answer: (c) 245

Calculation:

The ratio between the speeds of two trains = 2 : 5

Speed of 1^(st) train = 350/5 = 70 km/hr

Speed of 2^(nd) train = 70 × 5/2 = 175 km/hr

The sum of the speeds of the trains = 70 + 175 = 245 kmph

Q71. Answer: (b) 40

Calculation:

Marks of A = Marks of B + 8

According to the Question,

A = (A + B) × 60/100

=> A – 3A/5 = 3B/5

=> 2A/5 = 3B/5

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=> A/B = 3/2 = 3 : 2

Difference of marks = (3 - 2) = 1 unit = 8 marks

=> Sum of the marks (5 units) = 5 × 8 = 40 marks

Sum of marks obtained by A and B = 40

Q72. Answer: (c) 30√3

Given:

x = 2 + √3

Formula Used:

(x + y)3 = x3 + y3 + 3xy(x + y)

(x – y)(x + y) = $x^2 – y^2$

Calculation:

x = 2 + √3

1/x = 1/(2 + √3)

=> (2 – √3)/[(2 + √3) × (2 – √3)]

=> (2 – √3)/(4 – 3)

=> (2 – √3)

(x – 1/x) = (2 + √3) – (2 – √3)

=> 2√3

Upon taking cube on both sides,

=> $(x – 1/x)^3 = (2√3)^3$

=> $x^3 – 1/x^3 – 3 × x × (1/x) × (x – 1/x) = 24√3$

=> $x^3 – 1/x^3 – 3 × 2√3 = 24√3$

=> $x^3 – 1/x^3 = 30√3$

Therefore The value of x3 – x-3 is 30√3.

Q73. Answer: (a) 8600

Given:

The sum of the salaries of A and B together is Rs. 43000

A's expenditure = 95% of his salary

B's expenditure = 80% of his salary

Calculation:

Let the salary of A be x.

Salary of B = 43000 – x

Saving of A = 100 – 95 = 5%

Saving of B = 100 – 80 = 20%

According to question,

x × 0.05 = (43000 – x) × 0.2

=> 0.25x = 8600

=> x = 34400

Therefore B’s salary = 43000 – 34400 = 8600

Q74. Answer: (a) 11.1% Profit

Calculation:

Cost price of dealer = 20000 × (90/100) × (92/100) + 1440 = 180 × 92 + 1440

=> 180 × (100 - 8) + 1440

=> 18000 – 1440 + 1440 = 18000

Selling price = 20000

Profit percentage = (20000 – 18000)/18000 × 100 = 11.1% profit

Q75. Answer: (c) Rs. 6600

Calculation:

Let the principal amount be P.

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Amount = CI + P = 6963 + P

Using formula,

$A = P(1 + r/100)^n$

$\Rightarrow 6963 + P = P(1 + 11/100)^2$

$\Rightarrow 6963 + P = P(111/100)2$

$\Rightarrow 6963 = P(111/100)^2 - P$

$\Rightarrow 6963 = P [(111/100)2 - 1]$

$\Rightarrow 6963 = P [(12321/10000) - 1]$

$\Rightarrow 6963 = P [2321/10000]$

$\Rightarrow P = 30000$

Simple interest = P × R × T/100 =

30,000 × 11 × 2/100

= Rs. 6600

Therefore Simple interest is Rs. 6600

Q76. Answer: (a) Mahmud of Ghazni

The correct answer is option 1, i.e. Mahmud of Ghazni.

• Sultan Mahmud of Ghazni attacked India 17 times in order to plunder the wealth from the country.

• It was the first Turkish invasion in the country.

• He raided the Somnath Temple on the coast of Kathiawar in the year 1025 AD and the temple was destroyed in the year 1026 AD.

• Al-Biruni was made hostage by Mahmud of Ghazni.

• Al-Biruni was from Khwarazm and was an Iranian scholar.

• The title "founder of Indology" has been given to Al-Biruni.

• He spent many years in Ghazni and was made astrologer in the court of Mahmud of Ghazni.

• Kitab-ul-Hind is an Arabic text written by him, wherein, he comments on Indian customs, sciences, social organization, and Hindu beliefs.

