SSC CHSL Previous Paper 7 (Held On: 19 March 2020 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. Directions: In the sentence identify the segment which contains the grammatical error.

The invited guests preferred orange juice than hot coffee or chilled grapes.

(a) or chilled grapes
(b) than hot coffee
(c) preferred orange juice
(d) The invited guests

Q2. Directions: Select the most appropriate option to substitute the underlined segment in the given sentence. If there is no need to substitute it, select 'No improvement'.

As many as I care for her, I still have to disagree with her on this topic.

(a) As much as
(b) As high as
(c) As long to
(d) No improvement

Q3. Directions: Select the correct passive form of the given sentence.

The coach received the members of the team with great excitement.

(a) The members of the team had been received by the coach with great excitement.
(b) The members of the team was received by the coach with great excitement.
(c) The members of the team could be received by the coach with great excitement.
(d) The members of the team were received by the coach with great excitement.

Q4. Directions: Given below are four jumbled sentences. Out of the given options select the one that gives their correct order.

A. Anush was very afraid of stray dogs.

B. Anush's mother saw the dog chasing her son.

C. One evening, when a street dog barked at him, Anush turned and started running.

D. The dog ran after him barking loudly and fiercely.

(a) DCAB
(b) ABCD
(c) ACDB
(d) ADBC

Directions

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

Families, particularly those with children and who have the means, are opting to (1)____ from Delhi driven by the increasing air pollution and (2)__ impact on health. Delhi's Air Quality Index had (3)__ a three-year-low this year, post-Diwali, creating a (4)__ polluted atmosphere which led to (5)____ problems in many, forcing people to wear masks outdoors and install air purifiers at

home.

Q5. Select the most appropriate option for blank No. 1.

(a) reschedule
(b) relocate
(c) reinstate
(d) restart

Q6. Select the most appropriate option for blank No. 2.

(a) their
(b) its
(c) their's
(d) it's

Q7. Select the most appropriate option for blank No. 3.

(a) produced
(b) bagged
(c) hit
(d) leaped

Q8. Select the most appropriate option for blank No. 4.

(a) dissatisfied
(b) conditionally
(c) separate
(d) severely

Q9. Select the most appropriate option for blank No. 5.

(a) brain
(b) respiratory
(c) abdominal
(d) renal

Q10. Directions: Select the most appropriate ANTONYM of the given word.

CASUAL

(a) Planned
(b) Informal
(c) Inspirational
(d) Immature

Q11. Directions: Select the correct indirect form of the given sentence.

The traveler inquired, "Will there be a shelter for strangers?"

(a) The traveler inquired if would there be a shelter for strangers.
(b) The traveler inquired if there will be a shelter for strangers.
(c) The traveler inquired if there would be a shelter for strangers.
(d) The traveler inquired whether will there be a shelter for strangers.

Q12. Directions: Select the most appropriate meaning of the given idiom.

Every cloud has a silver lining

(a) Something disheartening is there in any happy situation
(b) Something promising is there in any difficult situation
(c) Something interesting is there in any colourful situation
(d) Something irritating is there in any joyous situation

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Q13. Directions: Select the most appropriate word to fill in the blank.

The _____ part of this issue is that the investigation officer himself turned out to be the culprit.

(a) primary
(b) major
(c) funniest
(d) real

Q14. Directions: Given below are four jumbled sentences. Out of the given options select the one that gives their correct order.

A. Navin and Jathin gathered a group of young men and trained them in the fighting.

B. They wanted to build their own village where people could live without fear.

C. They lived in a jungle hideout on the banks of a river in the village.

D. Navin and Jathin were brothers and brave fighters.

(a) DCBA
(b) DCAB
(c) DBCA
(d) DBAC

Q15. Directions: Select the most appropriate meaning of the given idiom.

Made out of whole cloth

(a) Entirely fabricated though believable
(b) Entirely false though convincing
(c) Entirely false and fabricated
(d) Entirely true and convincing

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

A song or music in praise of God

(a) Epic
(b) Hymn
(c) Elegy
(d) Ode

Q17. Directions: Select the word which means the same as the group of words given.

