SSC CHSL 2020 Official Paper 24 (Held on: 6 Aug 2021 Shift 3) (Previous Year Paper)

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

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ENGLISH LANGUAGE

Q1. Select the most appropriate meaning of the given idiom.

To play with fire

(a) To fight fires like a fireman
(b) To pour oil on a burning fire
(c) To act in a dangerous and risky way
(d) To hold a revenge against someone

Q2. Select the INCORRECTLY spelt word.

(a) Benifitiary
(b) Strategy
(c) Tractor
(d) Territory

Q3. Sentences of a paragraph are given below in jumbled order. Arrange the sentences in the right order to form a meaningful and coherent paragraph.

A. Oprah Winfrey is one of the richest and most powerful American women, loved and admired by everyone.
B. When she was only 19, she became the first black female assistant to Nashville's evening news anchor.
C. But Oprah had a very difficult and traumatic childhood.
D. In 1986, Oprah became the television presenter of her own talk show called 'The Oprah Winfrey Show'.

(a) CBDA
(b) BCAD
(c) DACB
(d) ABDC

Q4. Select the most appropriate synonym of the given word.

COMMENCE

(a) resume
(b) launch
(c) conclude
(d) complete

Q5. Select the most appropriate meaning of the underlined idiom in the given sentence.

Organic food seems to be in vogue these days.

(a) readily available
(b) very expensive
(c) out of stock
(d) in fashion

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

Every participant gave/ so outstanding performance/ that it became difficult/ to choose the winner.

(a) so outstanding performance
(b) that it became difficult
(c) to choose the winner
(d) Every participant gave

Q7. Given below are four sentences in jumbled order. Select the option that gives their correct order.

A. Once, on an airplane, I leaned over to tie my shoelace.

B. I found myself pinned helplessly in the crash position, unable to move.

C. I always have catastrophes when I travel.

D. Just at that moment, the person in the seat ahead threw his seat back into full recline.

(a) DBAC
(b) ABDC
(c) CADB
(d) BDAC

Q8. Fill in the blank with most appropriate word.

I am _____ of joining the armed forces.

(a) desirous
(b) eager
(c) keen
(d) interested

Q9. Select the option that can be used as a one-word substitute for the given group of words.

A strong interest in something or someone

(a) Attachment
(b) Apathy
(c) Fixation
(d) Empathy

Q10. Select the most appropriate option to substitute the underlined segment in the given sentence. If there is no need to substitute it, select 'No substitution'.

The workers' union has threatened for going to an indefinite strike

(a) to go on
(b) No substitution
(c) for go to
(d) to be going for

Q11. Select the most appropriate ANTONYM of the given word.

Friendly

(a) Upright
(b) Amiable
(c) Zealous
(d) Hostile

Q12. Select the most appropriate word to fill in the blank.

You don't usually discuss money with friends, because it may _____ the relationship negatively.

(a) effect
(b) strengthen
(c) affect
(d) improve

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Q13. Select the most appropriate one-word substitution for the given words.

To come to an end

(a) initiate
(b) exhale
(c) expire
(d) inspire

Q14. Select the misspelt word.

(a) boundry
(b) library
(c) already
(d) installment

Q15. Select the most appropriate option to substitute the underlined segment in the given sentence. If there is no need to substitute it, select 'No substitution required'.

A school teacher earns fewer salary from a college lecturer.

(a) less salary from
(b) No substitution required
(c) a lower salary than
(d) fewer salary than

Q16. Select the correct passive form of the given sentence.

She has put fresh flowers in the flower vase.

(a) Fresh flowers are put in the flower vase.
(b) Fresh flowers have been put by her in the flower vase.
(c) Fresh flowers are being put in the flower vase.
(d) Fresh flowers has been put in the flower vase.

Q17. The following sentence has been split into four segments. Identify the segment that contains a grammatical error.

My brother lost / his job during the lockdown, / but he had got / a new job now.

(a) his job during the lockdown
(b) My brother lost
(c) a new job now
(d) but he had got

Q18. Select the option that expresses the given sentence in direct speech.

She told the car mechanic that her car was giving very low mileage

(a) The car mechanic said to her, “Your car is giving very low mileage.”
(b) She said to the car mechanic, “My car is giving very low mileage.”
(c) She said to the car mechanic, “Her car has been giving very low mileage.”
(d) She asked the car mechanic, “Why is my car giving very low mileage?”

Q19. Select the most appropriate synonym of the given word.

Imitate

(a) Effect
(b) Mimic
(c) Disregard
(d) Enlighten

Q20. Select the most appropriate antonym of the given word.

SAVAGE

(a) cultured
(b) vicious
(c) brutal

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(d) violent

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 little princess said, “I shut you in a golden cage because I wanted to have you all to (1) ____. I never knew it would make you so unhappy. I love you (2) __ to grant you freedom and let you be happy in your (3) __.” Then she opened the cage and let out the (4) __ little bird. The bird said, “I will come back to sing you the (5) ____ songs I know,” and flew away into the blue.

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

(a) myself
(b) himself
(c) itself
(d) herself

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

(a) so much
(b) more
(c) enough
(d) so

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

(a) path
(b) cage
(c) turn
(d) way

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

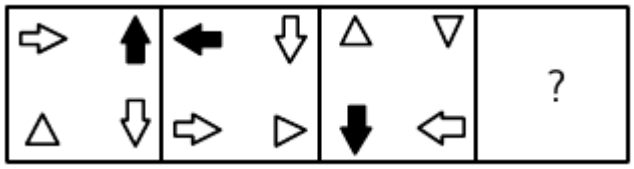
(a) terrible
(b) terrified
(c) terriflying
(d) terrorizing

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

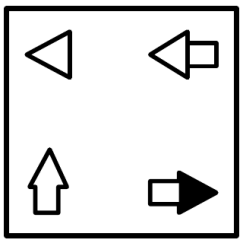
(a) more lovely
(b) much lovely
(c) most lovelier
(d) loveliest

GENERAL INTELLIGENCE

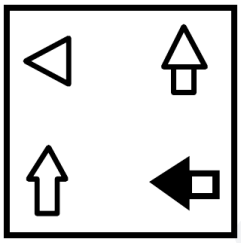
Q26. Select the figure from among the given options that can replace the question mark (?) in the following series.



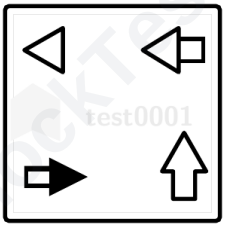
(a)



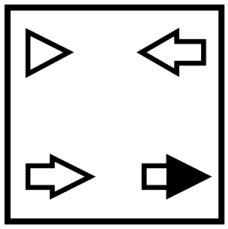
(b)



(c)



(d)



Q27. Select the option in which the numbers share the same relationship as that shared by the numbers in the given set.

(6, 8, 192)

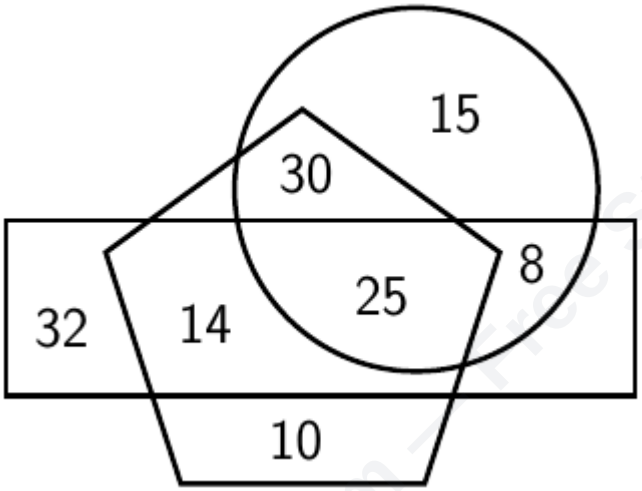
(a) (12, 13, 263)

(b) (8, 11, 180)

(c) (11, 9, 396)

(d) (7, 5, 78)

Q28. In the following Venn diagram, the pentagon stands for ‘Librarians’, the rectangle stands for ‘Income Tax Payers’, and the circle stands for ‘Post-graduates’. The given numbers represent the number of persons in that particular category.



How many librarians are there who are also post-graduates?

(a) 14
(b) 25
(c) 55
(d) 30

Q29. In a code language, MAGIC is written as NZTRX. How will LAYER be written in that language?

(a) OZBVH
(b) NZBVQ
(c) OZBVI
(d) PZPVI

Q30. Ankit is 30 years younger than his father. After 4 years Ankit's sister will be half the age of her father. The total of the present ages of Ankit and his sister is 67 years. What is the present age of Ankit's father?

(a) 48 years
(b) 66 years
(c) 52 years
(d) 60 years

Q31. Which two signs and two numbers should be interchanged to make the given equation correct?

12 × 5 + 7 ÷ 4 – 6 = 25

(a) × and +, 12 and 4
(b) × and ÷, 7 and 6
(c) × and −, 6 and 5
(d) ÷ and −, 4 and 12

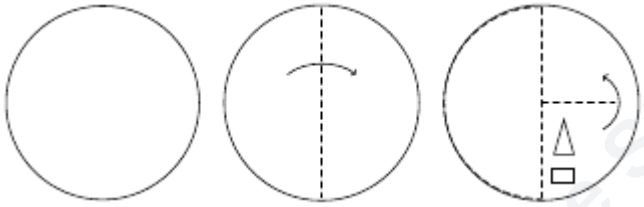
Q32. Select the correct option that indicates the arrangement of the given words in the order in which they appear in an English dictionary.

1. Mosaic
2. Mosquito
3. Mortgage
4. Moratorium
5. Morphed

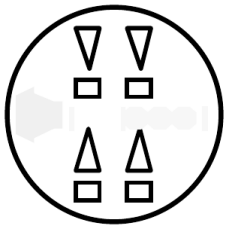
(a) 4, 1, 3, 5, 2
(b) 4, 3, 1, 2, 5
(c) 4, 5, 3, 1, 2
(d) 1, 4, 3, 2, 5

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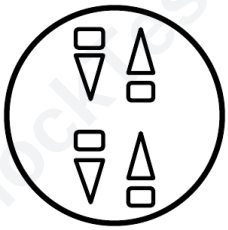
Q33. A piece of paper is folded and cut as shown below in the question figures. Select from the given answer figures, how it will appear when unfolded.



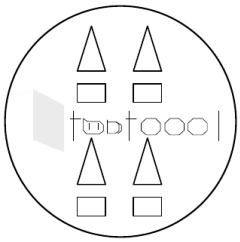
(a)



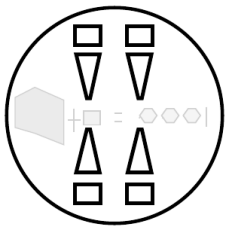
(b)



(c)



(d)



Q34. 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:

All bottles are utensils.

All kitchens are utensils.

Conclusions:

I. No bottle is a kitchen.

II. Some bottles are kitchens.

III. No utensil is a bottle.

(a) Only conclusions I and II follow

(b) Only conclusions II and III follow

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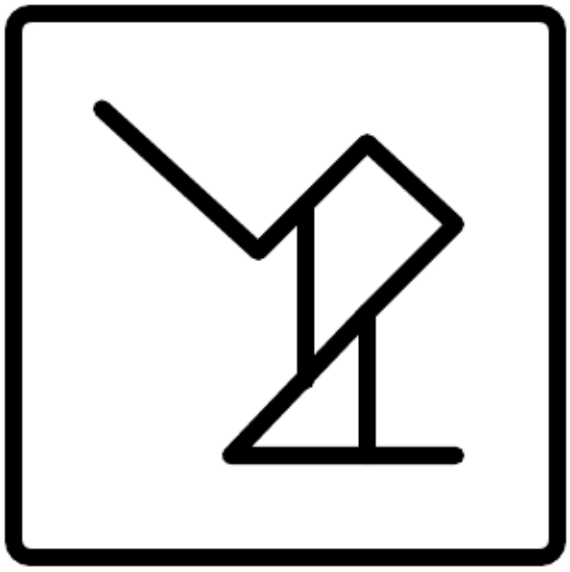
(c) Either conclusion I or II follows
(d) All the conclusions follow

Q35. In a certain code language, 'FOSTER' is coded as '61219202218' and 'CARGO' is coded as '32618712'. How will 'MARRIAGE' be coded in that language?
(a) 132618180926705
(b) 132609091826705
(c) 140118181801722
(d) 132618181826722

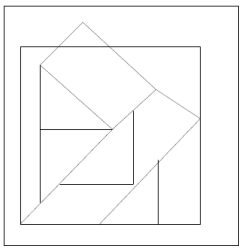
Q36. Four letter-clusters have been given, out of which three are alike in some manner and one is different. Select the letter-cluster that is different.
(a) MORV
(b) BDGK
(c) VYAE
(d) XZCG

Q37. 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.
FOR : MVY : : DEX : ?
(a) KLE
(b) LLF
(c) KLF
(d) KME

Q38. Select the option figure which contains figure X embedded in it as its part (rotation is NOT allowed).

