SSC CHSL 2020 Official Paper 25 (Held on: 9 Aug 2021 Shift 1) (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 INCORRECTLY spelt word.

(a) Tolerance
(b) Persistance
(c) Insistence
(d) Endurance

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

Paranoid

(a) Suspicious
(b) Patronising
(c) Impeccable
(d) Insignificant

Q3. 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'.

Had you not interfering in my affairs, I would have been in the US now.

(a) Was you not interfere
(b) No substitution
(c) Had you not interfered
(d) Have you not been interfering

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

Clandestine

(a) Honest
(b) Heavy
(c) Dressed
(d) Opaque

Q5. In the given sentence, identify the segment which contains a grammatical error.

Doctors say that home isolation is far more effective than hospitalise in cases of mild infection.

(a) than hospitalise
(b) isolation is
(c) Doctors say that
(d) far more effective

Q6. Select the option that can be used as a one-word substitute for the given group of words.

A person who presents a radio/television programme

(a) Idol
(b) Speaker

(c) Anchor
(d) Star

Q7. 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. His father shifted his own ambitions to those of his son, providing him with models and support for his first exhibition at the age of 13.

B. Pablo Picasso was the son of José Ruiz Blasco, a professor of drawing, and Maria Picasso López.

C. From that point his ability to experiment with what he learned and to develop new expressive means quickly allowed him to surpass his father's abilities.

D. His unusual adeptness for drawing began to manifest itself early, around the age of 10, when he became his father's pupil.

(a) BDCA
(b) BADC
(c) CDAB
(d) DCAB

Q8. Select the most appropriate synonym of the given word.

ABSOLUTE

(a) Partial
(b) Conditional
(c) Complete
(d) Limited

Q9. 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'.

Sometimes the family liking to play a game together after dinner.

(a) Sometimes the family likes
(b) No substitution required
(c) Sometimes the family are like
(d) Sometime the family likes

Q10. Select the most appropriate meaning of the given idiom.

Cook the books

(a) To write books on cooking
(b) To falsify financial records
(c) To be a good writer
(d) To be a good editor

Q11. The following sentence has been split into four segments. Identify the segment that contains a grammatical error.

The need today is for both sides / to introspect and re-examine the issue carefully / and resolve it amicably.

(a) to introspect and re-examine the issue carefully
(b) The need today is for both sides
(c) and resolve it amicably
(d) No error

Q12. Select the most appropriate ANTONYM of the given word.

BRAVERY

(a) courage
(b) cowardice
(c) heroism
(d) strength

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Q13. Select the INCORRECTLY spelt word.

(a) acknowlege
(b) acquire
(c) assimilate
(d) readable

Q14. Select the option that expresses the given sentence in passive voice.

Aditya passed the driving test quite easily.

(a) The driving test have been passed quite easily by Aditya.
(b) The driving test was passed quite easily by Aditya.
(c) The driving test could passed quite easily by Aditya.
(d) The driving test had passed quite easily by Aditya.

Q15. Given below are four jumbled sentences. Out of the given options, select the one that gives their correct order.

A. On either side of the trunk there are a few scattered tufts of short grass.
B. It is towards one of these fallen trees that I am now looking.
C. A very violent cyclonic storm has struck the forest, uprooting a number of trees.
D. The trunk of the tree is ripped apart and the branches are lying all around it.

(a) ADBC
(b) ABDC
(c) CDAB
(d) CBDA

Q16. Select the word which means the same as the group of words given.

One who has the power to do anything

(a) Omnipresent
(b) Multifaceted
(c) Omnipotent
(d) Multilingual

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

My niece said, “I have decided to take coaching in badminton.”

(a) My niece said she is deciding to take coaching in badminton.
(b) My niece told that I have decided to take coaching in badminton.
(c) My niece said that she had decided to take coaching in badminton.
(d) My niece said she will decide to take coaching in badminton.

Q18. Select the most appropriate word to fill in the blank.

Have you thought about the _____ of the recent decision you took?

(a) conclusions
(b) concerns
(c) complexes
(d) consequences

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

The headmaster _____ on the stage and gave a short speech.

(a) delighted
(b) prescribed
(c) remembered
(d) appeared

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Q20. Select the most appropriate meaning of the given idiom.

To cut corners

(a) not do a thing well in order to save money or effort
(b) cut something easily without spoiling it
(c) cut something into pieces
(d) be able to do a job effortlessly

Directions

In the following passage, some words have been deleted. Select the most appropriate option to fill in each blank.

Kanjirapally has the highest number of rainy days in Kerala. It receives the highest (1)___ of summer rains, winter rains and northeast monsoons in Kerala, (2)_ it one of the very few (3)_ in India enjoying equatorial rainforest type climate, with no (4) _ dry season. The well-distributed rainfall pattern of Kanjirapally is the (5)___ reason for the phenomenon of high yield of latex from rubber plantations in and around the town.

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

(a) extent
(b) expanse
(c) number
(d) amount

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

(a) made
(b) making
(c) makes
(d) make

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

(a) places
(b) spot
(c) space
(d) place

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

(a) divergent
(b) distinct
(c) diverse
(d) individual

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

(a) insignificant
(b) initial
(c) primary
(d) minor

GENERAL INTELLIGENCE

Q26. Which two digits and signs need to be interchanged so as to balance the given equation?

75 − 13 + 19 × 8 ÷ 5 = 93

(a) 3 and 5; − and ×
(b) 7 and 9; + and ×
(c) 5 and 8; − and ÷
(d) 8 and 3; × and ÷

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Q27. Select the combination of letters that when sequentially placed in the blanks of the given series will complete the series.

s _ t m s r _ m _ r t _ s _ t m

(a) r, t, r, m, s
(b) r, s, t, r, m
(c) r, s, m, r, t
(d) r, t, s, m, r

Q28. Arrange the following words in a meaningful sequence.

1. Manager
2. Worker
3. General manager
4. Supervisor
5. Owner

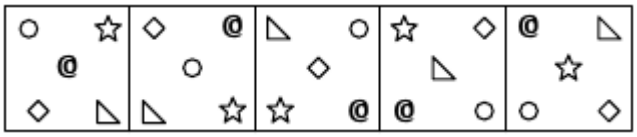
(a) 3, 5, 4, 1, 2
(b) 5, 3, 1, 4, 2
(c) 1, 3, 5, 2, 4
(d) 4, 3, 2, 1, 5

Q29. Select the option that is related to the third term in the same way as the second term is related to the first term.

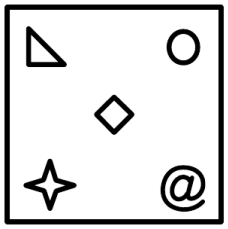
SHORTLY : OHSYLTR : : WALKING : ?

(a) AWKLNIG
(b) KLAWGNI
(c) LAWGNIK
(d) LAWNIKG

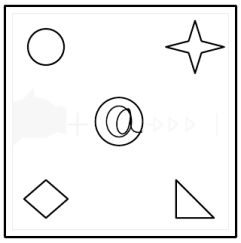
Q30. Select the figure that will come next in the following figure series.



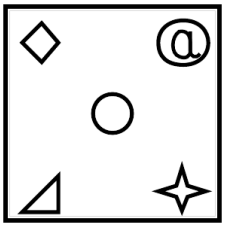
(a)



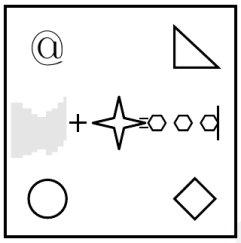
(b)



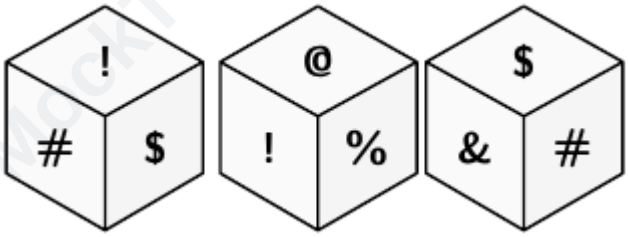
(c)



(d)



Q31. Three different positions of the same dice are shown. Which symbol is on the face opposite to the face having the symbol '!' ?



(a) %
(b) &
(c) $
(d) #

Q32. The cost of 5 pens and 12 pencils is Rs. 45. What would be the cost for 20 pens and 48 pencils?

(a) Rs. 235
(b) Rs. 210
(c) Rs. 180
(d) Rs. 135

Q33. In a certain code language, HUSBAND is written as ABDHNSU. How will HOUSEWIFE be written in that language?

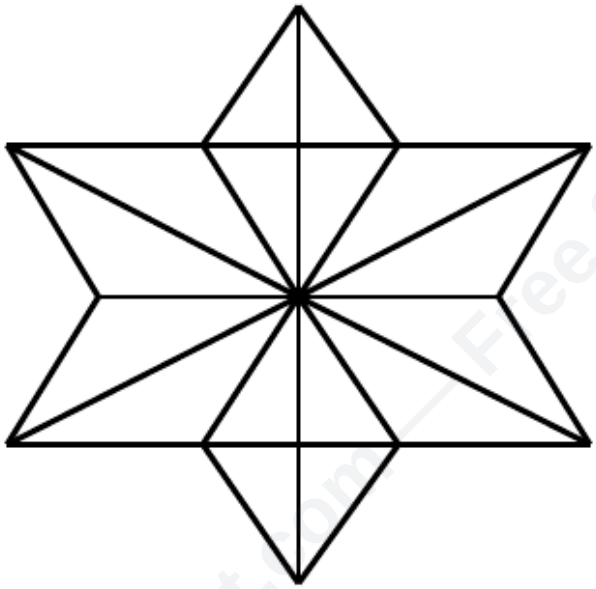
(a) EFIWESUOH
(b) ESEFUOIWH
(c) EEFHIOSUW
(d) EHEFOIUWS

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

(a) Steel
(b) Nickel
(c) Bronze
(d) Brass

Q35. Find the number of triangles in the given figure.

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(a) 34
(b) 26
(c) 24
(d) 22

Q36. If in a code language, ORGAN is coded as 17141518 and FINGER is coded as 56791418, then how will you code NECK?
(a) 351114
(b) 248741
(c) 532761
(d) 113497

Q37. Select the option that is related to the third word in the same way as the second word is related to the first word.
Wakeful : Sleepless : : Sitting : ?
(a) Situated
(b) Sedentary
(c) Steadily
(d) Idle Resting

Q38. Three of the following four letter-clusters are alike in a certain way and one is different. Select the odd one.
(a) JMSU
(b) IMPV
(c) YTSR
(d) AEKM

Q39. Select the word-pair in which the two words are related in the same way as are the two words in the given word-pair.
Mathematics : Teacher
(a) Science : Researcher
(b) Story : Book
(c) Hockey : Coach
(d) Student : Tutor

Q40. Select the number from among the given options that can replace the question mark (?) in the following series.
8, 8, 11, 11, 14, 14, ?
(a) 18
(b) 17
(c) 22

(d) 14

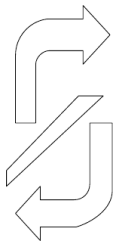
Q41. Select the correct mirror image of the given figure when the mirror is placed at the right side.



(a)



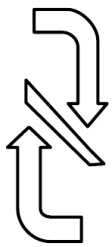
(b)



(c)



(d)



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Q42. Select the set in which the numbers are related in the same way as are the numbers of the following set.