Things which are of the same kind and of the same dimensions

(a) Homosexual
(b) Homogeneous
(c) Homonymous
(d) Homophony

Q18. Directions: Select the synonym of the given word.

QUARRELSOME

(a) Pragmatic
(b) Querulous
(c) Ambiguous
(d) Opaque

Q19. Directions: Select the most appropriate ANTONYM of the given word.

PLAUSIBLE

(a) Feasible
(b) Fantastic
(c) Unmanageable
(d) Unlikely

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Q20. Directions: Select the most appropriate synonym of the given word.

ADJUSTMENT

(a) Cooperating
(b) Coordinating
(c) Compromising
(d) Balancing

Q21. Directions: Select the most appropriate option to substitute the underlined segment in the given sentence. If there is no need to substitute it, select 'No improvement'.

So much as you are their class teacher, you are responsible for their performance in the examination.

(a) No improvement
(b) As long as
(c) In as much as
(d) As much to

Q22. Directions: Select the wrongly spelt word.

(a) Simulation
(b) Simultaneoues
(c) Stylistics
(d) Synthetic

Q23. Directions: Select the most appropriate word to fill in the blank.

There was a huge _____ in the stomach.

(a) tremor
(b) treasure
(c) tumor
(d) tuber

Q24. Directions: In the sentence identify the segment which contains the grammatical error.

Everyone are very well equipped with his own weapons.

(a) with his
(b) own weapons
(c) Everyone are
(d) very well equipped

Q25. Directions: Select the wrongly spelt word.

(a) Combination
(b) Molestation
(c) Condonation
(d) Navigetion

GENERAL INTELLIGENCE

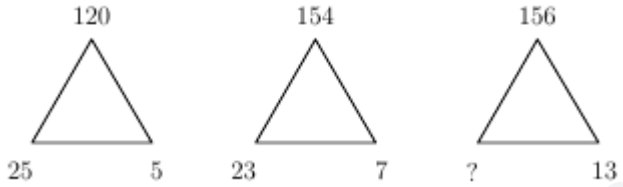
Q26. Select the option that is related to the third word in the same way as the second word is related to the first word.

Boxing : Ring :: Race : ?

(a) Arena
(b) Track
(c) Ground
(d) Court

Q27. Study the given pattern carefully and select the number that can replace the question mark (?) in it.

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(a) 11
(b) 21
(c) 23
(d) 13

Q28. Select the option that is related to the third number in the same way as the second number is related to the first number.

2197 : 12167 :: 343 : ?

(a) 729
(b) 1000
(c) 4913
(d) 515

Q29. X is the sister of Y. Y is the daughter of M. M is the mother of P. P is the brother of Y. T is the brother of X's mother. How is T related to M?

(a) Father
(b) Husband
(c) Son
(d) Brother

Q30. The sum of a number and its reciprocal is 17/4, Find the numbers.

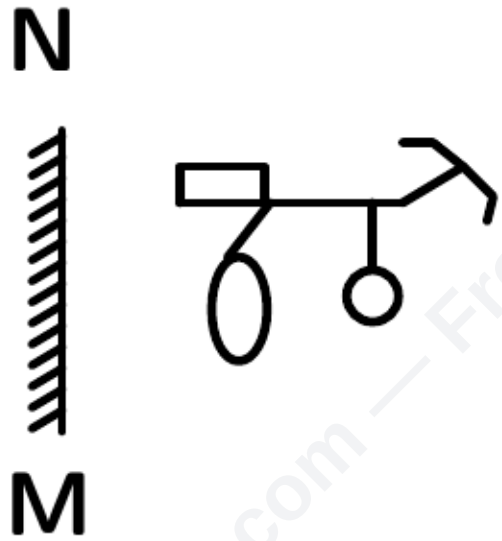
(a) 4 and 1/2
(b) 3 and 1/3
(c) 5 and 1/5
(d) 4 and 1/4

Q31. Four numbers have been given, out of which three are alike is some manner and one is different. Select the number that is different from the rest.