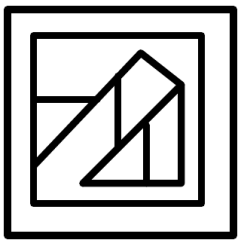


(a)

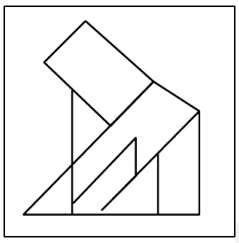


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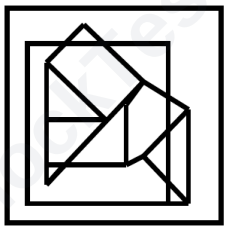
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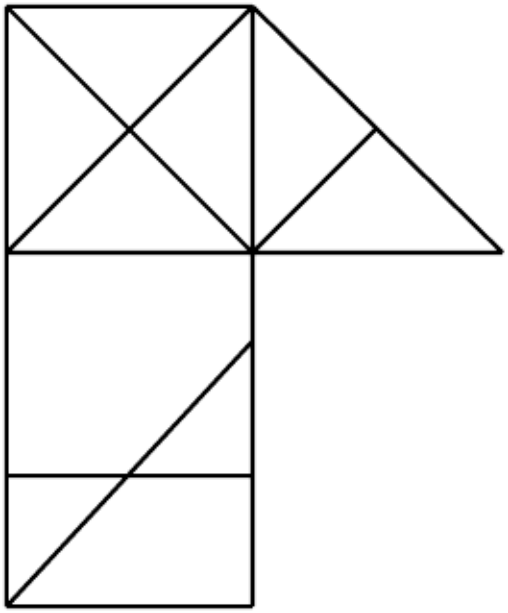
(c)



(d)



Q39. How many triangles are there in the given figure?



(a) 16
(b) 15
(c) 17
(d) 14

Q40. Select the option that is related to the fourth number in the same way as the first number is related to the second number and the fifth number is related to the sixth number.

26 : 182 : : ? : 203 : : 38 : 266

(a) 33
(b) 27
(c) 29

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(d) 35

Q41. Select the number that can replace the question mark (?) in the following series.

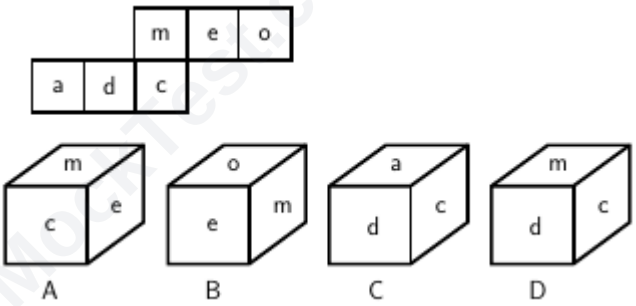
14, 29, 60, 123, ?, 505

(a) 150
(b) 250
(c) 280
(d) 305

Q42. 'Soldier' is related to 'Security' in the same way as 'Farmer' is related to '_____'.

(a) Rain
(b) Army
(c) Poverty
(d) Agriculture

Q43. Select the cubes that can be formed by folding the given sheet along the lines.



(a) Only B, C and D
(b) Only A, C and D
(c) Only B and C
(d) Only A and D

Q44. Select the correct mirror image of the given letter cluster when a mirror is placed on the right side of the cluster.



(a)



(b)



(c)



(d)



Q45. Mahendra is the son of Naman, who is the brother of Reema's mother. How is Mahendra related to Reema?

(a) Cousin
(b) Brother
(c) Uncle
(d) Son

Q46. Select the combination of letters that when sequentially placed in the blanks of the given letter series will complete the series.

p _ q q r _ p p q _ r r _ p q _ _ r

(a) r p q r p q
(b) q p r q r q
(c) q q p p r r
(d) p r q p q r

Q47. Select the option in which the numbers are related in the same way as are the numbers of the following set.

(15, 7, 252)

(a) (23, 9, 510)
(b) (27, 10, 520)
(c) (12, 16, 372)
(d) (16, 14, 451)

Q48. Select the option in which the words share the same relationship as that shared by the given pair of words.

Axe : Chop

(a) Scalpel : Stitching
(b) Chisel : Carve
(c) Compass : Architecture
(d) Scissor : Design

Q49. Four number-pairs have been given, out of which three are alike in some manner and one is different. Select the number-pair that is different.

(a) 7 : 349
(b) 4 : 70
(c) 3 : 30
(d) 8 : 518

Q50. Three of the following four words are alike in a certain way and one is different. Select the odd one.

(a) Almond
(b) Cashew
(c) Dry Fruits
(d) Walnuts

QUANTITATIVE APTITUDE

Q51. The average of the squares of four consecutive odd natural numbers is 201. The average of 7 times of the largest number and 3 times of the smallest number is:

(a) 76
(b) 78
(c) 66

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(d) 72

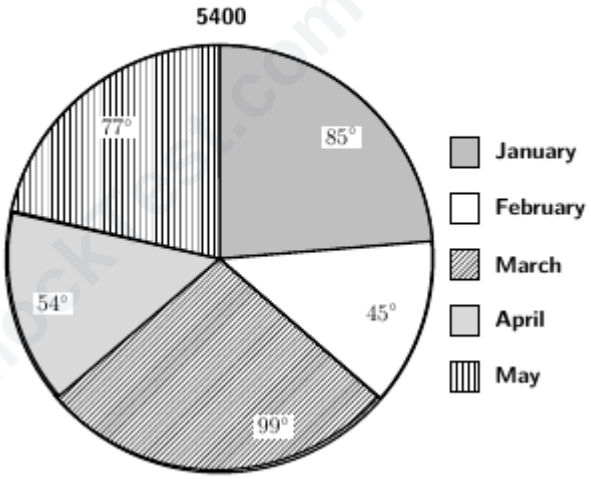
Q52. If the angle between the internal bisectors of two angles angle B and angle C of a triangle ABC is 125°, then the value of angle A is:

(a) 62°
(b) 65°
(c) 70°
(d) 72°

Q53. Study the given pie chart and answer the question that follows.

The pie chart shows the distribution (degree wise) of the number of computers sold by a shopkeeper during five months.

Total Number of computers Sold = 5400



By what percentage is the total number of computers sold in February and March more than the number of computers sold in April and May (correct to one decimal place)?

(a) 11.5%
(b) 9.9%
(c) 10.6%
(d) 8.8%

Q54. Chord AB of a circle with radius 5 cm is at a distance of 4 cm from the centre O. If tangents drawn at A and B intersect at P, then find the length of the tangent AP.

(a) 7.5 cm
(b) 3 cm
(c) 3.75 cm
(d) 2.4 cm

Q55. If x^4 - 12x² + 1 = 0, then what will be the value of x^4+1/(x^4) ?

(a) 144
(b) 10
(c) 146
(d) 142

Q56. If $(\sin^2\theta)/(\tan^2\theta-\sin^2\theta)=5$, then the value of $(24\cos^2\theta-15\sec^2\theta)/(6\ \mathrm{cosec}^2\theta-7\cot^2\theta)$ is:

(a) 1
(b) 6
(c) 2
(d) 4

Q57. When a positive integer 'n' is divided by 12, the remainder is 5. What will be the remainder if $8n^2 + 7$ is divided by 12?

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

Q58. If the simple interest on a certain sum of money borrowed for 4 years at 9.5% per annum exceeds the simple interest on the same sum for 3 years at 12.5% per annum by Rs. 225, then the sum borrowed is:

(a) Rs. 48,000
(b) Rs. 45,000
(c) Rs. 42,000
(d) Rs. 35,000

Q59. Simplify the following expression.

(32/3-57/9÷1/3×12/13)/(2/3 of 11/3÷1/3)

(a) -61/8
(b) -292/5
(c) -277/104
(d) -141/4

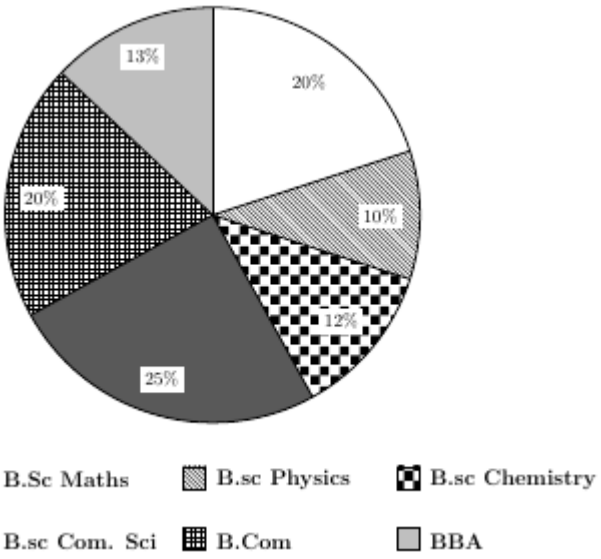
Q60. If $x-1/x=2\sqrt{2}$, then what will be the value of $x^3-1/(x^3)$?

(a) $10\sqrt{2}$
(b) $20\sqrt{2}$
(c) $12\sqrt{2}$
(d) $22\sqrt{2}$

Q61. Study the given pie chart and answer the question that follows.

The Total number of students admitted to a college = 700.

Distribution of the percentage of students in various courses.



Percentage-wise distribution of the number of boys.

Course	Number of boys
B.Sc. Maths	40%
B.Sc. Physics	68%
B.Sc. Chemistry	58%
B.Sc. Computer Science	80%

B.Com.	75%
BBA	65%

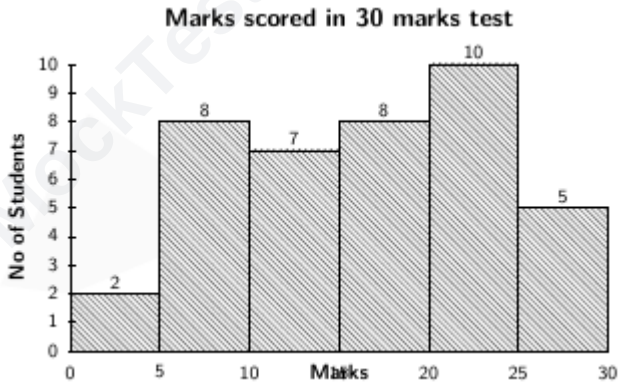
The difference between the number of boys and the number of girls admitted in B.Com. is:

(a) 60
(b) 75
(c) 70
(d) 65

Q62. If 3 cot A = 4 tan A and A is an acute angle, then what will be the value of sec A ?

(a) 1/√3
(b) √7/2
(c) √21/3
(d) 1/2

Q63. The histogram shows the marks scored by 40 students in a test with a maximum of 30 marks. How many students scored 10 or more marks?



(a) 38
(b) 10
(c) 23
(d) 30

Q64. Mohan takes 2 hours more than Kishore to walk 63 km. If Mohan increases his speed by 50%, then he can make it in 1 hour less than Kishore. How much time does Kishore take to walk 63 km?

(a) 7 hours
(b) 6 hours
(c) 9 hours
(d) 5 hours

Q65. What is the value of $(\cos^2 20° + \cos^2 70°)/(\sin^2 90°) - \tan^2 45°$?

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

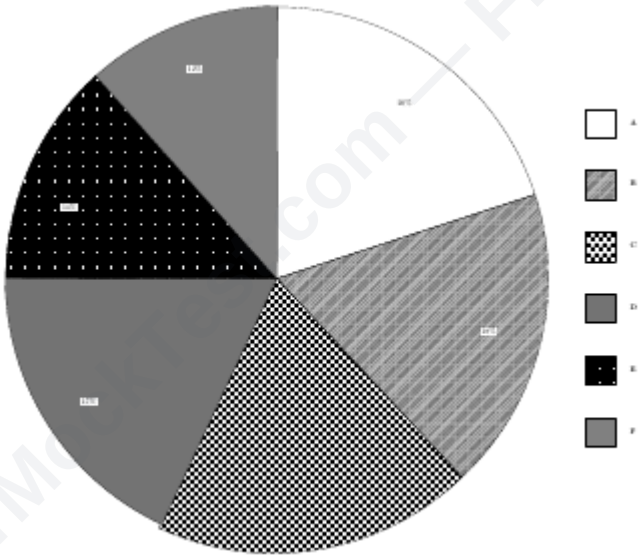
Q66. If $x + 81/x = 18$ where $x > 0$, then the value of $x^2 + 162/(x^2)$ is:

(a) 85
(b) 81
(c) 78
(d) 83

Q67. Points D, E and F are on the sides AB, BC and AC, respectively, of triangle ABC such that AE, BF and CD bisect angle A, angle B and angle C, respectively. If AB = 6 cm, BC = 7 cm and AC = 8 cm, then what will be the length of BE?

(a) 3.5 cm
(b) 3.6 cm
(c) 4 cm
(d) 3 cm

Q68. The following pie chart represents the percentage-wise distribution of 300 students of class X in a school in six different sections A. B. C.D, E, and F.