(313, 2732, 98211)

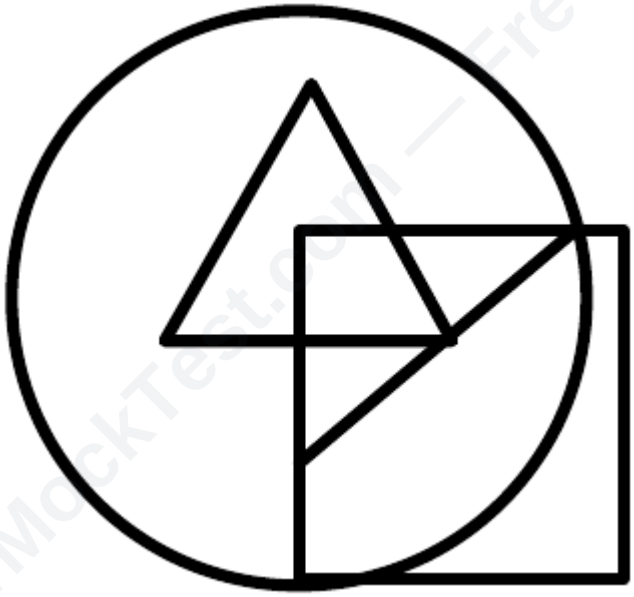
(a) (201, 4532, 65712)

(b) (601, 9401, 71427)

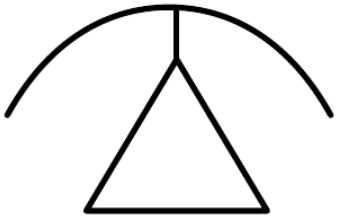
(c) (301, 6543, 94263)

(d) (103, 7341, 92501)

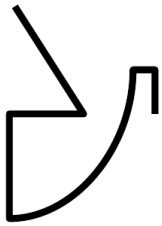
Q43. Select the option that is embedded in the given figure (rotation is NOT allowed).



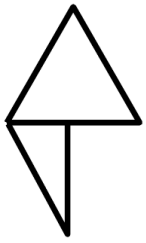
(a)



(b)

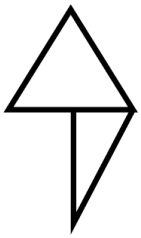


(c)

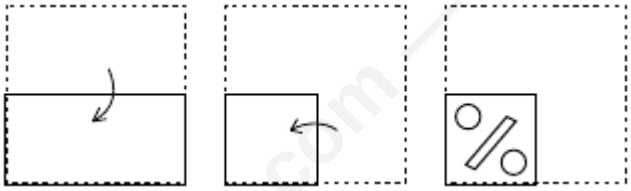


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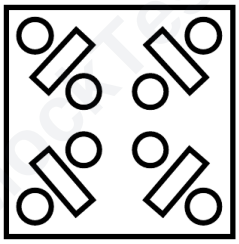
(d)



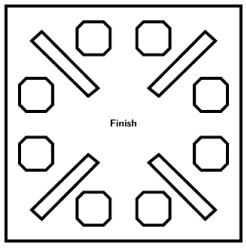
Q44. The sequence of folding a piece of paper and the manner in which the folded paper has been cut are shown in the following figures. How would this paper look when unfolded?



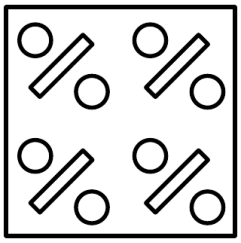
(a)



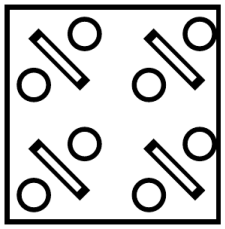
(b)



(c)



(d)



Q45. Read the given statements and conclusions carefully. Assuming that the information given in the statements is true, even if it appears to be at variance with commonly known facts, decide which of the given conclusions logically follow(s) from the statements.

Statements:

All rats are cats.

Some cats are not dogs.

Conclusions:

I. Some dogs are not rats.

II. Some dogs are rats.

(a) Only conclusion II follows.
(b) Only conclusion I follows.
(c) Neither conclusion I nor II follows.
(d) Both conclusions I and II follow.

Q46. Which of the following numbers does NOT belong to the group?

423, 171, 801, 900, 701

(a) 423
(b) 801
(c) 701
(d) 171

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

28 : 50 : 94

(a) 22 : 37 : 67
(b) 41 : 77 : 149
(c) 36 : 66 : 126
(d) 19 : 40 : 82

Q48. Select the option that is related to the third number in the same way as the second number is related to the first number.

166 : 415 :: 256 : ?

(a) 549
(b) 428
(c) 597
(d) 640

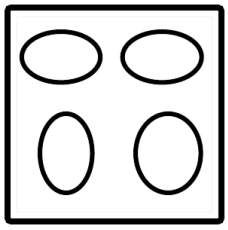
Q49. M's wife is N's daughter-in-law. P is the husband of O, who is the sister of M. How is P related to N?

(a) Nephew
(b) Son-in-law
(c) Cousin
(d) Brother

Q50. Select the Venn diagram that best represents the relationship between the following four classes.

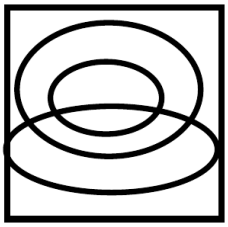
Book, Library, Chapter, Index

(a)

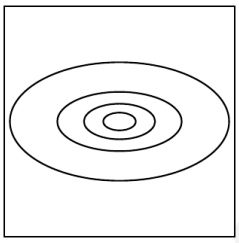


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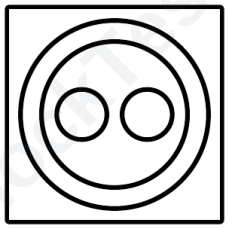
(b)



(c)



(d)

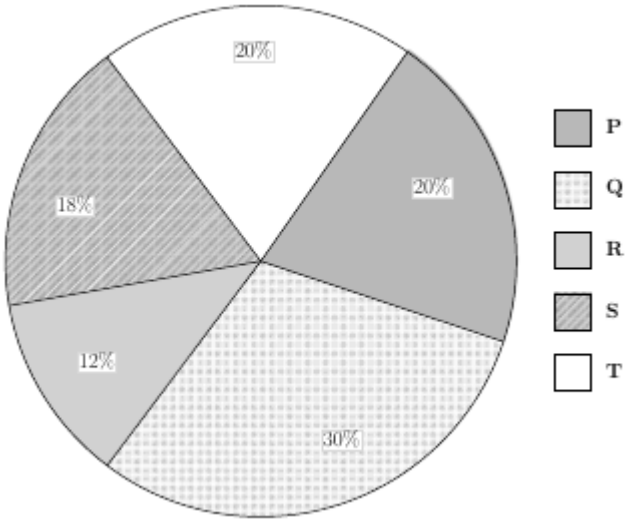


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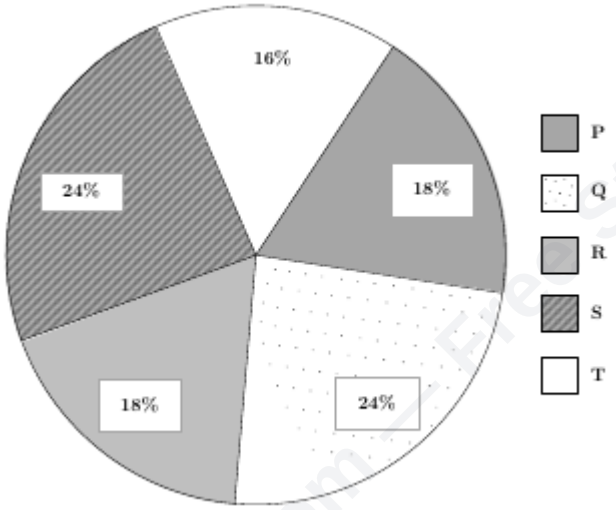
Q51. Study the given pie chart and answer the question that follow.

The pie charts represents the distribution of candidates who were enrolled for Bank Clerical Examination Fig(i) and the candidates (out of those enrolled) who passed the examination Fig(ii) in five different institutions P, Q, R, S and T.

(I) total number of candidates enrolled in five different institutes = 5500



(II) Total number of candidates who passed the examination from five institutes = 3300



The percentage of the candidates who passed to the number of candidates enrolled for institutes P and T together is:

(a) 54%
(b) 50%
(c) 51%
(d) 52%

Q52. The average of 42 numbers is 37. The average of the first 26 numbers is 32, and the average of the last 17 numbers is 44. The 26^(th) number is:

(a) 26
(b) 25
(c) 28
(d) 27

Q53. If $(3x + 2y)^3 + (3x – 2y)^3 = 3kx(3x^2 + 4y^2)$, then the value of k will be:

(a) 6
(b) 18
(c) 9
(d) 3

Q54. If $27x^3 - 64y^3 = (Ax + By)(Cx^2 + Dy^2 - Exy)$, then value of (A - B + C - D + E) will be:

(a) 15
(b) -20
(c) 18
(d) -12

Q55. If $\sqrt{13} \sin\theta = 2$, then the value of $(3\tan\theta+\sqrt{13}\sin\theta)/(\sqrt{13}\cos\theta - 3\tan\theta)$ is:

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

Q56. The perimeter of a right-angled triangle whose sides that make right angles are 15 cm and 20 cm is:

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

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Q57. If $\cos^2\theta - \sin^2\theta - 3\cos\theta + 2 = 0$, $0° < \theta < 90°$, then what will be the value of $\sec\theta - \cos\theta$?

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

Q58. A shopkeeper marks his goods at a price such that after giving a discount of 20%, he gains 25%. If the cost price of the article is Rs. 560, what will be its marked price (in Rs.)?

(a) 875
(b) 765
(c) 856
(d) 914

Q59. If $(\cot\theta + \cos\theta)/(\cot\theta - \cos\theta) = (k+1)/(1-k)$, $k \neq 1$, then k is equal to:

(a) $\cos\theta$
(b) $\operatorname{cosec}\theta$
(c) $\sin\theta$
(d) $\sec\theta$

Q60. If $x + 2y = 19$ and $x^3 + 8y^3 = 361$, then xy is equal to:

(a) 57
(b) 56
(c) 58
(d) 55

Q61. 40 persons take 6 days to complete a certain task, working 10 hours a day. How many hours a day will be sufficient for 30 persons to complete the same task in 10 days?

(a) 8
(b) 10
(c) 9
(d) 6

Q62. X sells an article to Y at 12% loss. Y sells it to Z at 9% profit. If Z pays Rs. 21,582 for it, then at what price (in Rs.) was the article purchased by X?

(a) 21,000
(b) 22,500
(c) 23,275
(d) 19,800

Q63. Two circle touch each other externally. The distance between their centres is 14 cm. If the radius of one circle is 8 cm, then the radius of the other circle is:

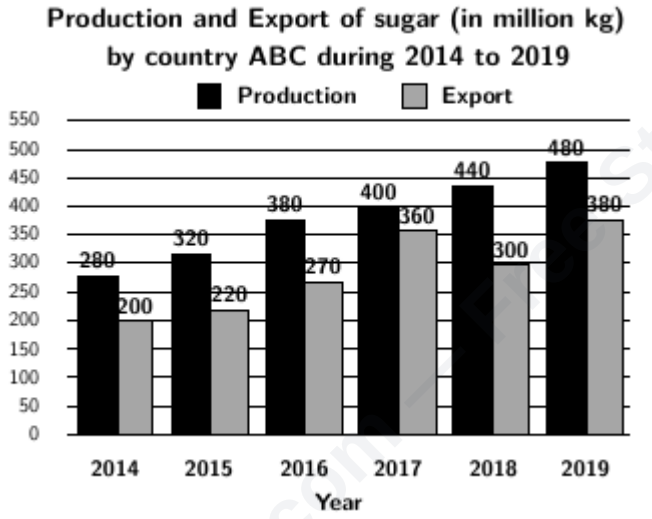
(a) 8 cm
(b) 5 cm
(c) 6 cm
(d) 7 cm

Q64. The value of $42 \div 10 - (7/4 \times 1/3)$ of $6/5 + 16/3 \times 9/10 - (1/6 \div 1/36)$ is:

(a) 2.3
(b) 1.7
(c) 2.9
(d) 1.5

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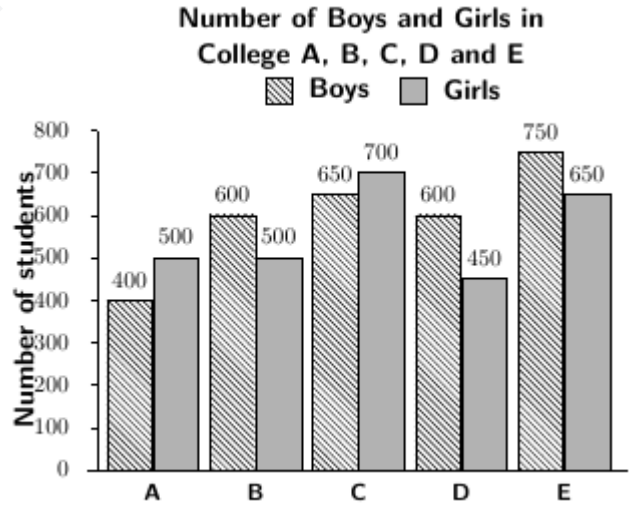
Q65. Study the given graph and answer the questions that follows.