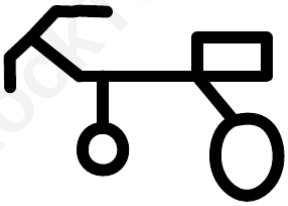
(a) 224
(b) 196
(c) 360
(d) 528

Q32. If a mirror is placed on line MN in the question figure, then which of the given answer figures is the correct mirror image of the question figure?

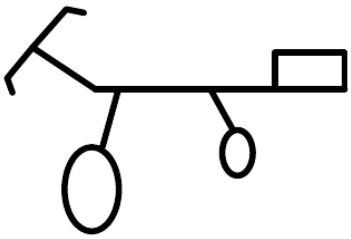
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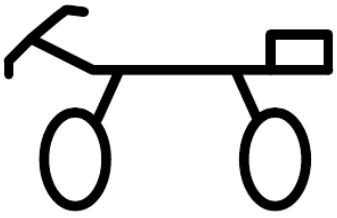
(a)



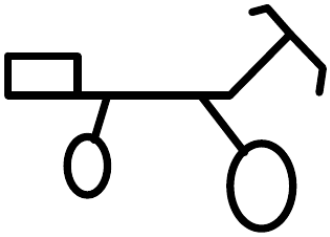
(b)



(c)

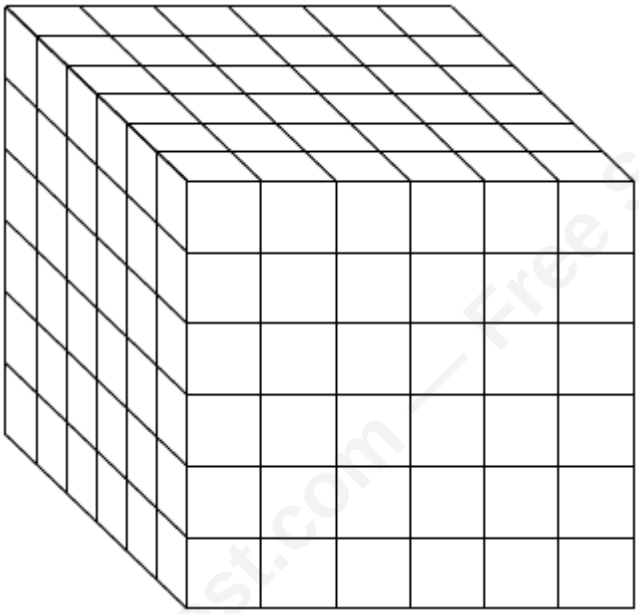


(d)



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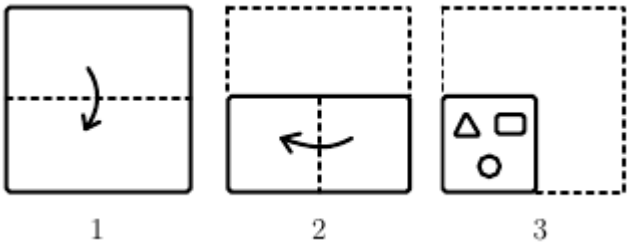
Q33. How many cubes are there in the given figure?



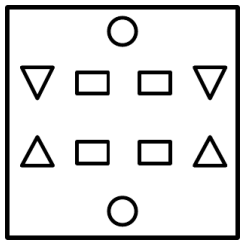
(a) 72
(b) 180
(c) 84
(d) 216

Q34. The sequence of folding a piece of paper and the manner in which the folded paper has been cut is shown in the question figure. Select the figure from the answer figures that would most closely resemble the unfolded paper.