The given table shows the number of boys of class X in six different sections A, B, C, D, E and F.

Section	A	B	C	D	E	F
No. of boys	36	26	34	28	----	20

The total number of boys in sections A. B and D together is what percentage more than the total number of girls in sections A, B and D together?

(a) 20%
(b) 15%
(c) 18%
(d) 30%

Q69. Two positive numbers are in the ratio 8 : 13. If the sum of their squares is 2097, then the sum of the two numbers is:

(a) 64
(b) 60
(c) 63
(d) 65

Q70. The present population of a village (males and females) is 7640. If the number of males increases by 25% and the number of females increases by 15%, then the population will become 9214. The difference between the present population of males and females in the village is:

(a) 920
(b) 820
(c) 940
(d) 960

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Q71. The circumference of a circle is 'aπ' units and the area of the circle is 'bπ' square units. If a : b is equal to 4 : 5, then the radius of the circle is:

(a) 2.5 cm
(b) 2 cm
(c) 5 cm
(d) 3 cm

Q72. If the adjacent sides of a rectangle whose perimeter is 60 cm are in the ratio 3 : 2, then what will be the area of the rectangle?

(a) 60 cm^2
(b) 864 cm2
(c) 216 cm2
(d) 300 cm2

Q73. A customer availed a 10% discount on the purchase of a table and paid Rs. 4,950 for it. How much money would he have saved if he had bargained to get 12% discount?

(a) Rs. 99
(b) Rs. 660
(c) Rs. 110
(d) Rs. 108.90

Q74. Amit purchased stationery marked for Rs. 8,000 at 12% discount and spent Rs. 160 on transportation. He sold the stationery at the marked price. Find his profit percentage.

(a) 12
(b) 121/2
(c) 111/9
(d) 10

Q75. Suman and Lata working together can complete a task in 8 days. If Lata can complete the same task in 12 days, then how many days will Suman take to complete the same task?

(a) 15
(b) 24
(c) 10
(d) 18

GENERAL AWARENESS

Q76. Ministry of Finance introduced a new form called Form 26AS for:

(a) job application
(b) school admission application
(c) e-Visa application
(d) tax payers

Q77. IC 1101 is a _____.

(a) satellite
(b) supernova
(c) asteroid
(d) galaxy

Q78. Which of the following states had the highest per capita income for the year 2019-2020?

(a) Goa
(b) Gujarat
(c) Sikkim
(d) Kerala

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Q79. Which of the following was the first operating system written in 'C' language?

(a) Windows 95
(b) Xenix
(c) UNIX
(d) LINUX

Q80. Which of the following ministries launched the e-Sampada mobile app in December 2020?

(a) Ministry of Home Affairs
(b) Ministry of Agriculture and Farmers' Welfare
(c) Ministry of Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homoeopathy
(d) Ministry of Housing and Urban Affairs

Q81. In Indian history who were referred to as the 'atavika rajya'?

(a) South Indian kingdom
(b) Forest kingdom
(c) Mughal empire
(d) Republican state

Q82. Which of the following is NOT a correct match of Dargah and its respective location?

(a) Haji Ali Dargah - Mumbai
(b) Khwaja Qutbuddin Bakhtiyar Kaki Dargah - Delhi
(c) Shaikh Muinuddin Sijzi (chishti) Dargah - Ajmer
(d) Shaikh Nizamuddin Auliya Dargah - Agra

Q83. Which of the following is the correct full form of JPEG?

(a) Joint Photography Exports Group
(b) Joint Pixel Experts Group
(c) Joint Photographic Experts Group
(d) Joint Pixel Exports Group

Q84. Good Governance Day is observed annually on 25 December on the birth anniversary of _____.

(a) Jawaharlal Nehru
(b) Rajiv Gandhi
(c) P. V. Narasimha Rao
(d) Atal Bihari Vajpayee

Q85. To which of the following states does the dance drama ‘Khyal’ belong?

(a) Rajasthan
(b) Madhya Pradesh
(c) Gujarat
(d) Punjab

Q86. Who won the Chess.com's 2020 Junior Speed Online Chess Championship after beating Russia's Alexey Sarana?

(a) Nihal Sarin
(b) D Gukesh
(c) Magnus Carlsen
(d) Raunak Sadhwani

Q87. Which of the following statements about blood pressure is correct?

(a) The normal systolic pressure is about 80 mm of Hg and diastolic pressure is 120 mm of Hg.
(b) The normal systolic pressure is about 120 mm of Hg and diastolic pressure is 80 mm of Hg.
(c) The normal systolic pressure is about 160 mm of Hg and diastolic pressure is 80 mm of Hg.
(d) The normal systolic pressure is about 72 mm of Hg and diastolic pressure is 35 mm of Hg.

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Q88. Ujjain is on the banks of river _____.

(a) Sarayu
(b) Dibang
(c) Shipra
(d) Saraswati

Q89. Who among the following is NOT a part of the committee, which is constructed to provide suggestions to the Prime Minister regarding the appointment of a chief commissioner of Central Information Commission?

(a) Speaker of the Lok Sabha
(b) Prime Minister
(c) A Union Cabinet Minister appointed by Prime Minister
(d) Leader of Opposition in Lok Sabha

Q90. Which Indian actor received the 'Crystal Award' at the World Economic Forum 2020?

(a) Kareena Kapoor
(b) Katrina Kaif
(c) Deepika Padukone
(d) Alia Bhatt

Q91. Who among the following represented India at the international level in shooting?

(a) Amit Panghal
(b) Ashalata Devi
(c) Anjum Moudgil
(d) Aditi Chauhan

Q92. Which country apart from India was declared a winner at the 2020 Online FIDE Chess Olympiad?

(a) Brazil
(b) Sweden
(c) Finland
(d) Russia

Q93. Which of the following rivers is a tributary of Krishna River?

(a) Tungabhadra
(b) Hemavati
(c) Bhavani
(d) Amravati

Q94. Which of the following festivals is celebrated for fertility and better fortune in Jharkhand?

(a) Sohrai
(b) Jawa
(c) Sarhul
(d) Karam

Q95. Where in India will you find India's largest Tulip garden?

(a) Srinagar
(b) Lansdowne
(c) Dehradun
(d) Munsiyari

Q96. For which of the following categories were Paul R Milgrom and Robert B Wilson awarded the Nobel Prize in 2020?

(a) Chemistry
(b) Economic Sciences
(c) Physiology or Medicine
(d) Literature

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Q97. How many recognised essential vitamins are there as on March 2021?

(a) 13
(b) 15
(c) 11
(d) 9

Q98. Which of the following national parks is situated in Kerala?

(a) Eravikulam National Park
(b) Sanjay Gandhi National Park
(c) Kaziranga National Park
(d) Tadoba National Park

Q99. Which of the following was the first High Court established in India?

(a) Madras
(b) Bombay
(c) Delhi
(d) Calcutta

Q100. Who among the following was the captain of women's hockey team of India as of December 2020?

(a) Grace Ekka
(b) Rajani Etimarpu
(c) Rani Rampal
(d) Reena Khokhar

ANSWER KEY

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

SOLUTIONS

Q1. Answer: (c) To act in a dangerous and risky way

The correct answer is option 3) i.e., 'To act in a dangerous and risky way'.

Key Points

• To play with fire is an idiomatic expression which means doing something dangerous that may result in great harm and cause many problems.

• You're playing with fire if you try to cheat on the test.

• This means that option 3 - To act in a dangerous and risky way is the most appropriate meaning of the given idiom.

Q2. Answer: (a) Benifitiary

The incorrect spelling is option 1) i.e., 'Benifitiary'.

Key Points

• Let us explore the meaning of the given options

• Benifitiary - There is no such word in English or we can say that there is a spelling mistake in the word.
• Strategy - a plan of action designed to achieve a long-term or overall aim.
• Tractor - a powerful motor vehicle with large rear wheels, used chiefly on farms for hauling equipment and trailers.
• Territory -an area of land under the jurisdiction of a ruler or state.
• Hence, the correct answer is option 1.

Additional Information

• If we replace the letter t with the letter c in the word benifitiary, we get the word beneficiary.
• Beneficiary is a proper English word and it means a person who derives advantage from something, especially a trust, will, or life insurance policy.

Q3. Answer: (d) ABDC

The correct answer is option 4) i.e., 'ABDC'.

Key Points

• When arranging sentences, it is easier to order the first few; and then eliminate the options accordingly.
• The first sentence of a paragraph is usually independent and introduces a topic. The second one provides more information about it.
• Here, only A is independent and introduces an American celebrity Oprah Winfrey as the subject of the passage under discussion.
• So, A becomes the first sentence of the passage.
• The only option that shows A as the first sentence is option 4.
• As per option 4, the full sequence is : ABDC.
• A. Oprah Winfrey is one of the richest and most powerful American women, loved and admired by everyone.
• B. When she was only 19, she became the first black female assistant to Nashville's evening news anchor.
• D. In 1986, Oprah became the television presenter of her own talk show called 'The Oprah Winfrey Show'.
• C. But Oprah had a very difficult and traumatic childhood.
• This sequence is logically correct, making option 4 the correct answer.

Q4. Answer: (b) launch

The correct answer is option 2) i.e., 'launch'.

Key Points

• Commence means to begin.
• The meaning of the given options are as follows -
• resume - begin again or continue after a pause or interruption.
• launch - start or set in motion (an activity or enterprise).
• conclude - bring or come to an end.
• complete - finish making or doing.
• From the above meanings it is clear that launch is the appropriate synonym for the word commence.
• This makes option 2 the correct answer.

Q5. Answer: (d) in fashion

The solution is in Hindi. Read it online.

Q6. Answer: (a) so outstanding performance

The correct answer is option 1) i.e., 'so outstanding performance'.

Key Points

• The error lies with the part '... so outstanding performance ...'
• Outstanding performance is a noun phrase.
• So is an adverb that can only be used with adjectives.
• Hence, the phrase '... so outstanding performance ...' is incorrect.
• The correct word to use here is the determiner such followed by the article an.

So the correct sentence is- Every participant gave/ such an outstanding performance/ that it became difficult/ to choose the winner.

Q7. Answer: (c) CADB

The correct answer is option 3) i.e., 'CADB'.

Key Points

• When arranging sentences, it is easier to order the first few; and then eliminate the options accordingly.

• The first sentence of a paragraph is usually independent and introduces a topic. The second one provides more information about it.

• Here, only C is independent and introduces the topic which speaks about how the subject faces difficulties while travelling.

• So, C becomes the first sentence of the passage.

• The only option that shows C as the first sentence is option 3.

• As per option 3, the full sequence is : CADB.

• C. I always have catastrophes when I travel.

• A. Once, on an airplane, I leaned over to tie my shoelace.

• D. Just at that moment, the person in the seat ahead threw his seat back into full recline.

• B. I found myself pinned helplessly in the crash position, unable to move.

• This sequence is logically correct, making option 3 the correct answer.

Q8. Answer: (a) desirous

The correct answer is option 1) i.e., 'desirous'.

Key Points

• The given blank needs an adjective that goes with the following preposition of.

• There are no definite rules when it comes to combining adjectives with prepositions, but a few patterns exist.

• One such pattern is to memorize the prepositions used with adjectives' associated noun forms.

• Let us look at the noun forms of the given adjectives and the prepositions they associate with -

• desirous - noun form → desire - associated preposition → of

• eager - noun form → eagerness - associated preposition → for

• keen - noun form → keenness - associated preposition → with

• interested - noun form → interest - associated preposition → in

• From the above explanation it is clear that desirous is the correct word for the given blank.

• This makes option 1 the correct answer.

Q9. Answer: (c) Fixation

The solution is in Hindi. Read it online.

Q10. Answer: (a) to go on

The correct answer is option 1) i.e., 'to go on'.

Key Points

• The underlined part uses the verb going to. showing or feeling opposition or dislike; unfriendly.

• Going to is not tense. It is a special structure that we use to talk about the future.

• It is incorrect in this case as it does not reflect the intention of the workers' union.

• To make the underlined part correct, we need to use the infinitive to show the intention of the workers' union.

• Thus, to go on is the correct replacement for the underlined part.

• This makes option 1 the correct answer.

Hence, the correct sentence is- The workers' union has threatened to go on an indefinite strike

Q11. Answer: (d) Hostile

The solution is in Hindi. Read it online.

Q12. Answer: (c) affect

The correct answer is option 3) i.e., 'affect'.

Key Points

• The given blank needs a verb to show the negative reaction process on a relationship because of a certain condition.

• The correct verb for the given blank is affect.

• Affect, when used as a verb, means to act on or change someone or something.

• Thus, option 3 is the correct answer.

Additional Information

• Effect is generally used a noun and means a change that results when something is done or happens. (We use affect as a verb (an action word) and effect as a noun (an object word).)

• Strengthen is a verb which means to make or become stronger.

• Improve is a verb which means to make or become better.

Q13. Answer: (c) expire

The solution is in Hindi. Read it online.

Q14. Answer: (a) boundry

The correct answer is option 1) i.e., 'boundry'.