For which of the following years was the increase in the production of sugar as compared to that in its preceding year between 8%and 10%?

(a) 2015
(b) 2018
(c) 2019
(d) 2017

Q66. Study the given bar graph and answer the questions that follows.



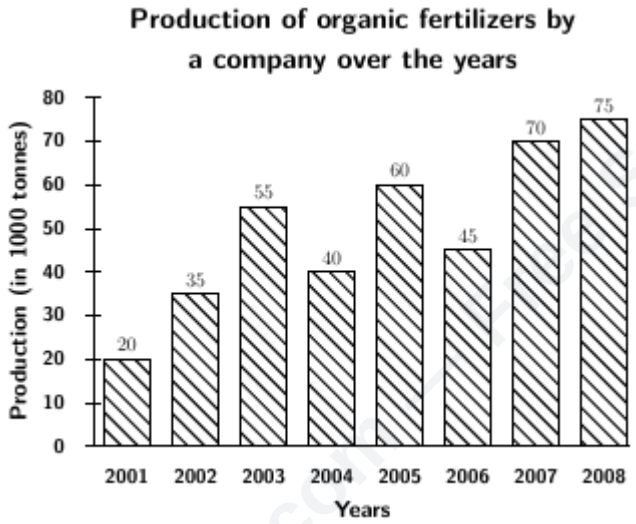
What is the ratio of the boys taken together in colleges A, B and C to the girls taken together in all 5 colleges?

(a) 31 : 56
(b) 35 : 61
(c) 37 : 59
(d) 33 : 56

Q67. Dimple is travelling at a speed of 90 km per hour on a highway, while Sachin is travelling at a speed of 108 km per hour. What is the difference in their speeds, in metres per second?

(a) 5
(b) 6
(c) 4
(d) 3

Q68. Study the given bar graph and answer the questions that follows.



In which year was the percentage increase in production as compared to the previous year, the maximum?

(a) 2002
(b) 2007
(c) 2005
(d) 2008

Q69. A circle touches the side BC of ΔABC at P and also touches AB and AC produced at Q and R, respectively. If the perimeter of ΔABC = 14.1 cm, then the length (in cm) of AQ will be:

(a) 6.25
(b) 7.05
(c) 9.15
(d) 10.3

Q70. Gaurav earns Rs. 800 per day. After some weeks, he earns Rs. 960 per day. What is the percentage increase in his daily earnings?

(a) 16%
(b) 20%
(c) 18%
(d) 14%

Q71. In ΔABC, D and E are the points on the sides AB and AC, respectively such that angle AED = angle ABC. If AE = 6 cm, BD = 2 cm, DE = 3 cm and BC = 5 cm, then (AB + AC) is equal to:

(a) 86/3 cm
(b) 70/3 cm
(c) 50/3 cm
(d) 49/3 cm

Q72. If 71^(83) + 73^(83) is divisible by 36, the remainder is:

(a) 8
(b) 13
(c) 0
(d) 9

Q73. A solid cube having volume 46656 cm^3 is cut into 27 cubes of equal volume. The surface area (in cm^2) of the smaller cubes is:

(a) 864
(b) 756
(c) 936
(d) 921

Q74. The compound interest on a certain sum of money for 3 years, compounded annually, at a rate of interest of 10% per annum is Rs. 1,324. The sum is:

(a) Rs. 4,000
(b) Rs. 5,500
(c) Rs. 4,500
(d) Rs. 5,000

Q75. In a proportion, the product of the first and fourth terms is 70 and that of the second and third terms is 3.5y. The value of y is:

(a) 17
(b) 20
(c) 15
(d) 22

GENERAL AWARENESS

Q76. Which natural port is located along the west coast of India?

(a) Haldia
(b) Marmagao
(c) Visakhapatnam
(d) Chennai

Q77. Who authored the book 'Jinnah: His Successes, Failures and Role in History'?

(a) Intizar Husain
(b) Ishrat Husain
(c) Ishtiaq Ahmed
(d) Khushwant Singh

Q78. Which was the first part of India to hold an election based on universal adult franchise?

(a) Assam
(b) Manipur
(c) Bihar
(d) Tripura

Q79. Which one of the following is the largest valley in Asia?

(a) Dang valley
(b) Alai valley
(c) Chuy valley
(d) Fergana valley

Q80. Bangladesh was a part of Pakistan from _____.

(a) 1947 - 1971
(b) 1948 - 1979
(c) 1947 - 1973
(d) 1948 - 1975

Q81. In which of the following years did the Santhal Revolt take place?

(a) 1825-26
(b) 1848-49
(c) 1855-56
(d) 1874-75

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Q82. Which one of the following is a computer virus?

(a) Creeper
(b) Spider
(c) Panda
(d) Penguin

Q83. Which Indian Cabinet Minister was appointed as Executive Board Chairman of World Health Organization (WHO) in May 2020?

(a) Piyush Goyal
(b) Nirmala Sitharaman
(c) Smriti Irani
(d) Harsh Vardhan

Q84. Who among the following boxers won a gold medal in the 57 kg category at the Cologne Boxing World Cup held at Germany in December 2020?

(a) Pooja Rani
(b) Simranjit Kaur Baath
(c) Manisha Moun
(d) Sakshi Choudhary

Q85. In which year did Gongsa Ugyen Wangchuck become the first monarch of Bhutan?

(a) 1901
(b) 1910
(c) 1907
(d) 1905

Q86. To which of the following Gharanas did the Hindustani classical vocalist Ustad Bade Ghulam Ali Khan belong?

(a) Jaipur-Atrauli Gharana
(b) Gwalior Gharana
(c) Kirana Gharana
(d) Patiala Gharana

Q87. In which Olympic Games did Shabana Akhtar, the first female athlete to represent Pakistan, participate?

(a) Beijing Olympics
(b) Atlanta Olympics
(c) Sydney Olympics
(d) Barcelona Olympics

Q88. Which Indian information technology company won the 2020 ‘IBM Beacon Award’?

(a) Tata Consultancy Services
(b) Tech Mahindra
(c) Infosys
(d) Wipro

Q89. Due to which of the following reactions are household bleaching agents using phosphorous, sulphur and chlorine formed?

(a) Displacement reaction
(b) Disproportionation reaction
(c) Combination reaction
(d) Decomposition reaction

Q90. What is the currency of Myanmar?

(a) Myanmar Riel
(b) Myanmar Ringgit
(c) Myanmar Dong

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(d) Myanmar Kyat

Q91. 'Puanchei' is the traditional dress of _____.

(a) Karnataka
(b) Sikkim
(c) Goa
(d) Mizoram

Q92. Which of the following is a polar molecule?

(a) Carbon dioxide
(b) Carbon tetrachloride
(c) Water
(d) Benzene

Q93. Who among the following is the youngest test debutant in the history of cricket as on May 2020?

(a) Hasan Raza
(b) Danish Kaneria
(c) Mushtaq Mohammad
(d) Mohammad Sharif

Q94. Which one of the following features is NOT shown by metals?

(a) Conducts heat
(b) Can be pounded into shape
(c) Looks dull
(d) Can be made into a wire

Q95. The concept of fiscal policy is based fundamentally on the ideas of _____.

(a) John Maynard Keynes
(b) Milton Friedman
(c) Elinor Ostrom
(d) Warren Buffett

Q96. Which of the following is a primary storage device in a personal computer?

(a) Hard disk
(b) Random-access memory
(c) Pen drive
(d) Compact disk

Q97. Which of the following state governments approved the Freedom of Religion Bill 2020 in December 2020?

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

Q98. Which of the following is a pass on the Pir Panjal Range?

(a) Banihal
(b) Zoji La
(c) Khardung La
(d) Fotu La

Q99. Which day in May 2020 was observed as 'International Tea Day'?

(a) 1 May
(b) 15 May
(c) 23 May
(d) 21 May

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Q100. A major portion of 'Sufed Koh' mountain range lies in _____.

(a) China
(b) Myanmar
(c) Pakistan
(d) India

ANSWER KEY

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

SOLUTIONS

Q1. Answer: (b) Persistance

The solution is in Hindi. Read it online.

Q2. Answer: (a) Suspicious

The solution is in Hindi. Read it online.

Q3. Answer: (c) Had you not interfered

The correct answer is 'Had you not interfered'

Key Points

• The given sentence is a third conditional sentence in which the structure is- Had + subject + third form of the verb, Subject + would + have + V3

• Hence, we need to use the third form of the verb 'interfere' i.e. 'interfered'

• Hence, the correct sentence is Had you not interfered in my affairs, I would have been in the US now.

Additional Information

• Mostly the students get confused with 'had had' structure also when the sentence has single 'had'.

• Had had- means the former had is an auxiliary verb and the latter had is a main verb i.e. third form of the verb 'have'

• She felt marvelous after she had had a good night's sleep.

• 'had'- whenever the subordinate clause has single 'had' then we quickly understand that the sentence belongs to second conditional.

Q4. Answer: (a) Honest

The solution is in Hindi. Read it online.

Q5. Answer: (a) than hospitalise

The error lies in Option 1 i.e. 'than hospitalise'

Key Points

• In the given part, the usage of 'hospitalize' is incorrect instead of this we need to use 'hospitalization'.

• 'Hospitalise' is a verb but here we need a noun because parallelism will be followed and "Isolation" is a noun.

• The meaning of the word 'hospitalise' is to admit or cause (someone) to be admitted to hospital for treatment.

Hence, the correct sentence is- Doctors say that home isolation is far more effective than hospitalization in cases of mild infection.

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Q6. Answer: (c) Anchor

The solution is in Hindi. Read it online.

Q7. Answer: (a) BDCA

The correct sequence is- BDCA

Key Points

• On the reading of the sentences we can easily comprehend that the passage is talking about Pablo Picasso.

• The introductory sentence will be Sentence B as it tells us about Pablo Picasso and his family.

• The second sentence will be sentence D as it tells us about at what age he started doing drawing

• The third sentence will be Sentence C as it tells that after acquiring the adeptness in drawing at the very early age he surpasses his father's abilities.

• The fourth sentence will be sentence A as it tells that what is his father's reaction towards his prodigious son.

Hence, the correct sequence is- BDCA.

Q8. Answer: (c) Complete

The solution is in Hindi. Read it online.

Q9. Answer: (a) Sometimes the family likes

The correct answer is 'Sometimes the family likes'

Key Points

• In the given phrase, 'The family' is a collective noun and 'Sometimes' is an adverb.

• 'Family'- It stands for one unit or group but consists of more than one person.

• Hence, we need to use a singular verb for it i.e. 'likes'. 'liking' is a gerund or a present participle depends upon the context of the sentence which we are using.

So the correct sentence is- Sometimes the family likes to play a game together after dinner.

Q10. Answer: (b) To falsify financial records

The solution is in Hindi. Read it online.

Q11. Answer: (d) No error

The correct answer is 'No error'

Key Points

• In the given sentence there is no error.

• Let's see the construction of the sentence.

• The subject of the sentence is 'the need' and the verb of the sentence is 'is' which is a linking verb. 'to introspect and re-examine' are infinitive phrases remember that when the infinitive verbs are joined with the conjunction 'and' don't use 'to' with the latter verb.

• 'and resolve' is also an infinitive phrase in this particular sentence. It is not used as a main verb.

• The usage of adverb 'carefully' is absolutely correct as it tell us that how we need to introspect and re-examine the issue i.e. carefully and amicably.