Q77. Answer: (c) Ethiopia

The correct answer is option 3, i.e. Ethiopia.

• UNICEF Goodwill Ambassador Priyanka Chopra travelled to Ethiopia to meet refugee children who have fled their countries due to conflict and humanitarian crises.

• Ethiopia is home to 900,000 refugees – the second-largest refugee population in Africa.

• Most were forcibly displaced from their homes in Somalia, South Sudan, Eritrea, Sudan, and Yemen. Many have crossed borders in search of peace or a better life, facing deadly dangers and discrimination along the way.

Q78. Answer: (d) Condensation

The correct answer is option 4, i.e. Condensation.

Concept:

Name of the processes	Definition
Precipitation	Precipitation is all liquid and solid water particles that fall from clouds and reach the ground.
Evaporation	Evaporation is the process by which an element or compound changes from its liquid state to its gaseous state below the temperature at which it boils.
Decantation	Decantation is a process to separate mixtures by removing a liquid layer that is free of a precipitate.
Condensation	It is the deposition of a liquid or a solid from its vapour, generally upon a surface that is cooler than the adjacent gas

Explanation:

From the above explanation, we can see that

Condensation: In this process, the gaseous phase of an object tends to convert into liquid form due to change in pressure and temperature.

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Hence option 4 is correct among all

Q79. Answer: (a) Sonam Wangchuk

The correct answer is option 1, i.e. Sonam Wangchuk.

• Bharat Vatwani and Sonam Wangchuk were among the winners of the Ramon Magsaysay Award 2018.

• Bharat Vatwani is a psychiatrist who works for mentally-ill people living on the streets.

• The Ramon Magsaysay Award is often referred to as the Asian version of the Nobel Prize.

• Sonam Wangchuk, a mechanical engineer/scientist has revolutionized the teaching methods in the hilly areas of Jammu and Kashmir and Ladhak.

• His speciality includes coming up with low-cost solutions to modern-day problems with minimal resources but the highest efficiency.

• A character named "Phunsukh Wangdu" in the film " 3 Idiots" is inspired by him.

• Wangchuk builds Ice Stupas to facilitate irrigation in the desert areas of the western Himalayas.

• In 1988, he founded SECMOL (Students' Educational and Cultural Movement of Ladakh).

• This school especially teaches only those students who have failed in their exams and not even those who score fewer marks.

• Ramon Magsaysay Award was awarded to him in the year 2018. (considered the Nobel Prize in the East)

Q80. Answer: (a) Motherboard

The correct answer is option 1, i.e. Motherboard.

Component	Speed Measured By	Units	Description
CPU	Clock speed	GHz	The time it takes to complete a circuit.
Motherboard	Bus speed	MHz	How much data can move across the bus simultaneously.
RAM	Data transfer rate	MB/s	The time it takes for data to be transferred from the memory to the system.
Access time	ms	The time it takes before the disk can transfer data.	
Hard disk	Data transfer rate	RPM	Disk speeds are usually measured in; Rotational speed in revolutions per minute

Q81. Answer: (c) Shaheen II

The correct answer is option 3, i.e. Shaheen II.

• Pakistan has performed a successful training launch of a Shaheen-II surface-to-surface medium-range guided ballistic missile that has the ability to hit targets up to a range of 1,500km.

• Designed and developed by the NESCOM and the National Defence Complex (NDC) of Pakistan, the missile can carry both conventional and nuclear warheads.

Q82. Answer: (b) Arbitrage

The correct answer is option 2, i.e. Arbitrage.

• The process of Arbitrage refers to the simultaneous buying and selling of an asset from different platforms, exchanges or locations to cash in on the price difference.

• In this case, only the price difference is captured as the net pay-off from the trade.

• The pay-off should be large enough to cover the costs involved in executing the trades.

Q83. Answer: (a) Jammu and Kashmir

The correct answer is Jammu and Kashmir.

• Chakri is one of the most popular types of traditional music played in Jammu & Kashmir.

• Chakri is a responsorial song form with instrumental parts, and it is played with instruments like the harmonium, the rubab, the sarangi, the nout, the geger, the tumbaknaer and the chimta.