Key Points

• Let us explore the meaning of the given options

• boundry - There is no such word in English or we can say that there is a spelling mistake in the word.

• library - a building or room containing collections of books, periodicals, and sometimes films and recorded music for use or borrowing by the public or the members of an institution.

• already - before or by now or the time in question.

• installment -a sum of money due as one of several equal payments for something, spread over an agreed period of time.

• The alternative spelling for the word is- Instalment both the spellings are correct. There is a difference of U.S English and British English.

• Hence, the correct answer is option 1.

Additional Information

• If we add the letter "a" in the word boundry, we get the word boundary.

• "Boundary" is a proper English word and it means a line that marks the limits of an area; a dividing line.

Q15. Answer: (c) a lower salary than

The correct answer is option 3) i.e., 'a lower salary than'.

Key Points

• Let us analyze the given sentence first.

• In the given sentence a comparison is happening between the salary earned by a school teacher and a college lecturer.

• Salary in this instance is an uncountable noun.

• Fewer is a determiner that is used with countable nouns.

• So, we need to change fewer to lower.

• We also need to add the conjunction than to introduce the second element in a comparison (a college lecturer).

• Thus, the underlined part should be replaced with a lower salary than.

• This makes option 3 the correct answer.

The correct sentence is- A school teacher earns a lower salary than a college lecturer.

Q16. Answer: (b) Fresh flowers have been put by her in the flower vase.

The correct answer is option 2) i.e., 'Fresh flowers have been put by her in the flower vase.'

Key Points

• The given sentence is in present perfect tense (has put)

• It has the following sentence pattern - Subject (she) + has + past participle (put) + object (fresh flowers) + adjunct (in the flower vase).

• To change to passive form, we need to use the following sentence pattern - Original object + has been + past participle + by original subject + adjunct

• It should be noted that the original subject of the active voice sentence is the pronoun she.

• In passive voice this changes to her.

• Following the above sentence pattern we get the following sentence - Fresh flowers have been put by her in the flower vase.

• This makes option 2 the correct answer.

Q17. Answer: (d) but he had got

The correct answer is option 4) i.e., 'but he had got'.

Key Points

• There is a grammatical error in the following part of the sentence - '... / he had got/ ...'

• The second clause in the given sentence '... but he ... now' is in the present tense as the word now is used.
• Had is the third person singular past tense and past participle of 'have.'
• Had should be replaced with has which is the third person singular present tense of 'have'. We need to consider the third person as the subject (my) is talking about their brother.
• Thus, it cannot be used in a present tense clause.
• So, the error lies in '... / he had got/ ...', making option 4 the correct answer.

So the correct sentence is- My brother lost / his job during the lockdown, / but he has got / a new job now.

Q18. Answer: (b) She said to the car mechanic, “My car is giving very low mileage.”

The correct answer is option 2) i.e., 'She said to the car mechanic, “My car is giving very low mileage.”'

Key Points

• When we change indirect speech to direct speech, we follow these rules -
• The verb told is converted to the reporting verb said to.
• Remove the conjunction that and replace it with quotation marks.
• Put a comma before the statement.
• Write the first word of the statement with capital letter.
• Change the past tense into present tense wherever the reporting verb is in the past tense. (was giving → is giving)
• Following these rules, we get the following direct speech - She said to the car mechanic, “My car is giving very low mileage.

Q19. Answer: (b) Mimic

The correct answer is option 2) i.e., 'mimic'.

Key Points

• Imitate means to copy someone's speech or mannerisms, especially for comic effect.
• The meaning of the given options are as follows -
• Effect - a change which is a result or consequence of an action or other cause.
• Mimic - imitate (someone or their actions or words), especially in order to entertain or ridicule.
• Disregard - pay no attention to; ignore.
• Enlighten - give (someone) greater knowledge and understanding about a subject or situation.
• From the above meanings it is clear that mimic is the appropriate synonym for the word imitate.
• This makes option 2 the correct answer.

Q20. Answer: (a) cultured

The correct answer is option 1) i.e., 'cultured'.

Key Points

• Savage means (of a person or group) primitive and uncivilized.
• The meaning of the given options are as follows -
• Cultured - characterized by refined taste and manners and good education.
• Vicious - deliberately cruel or violent.
• Brutal - savagely violent.
• Violent - using or involving physical force intended to hurt, damage, or kill someone or something.
• From the above meanings it is clear that cultured is the appropriate antonym for the word savage.
• This makes option 1 the correct answer.

Additional Information

• Vicious, brutal and violent are synonymous to the word savage.

Q21. Answer: (a) myself

The correct answer is option 1) i.e., 'myself'.

Key Points

• The given blank needs a reflexive pronoun.
• This is because the object of the sentence is the same as the subject.(I)
• Since the subject pronoun is I, the reflexive pronoun is myself.
• This makes option 1 the correct filler for the given blank.

Additional Information

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• When the subject pronoun is he, the reflexive pronoun is himself.
• When the subject pronoun is it, the reflexive pronoun is itself.
• When the subject pronoun is she, the reflexive pronoun is herself.

Q22. Answer: (c) enough

The correct answer is option 3) i.e., 'enough'.

Key Points

• The given blank needs a determiner to show that the princess loved as much as necessary to grant freedom.
• The correct determiner in this case is enough as it means as much or as many as required.
• Thus, option 3 is the correct answer.

Additional Information

• So much as a determiner means to a great degree or very much: She wanted to go so much.
• Much as a determiner means a great amount or quantity of. I didn't get much sleep.
• So is an adverb and means to such a great extent.

Q23. Answer: (d) way

The correct answer is option 4) i.e., 'way'.

Key Points

• Let us look at the meaning of the given options -
• path - a way or track laid down for walking or made by continual treading.
• cage - a structure of bars or wires in which birds or other animals are confined.
• turn - move in a circular direction wholly or partly round an axis or point.
• way - one's characteristic or habitual manner of behaviour or expression.
• The given blank needs a word that would imply how the princess wanted the little bird to be happy in her own fashion.
• THus, option 4 or way is the correct word for the given blank.

Q24. Answer: (b) terrified

The correct answer is option 2) i.e., 'terrified'.

Key Points

• The given blank needs an adjective to describe how the bird feels.
• Terrified which means very frightened is the correct word for the given blank.
• Thus, option 2 is the correct answer.

Additional Information

• Terrible is an adjective which means extremely bad or serious.
• Terrifying is an adjective which means causing extreme fear.
• Terrorizing is a gerund which means to create and maintain a state of extreme fear and distress in (someone); fill with terror.

Q25. Answer: (d) loveliest

The correct answer is option 4) i.e., 'loveliest'.

Key Points

• The given blank needs a superlative adjective form.
• From the given options, it is clear that this form is the superlative form of the adjective lovely.
• Thus, option 4 or loveliest is the correct word for the given blank.

Additional Information

• When we form the degrees of comparison for adjectives, we need to follow certain rules.
• In the given case, lovely is the positive that ends in 'y' and has a consonant (L) before it.
• To form the comparative and the superlative, we change 'y' into 'i' and then add 'er' and 'est' respectively.
• Lovely → Lovelier → Loveliest

Q26. Answer: (a) [figure]

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

1)

This arrow rotate a clockwise direction in the square of each corner and also rotate a clockwise direction at its own position.

2)

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This arrow rotate an anti-clockwise direction in the square of each corner and also rotate an anti-clockwise direction at its own position.

3)

This arrow rotate a clockwise direction in the square of each corner and rotate an anti-clockwise direction at its own position.

4)

This triangle rotate an anti-clockwise direction in the square of each corner and rotate a clockwise direction at its own position.

Hence, ‘option 1’ is the correct answer.

Q27. Answer: (c) (11, 9, 396)

The Logic here is as follows:

(1^(st) Number × 2^(nd) number) × 4 = 3^(rd) Number

In (6, 8, 192)

(1^(st) Number × 2^(nd) number) × 4

= (6 × 8) × 4

= 48 × 4

= 192 = 3^(rd) Number

Now check the all options,

Option (1) (12, 13, 263)

(1^(st) Number × 2^(nd) number) × 4

= (12 × 13) × 4

= 156 × 4

= 624 ≠ 3^(rd) Number

Option (2) (8, 11, 180)

(1^(st) Number × 2^(nd) number) × 4

= (8 × 11) × 4

= 88 × 4

= 352 ≠ 3^(rd) Number

Option (3) (11, 9, 396)

(1^(st) Number × 2^(nd) number) × 4

= (11× 9) × 4

= 99 × 4

= 396 = 3^(rd) Number

Option (4) (7, 5, 78)

(1^(st) Number × 2^(nd) number) × 4

= (7 × 5) × 4

= 35 × 4

= 140 ≠ 3^(rd) Number

Hence, the correct answer is "(11, 9, 396)".

Q28. Answer: (c) 55

The shaded part represents is the number of librarians are there who are also post-graduates.

The number of librarians are there who are also post-graduates = 25 + 30 = 55

Hence, ‘55’ is the correct answer.

Q29. Answer: (c) OZBVI

The table is alphabets place value:

The pattern followed here is:

MAGIC is written as NZTRX

Similarly,

Hence, 'LAYER' is coded as "OZBVI".

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Q30. Answer: (b) 66 years

Let,

Ankit present age = a years

Ankit's father present age = b years

Ankit's sister present age = c years

Given:

1) Ankit is 30 years younger than his father.

=> a = b – 30 → Eq. (1)

2) After 4 years Ankit's sister will be half the age of her father.

=> c + 4 = (b + 4) / 2

=> (c + 4) × 2 = b + 4

=> 2c + 8 = b + 4

=> b – 2c = 4 → Eq. (2)

3) The total of the present ages of Ankit and his sister is 67 years.

=> a + c = 67 → Eq. (3)

From eq. (1) put the value of a in eq. (3)

=> (b – 30) + c = 67

=> c = 67 - (b – 30)

=> c = 67 - b + 30

=> c = 97 – b

This value of c put in eq. (2)

=> b – 2 × (97 – b) = 4

=> b – 194 + 2b = 4

=> 3b = 4 + 194

=> 3b = 198

=> b = 66

Hence, the present age of Ankit's father is "66" years.

Q31. Answer: (d) ÷ and −, 4 and 12

According to the BODMAS rule:

Option 1 : × and +, 12 and 4

Given:

12 × 5 + 7 ÷ 4 – 6 = 25

After interchange the signs;

4 + 5 × 7 ÷ 12 – 6 = 25

By BODMAS rule

4 + 5 × 0.584 – 6 = 25

4 + 2.92 – 6 = 25

6.92 – 6 = 25

0.92 = 25 (LHS ≠ RHS)

Option 2 : × and ÷, 7 and 6

Given:

12 × 5 + 7 ÷ 4 – 6 = 25

After interchange the signs;

12 ÷ 5 + 6 × 4 – 7 = 25

By BODMAS rule

2.4 + 6 × 4 – 7 = 25

2.4 + 24 – 7 = 25

26.4 – 7 = 25

19.4 = 25 (LHS ≠ RHS)

Option 3 : × and −, 6 and 5

Given:

12 × 5 + 7 ÷ 4 – 6 = 25

After interchange the signs;

12 - 5 + 7 ÷ 4 × 6 = 25

By BODMAS rule

12 - 6 + 1.75 × 5 = 25

12 - 6 + 8.75 = 25

20.75 - 6 = 25

14.75 = 25 (LHS ≠ RHS)

Option 4 : ÷ and −, 4 and 12

Given:

12 × 5 + 7 ÷ 4 – 6 = 25

After interchange the signs;

4 × 5 + 7 - 12 ÷ 6 = 25

By BODMAS rule

4 × 5 + 7 - 2 = 25

20 + 7 - 2 = 25

27 - 2 = 25

25 = 25 (LHS = RHS)

Hence, the answer is “÷ and −, 4 and 12”.

Q32. Answer: (c) 4, 5, 3, 1, 2

According to the sequence in the dictionary:

The correct order of the given words is:

4. Moratorium

5. Morphed

3. Mortgage

1. Mosaic

2. Mosquito

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

Q33. Answer: (d) [figure]

The image obtained when the paper is unfolded is,

Hence, "option 4" is the correct answer.

Q34. Answer: (c) Either conclusion I or II follows

Statements:

All bottles are utensils.

All kitchens are utensils.

The least possible diagram for the given statements is as follows

Conclusions:

I. No bottle is a kitchen → False (It is possible but not definite)

II. Some bottles are kitchens → False (It is possible but not definite)

III. No utensil is a bottle → False (it is not a possibility because already statement given all bottles are utensils so some utensils are definitely bottle)

Conclusion I and II are complementary pairs.

Hence, “Either conclusion I or II follows”.

Q35. Answer: (d) 132618181826722

The table is alphabets place value:

The pattern followed here is:

Step 1: Consonants coded as its alphabet place value numerical.

Step 2: Vowel’s coded as opposite alphabet place value numerical.

'FOSTER' is coded as '61219202218'

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And,
'CARGO' is coded as '32618712'
Similarly,
Hence, 'MARRIAGE' is coded as "132618181826722".