• So the given sentence is an error-free sentence.

Confusion Points

• to introspect and re-examine the issue carefully and resolve it amicably.

• introspect, re-examine and resolve are used here as infinitives. To introspect, to re-examine and to resolve.

• Resolve is not used here as a main verb.

• when the infinitive verbs are joined with the conjunction 'and' don't use 'to' with the latter verb.

Q12. Answer: (b) cowardice

The solution is in Hindi. Read it online.

Q13. Answer: (a) acknowlege

The solution is in Hindi. Read it online.

Q14. Answer: (b) The driving test was passed quite easily by Aditya.

The correct answer is 'The driving test was passed quite easily by Aditya.'

Key Points

• The given sentence is in the past tense as we can recognize it by looking at the verb of the sentence i.e. 'passed'

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• While changing the sentence into passive voice we use a structure was + third form of the verb.

• The third form of the verb 'pass' is 'passed' and the helping verb we choose according to the object of the sentence in this sentence the object is 'the driving test' which is singular in number.

So the correct passive of the sentence is- The driving test was passed quite easily by Aditya

Q15. Answer: (d) CBDA

The solution is in Hindi. Read it online.

Q16. Answer: (c) Omnipotent

The solution is in Hindi. Read it online.

Q17. Answer: (c) My niece said that she had decided to take coaching in badminton.

The correct answer is 'My niece said that she had decided to take coaching in badminton.'

Key Points

• The sentence in the Direct Speech is in Present Perfect Tense. Therefore, the sentence in the Indirect Speech should be in Past Perfect Tense.

• Present Perfect (Subject + has/have + V3 +Object) should be converted into Past Perfect (Subject + had + V3 +Object).

• For example:

• He said, “I have got a new job.” (Direct Speech)

• He said that he had got a new job. (Indirect Speech)

• The following things in the sentence should change when changed from Direct speech to Indirect Speech:

• 'said' to 'said that'.

• 'I' to 'she'

• 'have decided' to 'had decided'

Therefore, the correct answer is: My niece said that she had decided to take coaching in badminton.

Q18. Answer: (d) consequences

The solution is in Hindi. Read it online.

Q19. Answer: (d) appeared

The solution is in Hindi. Read it online.

Q20. Answer: (a) not do a thing well in order to save money or effort

The solution is in Hindi. Read it online.

Q21. Answer: (d) amount

The solution is in Hindi. Read it online.

Q22. Answer: (b) making

The correct answer is 'making'

Key Points

• (2)_____ it one of the very few

• We need a present participle in the given blank to describe 'Kerala' after the blank 'it' is used for Kerala.

• Hence, 'making' is a correct word in the given blank.

So the correct sentence is- making it one of the very few

Q23. Answer: (a) places

The solution is in Hindi. Read it online.

Q24. Answer: (b) distinct

The solution is in Hindi. Read it online.

Q25. Answer: (c) primary

The correct answer is 'primary'

Key Points

• The well-distributed rainfall pattern of Kanjirapally is the (5)_____ reason for the phenomenon of high yield of latex from rubber plantations in and around the town.

• The speaker wants to say that the rainfall pattern is the only reason for the high yield of latex from rubber plantation around the

town.

• Hence, this is the primary reason of the production so the correct answer is Option 3.

So the correct sentence is- The well-distributed rainfall pattern of Kanjirapally is the primary reason for the phenomenon of high yield of latex from rubber plantations in and around the town.

Q26. Answer: (c) 5 and 8; − and ÷

Given: 75 − 13 + 19 × 8 ÷ 5 = 93

By checking options and interchanging accordingly,

(1) 3 and 5; − and ×

LHS = 75 − 13 + 19 × 8 ÷ 5 → 73 × 15 + 19 - 8 ÷ 3

= 73 × 15 + 19 - 2.67

= 1095 + 19 - 2.67

= 1114 - 2.67

= 1111.33

≠ 93

LHS ≠ RHS

(2) 7 and 9; + and ×

LHS = 75 − 13 + 19 × 8 ÷ 5 → 95 − 13 × 17 + 8 ÷ 5

= 95 − 13 × 17 + 1.6

= 95 - 221 + 1.6

= 96.6 - 221

= - 124.4

≠ 93

LHS ≠ RHS

(3) 5 and 8; − and ÷

LHS = 75 − 13 + 19 × 8 ÷ 5 → 78 ÷ 13 + 19 × 5 - 8

= 6 + 19 × 5 - 8

= 6 + 95 - 8

= 101 - 8

= 93

LHS = RHS

(4) 8 and 3; × and ÷

LHS = 75 − 13 + 19 × 8 ÷ 5 → 75 − 18 + 19 ÷ 3 × 5

= 75 − 18 + 6.33 × 5

= 75 - 18 + 31.65

= 106.65 - 18

= 88.65

LHS ≠ RHS

Hence, 5 and 8; - and ÷ is the correct answer.

Q27. Answer: (d) r, t, s, m, r

Given: s _ t m s r _ m _ r t _ s _ t m

By checking options and substituting accordingly,

(1) r, t, r, m, s → s r t m / s r t m / r r t m / s s t m

(2) r, s, t, r, m → s r t m / s r s m / t r t r / s m t m

(3) r, s, m, r, t → s r t m / s r s m / m r t r / s t t m

(4) r, t, s, m, r → s r t m / s r t m / s r t m / s r t m

Option (4) gives a pattern of s r t m / s r t m / s r t m / s r t m.

Hence, r, t, s, m, r is the correct answer.

Q28. Answer: (b) 5, 3, 1, 4, 2

Arranging all the words in a logical order of seniority in a workplace,

5. Owner → ranks number 1 in seniority.

3. General manager → ranks number 2.

1. Manager → ranks number 3.

4. Supervisor → ranks number 4.

2. Worker → ranks last.

Hence, 5, 3, 1, 4, 2 is the correct order.

Q29. Answer: (c) LAWGNIK

Given: SHORTLY : OHSYLTR : : WALKING : ?

The logic followed here is:

SHORTLY : OHSYLTR

Similarly,

WALKING : ?

Hence, LAWGNIK is the correct answer.

Q30. Answer: (b) [figure]

Given:

1) Left top corner (circle) is moved in middle and middle shape is moved in right top corner in each step.

2) Right top corner shape is moved in bottom right corner and bottom right is moved in bottom left corner.

3) Bottom left corner shape is moved in top left corner in each step.

The logic followed here is as given below, in each step

Hence, option (2) is the correct answer.

Q31. Answer: (b) &

Given:

Logic: If two dice have the same face value in the given image on two of their faces then the third face of each dice is opposite to one another.

Thus, from the common face ($) and (#) from dice (1) and dice (3):

Now, & is opposite to !, thus '&' will be on the face opposite to the face showing the letter '!'.

Hence, & is the correct answer.

Q32. Answer: (c) Rs. 180

Given: The cost of 5 pens and 12 pencils is Rs. 45.

Let the cost of one pen be 'P' and that of one pencil be 'p'.

Then, according to the question,

5P + 12p = 45

and, for the cost of 20 pens and 48 pencils, we multiply the above equation with 4, then we get

20P + 48p = 45 × 4

20P + 48p = 180

Hence, Rs. 180 is the correct answer.

Q33. Answer: (c) EEFHIOSUW

Given: HUSBAND is written as ABDHNSU.

The logic followed here is: Alphabetical order or increasing order the positional values.

Similarly,

Hence, EEFHIOSUW is the correct answer.

Q34. Answer: (b) Nickel

By checking options:

The logic followed here is:

All Steel, Bronze, and Brass are alloys.

Whereas,

Nickel is not an alloy. (Nickel is an element)

Hence, nickel is the correct answer.

Important PointsBrass and bronze are both metal alloys, which means they are a combination of two or more different metals.

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Steel - an alloy of iron with other elements, including carbon.
Bronze - copper + tin.
Brass - copper + zinc.

Q35. Answer: (a) 34

By counting triangles:
Hence, 34 is the correct answer.

Q36. Answer: (a) 351114

Given: ORGAN is coded as 17141518 and FINGER is coded as 56791418
The logic followed here is increasing order of positional values of the letters as shown below,
And,
Similarly,

Q37. Answer: (b) Sedentary

Given: Wakeful : Sleepless : : Sitting : ?
The logic followed here is:
Prolonged Wakefulness causes Sleepless.
Similarly,
Too much Sitting is known as Sedentary.
Important PointsSedentary → (of a person) tending to spend much time seated; somewhat inactive.

Q38. Answer: (c) YTSR

By checking options: except option (3) all the letters are in increasing order of their positional values in each option.
(1) JMSU
(2) IMPV
(3) YTSR
(4) AEKM
Hence, YTSR is the correct answer.

Q39. Answer: (c) Hockey : Coach

Given: Mathematics : Teacher
The logic followed here is:
Mathematics is taught by Teachers.
Similarly,
Hockey is coached by the Coach.
Hence, hockey : coach is the correct answer.

Q40. Answer: (b) 17

Given: 8, 8, 11, 11, 14, 14, ?
The logic followed here is:
Hence, "17" is the correct answer.
Alternate MethodThe logic followed here is:
Hence, "17" is the correct answer.

Q41. Answer: (c) [figure]

The logic followed here is: line AB is the mirror,
;
Hence, option (3) is the correct answer.

Q42. Answer: (b) (601, 9401, 71427)

Given: (313, 2732, 98211)
The logic followed here is:
Sum of digits, as shown below,
(313, 2732, 98211)

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313 → 3 + 1 + 3 = 7
2732 → 2 + 7 + 3 + 2 = 14
98211 → 9 + 8 + 2 + 1 + 1 = 21
Similarly,
By checking options only option (2) has the same sum of digits as given above.
(601, 9401, 71427)
601 → 6 + 0 + 1 = 7
9401 → 9 + 4 + 0 + 1 = 14
71427 → 7 + 1 + 4 + 2 + 7 = 21
Hence, (601, 9401, 71427) is the correct answer.

Q43. Answer: (b) [figure]

The logic followed here is: only option (2) is embedded as shown below,
Hence, option (2) is the correct answer.
Important Points
• Do not get tensed by the complexity of the figures.
• Carefully understand the structure of the given question figure.
• The embedded figure may not be of exact size. It may be small or big.
• Sometimes the rotation or reflection of the figures may be confusing.
• So think wisely before selecting the answer.

Q44. Answer: (b) [figure]

Given:
The logic followed here is:
The paper when unfolded will look like this:
Hence, option (2) is the correct answer.

Q45. Answer: (c) Neither conclusion I nor II follows.

The least possible Venn diagram is:
Conclusions:
I. Some dogs are not rats → False (as there is no direct relation between dogs and rats)
II. Some dogs are rats → False (it is possible but not definite as shown in the diagram above)
Hence, neither conclusion I nor II follows.
Important PointsThere are only two Complementary pairs as follows:
(1) All - Some not
(2) No - Some
Confusion PointsSome - Some not is not a complementary pair.

Q46. Answer: (c) 701

Given: 423, 171, 801, 900, 701
The logic followed here is: sum of digits is equal to 9.
423 → 4 + 2 + 3 = 9
171 → 1 + 7 + 1 = 9
801 → 8 + 0 + 1 = 9
900 → 9 + 0 + 0 = 9
701 → 7 + 0 + 1 = 8 ≠ 9
Thus except 701, all numbers are followed same logic.
Hence, 701 is the wrong term.

Q47. Answer: (c) 36 : 66 : 126

Given: 28 : 50 : 94
The logic followed here is:
28 : 50 : 94 → 28 × 2 - 6 = 56 - 6 = 50, and 50 × 2 - 6 = 100 - 6 = 94
Similarly by checking options:

36 : 66 : 126 → 36 × 2 - 6 = 72 - 6 = 66, and 66 × 2 - 6 = 132 - 6 = 126

Hence, 36 : 66 : 126 is the correct answer.

Q48. Answer: (d) 640

Given: 166 : 415 :: 256 : ?

The logic followed here is the Sum of digits.