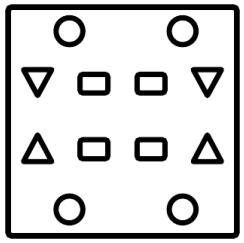
Question figure:



(a)

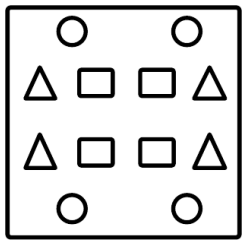


(b)

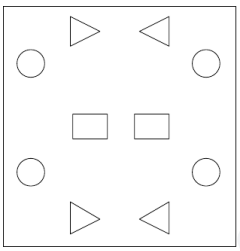


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(c)



(d)

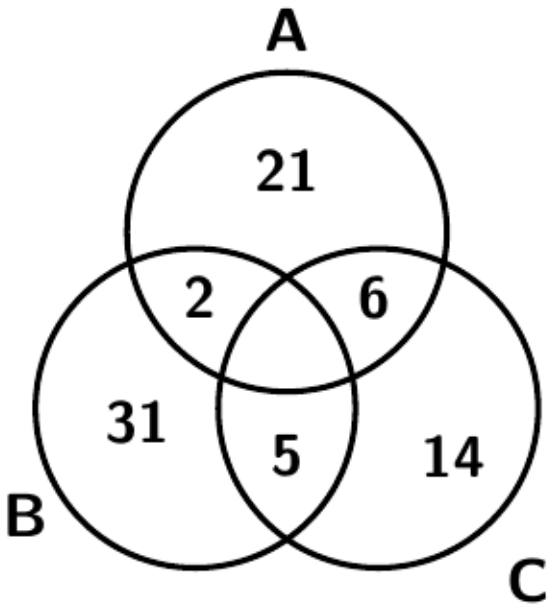


Q35. Select the number that can replace the question mark (?).

C10G, H20L, L17E, L?Q

(a) 25
(b) 30
(c) 19
(d) 29

Q36. In the given venn diagram, 'A' denotes 'likes teaching', 'B' denotes 'likes cooking', and 'C' denotes 'likes playing'. How many persons like only teaching and playing but NOT cooking?



(a) 41
(b) 23
(c) 48
(d) 29

Q37. Select the combination of letters that when sequentially placed in the blanks of the given series will complete the series.

mn _ pmno _ _ nopm _ op

(a) oomn
(b) oppn
(c) opmn

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(d) mpmo

Q38. Identify the letter-cluster that does NOT belong to the following series.

DEC, HIG, LKM, PQO, TUS

(a) TUS
(b) HIG
(c) PQO
(d) LKM

Q39. In a certain code language, 21683 is coded as UFHC and 15654 is coded as OFED. How will 15236 be coded as in that language?

(a) FAEBC
(b) OBCF
(c) AEFOF
(d) FOX

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

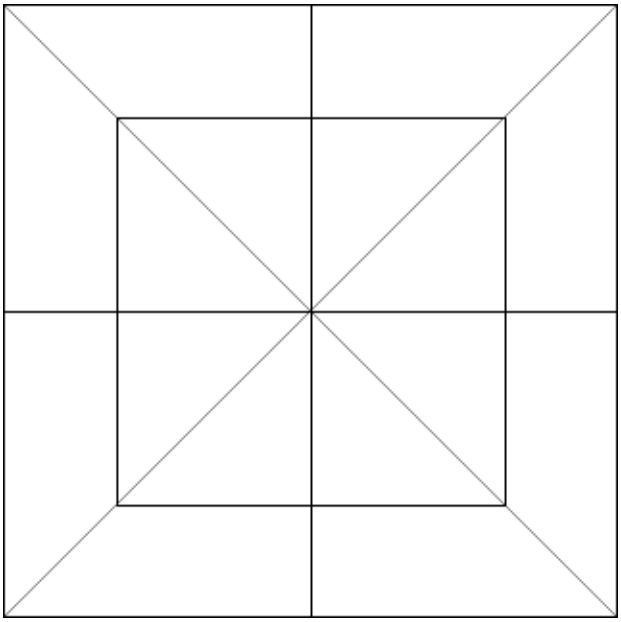
30, 130, 350, ?