Q36. Answer: (c) VYAE

Table show alphabet serial number –
The pattern followed is,
All follow the same pattern, except 'VYAE'.
Hence, “VYAE” is the odd one.

Q37. Answer: (a) KLE

The logic here is,
FOR : MVY
Similarly,
DEX : ?
Hence, "KLE" is the correct answer.

Q38. Answer: (a) [figure]

The embedded part of this image is:
Hence, option (1) is the correct answer.

Q39. Answer: (b) 15

The number of triangles in the given figure is:
So, there are a total of 15 triangles in the figure.
Hence, ‘15’ is the correct answer.

Q40. Answer: (c) 29

The pattern followed here is,
Let (1^(st) number : 2^(nd) number)
2^(nd) number ÷ 7 = 1^(st) number
Now follow the steps:
26 : 182
=> 182 ÷ 7 = 26 = 1^(st) number
And,
38 : 266
=> 266 ÷ 7 = 38 = 1^(st) number
Similarly,
? : 203
=> 203 ÷ 7 = 29 = 1^(st) number
Hence, "29" is correct answer.

Q41. Answer: (b) 250

The pattern followed here is:
Hence, '250' is the correct answer.

Q42. Answer: (d) Agriculture

The logic followed here is:
Given:
‘Soldier’ is related to ‘Security’ → The job of a soldier is to security.
Similarly,
‘Farmer’ is related to ‘Agriculture’→ The job of a farmer is to agriculture.
Hence, ‘Agriculture’ is the correct answer.

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Q43. Answer: (d) Only A and D

The opposite surface of the open dice can be found by the below method:-

• Alternate surfaces are opposite to each other.

• No two opposite surfaces are touched by side or by corners

So, by using the above rule we can find the opposite surface of open dice.

Below are the opposite surfaces:-

Alphabets	Opposite alphabets
m	o
a	c
d	e

Note:- Two opposite faces are never seen together or adjacent to each other.

Given:

In figure (A): None of the opposite faces are seen together nor they are adjacent to each other. Thus this cube can be made.

In figure (B): 'o' and 'm' are opposite faces but here they are seen together which is wrong. Thus this cube cannot be made.

In figure (C): 'a' and 'c' are opposite faces but here they are seen together which is wrong. Thus this cube cannot be made.

In figure (D): None of the opposite faces are seen together nor they are adjacent to each other. Thus this cube can be made.

Hence, 'Only A and D' is the correct answer.

Q44. Answer: (b) [figure]

The correct mirror image of the given figure when the mirror is held at the right side is:

Hence, "option (2)" is the correct answer.

Additional InformationIn Mirror image left side and right side changed vice-versa where top and bottom remain same.

Reflection of an object into the water is its water image. It appears by inverting an object vertically i.e. upside down.

The water image of the figure looks like the mirror image of the figure in case the mirror is horizontally at the bottom of the figure.

Water image is just a reflection where top and bottom part of the images changed where left and right side of the image remain same.

Q45. Answer: (a) Cousin

Preparing the family tree using the following symbols,

Given:

Mahendra is the son of Naman, who is the brother of Reema's mother.

1) Mahendra is the son of Naman.

2) Naman is the brother of Reema's mother.

We can draw following Family Tree from the information given above:

Hence, the Mahendra is the "Cousin" of Reema.

Q46. Answer: (d) p r q p q r

Given :- p _ q q r _ p p q _ r r _ p q _ _ r

By checking options and substituting accordingly.

Option (1) r p q r p q → p r q q r p - p p q q r r - r p q p q r

Option (2) q p r q r q → p q q q r p - p p q r r r - q p q r q r

Option (3) q q p p r r → p q q q r q - p p q p r r - p p q r r r

Option (4) p r q p q r → p p q q r r - p p q q r r - p p q q r r

• Option (4) gives a pattern of p p q q r r - p p q q r r - p p q q r r.

Hence, 'p r q p q r' is the correct answer.

Q47. Answer: (c) (12, 16, 372)

The Logic here is as follows:

{(1^(st) Number)² + (2^(nd) number)^(2)} - (1^(st) Number + 2^(nd) number) = 3^(rd) Number

In (15, 7, 252)

{(1^(st) Number)² + (2^(nd) number)^(2)} - (1^(st) Number + 2^(nd) number)

= (15² + 7²) - (15 + 7)

= (225 + 49) - (15 + 7)
= 274 - 22
= 252 = 3^(rd) Number
Now check the all options,
Option (1) (23, 9, 510)
= (23^2 + 9^2) - (23 + 9)
= (529 + 81) - (23 + 9)
= 610 - 32
= 578 ≠ 3^(rd) Number
Option (2) (27, 10, 520)
= (27^2 + 10^2) - (27 + 10)
= (729 + 100) - (27 + 10)
= 829 - 37
= 792 ≠ 3^(rd) Number
Option 3) (12, 16, 372)
{(1^(st) Number)² + (2^(nd) number)^(2)} - (1^(st) Number + 2^(nd) number)
= (12^2 + 16^2) - (12 + 16)
= (144 + 256) - (12 + 16)
= 400 - 28
= 372 = 3^(rd) Number
Option (4) (16, 14, 451)
= (16^2 + 14^2) - (16 + 14)
= (256 + 196) - (16 + 14)
= 452 - 30
= 422 ≠ 3^(rd) Number
Hence, the correct answer is "(12, 16, 372)".

Q48. Answer: (b) Chisel : Carve

The logic followed here is:
Axe : Chop → An axe is used for chopping wood.
Similarly,
Chisel : Carve → A chisel is used for curving stone.
Hence, ‘Chisel : Carve’ is the correct answer.

Q49. Answer: (c) 3 : 30

The logic is here is:
(1^(st) number)³ + 6 = 2^(nd) number.
Option (1): 7 : 349
$(7)^3$ + 6 = 343 + 6 = 349 = 2^(nd) number
This option follows the pattern.
Option (2): 4 : 70
$(4)^3$ + 6 = 64 + 6 = 70 = 2^(nd) number
This option do not follow the pattern.
Option (3): 3 : 30
Now, follow the logic:
$(3)^3$ + 6 = 27 + 6 = 33 ≠ 2^(nd) number
This option follows the pattern.
Option (4): 8 : 518
$(8)^3$ + 6 = 512 + 6 = 518 = 2^(nd) number
This option follows the pattern.
Hence, pair “3 : 30” is an odd one.

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Q50. Answer: (c) Dry Fruits

The logic followed here is:

Except option (3), all words are the types of dry fuits.

Option (1) Almond → Almond is a type of dry fruits.

Option (2) Cashew → Cashew is a type of dry fruits.

Option (3) Dry Fruits → There are many types of dry fruits like almond, cashew and walnuts.

Option (4) Walnuts → Walnuts is a type of dry fruits.

Hence, “Dry Fruits” is an odd one.

Q51. Answer: (a) 76

Given

Average of the squares of four consecutive odd natural numbers = 201

concept

Average = Sum of all observation/Number of observation

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

Explanation

Let the four odd consecutive natural numbers are x, (x + 2), (x + 4) and (x + 6)

$[(x)^2 + (x + 2)^2 + (x + 4)^2 + (x + 6)^2]/4 = 201$

$\Rightarrow [x^2 + x^2 + 4 + 4x + x^2 + 16 + 8x + x^2 + 36 + 12x]/4 = 201$

$\Rightarrow [4x^2 + 24x + 56]/4 = 201$

$\Rightarrow x^2 + 6x + 14 = 201$

$\Rightarrow x^2 + 6x - 187 = 0$

$\Rightarrow x^2 + 17x - 11x - 187 = 0$

$\Rightarrow x(x + 17) - 11(x + 17) = 0$

$\Rightarrow (x - 11) (x + 17) = 0$

$\Rightarrow x = 11$ and $x = - 17$

Largest number is 17 i.e.(11 + 6)

7 times of largest number = 17 × 7

=> 119

Smallest number = 11

Three times of smallest number = 33

Required average = (119 + 33)/2

=> 152/2

=> 76

Therefore The average of 7 times of the largest number and 3 times of the smallest number is 76.

Shortcut Trick

Average lies between smallest and largest data.

we consider 4 four consecutive odd natural numbers like as 5,7 ,9,11 so $11^2 = 121 < 201$ (given average)

so we consider a odd largest number which square is greater than 201 we know that $17^2 = 289$

so 4 four consecutive odd natural numbers = $11^2 + 13^2 + 15^2 + 17^2 = 804$ (average =201)

As per the question, average = $(7 \times 17 + 3 \times 11)/2 = 76$

Q52. Answer: (c) 70°

Alternate Methodangle BOC = 90° + angle A/2

=> 90° + angle A/2 = 125

=> angle A/2 = 35

=> angle A = 70°

Traditional method:

Given

the angle between the internal bisectors of two angles angle B and angle C of a triangle ABC is 125°

Concept

Angle sum property of a triangle such that sum of three angles of a triangle is 180°

Explanation
In triangle BOC
angle OBC + angle BCO + angle BOC = 180°
=> 1over 2 angle B + 1over 2 angle C + 125° = 180°
=> 1over 2 (angle B + angle C) = 180° - 125°
=> 1over 2 (angle B + angle C) = 55°
=> angle B + angle C = 110° ---- (1)
In triangle ABC
=> angle A + angle B + angle C = 180°
=> angle A + 110° = 180 (from 1)
=> angle A = 180° - 110°
=> angle A = 70°
Therefore The value of angle A is 70°.
Shortcut Trickangle BOC = 90° + 1over 2 angle A
125° = 90° + 1over 2 angle A
35° = 1over 2 angle A
angle A = 70°

Q53. Answer: (b) 9.9%

Alternate Method
Angle subtended by April and May = 77° + 54° = 131°
Angle subtended by February and March = 45° + 99° = 144°
The difference in the angle = 144° - 131°
=> 13°
Percentage difference = (13/131) × 100 = 9.9%
Therefore The percentage difference is 9.9%.
Traditional method:

Months	Number of computer sold
January	1275
February	675
March	1485
April	810
May	1155
Total	5400

Number of computer sold in February and March = 675 + 1485
=> 2160
Number of computer sold in April and May = 810 + 1155
=> 1965
Required percentage = (195/1965) × 100
=> 9.92%
Therefore The total number of computer sold in February and March than the number of computer sold in April and May is 9.9 %

Q54. Answer: (c) 3.75 cm

Given
Radius of circle = 5 cm
Distance of chord from the centre = 4 cm
THEOREM
The perpendicular to a chord bisects the chord, if drawn from the centre of the circle.
Concept
In ΔAOI

$OA^2 = OI^2 + AI^2$ (By pythagorus theorem)

$(5)^2 = (4)^2 + AI^2$

$25 = 16 + AI^2$

$25 - 16 = AI^2$

$9 = AI^2$

$3 = AI$

ΔOAI and Δ API are similar triangles

OAover OI = APover AI

=> 5over 4 = APover 3

=> (5 × 3)over 4 = AP

AP = 3.75 cm

Therefore The length of the tangent AP is 3.75 cm

Q55. Answer: (d) 142

Given

x4 - 12x2 + 1 = 0

To find

x^4+1/(x^4)

Formula used

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

Calculation

x4 - 12x2 + 1 = 0

=> $x^4 + 1 = 12x^2$

divide by x^2 on both sides, we get

• 1over x^2 = $12x^2$over x^2

x^2 + 1over x^2 = 12

squaring on both sides

x^4 + 1over x^4 + 2 = 144

x^4 + 1over x^4 = 144 - 2

x^4 + 1over x^4 = 142

Therefore The value of x^4+1/(x^4) is 142.

Q56. Answer: (c) 2

Given

$(\sin^2 \theta)/(\tan^2 \theta - \sin^2 \theta) = 5$

Identities

$\sin\theta$ = 1over $\operatorname{cosec}\theta$

tan A = sinAover cosA

sec A = 1over cosA

$\sin^2 A + \cos^2 A = 1$

Calculation

$(\sin^2 \theta)/(\tan^2 \theta - \sin^2 \theta) = 5$

$\sin^2\theta = 5 \tan^2\theta - 5\sin^2 \theta$

=> $6 \sin^2\theta = 5 \sin^2\theta/\cos^2\theta$

=> $6 = 5/\cos^2\theta$

=> $6 \cos^2\theta = 5$

=> $\cos^2\theta = 5/6$ ---- (1)

=> $\sec^2\theta = 6/5$

$\sin^2\theta + \cos^2\theta = 1$

$\sin^2\theta + (5/6) = 1$

=> $\sin^2\theta = 1 - (5/6)$ (from 1)

=> $\sin^2\theta = 1/6$

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=> $\text{cosec}^2\theta = 6$

$\cot^2\theta = \cos^2\theta / \sin^2\theta$

=> (5/6)/(1/6)

=> 5

=> [24 × (5/6) - 15 × (6/5)]/(6 × 6 - 7 × 5)

=> (20 - 18)/(36 - 35)

=> 2

Therefore The value of $(24\cos^2\theta-15\sec^2\theta)/(6\ \text{cosec}^2\ \theta-7\cot^2\theta)$ is 2.