166 → 1 + 6 + 6 = 13

and

256 → 2 + 5 + 6 = 13

Similarly,

415 → 4 + 1 + 5 = 10

Now, by checking options:

(1) 549 → 5 + 4 + 9 = 18 ≠ 10

(2) 428 → 4 + 2 + 8 = 14 ≠ 10

(3) 597 → 5 + 9 + 7 = 21 ≠ 10

(4) 640 → 6 + 4 + 0 = 10

Hence, 640 is the correct answer.

Alternate Method 166 : 415 :: 256 : ?

Here multiply the 1^(st) number by 2 and divide the same number by 2 and the add both the result

166 × 2 + 166 ÷ 2 = 332 + 83 = 415

Similarly,

256 × 2 + 256 ÷ 2 = 512 + 128 = 640

Q49. Answer: (b) Son-in-law

From the given information,

(1) M's wife is N's daughter-in-law, which means N is one of the parents M.

(2) P is the husband of O, who is the sister of M.

Thus, the final family tree is as follows,

Hence, P is the son-in-law of N.

Q50. Answer: (d) [figure]

Given: Book, Library, Chapter, Index

The logic followed here is: the library contain books, and a book contain chapters and an index, as shown below,

Hence, option (4) is the correct answer.

Q51. Answer: (c) 51%

Calculation:

The number of candidates enrolled for institutes P and T together = (20 + 20)% = 40%

Total number of candidates enrolled in five different institutes = 5500

The number of candidates enrolled for institutes P and T together

=> (40% of 5500)

=> (40/100 × 5500)

=> 2200

Now,

The number of candidates passed from institutes P and T together = (18 + 16)% = 34%

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

The number of candidates passed from institutes P and T together

=> (34% of 3300)

=> (34/100 × 3300)

=> 1122

Now,

The percentage of the candidates who passed to the number of candidates enrolled for institutes P and T together

=> (1122/2200 × 100)%

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=> (1122/22)%
=> 51%
Therefore The required percentage is 51%

Q52. Answer: (a) 26

Given:
The average of 42 numbers = 37
The average of the first 26 numbers = 32
The average of the last 17 numbers = 44
Formula used:
Average = sum of observations/Number of observations
Calculation:
The average of 42 numbers = (42 × 37) = 1554
The average of the first 26 numbers = (26 × 32) = 832
The average of the last 17 numbers = (17 × 44) = 748
Now,
The 26th number = (The average of the first 26 numbers + The average of the last 17 numbers) – (The average of 42 numbers)
=> (832 + 748) – 1554
=> 1580 – 1554
=> 26
Therefore The 26^(th) number is 26

Q53. Answer: (a) 6

Given:
(3x + 2y)3 + (3x – 2y)3 = 3kx(3x2 + 4y2)
Formula used:
$(a + b)^3 = a^3 + b^3 + 3a^2b + 3ab^2$
$(a – b)^3 = a^3 – b^3 – 3a^2b + 3ab^2$
Calculation:
Adding both the formula, we get
a3 + b3 + 3a2b + 3ab2 + a3 – b3 – 3a2b + 3ab²
=> ($a^3 + a^3 + 3ab^2 + 3ab^2$)
=> $2a^3 + 6ab^2$
Now,
2a3 + 6ab² = [2 × $(3x)^3$ + 6 × 3x × $(2y^2)$]
=> (2 × $27x^3$ + 6 × 3x × $4y^2$)
=> $54x^3 + 72xy^2$
Compare the value,
=> 54x3 + 72xy² = 3kx(3x2 + 4y2)
=> $18x(3x^2 + 4y^2) = 3kx(3x^2 + 4y^2)$
=> k = (18/3)
=> k = 6
Therefore The required value of k is 6
Alternate Method(3x + 2y)3 + (3x – 2y)3 = 3kx(3x2 + 4y2) ----(1)
We have (3x + 2y)3 + (3x – 2y)3
=> {(3x + 2y) + (3x -2y)}{$(3x + 2y)^2$ + $(3x - 2y)^2$ - (3x + 2y)(3x - 2y)}
=> 6x{($9x^2 + 4y^2$ + 12xy) + (9x2 + 4y2 - 12xy) - ($9x^2 - 4y^2$)}
=> $6x(9x^2 + 12y^2)$
=> 3 × $6x(3x^2 + 4y^2)$ ----(2)
Comparing the coefficients of equation(2) with (1), we get
k = 6

Q54. Answer: (d) -12

Given:

27x3 – 64y3 = (Ax + By)(Cx2 + Dy2 – Exy)

Formula used:

$a^3 – b^3 = (a – b)(a^2 + b^2 + ab)$

Calculation:

a3 – b3 = (a – b)(a2 + b^2 + ab)

=> $(3x)^3 – (4y)^3 = (3x – 4y)(9x^2 + 16y^2 – 12xy)$

Now,

Putting the value, we get

A = 3, B = -4, C = 9, D = 16 and E = -12

The value of (A – B + C – D + E)

=> [3 – (-4) + 9 – 16 + (-12)]

=> (3 + 4 + 9 – 16 – 12)

=> (16 – 16 – 12)

=> -12

Therefore The required value is -12

Q55. Answer: (b) 4

Given:

√13 sin θ = 2

Formula used:

By Pythagoras theorem,

B2 = H2 – P2

sinθ = P/H

tanθ = P/B

cosθ = B/H

Calculation:

√13 sin θ = 2

=> sinθ = 2/√13

Sinθ = P/H = 2√13

By Pythagoras theorem,

$B^2 = H^2 – P^2$

=> $B^2 = √13^2 – 2^2$

=> $B^2 = 13 – 4$

=> $B^2 = 9$

=> B = 3

tanθ = P/B = 2/3

cosθ = B/H = 3/√13

Now, the value of (3tan θ+√13 sin θ)/(√13 cos θ - 3tan θ)

=> (3 × 2/3 + √13 × 2/√13)/(√13 × 3/√13 – 3 × 2/3)

=> (2 + 2)/(3 – 2)

=> 4/1

=> 4

Therefore The required value is 4

Q56. Answer: (c) 60 cm

Given:

The sides of the right angles = 15 cm and 20 cm

Formula used:

By Pythagoras theorem,

$AC^2 = AB^2 + BC^2$

Calculation:
Let AB and BC be 15 cm and 20 cm respectively
According to the question
By Pythagoras theorem,
AC2 = AB2 + BC²
=> AC² = (15² + 20²)
=> AC² = (225 + 400)
=> AC² = 625
=> AC = 25 cm
Now,
Perimeter of right-angled triangle = (AB + BC + AC)
=> (15 + 20 + 25) cm
=> 60 cm
Therefore The required perimeter is 60 cm

Q57. Answer: (d) 3/2

Given:
cos2θ – sin2θ – 3cosθ + 2 = 0
Formula used:
sin²θ + cos²θ = 1
sin²θ = 1 – cos²θ
cos 60° = 1/2
sec 60° = 2
Calculation:
cos2θ – sin2θ – 3cosθ + 2 = 0
=> cos2θ – (1 – cos²θ) – 3cosθ + 2 = 0
=> cos²θ – 1 + cos²θ – 3cosθ + 2 = 0
=> 2cos²θ – 3cosθ + 1 = 0
=> 2cos²θ – 2cosθ – cosθ + 1 = 0
=> 2cosθ(cosθ – 1) – 1(cosθ – 1) = 0
=> (2cosθ – 1, (cosθ – 1) = 0
=> cosθ = 1/2,1
According to the question
cosθ = 1 is not possible as θ < 90°
So, cosθ = 1/2 = cos 60°
Now,
secθ – cosθ = (sec 60° – cos 60°)
=> (2 – 1/2)
=> (4 – 1)/2
=> 3/2
Therefore The required value is 3/2

Q58. Answer: (a) 875

Given:
Discount = 20%
Gain = 25%
The cost price of the article = Rs. 560
Formula used:
SP = (100 + gain%)/100 × CP
Discount = MP – SP
Marked price = [100/(100 – Discount%) × SP]
Calculation:

The cost price of the article = Rs. 560
Selling price of the article = [(100 + gain%)/100 × CP]
=> [(100 + 25)/100 × 560]
=> (125/100 × 560)
=> 700
Now,
Marked price = [100/(100 – Discount%) × SP]
=> [100/(100 – 20) × 700]
=> (100/80 × 700)
=> Rs. (5 × 175)
=> Rs. 875
Therefore The required marked price is Rs. 875
Shortcut TrickDiscount = 20% = 1/5
Ratio of M.P to S.P. = 5 : 4 ----(1)
Also, Gain% = 25% = 1/4
Ratio of C.P. to S.P. = 4 : 5 ----(2)
S.P. will be the same in both the case, so multiplying (1) by 5 and (2) by 4, we get
Ratio of M.P : S.P : C.P = 25 : 20 :16
Now, 16 units = Rs. 560
=> 1 unit = Rs. 35
=> 25 units = 35 × 25 = Rs. 875

Q59. Answer: (c) sin θ

Given:
(cot θ + cos θ)/(cot θ - cos θ)=(k+1)/(1-k), k ≠ 1
Formula used:
Componendo and Dividendo
(a + b)/(a – b) = (b + a)/(b – a)
Calculation:
According to the question
(cot θ + cos θ)/(cot θ - cos θ)=(k+1)/(1-k), k ≠ 1
By Componendo and Dividendo
(a + b)/(a – b) = (b + a)/(b – a)
=> (cotθ + cosθ)/(cotθ – cosθ) = (cosθ + cotθ)/(cosθ – cotθ) = [(k + 1)/(1 – k) = (1 + k)/(k – 1)
=> 2cotθ/2cosθ = 2/2k
=> 2cosθ/sinθ/2cosθ = 1/k
=> 1/sinθ = 1/k
=> k = sinθ
Therefore The required value of k is sinθ

Q60. Answer: (a) 57

Given:
x + 2y = 19 and x3 + 8y3 = 361
Formula used:
$(a + b)^3 = a^3 + b^3 + 3ab(a + b)$
Calculation:
According to the question
$(x + 2y)^3 = x^3 + 8y^3 + 6xy(x + 2y)$
=> $(19)^3 = 361 + 6xy \times 19$
=> 6859 = 361 + 114xy
=> 114xy = (6859 – 361)
=> 114xy = 6498

=> xy = (6498/114)

=> xy = 57

Therefore The required value of xy is 57

Q61. Answer: (a) 8

Given:

40 persons take 6 days to complete a certain task, working 10 hours a day

Formula used:

(M1 × D1 × H1)/W1 = (M2 × D2 × H2)/W2

Where, M, D, H and W is the number of men, days, hours and amount of the work respectively.

Calculation:

Let the number of hours required to complete the task by 30 persons working 10 days be H respectively.

According to the question

(M1 × D1 × H1)/W1 = (M2 × D2 × H2)/W2

=> (40 × 6 × 10)/1 = (30 × 10 × H)/1

=> (2400) = 300H

=> H = (2400/300)

=> H = 8

Therefore The number of hours required to complete the task by 30 persons working 10 days is 8

Q62. Answer: (b) 22,500

Given:

X sells an article to Y with a loss = 12%

Y sells it to Z at a profit = 9%

Selling price for article Z pays = Rs. 21,582

Concept used:

When a product is buy in a chain, the relationship between cost price and selling price can be established by the following formula,

CP = [SP × 100/(100 – loss%) × 100/(100 + gain%)]

Calculation:

According to the question

SP = Rs. 21,582, x1 = 12% and x2 = 9%

Now,

CP = SP × 100/(100 – loss%) × 100/(100 + gain%)

=> CP = 21,582 × 100/(100 – 12%) × 100/(100 + 9%)

=> CP = 21,582 × 100/88 × 100/109

=> CP = (21,582 × 100 × 100)/(88 × 109)

=> CP = Rs. (215,820,000/9,592)

=> CP = Rs. 22,500

Therefore The required article purchased by X at Rs. 22,500

Q63. Answer: (c) 6 cm

Given:

Two circles touch each other externally.

The distance between their centres = 14 cm.

The radius of one circle = 8 cm

Concept used:

When two circles touch each other externally then the distance between their centres is given by the sum of their radii.