• Here the question is about traditional music so the answer is Jammu and Kashmir.

• Chakri Folk Dance:

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• Chakri dance is believed as the same as the Raai dance of the 'Beriyas' tribe of Madhya Pradesh.

• Devi Lal Sagar made this dance popular.

• It is performed in the Hadoti region of Bundi, Kota & Baran District.

• It is performed By Women of the Kanjar tribe on the occasion of Marriages & Festivals of the Hadoti Region.

• The act re-constituted the former state of Jammu and Kashmir into two union territories, Jammu and Kashmir and Ladakh, with effect from 31 October 2019.

Q84. Answer: (d) Dipa Karmakar

The correct answer is option 4, i.e. Dipa Karmakar.

• Dipa Karmakar is the first Indian gymnast to win a Gold medal at a Global Event in the World Challenge Cup in Turkey.

• She is from Agartala, Tripura.

• She has been coached by veteran Bisbeshwar Nandi.

• Since 2007, she has won 77 medals including 67 gold, in-state, national and international championships.

• She won a bronze medal at the 2014 Commonwealth Games and at the Artistic Gymnastics Asian Championships in Hiroshima, Japan.

Q85. Answer: (b) National Highway Number 1

The correct answer is option 2, i.e. National Highway Number 1.

Key Points

• Sher Shah Suri Marg is also known as National Highway Number 1 (NH1) in India.

• It's a major part of the old Grand Trunk Road, a historic trade route that ran through the Indian subcontinent, from Bangladesh to Afghanistan.

• Sher Shah Suri, the emperor of Northern India in the 16th century, is credited with reviving and refurbishing this important route.

Additional Information

National Highway Number	Notable Features
National Highway Number 1 (NH1)	Also known as Sher Shah Suri Marg. It is a part of the Grand Trunk Road.
National Highway Number 11 (NH11)	Connects Agra in Uttar Pradesh with Bikaner in Rajasthan, passing through Jaipur and several other significant cities.
National Highway Number 8 (NH8)	Was renamed NH48 in 2010. It used to connect the national capital, Delhi, to the financial capital, Mumbai.
National Highway Number 23 (NH23)	Connects Ranchi in Jharkhand to Rourkela in Odisha, serving as a crucial route between these two states.

Q86. Answer: (b) Maharashtra

The correct answer is option 2, i.e. Maharashtra.

• Jawaharlal Nehru Port is located in Mumbai, Maharashtra.

• It is the first port in the country to implement logistics data tagging of containers.

• The port implemented the logistics data tagging of containers which will help importers and exporters track their goods in transit.

• An RFID (Radio Frequency Identification Tag) tag would be attached to each container and tracked through RFID readers installed at different locations.

Q87. Answer: (d) 1993

• MP Local Area Development Scheme was implemented by the Government of India on 23 December 1993.

• At the beginning of the scheme, it was administered by the Ministry of Rural Development and later in October 1994 it was handed over to the Ministry of Statistics and Program Implementation.

• A member of the Lok Sabha represents the parliamentary constituency from which he comes and members of the Rajya Sabha represent the entire state and may elect one or more districts to act voluntarily.

• The main objective of the Government of India behind the implementation of this scheme was that the MPs should go to the local level in their area to understand and solve the problems so that the public can get basic facilities like electricity, water, rail, health, education, roads, food. And social, economic, political, cultural, geographical material development of the people can be done.

• Each MP can make the District Magistrate aware of the work up to 2500000 for working in his / her chosen constituency and after the year 2011-12 this amount was increased to five crore.

• However, for any natural disaster like tsunami earthquake, volcanic flood, etc., this amount can increase even more.

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Q88. Answer: (c) 20th May

The correct answer is option 3, i.e. 20 May.

• World Metrology Day is observed every year on 20 May.

• It commemorates the anniversary of the signing of the Metre Convention in 1875.

• The theme for World Metrology Day 2019 is The International System of Units - Fundamentally better.

Q89. Answer: (c) 105

The correct answer is option 3, i.e. 105.

• Article 105 of the Indian Constitution, deals with the 'Parliamentary Privileges' enjoyed by the MPs so as to enable them to discharge their legislative duties.