Q57. Answer: (a) 3

Alternate MethodLet n = 17,

The value of 8n2 + 7

=> 8 × 172 + 7

=> 8 × 289 + 7

=> 2312 + 7 = 2319

2319/12, remaining = 3.

Therefore The remaining is 3.

Given

n is divided by 12, the remainder is 5

Concept

Dividend = Divisor × quotient + Remainder

Explanation

$n = 12q + 5$

Squaring on both sides

=> $n^2= (12q + 5)^2$

=> $n^2= 144q^2 + 25 + 120q$ ---- (1)

=> $8n^2+ 7 = 8(144q^2 + 25 + 120q) + 7$ (from 1)

=> $8n2 + 7= 1152\ q^2 + 200 + 960q + 7$

=> $8n2 + 7 =1152q^2 + 960q + 207$

First and second term is divisible by 12, but thirds term is not fully divisible by 12

There remainder will be 3.

Therefore When $8n^2 + 7$ is divisible by 12 then remainder is 3.

Q58. Answer: (b) Rs. 45,000

Shortcut Trick

Net percentage interest for 4 years at 9.5% = 9.5% × 4 = 38%

Net percentage interest for 3 years at 12.5% = 12.5% × 3 = 37.5%

Difference in interest percentage = 38% − 37.5% = 0.5%

According to the question, 0.5% of Sum = Rs. 225

Total Sum (100%) = (225 ÷ 0.5) × 100 = 45,000

Therefore The correct answer is Rs. 45,000.

Alternate Method

Given:

Rate 1 (R1) = 9.5%, Time 1 (T1) = 4 years

Rate 2 (R2) = 12.5%, Time 2 (T2) = 3 years

Difference in Simple Interest = Rs. 225

Formula Used:

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

Calculations:

=> Let the borrowed Sum be P.

=> SI1 = (P × 9.5 × 4) ÷ 100 = 38P ÷ 100

=> SI2 = (P × 12.5 × 3) ÷ 100 = 37.5P ÷ 100

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=> SI1 − SI2 = 225

=> (38P − 37.5P) ÷ 100 = 225

=> 0.5P ÷ 100 = 225

=> 0.5P = 22500

=> P = 22500 ÷ 0.5 = 45,000

Therefore The correct answer is Rs. 45,000.

Additional Information

Simple Interest vs Compound Interest

While Simple Interest is calculated only on the principal, Compound Interest is calculated on the principal plus any accumulated interest from previous periods.

Effective Rate of Interest

For Simple Interest, the effective rate for a period is simply the product of the Rate and Time (R × T).

Sum Calculation from Difference

If the difference between interests is D, the Principal P = (D × 100) ÷ (R1T1 − R2T2).

Q59. Answer: (a) -61/8

Concept

BODMAS rule applies here.

First solve bracket values, after it solves the values related with 'Of', Then Divided value, afterward Multiply values, Then addition and subtractions values.

Calculation

(32/3-57/9÷1/3×12/13)/(2/3 of 11/3÷1/3)

=> [11/3 - 52/9 × 3 × 15/13]over2/3 ×4/3 ×3

=> [11/3 -20/1]over 8/9 × 3

=> 11 - 60over 3 × 3over 8

=> - 49over 8

=> -61/8

Therefore The value of (32/3-57/9÷1/3×12/13)/(2/3 of 11/3÷1/3) is -61/8

Q60. Answer: (d) 22√2

Shortcut Trick

If $x - 1/x = k$, then $x^3 - 1/x^3 = k^3 + 3k$

Here, $k = 2\sqrt{2}$

Required value = $(2\sqrt{2})^3 + 3 \times (2\sqrt{2})$

=> $16\sqrt{2} + 6\sqrt{2} = 22\sqrt{2}$

Therefore The correct answer is $22\sqrt{2}$.

Alternate Method

Given:

$x - 1/x = 2\sqrt{2}$

Formula Used:

$(a - b)^3 = a^3 - b^3 - 3ab(a - b)$

Calculations:

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

Substitute a = x and b = 1/x into the formula:

=> $x^3 - 1/x^3 = (x - 1/x)^3 + 3 \times x \times (1/x) \times (x - 1/x)$

=> $x^3 - 1/x^3 = (x - 1/x)^3 + 3(x - 1/x)$

Put the given value of $(x - 1/x) = 2\sqrt{2}$:

=> $x^3 - 1/x^3 = (2\sqrt{2})^3 + 3 \times 2\sqrt{2}$

=> $(2\sqrt{2})^3 = 2^3 \times (\sqrt{2})^3 = 8 \times 2\sqrt{2} = 16\sqrt{2}$

=> $x^3 - 1/x^3 = 16\sqrt{2} + 6\sqrt{2}$

=> $x^3 - 1/x^3 = 22\sqrt{2}$

Therefore The correct answer is $22\sqrt{2}$.

Additional Information

Sum of Cubes Identity

If $x + 1/x = k$, then $x^3 + 1/x^3 = k^3 - 3k$.

Sum of Squares Identities

If $x + 1/x = k$, then $x^2 + 1/x^2 = k^2 - 2$. Conversely, if $x - 1/x = k$, then $x^2 + 1/x^2 = k^2 + 2$.

Sign Conversion Rules

If $x + 1/x = k$, then $x - 1/x = \sqrt{(k^2 - 4)}$. Similarly, if $x - 1/x = k$, then $x + 1/x = \sqrt{(k^2 + 4)}$.

Q61. Answer: (c) 70

Shortcut TrickPercentage of B.com students = 20%

Difference in percentage girls and boys in B.com = 75 - 25 = 50%

The required difference = 50% of 20% 700

=> 1/2 × 1/5 × 700 = 70

Traditional method:

Courses	Number of students
B.Sc Physics	70
B.Sc Chemistry	84
B.Sc computer science	175
B.Com	140
BBA	91
B.Sc Maths	140

Number of boys in B.Com = 75% of 140

=> 105

Number of girls in b.com = 140 - 105

=> 35

Required difference = 105 - 35

=> 70

Therefore The difference between the number of boys and the number of girls admitted in B.Com is 70.

Q62. Answer: (b) √7/2

Given

3 cot A = 4 tan A

Identities

cot A = 1 over tan A

$Sec^2 A - tan^2 A = 1$

Calculation

=> 3 cot A = 4 tan A

=> 3 × 1 over tanA = 4 tan A

=> tan2 A= 3 over 4

=> sec2A - 1= 3 over 4

=> sec2A = 3 over 4 + 1

=> sec2A = 7 over 4

=> sec A = √7/2

Therefore The value of secA is √7/2

Q63. Answer: (d) 30

Number of students score 10 or more marks = 7 + 8 + 10 + 5

=> 30

Therefore 30 students scored 10 or more marks.

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Q64. Answer: (a) 7 hours

Shortcut Trick

Mohan speed ratio = 100 : 150 = 2 : 3

Mohan time ratio = 3 : 2 (since distance is constant)

Time difference = 3 − 2 = 1 unit

Actual time difference = (+2 hours) − (−1 hour) = 3 hours

1 unit = 3 hours => Mohan original time = 3 × 3 = 9 hours

Kishore time = 9 − 2 = 7 hours

Therefore The correct answer is 7 hours.

Alternate Method

Given: Total distance = 63 km

Let Kishore time = T_k and Mohan initial time = T_m

Formula: Time = Distance ÷ Speed

Distance = 63 km

T−1h (Fast)

T (Kishore)

T+2h (Slow)

Gap = 3 hours

=> Case 1: T_m − T_k = 2 => T_m = T_k + 2

=> Let Mohan initial speed = S_m

=> Case 2: New speed = 1.5S_m

=> New time (T_m′) = 63 ÷ (1.5S_m) = (1 ÷ 1.5) × (63 ÷ S_m) = (2/3)T_m

=> T_k − T_m′ = 1 => T_k − (2/3)T_m = 1

=> Substitute T_k = T_m − 2: (T_m − 2) − (2/3)T_m = 1

=> (1/3)T_m = 3 => T_m = 9 hours

=> T_k = 9 − 2 = 7 hours

Therefore The correct answer is 7 hours.

Additional Information

Speed-Time Relation

When distance is constant, speed is inversely proportional to time (S1/S2 = T2/T1).

Average Speed Formula

For the same distance traveled at two different speeds x and y, Average Speed = 2xy ÷ (x + y).

Unit Conversion

To convert km/hr to m/s, multiply by 5/18. To convert m/s to km/hr, multiply by 18/5.

Q65. Answer: (c) 0

Given

$(\cos^2 20°+\cos^2 70°)/(\sin^2 90°)-\tan^2 45°$

Identity

$\sin^2A + \cos^2A = 1$

$\tan 45° = 1$

$\sin 90° = 1$

$\cos (90° - A) = \sin A$

Calculation

=> $\cos^2 20° + \cos^2(90 - 20)$ over $\sin^2 90° - \tan^2 45°$

=> $\cos^2 20° + \sin^2 20°$ over $1 - 1$

=> 1- 1

=> 0

Therefore The value of $(\cos^2 20°+\cos^2 70°)/(\sin^2 90°)-\tan^2 45°$ is 0.

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Q66. Answer: (d) 83

Given

x+81/x=18

Calculation

x+81/x=18

$x^2 + 81 = 18x$

$=> x^2 - 18x + 81 = 0$

$=> x^2 - 9x - 9x + 81 = 0$

$=> x(x - 9) - 9(x - 9) = 0$

$=> (x - 9) (x - 9) = 0$

$=> x = 9, x = 9$

Value of $x^2+162/(x^2)$

$=> (9)^2 + 162$over 9^2

$=> 81 + 2$

$=> 83$

Therefore The value of $x^2+162/(x^2)$ is 83.

Q67. Answer: (d) 3 cm

Given

AB = 6 cm, BC = 7 cm and AC = 8 cm

Concept

Internal angle bisector theorem

The internal bisector of an angle of a triangle divides the opposite side internally in the ratio of the sides containing the angle.

In ΔABC, AE bisects angle A.

(BE/EC) = (AB/AC)

BE/(7 - BE) = 6/8

8 BE = 42 - 6BE

14 BE = 42

BE = 42/14

BE = 3 cm

Therefore The length of BE is 3 cm.

Q68. Answer: (a) 20%

ections	Number of students	Number of boys	Number of girls
A	60	36	24
B	54	26	28
C	57	34	23
D	51	28	23
E	42	•	42
F	36	20	16

Total number of boys in sections A, B and D = 36 + 26 + 28

=> 90

Total number of girls in sections A, B and D = 24 + 28 + 23

=> 75

Required percentage = (15/75) × 100

=> 20%

Therefore The total number of boys in sections A, B and D together is 20% more than the total number of girls in sections A, B and D together.

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Q69. Answer: (c) 63

Given

Ratio of two numbers = 8 : 13

Sum of their square = 2097

Explanation

Let the numbers are 8x and 13x

According to question

$(8x)^2 + (13x)^2 = 2097$

$\Rightarrow 64x^2 + 169x^2 = 2097$

$\Rightarrow 233x^2 = 2097$

$\Rightarrow x^2 = 9$

$\Rightarrow x = 3$

So, the numbers are 24(8 × 3) and 39(13 × 3)

Therefore The sum of the two numbers is 63 i.e.(24 + 39)

Shortcut Trick

Option method :-

Whatever will be the sum of the ratios. It will be in the multiple of the number.

Here the sum of the ratio is 21 and there is only one option(3) with its original multiple.

Q70. Answer: (a) 920

Given

Total population of village = 7640

Population of village increase to 9214.

Explanation

Let the present number of males and females population in a village is x and y

x + y = 7640

x = 7640 - y ---- (1)

(x + 25% of x) + (y + 15% of y) = 9214

$\Rightarrow (125x/100) + (115y/100) = 9214$

$\Rightarrow (125x + 115y)/100 = 9214$

$\Rightarrow 125x + 115y = 921400$

Divide both sides by 5, we get

$\Rightarrow 25x + 23y = 921400$

$\Rightarrow 25(7640 - y) + 23y = 184280$

$\Rightarrow 191000 - 25y + 23y = 184280$

$\Rightarrow 191000 - 2y = 184280$

$\Rightarrow 6720 = 2y$

$\Rightarrow 3360 = y$

so, x = 7640 - 3360

x = Rs 4280

Required difference = 4280 - 3360

$\Rightarrow 920$

Therefore The difference between the present population of males and females in the village is 920.

Alternate MethodMales increased = 25% = (15% + 10%)

Females increased = 15%

The population of town = 7640

$\Rightarrow (7640 \times 15\%)$

$\Rightarrow (7640 \times 15/100) = 1146$

Then,

$\Rightarrow (9214 – 7640) = 1574$

Then,

$\Rightarrow (1574 – 1146) = 428$

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Extra males,
=> 10% = 428
=> 100% = [(428 × 100)/10]
=> 4280
Females = (7640 – 4280) = 3360
Now,
The difference between the present population of males and females in the village = (4280 – 3360)
=> 920
Therefore The required difference is 920.