Formula used:

Distance between their centres = Radius of I^(st) circle + Radius of 2^(nd) circle

Calculation:

Let r be the radius of the 2^(nd) circle.

According to the question

=> 14 = 8 + r

=> r = (14 – 8) cm

=> r = 6 cm

Therefore The radius of the other circle is 6 cm

Q64. Answer: (a) 2.3

Concept Used:

Follow the BODMAS rule according to the table given below:

Calculation:

42 ÷ 10 - (7/4× 1/3) of 6/5+16/3× 9/10-(1/6 ÷ 1/36)

=> 42 ÷ 10 – 7/12 of 6/5 + 16/3 × 9/10 – (1/6 ÷ 1/36)

=> 42 ÷ 10 – 7/12 of 6/5 + 16/3 × 9/10 – (1/6 × 36/1)

=> 42 ÷ 10 – 7/12 of 6/5 + 16/3 × 9/10 – 6

=> 42 ÷ 10 – 7/10 + 16/3 × 9/10 – 6

=> 42/10 – 7/10 + 24/5 – 6

=> (42 – 7 + 48)/10 – 6

=> (83/10 – 6)

=> (83 – 60)/10

=> 23/10

=> 2.3

Therefore The required value is 2.3

Q65. Answer: (c) 2019

Calculation:

The production of sugar in 2014 = 280

The production of sugar in 2015 = 320

The percentage increase in the production of sugar in 2015 as compared to that in its preceding year 2014

=> [(320 – 280)/280 × 100]

=> (40/280 × 100)

=> 14.28%

The production of sugar in 2015 = 320

The production of sugar in 2016 = 380

The percentage increase in the production of sugar in 2016 as compared to that in its preceding year 2015

=> [(380 – 320)/320 × 100]

=> (60/320 × 100)

=> 18.75%

The production of sugar in 2016 = 380

The production of sugar in 2017 = 400

The percentage increase in the production of sugar in 2017 as compared to that in its preceding year 2016

=> [(400 – 380)/380 × 100]

=> (20/380 × 100)

=> 5.26%

The production of sugar in 2017 = 400

The production of sugar in 2018 = 440

The percentage increase in the production of sugar in 2018 as compared to that in its preceding year 2017

=> [(440 – 400)/400 × 100]

=> (40/400 × 100)

=> 10%

The production of sugar in 2018 = 440

The production of sugar in 2019 = 480

The percentage increase in the production of sugar in 2019 as compared to that in its preceding year 2018

=> [(480 – 440)/440 × 100]

=> (40/440 × 100)

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=> 9.09%

Therefore The increase in the production of sugar as compared to that in its preceding year between 8% and 10% in 2019

Q66. Answer: (d) 33 : 56

Calculation:

Total number of boys taken together in colleges A, B and C

=> (400 + 600 + 650) = 1650

Total number of girls taken together in all 5 colleges

=> (500 + 500 + 700 + 450 + 650) = 2800

The ratio of the boys taken together in colleges A, B and C to the girls taken together in all 5 colleges

=> (1650 : 2800)

=> 33 : 56

Therefore The required ratio is 33 : 56

Q67. Answer: (a) 5

Given:

Speed of Dimple = 90 km/hr

Speed of Sachin = 108 km/hr

Calculation:

According to the question

The difference in their speeds = (108 – 90) km/hr

=> 18 km/hr

Now,

=> (18 × 5/18) m/sec

=> 5 m/sec

Therefore The required difference is 5 m/sec

Q68. Answer: (a) 2002

Calculation:

The production of organic fertilizers in 2001 = 20

The production of organic fertilizers in 2002 = 35

The percentage increase in production in 2002 as compared to 2001 = [(35 – 20)/20 × 100]

=> (15/20 × 100)

=> 75%

The production of organic fertilizers in 2002 = 35

The production of organic fertilizers in 2003 = 55

The percentage increase in production in 2003 as compared to 2002 = [(55 – 35)/35 × 100]

=> (20/35 × 100)

=> 57.14%

The production of organic fertilizers in 2004 = 40

The production of organic fertilizers in 2005 = 60

The percentage increase in production in 2005 as compared to 2004 = [(60 – 40)/40 × 100]

=> (20/40 × 100)

=> 50%

The production of organic fertilizers in 2006 = 45

The production of organic fertilizers in 2007 = 70

The percentage increase in production in 2007 as compared to 2006 = [(70 – 45)/45 × 100]

=> (25/45 × 100)

=> 55.55%

The production of organic fertilizers in 2007 = 70

The production of organic fertilizers in 2008 = 75

The percentage increase in production in 2008 as compared to 2007 = [(75 – 70)/70 × 100]

=> (5/70 × 100)

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=> 7.14%

Therefore The maximum increase in production is 2002

Q69. Answer: (b) 7.05

Given:

A circle touches the side BC of ΔABC at P and also touches AB and AC produced at Q and R, respectively.

The perimeter of ΔABC = 14.1 cm

Calculation:

AQ = AR [Tangents]

BP = BQ [Tangents]

CP = CR [Tangents]

Perimeter of ΔABC = AB + BP + CP + AC

=> 14.1 = AB + BQ + CR + AC

=> 14.1 = AQ + AR

=> 14.1 = AQ + AQ

=> 14.1 = 2AQ

=> AQ = (14.1/2) cm

=> AQ = 7.05 cm

Therefore The length of AQ is 7.05 cm

Q70. Answer: (b) 20%

Given:

Gaurav earns per day = Rs. 800

After a week, he earns = Rs. 960

Calculation:

According to the question

Increase in his earnings = Rs. (960 – 800)

=> Rs. 160

Now,

Percentage increase in his daily earnings = Rs. (160/800 × 100)

=> 20%

Therefore The required percentage increase in his earnings is 20%

Q71. Answer: (b) 70/3 cm

Given:

angle AED = angle ABC

AE = 6 cm

BD = 2 cm

DE = 3 cm

BC = 5 cm

Concept used:

Basic proportionality theorem:

If a line is parallel to a side of a triangle which intersects the other sides into two distinct points, then the line divides those sides in proportion.

Calculation:

Let AD be x cm and CE be y cm respectively

According to the question

In ΔABC and ΔAED

=> AB/AE = BC/DE

=> (x + 2)/6 = 5/3

=> 3x + 6 = 30

=> 3x = 30 – 6

=> 3x = 24

=> x = 8
So, AD = 8 cm
Now,
Again, In ΔABC and ΔAED
=> AC/AD = BC/DE
=> (6 + y)/8 = 5/3
=> 18 + 3y = 40
=> 3y = 40 – 18
=> 3y = 22
=> y = 22/3
So, CE = 22/3 cm
Now,
AB = (AD + BD) = (8 + 2) = 10 cm
AC = (AE + CE) = (6 + 22/3)
=> (18 + 22)/3
=> 40/3 cm
Now,
The value of (AB + AC) = (10 + 40/3) cm
=> (30 + 40)/3
=> 70/3 cm
Therefore The required value is 70/3 cm

Q72. Answer: (c) 0

Given:
7183 + 7383
Formula used:
If n is odd number
Then, xn + an
Common factor = (x + a)
Calculation:
According to the question
7183 + 73^(83)
Here, n = odd number = 83
So,
Common factor = (x + a)
=> (71 + 73)
=> 144
Now,
When 144 is divided by 36, we get remainder = 0
Therefore The remainder is 0

Q73. Answer: (a) 864

Shortcut Trick
Volume of smaller cube = 46656 ÷ 27 = 1728 cm^3.
Side of smaller cube (a) = $\sqrt[3]{1728}$ = 12 cm.
Surface Area of smaller cube = $6a^2 = 6 \times 12^2$.
Surface Area = 6 × 144 = 864 cm^2.
Therefore The correct answer is 864 cm^2.
Alternate Method
Given:
Volume of large cube (V) = 46656 cm^3
Number of smaller cubes (n) = 27

Formula Used:
Volume of cube = a^3
Total Surface Area of cube = $6a^2$
Calculations:
=> Volume of one smaller cube = 46656 ÷ 27
=> Volume of one smaller cube = 1728 cm^3
=> Let the side of the smaller cube be a.
=> $a^3 = 1728$
=> $a = \sqrt[3]{1728} = 12$ cm
=> Surface Area of smaller cube = $6 \times a^2$
=> Surface Area = $6 \times (12)^2$
=> Surface Area = 6×144
=> Surface Area = 864 cm^2
Therefore The correct answer is 864 cm^2.
Additional Information
Cube Properties
For a cube of side a, Volume = a^3, Lateral Surface Area = $4a^2$, and Diagonal = $a\sqrt{3}$.
Cutting of Cubes
When a large cube is cut into n^3 identical smaller cubes, the side of each smaller cube is 1/n times the side of the large cube.
Surface Area Change
When a cube is cut into smaller cubes, the total volume remains constant, but the total surface area increases.

Q74. Answer: (a) Rs. 4,000

Given:
Time = 3 years
Rate = 10%
Formula used:
CI = [P(1 + r/100)t – 1]
Calculation:
According to the question
CI = [P(1 + r/100)t – 1]
=> 1,324 = $[P(1 + 10/100)^3 – 1]$
=> 1,324 = $[P(110/100)^3 – 1]$
=> 1,324 = $[P(11/10)^3 – 1]$
=> 1,324 = [P(1,331/1,000 – 1)]
=> 1,324 = [P(1331 – 1,000)/1,000]
=> 1,324 = [P(331/1,000)]
=> 1,324 = 331P/1,000
=> P = [(1,324 × 1,000)/331]
=> P = Rs. (4 × 1,000)
=> P = Rs. 4,000
Therefore The required sum is Rs. 4,000
Alternate Method R = 10%, T = 3 yrs
We can write D = $(110/100)^3 = (11/10)^3$
1331/1000 Means if 1331 is the amount and 1000 is principal then apply unitery method
331 is the compound interest for amount 1000 then
then for pricipal x amount given 1324
x = 1000/331×1324 = 4000

Q75. Answer: (b) 20

Given:
The product of the first and fourth terms = 70

The second and third terms = 3.5y

Calculation:

In proportion, we know that

a : b :: c : d

According to the question

=> a × d = b × c

=> 70 = 3.5y

=> y = (70 × 10)/35

=> y = 20

Therefore The value of y is 20

Q76. Answer: (b) Marmagao

The correct answer is Marmugao.

Key Points

• Mormugao is situated in South Goa(West coast) and it is India's natural and oldest port.

• It has a deep natural harbour and is the most important port of Goa.

• It has contributed largely to the growth of maritime trade in India.

• It is one of the major exporters of iron ore exporting around 27.3 million tonnes of iron ore.

• According to the 2001 census, it has a population of around 97000. The major languages spoken are Kannad, Marathi, Hindi, English, and Konkani is the state language.

Additional Information

• Visakhapatnam Port:

• It is one of 13 major ports in India and the only major port of Andhra Pradesh.

• It is a natural port endowed with deepwater basins formed by a high promontory into the sea, known as Dolphin's Nose Hill to the south and Ross Hill to the North of the entrance channel.

• It is a landlocked port on the east coast.

• Haldia Port:

• It is located at the mouth of the Hooghly River.

• Coal, petroleum including containers, and other heavy goods are imported and exported from Haldia port.

• Chennai Port:

• It is one of the most ancient ports which is situated on the easter coast of India.

• India's 95% of trading by volume is done through maritime transport.

• It stands at 70% by value.

Q77. Answer: (c) Ishtiaq Ahmed

The correct answer is Ishtiaq Ahmed.

Key Points

• A new book on the life and times of Pakistan's founder Mohammad Ali Jinnah has been launched The book, "Jinnah: His Successes, Failures, and Role in History", is written by Swedish political scientist and a noted author of Pakistani descent Ishtiaq Ahmed.

• Born on December 25th, 1876, Jinnah served as leader of the All-India Muslim League from 1913 until Pakistan's creation on Aug 14, 1947.

Additional Information

• Mr. Khushwant Singh:

• He was a great supporter of diplomatic relations with Israel at a time when India did not want to displease Arab nations where thousands of Indians found employment.

• He visited Israel in the 1970s and was impressed by its progress.