Article	Details
107	Provisions as to introduction and passing of Bills
102	Disqualifications for membership
105	The powers, privileges and immunities of either House of Parliament and of its Committees and Members
115	Supplementary, additional or excess grants

Q90. Answer: (c) Running

The correct answer is option 3, i.e. Running.

• The sheets printed with numbers used to identify each runner in a race.

• It is also called “bib numbers”.

• Bib numbers have many event applications, including:

• Marathons

• Road Races

• Track and Field Competitions

• Cross Country Races

Q91. Answer: (c) Avalanche

The correct answer is option 3, i.e. Avalanche.

• When a mass of snow moving rapidly down a slope of a mountain is known as Avalanche.

• It is started when the snow on a slope breaks loose from its surroundings and this snow then quickly collects and carries additional material down the slope.

• Other kinds of avalanches are also there, they are as follows;

• Rock avalanches,

• Ice avalanches,

• Debris avalanches.

Q92. Answer: (d) West Bengal

The correct answer is option 4, i.e. West Bengal

• Bhawaiya is a musical form of popular folk music in West Bengal.

• It is practised in Cooch Behar, Jalpaiguri, part of Darjeeling and North Dinajpur district of West Bengal.

• Some other folk dance names are:

• Chhau (It also performed in Odisha and Bihar)

• Kirtan

• Alkap

• Gambhira

Q93. Answer: (a) Second

The correct answer is option 1, i.e. Second.

• India has overtaken Japan to become the world's second-largest producer of crude steel, according to the Steel Users Federation of India.

• China is the largest producer of crude steel in the world, accounting for more than 50 per cent of the production.

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• India overtook the US in 2015 to become the third largest producer of crude steel.

Q94. Answer: (a) Vindhaya

The correct answer is option 1, i.e. Vindhya.

Range name	Highest point
Vindhya	Kalumar Peak
Satpura	Mount Dhupgarh
Aravalli	Guru Shikhar
Karakoram	K2

Q95. Answer: (a) Shashi Tharoor

The correct answer is option 1, i.e. Shashi Tharoor.

Book	Author
An Era of Darkness: The British Empire in India	Shashi Tharoor
India After Gandhi	Ramchandra Guha
The Guiding Light: A Selection of Quotations from My Favourite Books	A P J Abdul Kalam
How the Sea Became Salty	Sudha Murthy

Q96. Answer: (b) Sergey Brin

The correct answer is option 2, i.e. Sergey Brin.

Founders/Co-founders Name	Company Name
Peter Thiel(Co-founder)	Paypal
Sergey Brin	Google
Steve Wozniak(Co-founder)	Apple
Elon Musk	Tesla, Space X

Q97. Answer: (b) Malik Kafur

The correct answer is option 2, i.e. Malik Kafur.

• Malik Kafur was a eunuch slave who became a general in the army of Alauddin Khilji, who was the ruler of Delhi sultanate from 1296 to 1316.

• He had led two successful campaigns in South India.

• The Chola Empire was invaded by Malik Kafur too in the early 14th century A.D

Q98. Answer: (b) Calcium Hydroxide

The correct answer is option 2, i.e. Calcium Hydroxide.

• Slaked lime is the other name of Calcium hydroxide.

• Chemical formula: Ca(OH)2

• It is widely used for mortar, plaster, and cement in buildings.

• It is also used in wastewater treatment.

Q99. Answer: (c) Cellulose

The correct answer is option 3, i.e. Cellulose.

• Cellulose is mainly found in plants and therefore is the main constituent of woods which makes it the most abundant organic compound on earth.

• It is the main constituent of plant fiber; plants contain on average 33% cellulose, and cotton is the purest form at 90%.

• Cellulose is a linear polymer of as many as 10,000 D-glucose units.

• Cellulose from wood and cotton is used in the manufacturing of paper, cardboard, cellophane, and rayon.

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Q100. Answer: (c) Swimming

The correct answer is option 3, i.e. Swimming.

- In swimming, a tumble turn or flip turn is one of the turns.
- At the time of swimming, it is used to reverse the direction.
- It is done when the swimmer reaches at the end of the swimming pool but has one more turn left to complete swiftly.

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