Q71. Answer: (a) 2.5 cm

Shortcut Trick
Let the radius of the circle be r.
Given Circumference = 2πr = aπ => a = 2r
Given Area = πr² = bπ => b = r²
Ratio a/b = 2r / r² = 2/r
Since a/b = 4/5 => 2/r = 4/5 => 4r = 10 => r = 2.5 cm.
Therefore The correct answer is 2.5 cm.
Alternate Method
Given:
Circumference of the circle = aπ
Area of the circle = bπ
Ratio of a to b = a ÷ b = 4 ÷ 5
Formula Used:
Circumference of a circle = 2πr
Area of a circle = πr²
r = 2.5 cm
Circumference = aπ
Area = bπ
a : b = 4 : 5
Calculations:
=> Circumference = 2πr = aπ
=> a = 2r
=> Area = πr² = bπ
=> b = r²
=> Given ratio a ÷ b = 4 ÷ 5
=> 2r ÷ r² = 4 ÷ 5
=> 2 ÷ r = 4 ÷ 5
=> 4r = 10
=> r = 10 ÷ 4 = 2.5 cm
Therefore The correct answer is 2.5 cm.
Additional Information
Area of a Semi-Circle
The area of a semi-circle is exactly half of the area of a full circle: Area = 1/2 × πr².
Perimeter of a Semi-Circle
The perimeter includes the curved arc and the straight diameter: Perimeter = πr + 2r.
Area of a Sector
The area of a sector with a central angle θ in degrees is given by: Area = (θ ÷ 360) × πr².
Length of an Arc
The length of an arc subtending angle θ at the center is given by: Length = (θ ÷ 360) × 2πr.

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Q72. Answer: (c) 216 cm2

Given

Perimeter of a rectangle = 60 cm

ratio of sides = 3 : 2

Formula used

Area of rectangle = Length × Breadth

Perimeter of rectangle = 2(Length + Breadth)

Calculation

Let the sides of rectangle are 3x and 2x

so, 2(3x + 2x) = 60

=> 2(5x) = 60

=> 10x = 60

=> x = 6

Sides of rectangle is 18 cm i.e. (3 × 6) and 12 cm i.e. (2 × 6)

Area of rectangle = 18 × 12

=> 216 cm²

Therefore Area of rectangle is 216 cm².

Q73. Answer: (c) Rs. 110

Given

Discount % = 10

Cost price = RS. 4950

Formula used

Cost Price = Market Price - Discount

Calculation

let the market price is Rs.x

so, 4950 = x - 10% of x

=> 4950 = 90x/100

=> x = (4950 × 100)/90

=> x = 5500

if discount rate is 12%

Then, cost price = 5500 - 12% of 5500

=> 5500 - 660

=> Rs. 4840

Money gained at 12% discount = RS.(4950 - 4840)

=> Rs. 110

Therefore Customer would save Rs. 110, if he had bargained to get 12% discount.

Q74. Answer: (c) 111/9

Given

Market price = Rs 8000

Discount = 12%

Formula used

Cost price = Market Price - Discount

Profit % = profit/(cost price) × 100

Calculation

Cost price = Market Price - Discount

=> 8000 - 12% of 8000

=> 8000 - 960

=> Rs 7040

Total cost price =Rs(7040 + 160)

=>Rs 7200

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Profit = Rs (8000 - 7200)

=>Rs 800

Profit % = 800/7200 × 100

=> 111/9 %

Therefore Amit profit percentage is 111/9 %.

Q75. Answer: (b) 24

Given

Suman and Lata together complete a work in 8 days.

Concept

Firstly find the one day work done by each partner

Explanation

Let the Suman completes a work in x days.

So, work done by Suman in one day = 1/x

According to question

=> 1over x + 1over 12 = 1over 8

=> 1over x = 1over 8 - 1over 12

=> 1over x = (3 - 2)over 24

=> 1over x = 1over 24

=> x = 24

Therefore Suman will take 24 days to complete a work.

Shortcut Trick

if C and D together do a work in X days, while C alone do work in X days, then D alone do a work in = XYover Y - X

=> (8 × 12) over (12 - 8) = 96over 4 = 24 days

Q76. Answer: (d) tax payers

The correct answer is Tax Payers.

Key Points

• Form 26AS, also known as Annual Information Statement (AIS).

• Form 26AS to provide details of pending/ completed income tax proceedings, the status of income tax demand and refund along with details of specified financial transactions undertaken by the taxpayer during a financial year.

• Form 26AS expanded to incorporate 8 new particulars, including foreign remittances, interest on income tax refund, off-market transactions, dividend income/ purchase of mutual funds, the detailed breakup of salary and information from Income Tax Return (ITR) of another person.

Additional Information

• Form 26AS was initially introduced as a tax credit statement, containing details of taxes deducted from the income of taxpayers (TDS/ TCS), advance tax or any self-assessment tax paid by the taxpayers or income tax refund received during the financial year.

• Form 26AS is the major mandatory document needed prior to furnishing the income tax return (ITR).

Q77. Answer: (d) galaxy

T he correct answer is Galaxy.

Key Points

• IC 1101 is a supergiant elliptical galaxy located in the constellation Virgo.

• IC 1101 is a supergiant elliptical galaxy at the centre of the Abell 2029 galaxy cluster and is one of the largest known galaxies.

• IC 1101 was discovered by the German-born British astronomer William Herschel on June 19, 1790.

• IC 1101 has a radius of about 3 million light years but given its distance, the actual size is debatable.

Additional Information

• A supernova is the biggest explosion that humans have ever seen.

• Each blast is the extremely bright, super-powerful explosion of a star.

• A galaxy is a huge collection of gas, dust, and billions of stars and their solar systems.

• A galaxy is held together by gravity.

• Our galaxy is the Milky Way.

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Q78. Answer: (a) Goa

The correct answer is Goa.

Key Points

• The Ministry of Statistics and Programme Implementation (report released on 7 January 2020), the state per capita income of Goa is the highest in the country.

• Bihar has the lowest per capita income.

• The per-capita net national income of India rose to Rs 1,35,050/annum in 2019-20.

• This was 1,26,406 during 2018-19.

• In terms of NSDP per capita (INR at Current prices), Goa has the highest per capita income Rs 467,998 in FY 2018-19.

• Delhi is in second place with Rs. 365,529.

Additional Information

• Per capita income is the average income per head of population per period.

• Net national product (NNP) is gross national product (GNP), the total value of finished goods and services produced by a country's citizens overseas and domestically, minus depreciation.

• NNP is often examined on an annual basis as a way to measure a nation's success in continuing minimum production standards.

• It is computed by dividing the national income of the country by the total population, i.e. Per capita income = National Income ÷ Population

• It is used as a measure of the standard of living between countries.

Q79. Answer: (c) UNIX

The correct answer is UNIX.

• UNIX is an operating system that was first developed in the 1960s

• Operating system, we mean the suite of programs which make the computer work.

• The operating system is a stable, multi-user, multi-tasking system for servers, desktops and laptops.

Key Points

• UNIX is an operating system that was original AT&T.

• UNIX development started in 1969 at the Bell Labs research centre by Ken Thompson, Dennis Ritchie.

• UNIX was widely used for Internet servers, workstations, and mainframe computers.

Additional Information

• Windows 10 is a major release of Microsoft's Windows NT operating system.

• Xenix is a discontinued version of the Unix operating system for various microcomputer platforms, licensed by Microsoft from AT&T Corporation in the late 1970s

• Linux is an open-source multi-tasking, multi-user operating system.

Q80. Answer: (d) Ministry of Housing and Urban Affairs

The correct answer is Ministry of Housing and Urban Affairs.

Key Points

• "E-Sampada" Web Portal and Mobile App are launched by the Ministry of Housing and Urban Affairs on 25 December 2020.

• It is launched to serve a single platform to manage the estate services of the Government Of India.

• The app and web portal is developed by the National Informatics Centre (NIC).

• This app and portal will help to bring uniformity in estate systems and organizations of India with the motto of ‘One Nation, One System’.

Q81. Answer: (b) Forest kingdom

The correct answer is Forest kingdom.

Key Points

• Atavika Rajya referred to the Forest Kingdom.

• It was in the Gupta Dynasty.

• Samudragupta made the kings of the forest states (atavika Rajya) in central India his servants.

Additional Information

Name of the Gupta Kings	Titles assumed
Sri Gupta (Founder of the empire)	Adiraja, Maharaja

Ghatotkacha	Maharaja
Chandragupta I	Maharajadhiraja
Samudragupta	• Parakramank(marked with powers), - Apratiratha(Unrivalled chariot warrior), - Apprativaryavirya(Irresistible valor), - Vyaghraparakramanka (Processor of a tiger), - Sarvo raj ochchhetta(Uprooter of all kings)
Chandragupta II	Vikramaditya, Vikramanak Devagupta, Devaraja, Devashri
Kumaragupa	Mahendraditya, Vyaghrabala, Parakramam
Skandagupta	Vikramaditya, Shakropana

Q82. Answer: (d) Shaikh Nizamuddin Auliya Dargah - Agra

The correct answer is Shaikh Nizamuddin Auliya Dargah - Agra.

Key Points

• Shaikh Nizamuddin Auliya Dargah Situated in the Nizamuddin West area of Delhi.

• Nizamuddin Dargah is the dargah (mausoleum) of the Sufi saint Khwaja Nizamuddin Auliya (1238–1325 CE).

• Nizamuddin Dargah built-in 1325 by Khizr Khan, the son of Alauddin Khalji (r. 1296-1316), and is the oldest building in the Nizamuddin area.

Additional Information

Dargah	Location	Built for
Haji Ali Dargah	Mumbai	15th-century Sufi saint, Pir Haji Ali Shah Bukhari.
Khwaja Qutbuddin Bakhtiyar Kaki Dargah	Delhi	Qutb ul Aqtab Khwaja Sayyid Muhammad Bakhtiyar AlHussaini, Qutbuddin Bakhtiar Kaki (born 1173 – died 1235) was a Sunni Muslim Sufi mystic
Shaikh Muinuddin Sijzi (chishti) Dargah	Ajmer	Ajmer, with its connection to Sufi saint Khwaja Muin-ud-Din Chisti, is world-renowned for its dargah. The Sufi saint came to Ajmer from Persia in 1192 and died here in 1236.
Shaikh Nizamuddin Auliya Dargah	Delhi	Syed Muhammad Nizamuddin Auliya was one of the most famous Sufi saints from the Indian subcontinent region. Also known as Hazrat Nizamuddin.(1238-1325)

Q83. Answer: (c) Joint Photographic Experts Group

The correct answer is Joint Photographic Experts Group (JPEG).

Key Points

• JPEG stands for Joint Photographic Experts Group.

• JPEG is a standard image format for containing lossy and compressed image data.

• JPEG is a unique compression feature, that allows JPEG files to be used widely on the Internet, Computers, and Mobile Devices.

Additional Information

• Some important abbreviations used in Computer:

• BIOS - Basic Input Output System

• CAD - Computer-Aided Design

• EDVAC - Electronic Discrete Variable Automatic Computer

• EPROM - Erasable Programmable Read-Only Memory

• FORTRAN - FORmula TRANslation

• GPRS - General Packet Radio Service

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Q84. Answer: (d) Atal Bihari Vajpayee

The correct answer is Atal Bihari Vajpayee.

Key Points

• The Good Governance Day (GGD) is observed on December 25 of every year in India.

• The birth anniversary of former Prime Minister and Bharat Ratna Atal Bihari Vajpayee is celebrated as Good Governance Day across the country.

• The day aims to let the citizens, the students, who are the future of the country know about the government's responsibilities and duties that it needs to fulfill.

Additional Information

• Shri Atal Bihari Vajpayee was born on 25 December 1924 in Gwalior Madhya Pradesh.

• He was one of the founding members of the Bharatiya Jana Sangh and later became its national president.

• Atal Bihari Vajpayee won the election from Lucknow parliamentary constituency and became the tenth Prime Minister of India.

• Atal Bihari Vajpayee has given his membership in both the Lok Sabha and the Rajya Sabha.

• He was awarded Bharat Ratna, India's highest honour in the year 2015.

• Atal Bihari Vajpayee was the first foreign minister of India who give a speech in Hindi at the United Nations.

• He died in Delhi on 16 August 2018 due to prolonged illness.

Q85. Answer: (a) Rajasthan

The correct answer is Rajasthan.

Key Points.

• Khyal is a folk play that involves dance also.

• Women do not participate in Bhawai dances.

• Khayal dance is performed by men of the Bhawai tribe of Rajasthan.

• It is believed that during the 16th century, the Jats only practised this folk dance.

• The Bhawai tribes picked it up from the Jats and continued to date.

Additional Information

Folk dances of Rajasthan are as follows:

• Gidar dance is one of the famous folk dances of Rajasthan.

• It is a famous dance of the Shekhawati region performed on the occasion of ' Holi '.

• Only men perform this dance.

• The main area of Gidad dance is Shekhawati, in which the areas of Sikar, Laxmangarh, Churu, Jhunjhunu, Ramgarh and Sujangarh etc. are counted.