Q78. Answer: (b) Manipur

The correct answer is Manipur.

Key Points

• Manipur was the first part of India to hold an election based on a universal adult franchise.

Additional Information

• The first general election was held in 1951-52 for over four months. It is from 25 October 1951 to 21 February 1952.

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• The elections were based on universal adult franchise i.e twenty-one years of age or older having the right to vote.

• There were over 173 million voters, most of them poor, illiterate, and rural, and have had no experience of elections.

• The first general elections were marked by an active election campaign by Jawaharlal Nehru.

• The parties contested 489 seats. INC won the elections with 364 seats, as the people voted for the party which was led by Jawaharlal Nehru.

• The first Election Commissioner of India was Sukumar Sen.

• Some Prominent winners were Jawahar Lal Nehru, Lal Bahadur Shastri, Sucheta Kripalani, Gulzari Lal Nanda, Kakasaheb Kalelkar, Shyama Prasad Mukherjee, etc.

Q79. Answer: (a) Dang valley

The correct answer is Dang Valley.

Key Points

• The Dang Valley is the largest valley in Asia.

• It lies between the Mahabharat Range in the north and the Churia Range in the south.

• It forms a nearly 1,000 km2 (390 sq mi) plain within a local drainage basin of fewer than 3,000 km2 (1,200 sq mi). It is drained by the Babai River and is one of the largest Inner Terai valleys.

Additional Information

• Ferghana Valley:

• It was the homeland of the Babur, the first Mughal Emperor and the founder of the dynasty in India.

• Following are the reasons why Emperor Shah Jahan undertook this campaign:

• The first and foremost reason was the proclaimed desire on the part of the Mughal emperors to recover their ancestral lands.

• As direct descendants of Tamerlane, the Mughals of India considered Central Asia their true home and ancestral domain.

Q80. Answer: (a) 1947 - 1971

The correct answer is 1947-1971.

Key Points

• Bangladesh (East-Pakistan) was part of Pakistan from 1947 to 1971.

• The Government of India decided on 3rd December 1971, that India would go to war with Pakistan to save Bengali Muslims and Hindus.

• On 16th December 1971, the chief of the Pakistani forces with 93,000 soldiers had surrendered unconditionally to the allied forces consisting of the Indian Army and Mukti Bahini in Dhaka.

• Vijay Diwas is observed on 16th December every year in Bangladesh and India, to observe Bangladesh's victory over Pakistan in the War of 1971 for the liberation of Bangladesh from Pakistan and to show respect to Freedom fighters, and Martyrs who take part to free Bangladesh from the atrocious rule of Pakistan.

• 26 March is celebrated as the Independence Day of Bangladesh.

Q81. Answer: (c) 1855-56

The correct answer is 1855-56.

Key Points

• Santhal Pargana is the mainland of the famous Santhal rebellion. On 30 June 1855, two Santal rebel leaders, Sidhu and Kanhu Murmu with the help of Chand and Bhairav, mobilized ten thousand Santals and declared a rebellion against British colonists.

• Santhal Parganas comprised a district of the same name, in undivided Bihar state, India.

Additional Information

• The Santhal uprising of 1855:

• The Santhals were given land and persuaded to settle in the foothills of Rajmahal.

• By 1832 a large area of land was demarcated as Damin-i-Koh. This was declared to be the land of the Santhals. They were to live within it, practice plough agriculture, and become settled peasants.

• The land grant to the Santhals stipulated that at least one-tenth of the area was to be cleared and cultivated within the first ten years.

• The territory was surveyed and mapped. Enclosed with boundary pillars, it was separated from both the world of the settled agriculturists of the plains and the Paharias of the hills.

• After the demarcation of Damin-i-Koh, Santhal settlements expanded rapidly.

• From 40 Santhal villages in the area in 1838, as many as 1,473 villages had come up by 1851.

Q82. Answer: (a) Creeper

The correct answer is Creeper.

Key Points

• Creeper virus is a computer virus that is most commonly recognized as the first computer virus.

• In 1971, Bob Thomas at BBN created Creeper as an experimental self- duplicating program that was intended not to inflict damage on but to illustrate a mobile application.

• Creeper was named for a character on the "Scooby-Doo" cartoon show, is recognized as the first computer virus.

• It was written in 1971 by Bob Thomas of BBN Technologies and spread through DEC PDP-10 computers on ARPAnet.

• It used to display the message, "I'm the creeper, catch me if you can!".

Additional Information

• ARPANET:

• The ARPANET is an acronym for Advanced Research Projects Agency Network.

• It was an arm of the U.S. Defense Department that funded the development of the Advanced Research Projects Agency Network (ARPANET) in the late 1960s.

• Its purpose was to link computers at Pentagon-funded research institu tions with the telephone lines

Q83. Answer: (d) Harsh Vardhan

The correct answer is Harsh Vardhan.

Key Points

• Indian Cabinet Minister Harsh Vardhan was appointed as Executive Board Chairman of the World Health Organization (WHO) in May 2020.

• Dr. Harsh Vardhan is currently serving as Minister of Science and Technology, Minister of Health and Family Welfare and Minister of Earth Sciences.

• He is the Member of Parliament from Chandni Chowk, Delhi constituency.

• Dr Harsh Vardhan is an ENT Surgeon by profession.

• Dr Harsh Vardhan has been elected to the office of Chairperson of Executive Board of the World Health Organization from May 22, 2020.

Additional Information

• Piyush Goyal:

• Piyush Goyal is the minister of Railways as well as the minister of the Ministry of Commerce and Industry.

• The Ministry of commerce and industry is a nodal ministry under the government of India which overlooks and regulates the working of trade and industry and is responsible for the growth and development of industry and trade within and outside the country.

• Piyush Goyal is the current minister of the Ministry of Commerce and Industry.

• Piyush Goyal also handles the portfolio of the Ministry of Railways.

• Nirmala Sitaraman:

• She is the current Minister of Finance.

• Smriti Irani:

• Smt. Smriti Irani, the Union Minister of Textiles launched the India Size project in Mumbai on 6th February 2019.

• It aims to arrive at standard Indian size for the ready-to-wear clothing industry.

• A size chart will be developed which will be specific to Indian consumers measurements.

• The project is undertaken by the Ministry of Textiles.

Q84. Answer: (c) Manisha Moun

The correct answer is Manisha Moun.

Key Points

• Manisha Moun boxer won a gold medal in the 57 kg category at the Cologne Boxing World Cup held in Germany in December 2020.

Additional Information

• Indian boxers have bagged 9 medals including three gold, two silver, and four bronze at the Cologne Boxing World Cup 2020, held in Cologne, Germany.

• India finished 2nd in the overall Medals List, Germany topped the list with 16 medals.

• Gold: The three gold medals for India were bagged by Amit Panghal (52kg), Manisha Moun (57kg), and Simranjit Kaur (60kg) in their respective categories.

• Silver: Silver medals were claimed by Sakshi Choudhary (57kg) and Satish Kumar (91kg).

• Bronze: Sonia Lather (57kg), Pooja Rani (75kg) Gaurav Solanki (57kg), and Mohamed Hussamudin (57kg) claimed the bronze medal in their respective categories.

Q85. Answer: (c) 1907

The correct answer is 1907.

Key Points

• In 1907 Gongsa Ugyen Wangchuck become the first monarch of Bhutan.

• The Constitution of Bhutan was enacted on 18 July 2008 by the Royal Government of Bhutan.

• Bhutan's political system has changed from an absolute monarchy to a constitutional monarchy.

• Bhutan is the Sovereign Kingdom and the Sovereign power belongs to the people of Bhutan.

• This Constitution is the Supreme Law of the State.

• Princess Ashi Sonam Dechen Wangchuck is a princess of Bhutan.

• She is the daughter of the fourth King of Bhutan Jigme Singye Wangchuck and his wife, Queen Mother Ashi Dorji Wangmo Wangchuck.

Additional Information

• The current King of Bhutan is Jigme Khesar Namgyel Wangchuck.

• On Dec 9, 2006, Jigme Khesar Namgyel Wangchuck became the king and is known as the" Dragon King" of Bhutan.

Q86. Answer: (d) Patiala Gharana

The correct answer is Patiala Gharana.

Key Points

• Ustad Bade Ghulam Ali Khan was an Indian Hindustani classical vocalist, from the Patiala Gharana.

• The most common epithet used to describe Ustad Ghulam Ali Khan is 'Tansen of the 20th century. Often referred to as Bade (older) Ghulam Ali Khan to differentiate him from other maestros of the same name.

• The genius musician was one of the most legendary thumri vocalists of all time, who took the Patiala Gharana.

• Born on 2 April 1902 in Kasur (now in Pakistan), Bade Ghulam Ali Khan belonged to a family of musicians.

• He was awarded the Sangeet Natak Akademi Award and the Padma Bhushan in 1962 Ustad Bade Ghulam Ali Khan breathed last on April 25, 1968, at Basheerbagh Palace in Hyderabad.

Additional Information

• Gwalior Gharana:

• It is considered the oldest Khyal Gharana in Indian classical music.

• Gwalior Gharana was founded in the first half of the 19th century.

• Gwalior Gharana became popular in India during the reign of the Mughal emperor Akbar.

• Mian Tansen was one of the first and most famous vocalists who came from Gwalior.

• The word meaning of Gharana is “family" or "lineage".

• The word Gharana was derived from the Sanskrit word Griha, which means "house'.

• Gharana is a community of performers who share a distinctive musical style that traces to a particular instructor or region.

• Kirana Gharana:

• It is one of the most prominent Indian classical khayal gharanas and is associated mostly with the perfect intonation of notes.

• The gharana's style was further evolved and was established as one of the important styles in modern Indian classical music in the late 19th / early 20th centuries by the musicians Abdul Karim Khan and Abdul Wahid Khan.

• The name of this school of music comes from Kirana or Kairana, a town and tehsil of Shamli District in Uttar Pradesh.

Q87. Answer: (b) Atlanta Olympics

The correct answer is Atlanta Olympics.

Key Points

• In Atlanta Olympics Games Shabana Akhtar, the first female athlete represented Pakistan.

• Shabana Akhtar (born April 5, 1972) is an Olympic athlete from Pakistan.

• She became Pakistan's first woman to compete at the Olympics when she took part in the women's long jump at the 1996 Olympics.

• She is a 42-time Pakistan national champion, having won the 100m and 200m dashes from 1989–1998, and from 1992–1998 the 400 meters, long jump, high jump, 4 × 100 m Relay, and 4x400 Relay.

• She represented Pakistan at the World Championships:

• 1993 and 1995.South Asian Games: 1989, 1991, 1993, 1995.

• Women's Islamic Games: 1993, 1997.

• Women's International Games: 1998, 2001.

Q88. Answer: (c) Infosys

The correct answer is Infosys.

Key Points

• Infosys company won the 2020 ‘IBM Beacon Award’.

• The Infosys Prize for 2019 was announced at the Infosys campus in Bengaluru.

• The award is given annually to honor outstanding achievements in six categories:

• Humanities: Manu V. Devadevan, jeevitha: Manjula Reddy, Mathematical Sciences: Sidhartha Mishra, Physical Sciences: G. Mugesh, Social Sciences: Anand Pandian, Engineering and Computer Science: Sunita Sarawagi.

Additional Information

• SJVN has been conferred with the Dun & Bradstreet - Corporate Award 2021 in the category of Best Growth Performance-Power.

• The award was presented at a virtual conference titled India's Top 500 Companies 2021.

• The event, with the central theme 'Laying the Foundations for an ESG-Ready Corporate India', featured keynote addresses by several eminent dignitaries.

• With a robust portfolio of 31 projects of about 10,000 MW in the pipeline, SJVN for itself has set an ambitious target of achieving 5000 MW installed capacity by 2023, 12000 MW by 2030 and 25000 MW by 2040.

• SJVN today has ventured into Thermal Power, Wind, and Solar energy generation, and electricity transmission also.

• For more than two decades, Dun & Bradstreet has been compiling the list of India's Top 500 Companies, which represent the leaders among Corporate India, and the driving force of the Indian economy.

Q89. Answer: (b) Disproportionation reaction

The correct answer is the Disproportionation reaction.

Key Points

• Disproportionation reactions are the reason behind household bleaching agents using phosphorous, sulfur, and chlorine formed.

• Disproportionation reaction:

• A disproportionation reaction is a specific type of redox reaction in which a species is simultaneously reduced and oxidized to form two different products.

• Electronic configuration of Cl is $1s^2,2s^2,2p^6,3s^2,3p^5$

• It can exhibit a maximum oxidation state of +7.

• In the given question, all three species can exhibit a Disproportionation reaction which simultaneously oxidizes as well as reduce.

• ClO - cannot undergo oxidation as +7 is the maximum oxidation state exhibited by Chlorine.

Additional Information

• A displacement reaction:

• It is a type of reaction in which part of one reactant is replaced by another reactant.

• There are two types of displacement reactions.

• Single displacement reactions: These are those reactions in which one reactant replaces part of the other. Eg: $Fe + CuSO_4 \rightarrow FeSO_4 + Cu$.

• Double displacement reactions: These are those reactions in which the cations and anions in the reactants switch partners to form products. Eg: $AgNO_3 + NaCl \rightarrow AgCl + NaNO_3$.

• A displacement reaction is also known as a replacement reaction or a metathesis reaction.

• Combination reaction:

• A combination reaction also termed a synthesis reaction is about two or more reactants or substances combining with each other to form a new product.

• Rust, which is a result of a combination reaction of oxygen and iron could serve as one of the examples of a combination reaction.

• Decomposition reaction:

• Those reactions in which a compound splits up into two or simpler substances are known as decomposition reactions.

• A decomposition reaction is the opposite of a combination reaction.

• Thermal decomposition:

• When a decomposition reaction is carried out by heating, it is called thermal decomposition. The decomposition reaction of calcium carbonate into calcium oxide and carbon dioxide is an example of thermal decomposition. Example: 2FeSO4 - Fe2O3 + SO2 + SO3.

Q90. Answer: (d) Myanmar Kyat

The correct answer is Myanmar Kyat.

Key Points

• Kyat is the currency of Myanmar.

• The term kyat derives from the ancient Burmese unit kyattha, equal to 16.3 grams of silver Myanmar, formerly known as Burma, is a country in Southeast Asia.

Additional Information

• It is bordered by Bangladesh and India to its northwest, China to its northeast, Laos, and Thailand to its east and southeast, and the Andaman Sea and the Bay of Bengal to its south and southwest.

• Capital- Naypyidaw.

• It has a population of about 54 million, most of whom are Burmese speakers, although other languages are also spoken.

• The biggest city is Yangon (Rangoon).

• The main religion is Buddhism.

• Recently, the State Administration Council of Myanmar has been reformed as the Caretaker government of Myanmar' headed by the Chief of the Myanmar military Senior General Min Aung Hlaing as the Prime Minister.

Q91. Answer: (d) Mizoram

The correct answer is Mizoram.

Key Points

• Mizo Puanchei is a colourful Mizo shawl and it is famous for its attractive colour among the Mizo textiles.

• It is an essential occupation for every Mizo lady and It is the most used costume in Mizo festive dances and official ceremonies.

• The traditional dress worn by Mizoram women is called 'Puan'.

• Puan is a black and white cloth worn like a skirt, which is the state dress of the state of Mizoram.

• It is mainly worn on the occasion of the Puanchei festival by Mizo women.

• Shawl or dupatta is a traditional Manipuri costume for women and a skirt called a "Phanek".

• Pajama or Dhoti is a traditional dress of Rajasthani men, and Women stick to ghagra (long skirt) and Kanchi (top).

• The Lungi is a traditional dress of Kerala state worn by men and women.

Additional Information

• GI tag is an indication, used on the product that is associated with a "Specific Geographical Area".

• Mizo Chilli is known as "Mizoram's Birds Eye Chilli" a Geographical Indication of Mizoram.

Q92. Answer: (c) Water

The correct answer is Water.

Key Points

• Water has a polar molecule.

• Unequal sharing of electrons makes water a polar molecule.

• So even though the electrons from each atom are attracted by both oxygen and hydrogen, the electrons are a bit more attracted to the oxygen.

• This means that electrons spend a bit more time at the oxygen end of the molecule.

Q93. Answer: (a) Hasan Raza

The correct answer is Hasan Raza.

Key Points

• Hasan Raza is a Pakistani former cricketer who played for the Pakistan national cricket team between 1996 and 2005.

• He initially was subject to something of a claim for an international cricketing record, as his debut performance was believed to have taken place at the age of 14 years and 233 days, then a world record, sparking investigations over the legitimacy of his age claims.

• He was soon taken away from international play after struggling initially in the early 2000s but was recalled against Australia and Zimbabwe in 2004.

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Q94. Answer: (c) Looks dull

The correct answer is Looks dull.

Key Points

• Dullness refers to the lack of shine or brightness which is not a characteristic property of metals.

• Metals do display:

• Malleability-ability to be drawn into thin sheets.

• Ductility-ability to be drawn into thin wires.

• Electrical Conductivity- ability to allow the electric current to pass through it.

Additional Information

Physical properties	Metals	Non-metals
Electrical Conductivity	Metals are good conductors of electricity.	Non-metals are poor conductors of electricity.
Sonorous	Metals are sonorous which means the ringing sound is produced when they are hit.	Non-metals are non-sonorous.
Malleability	Metals can be into thin sheets sheets and hence are Malleable.	Non-metals cannot be converted into thin sheets and hence are non malleable.
Ductility	Metals can be drawn into thin wires.	Non-metals cannot be drawn into thin wires and hence are non-ductile.
High melting and boiling point	Metals have high melting and boiling point. They are usually solid at room temperature.	Non-metals are having low melting point and boiling point. They can be solid, liquid or gas at room temperature.

Q95. Answer: (a) John Maynard Keynes

The correct answer is John Maynard Keynes.

Key Points

• British economist John Maynard Keynes proposed the theory of Fiscal policy.

• He gave a different outlook on macroeconomics and the economic policies of the government.

• He is well known for the theory called 'Keynesian Economics'.

• He died on April 21, 1946.

Additional Information

• Milton Friedman:

• He gave emphasis on monetary policy and his theory of money came to be known as monetarism.

• Elinor Ostrom:

• She was the first woman who was earlier awarded Nobel Prize for Economics.

• Elinor Ostrom and Oliver Williamson won the Nobel Prize for economics for work on how community institutions can prevent conflict in the year 2009.

Q96. Answer: (b) Random-access memory

The correct answer is Random-access memory.

Key Points

• Primary storage, also known as main storage or memory, is the main area in a computer in which data is stored for quick access by the computer's processor.

• In personal computers and workstations, the term random access memory (RAM) - or just memory - is used instead of primary or main storage, and the hard disk, diskette, CD, and DVD collectively describe secondary storage or auxiliary storage.

• Primary memory is one that is directly attached to the CPU.

• In a Memory hierarchy, cache memory and main Memory are directly attached to the CPU.

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Additional Information

• A storage device is a piece of computer hardware used for saving, carrying, and pulling out data.

• It can keep and retain information short-term or long-term.

• It can be a device inside or outside a computer or server.

• Other terms for the storage device are storage medium or storage media.

• Examples of storage devices are - Pen drives, Hard disks, Compact disks, etc.

Q97. Answer: (c) Madhya Pradesh

The correct answer is Madhya Pradesh.

Key Points

• The Madhya Pradesh Cabinet has approved 'MP Freedom of Religion Bill, 2020'.

• After the approval by the cabinet, the bill will now be presented in the state Assembly.

• Under the new MP Freedom of Religion Bill 2020, forced conversion of a minor, woman, or a person from Scheduled Caste or Scheduled Tribe, would draw a minimum jail term of 2 to 10 years with a minimum penalty of Rs 50,000.

• Provision for the imprisonment of five to 10 years and a fine of at least Rs 100,000 is being made for attempting mass religious conversion (of two or more persons).

Additional Information

• Madhya Pradesh:

• Chief Minister - Shivraj Singh Chouhan. (Feb 2022)

• Governor - Anandiben Patel.

• Dams - Bansagar Dam (Sone river), Bheemgarh dam (Wainganga river), Gandhi Sagar Dam (Chambal River), Indira Sagar Dam (Narmada River) and Omkareshwar Dam (Narmada River).

• Registered GI - Chanderi Fabric, Leather Toys of Indore, Bell Metal Ware of Datia and Tikamgarh, Ratlami Sev.

Q98. Answer: (a) Banihal

The correct answer is Banihal.

Key Points

• Banihal Pass:

• Banihal Pass is a mountain pass across the Pir Panjal Range at a maximum elevation of 2,832 m.

• It connects the Kashmir Valley in the union territory of Jammu and Kashmir to the outer Himalayas and the plains to the south.

• The Pir Panjal ranges:

• It lies in the Inner Himalayan region, running from east southeast to west-northwest across the states of Himachal Pradesh and Jammu and Kashmir in India, as well as Pakistan, Administered Kashmir in Pakistan, where the average elevation varies from 1,400 m to 4,100 m.

• The Pir Panjal, Dhauladhar, and Mahabharat ranges are a part of the Himachal range.

• Pir Panjal is the largest range on the Lesser Himalayas.

Additional Information

• Zoji La Pass:

• It is in the Zaskar range in the Indian union territory of Ladakh.

• The road route from Srinagar to Leh goes through this pass.

• It has been created by the Indus River.

• Khardung La pass:

• It is associated with the Ladakh mountain range in Jammu and Kashmir.

• The pass on the Ladakh Range lies north of Leh and is the gateway to the Shyok and Nubra valleys and serves as a motorable route from Leh in India to Kashgar in Central Asia.

• Photu La pass:

• It is on the Srinagar-Leh highway of the Himalayan Zanskar Range stand.

• This mountain pass is referred to as the highest point on the highway, going beyond the well-known Zoji La.

Q99. Answer: (d) 21 May

The correct answer is 21 May.

Key Points

• International Tea Day is celebrated on 21 May, every year.

• In 2019, the United Nations General Assembly decided to designate 21 May as International Tea Day.

• First-ever International Tea Day was on 21 May 2020 and in the current year 2021, it is the second observance of this day.

• Tea is a beverage made from the Camellia Sinensis plant.

• Tea is the world's most-consumed drink, after water.

• It is believed that tea originated in northeast India, north Myanmar, and southwest China, but the exact place where the plant first grew is not known.

• There is evidence that tea was consumed in China 5,000 years ago.

• The top tea-producing countries are currently China, India, Taiwan, and Kenya, according to tea historian and sommelier Domenico Gradia of the UK Tea Academy.

Q100. Answer: (c) Pakistan

The correct answer is Pakistan.

Key Points

• Safed Koh mountain range on the Pakistan-Afghanistan border, SE of Kabul; rises to 15,620 ft (4,761 m) at Mt. Sikaram.

• It parallels the Kabul River. A spur of the range is crossed by the Khyber Pass.

Additional Information

• The Karakoram:

• It is a large mountain range spanning the border between Pakistan, India, and China.

• It is located in the regions of Gilgit Baltistan (Pakistan), Ladakh (India), and Xinjiang (China).

• The range is having many peaks such as k2 Mount Godwin Austen (8611m), the second-highest peak in the world, and three other peaks like Gasherbrum |(8068 m), Broad peak (8047 m), Gasherbrum II (8035 m).

• Ladakh range:

• It lies to the north of the Leh and is an important part of the trans- Himalayan range.

• It merges with the Kailash range in Tibet.

• The important passes are Khardung la and Digar la.

• Zaskar range:

• It covers an area of 7000 sq km and has a height between 3500-7000 m.

• It separates Zaskar from Ladakh to the northeast. Pir Panjal is a group of mountains in the inner Himalayan region running from east-southeast to west-northwest.

• It consists of the area of Himachal Pradesh, Jammu, and Kashmir and Pakistan administered Kashmir.

• It has passes such as Pir Panjal pass, Banihal pass, Sinthan pass and Rohtang la pass.

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