• Dhol Dance: This is the famous dance of Jalore which is done by men.

• Four or five dhols are beaten together in it.

• Dhol dance is generally performed at a wedding ceremony.

• Bamarsia Dance: A large Nagada is used in this dance.

• Holi's song and Rasia are also sung along with dance.

• This is performed in the regions of Bharatpur and Alwar.

• Dandiya Dance: It is a popular dance of Marwar.

• In this dance, a group of men dances with long sticks in their hands.

Q86. Answer: (a) Nihal Sarin

The correct answer is Nihal Sarin.

Key Points

• Nihal Sarin won Chess.com's 2020 Junior Speed Online Chess Championship after beating Russia's Alexey Sarana.

• A chess child prodigy from Kerala.

• Nihal Sarin became India’s 53rd Grandmaster after attaining his third and final Grand Master-norm in the Abu Dhabi Masters

• He is only the third grandmaster from Kerala after GN Gopal and SL Narayanan.

• He is the twelfth youngest grandmaster in chess history.

Additional Information

• Dommaraju Gukesh (born 29 May 2006), commonly referred to as Gukesh D, is a chess player from India.

• At 12 years, 7 months and 17 days, D. Gukesh became India's youngest Grandmaster on 15 January 2019.

• Sven Magnus Carlsen is a Norwegian Chess Grandmaster.

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• He is the current World Chess Champion, World Rapid Chess Champion, and World Blitz Chess Champion.
• Raunak Sadhwani became India's 65th Grandmaster.
• He defeated Russian GM Alexander Motylev to become the Grandmaster at the age of 13 years.

Q87. Answer: (b) The normal systolic pressure is about 120 mm of Hg and diastolic pressure is 80 mm of Hg.

The correct answer is The normal systolic pressure is about 120 mm of Hg and diastolic pressure is 80 mm of Hg.

Key Points

• The normal blood pressure range is 120/80 mm.
• The top number (120) is known as the systolic number while the bottom number (80) is known as the diastolic number.

Additional Information

• The blood pressure is measured by an instrument known as a sphygmomanometer.
• The study of blood is known as Haematology.
• The normal volume of blood in an adult human being is 4.7 to 5 litres.
• William Harvey was the first scientist to describe accurately how blood is pumped around the body by the heart.
• Karl Landsteiner classified the blood of human beings into A, B, AB, and O.
• Blood is purified mainly by lungs which remove gaseous impurities like CO2 and kidneys which remove other impurities.

Q88. Answer: (c) Shipra

The correct answer is Shipra.

Key Points

• Ujjain is located on the banks of River Shipra.
• Ujjain in Madhya Pradesh is one of the holiest cities in India.
• River Shipra is a tributary of the Chambal River.

Additional Information

• There are 7 cities located on the banks of River Yamuna.
• Prayagraj, Kaushambi, Hamirpur, Bateshwar, Agra, Vrindavan, and Mathura.
• There are 2 cities located on the banks of River Rapti.
• Gorakhpur and Barhaj.
• There are 3 cities located on the banks of River Gomti.
• Jaunpur, Sultanpur, and Lucknow.
• There are 4 cities located on the banks of River Saryu.
• Ayodhya, Gola, Badhalganj, and Barhaj.

Q89. Answer: (a) Speaker of the Lok Sabha

The correct answer is Speaker of Lok Sabha.

Key Points

• Chief commissioner of Central Information Commission is appointed by the President on the recommendation of a committee consisting of
• the Prime Minister as Chairperson,
• the Leader of Opposition in the Lok Sabha and
• a Union Cabinet Minister nominated by the Prime Minister.
• Hence Speaker of Lok of Sabha is correct answer.

Additional Information

• Central Information Commission was established by the Central Government in 2005.
• Chief Information Commissioner is not a constitutional body, so there is no provision of it in the Indian Construction.
• Post of Central Information Commission is derived from the provision of Section-12 RTI Act, 2005.
• Yashwardhan Kumar Sinhahad been appointed as the 11th Central Information Commission CIC of India.
• The Central Information Commission falls under Ministry of Personnel.

Q90. Answer: (c) Deepika Padukone

The correct answer is Deepika Padukone.

Key Points

• Bollywood actor Deepika Padukone has been awarded the Crystal Award 2020 at the annual meeting of the World Economic Forum.
• Deepika Padukone won the prize for her leadership in raising mental health awareness.
• The World Economic Forum Annual Meeting took place in Davos-Klosters, Switzerland from 21-24 January 2020.
• The theme of the meeting was, “Stakeholders for a Cohesive and Sustainable World.”

Additional Information

Winners of Crystal Award 2020:

Awardees	Awarded For
Theaster Gates	For his leadership in creating sustainable communities.
Jin Xing	For her leadership in shaping inclusive cultural norms
Lynette Wallworth	For her leadership in creating inclusive narratives

Q91. Answer: (c) Anjum Moudgil

The correct answer is Anjum Moudgil.
• Anjum Moudgil is one of India's top shooters in rifle events.
• She competes in the 10m air rifle and the 50m rifle 3 positions events.
• The Government of India conferred her with the Arjuna Award in 2019.
• Anjum Moudgil is employed by Punjab Police as a sub-inspector.

Additional Information

Players name	Sport
Amit Panghal	Boxer
Ashalata Devi	Football player
Anjum Moudgil	Shooter
Aditi Chauhan	Football player

Q92. Answer: (d) Russia

The correct answer is Russia.
• India, Russia declared joint winners of the 2020 Online FIDE Chess Olympiad.
• India and Russia were declared joint winners of the 2020 Online FIDE Chess Olympiad after the final was marred by internet disconnection last night.
• The international chess federation Fide's president Arkady Dvorkovich decided to award the gold medal to both teams.

Additional Information
• The FIDE Online Chess Olympiad was held for the first time due to the coronavirus pandemic.
• The first round of the final ended in a 3-3 draw with all six games finishing in a stalemate.
• This is the biggest team championship in chess as around 163 countries took part in the online tournament.

Q93. Answer: (a) Tungabhadra

The correct answer is Tungabhadra.

Key Points
• The major tributaries of the Krishna River are:
• Left: Bhima, Dindi, Peddavagu, Musi, Paleru, Munneru.
• Right: Kudali (Niranjna) Venna, Koyna, Panchganga, Dudhaganga, Ghataprabha, Malaprabha, Tungabhadra.

Additional Information
• The Krishna River
• It originates from the Western Ghats range near Mahabaleshwar in the state of Maharashtra.
• The Krishna River has a large and very fertile delta, which continues northeast towards the Godavari River region.
• The length of the Krishna river is about 1400 km.
• The Krishna River has the two largest tributaries, the Bhima (North) and the Tungabhadra (South).
• Koyna River is also a minor tributary of it on which Koyna Dam is situated.

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Q94. Answer: (b) Jawa

The correct answer is Jawa.

• The unmarried tribal girls celebrate the Jawa festival, which has its own kind of song and dance.

• This is held mainly for the expectation of good fertility and a better household.

Additional Information

• Sohrai is a harvest festival of the Indian states of Bihar, Jharkhand, Chhattisgarh, Odisha, and W est Bengal.

• It is also called the cattle festival.

• Sarhul is the festival of the New Year celebrated in the state of Jharkhand by the tribal communities as part of the local Sarna religion.

• Karam is a harvest festival celebrated in the Indian states of Jharkhand, Bihar, Madhya Pradesh, Chhattisgarh, Assam, Odisha and West Bengal.

Q95. Answer: (a) Srinagar

The correct answer is Srinagar.

Key Points

• Tulip garden is located in Srinagar Jammu and Kashmir.

• The Indira Gandhi Memorial Tulip garden, previously Model Floriculture Center.

Additional Information

• Tulip Festival is an annual celebration that aims to showcase the range of flowers in the garden as a part of tourism efforts by the Government of Jammu and Kashmir.

• It is the largest tulip garden in Asia spread over an area of about 30 hectares. It is situated on the foothills of Zabarwan Range with an overview of Dal Lake.

• The tulip garden was opened in 2007 with the aim of boosting floriculture and tourism in the Kashmir Valley by then Chief Minister Ghulam Nabi Azad.

• The garden is built on sloping ground in a terraced fashion consisting of seven terraces.

• Apart from tulips, many other species of flowers like hyacinths, daffodils, and ranunculus can be spotted here.

Q96. Answer: (b) Economic Sciences

The correct answer is Economic Sciences.

• American economists Paul Milgrom and Robert Wilson have been awarded the 2020 Nobel Prize in economic sciences.

• Milgrom and Wilson, who are professors at Stanford University in California, were recognized for theoretical discoveries that improved how auctions work.

• They also designed auction formats for goods and services that are difficult to sell in a traditional way, such as radio frequencies.

Additional Information

Nobel Prize Winners 2020

Field	Name
Medicine/ Physiology	Harvey J. Alter, Charles M. Rice, and Michael Houghton
Physics	1. Roger Penrose 2. Reinhard Genzel and Andrea Ghez
Chemistry	Emmanuelle Charpentier and Jennifer A. Doudna
Literature	Louise Glück
Peace	World Food Programme (WFP)
Economics	Paul Milgrom and Robert Wilson

Q97. Answer: (a) 13

The correct answer is 13.

Key Points

• There are 13 essential vitamins — vitamins A, C, D, E, K, and the B vitamins (thiamine, riboflavin, niacin, pantothenic acid, biotin, B6, B12, and folate).

• Vitamins and minerals are considered essential nutrients because acting in concert, they perform hundreds of roles in the body.

• They help shore up bones, heal wounds, and bolster your immune system.

Source: Click.)

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Additional Information

Vitamin	Function	Source	Deficiency
Vitamin A	Regulate Growth, Promotes Healthy Skin, Helps eye adapt a dim light, Maintenance healthy Tissue.	Diary product, Egg yolk, carrots, green vegetables.	Night Blindness, Retired Growth
Vitamins D	Absorption And lying down of calcium And phosphorous in bones and teeth.	Sunlight, Fish, Diary product, Fish liver oils.	Osteoporosis Bones, Dental Caries.
Vitamin E	Helps in Red blood cell Formation, protects Tissue against damage.	Wheat, nuts, whole cereals.egg yolk.	It is very rare but it could affect CNS.
Vitamin K	Needed for blood clotting, which means heap properly.	Green leafy, vegetable, cereals.	Preventing excess bleeding.
Vitamin B1(Thiamine)	Essential for releasing energy from carbohydrates, Help for normal functioning of the nervous system.	Meat, Oatmeal, Milk,	Fatigue, Beri-Beri, depression, disease of the nervous system.
Vitamin B2(Riboflavin)	Growth repair of body tissue, healthy eyes, and skin.	Milk, cheese, yeast extract.	Loss of appetite, swollen Tongue, cracked lips, eyes Infection.

Q98. Answer: (a) Eravikulam National Park

The correct answer is Eravikulam National Park.

• There are six national parks in Kerala:
• Eravikulam National Park,
• Silent Valley National Park,
• Periyar National Park,
• Pampadum Shola National Park,
• Anamudi Shola National Park and
• Mathikettan Shola National Park (Idukki National Park).

Trick to remember - Ravi Pyar Me Silent Shola Ho Gaya

Additional Information

• Sanjay Gandhi National Park is in Mumbai, Maharashtra.
• Kaziranga National Park is in Assam.
• Tadoba Andhari Tiger Reserve is a wildlife sanctuary in the Chandrapur district of Maharashtra.

Q99. Answer: (d) Calcutta

The correct answer is Calcutta.

Key Points

• The first high court of India was established in Calcutta.
• It was formerly called the High Court of Judicature at Fort William.
• It was issued under the Indian High Courts Act 1861.
• It was formally opened on 1 July 1862.
• Sir Barnes Peacock as its first Chief Justice of the Calcutta High Court.
• Justice Sumboo Nath Pandit was the first Indian to assume office as a Judge of the Calcutta High Court.

Additional Information

• The Supreme Court in India was established under the Regulating Act, of 1773.
• The Regulating Act of 1773 established a Supreme Court at Fort William, Calcutta.
• Harilal Jekisundas Kania was the first Chief Justice of India.
• The Supreme Court of India came into existence on 26 January 1950.
• It replaced both the Federal Court of India and the Judicial Committee of the Privy Council.

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Q100. Answer: (c) Rani Rampal

The correct answer is Rani Rampal.

Key Points

• Rani Rampal is an Indian field hockey player from Haryana.

• She is currently the Captain of the Indian Women's Hockey Team.

Additional Information

• The Indian women’s Hockey team captain Rani Rampal is the World Games Athlete of the Year 2019, thus becoming the first-ever hockey player to win the prestigious World Games Athlete of the Year Award.

• In 2020 the Government of India honored her with the Padma Shri.

• Rani played in the Champion's Challenge Tournament held in Kazan, Russia in June 2009 and powered India to a win by scoring 4 goals in the finals.

• At the age of 15, she was the youngest player in the national team which participated in the 2010 World Cup.

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