(a) 1350
(b) 729
(c) 738
(d) 64

Q41. In a certain code language, JONAIL is written as IRMDHO. How will PLMUTG be written in the same code language?

(a) OPLXSJ
(b) OOLXRK
(c) OOLXSJ
(d) OOLYTJ

Q42. Find the number of triangles in the given figure.

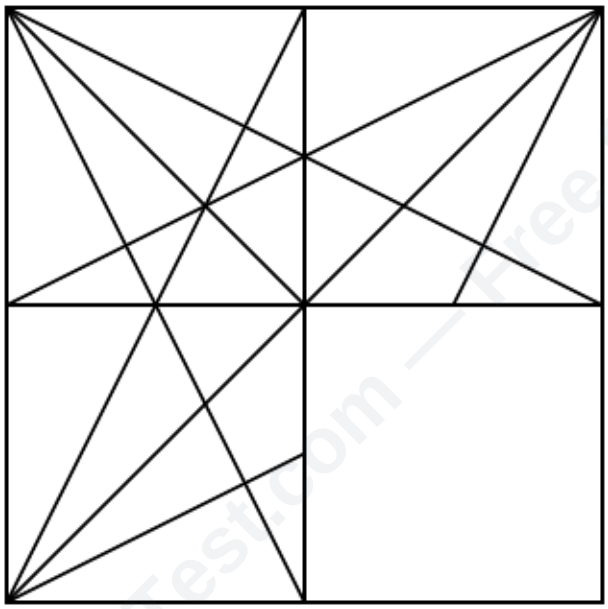


(a) 32
(b) 64
(c) 46
(d) 16

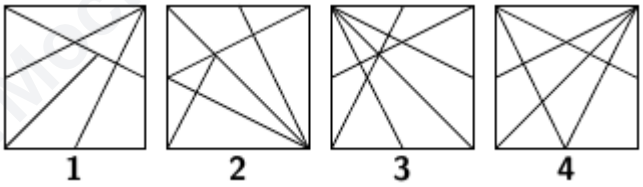
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Q43. Select the answer figure that when placed in the blank space of the question figure will complete the pattern.

Question figure:



Answer figure:



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

Q44. 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:

1. All men are animals.
2. No men is a bird.

Conclusions:

1. All animals are birds.
2. All animals are men.

(a) Both conclusions 1 and 2 follow.
(b) Only conclusion 1 follows.
(c) Neither conclusion 1 nor 2 follows.
(d) Only conclusion 2 follows.

Q45. Identify the letter / letter-cluster that does NOT belong to the following series.

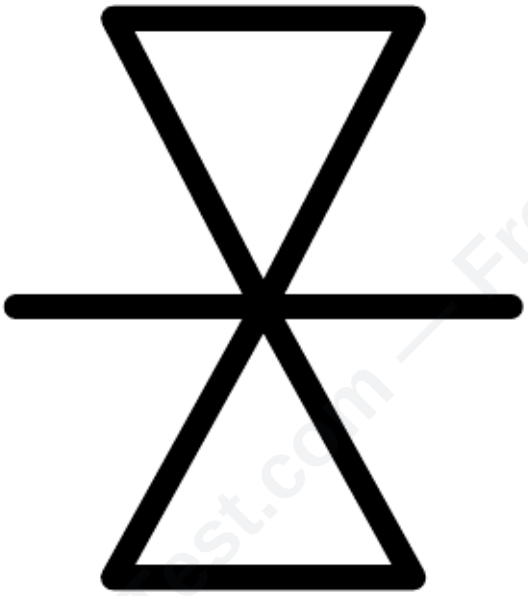
EC, G, HF, M, KI, T

(a) M
(b) EC
(c) HF
(d) T

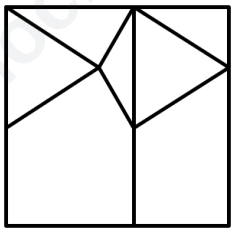
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Q46. Select the answer figure in which the question figure is embedded. (Rotation is not allowed)

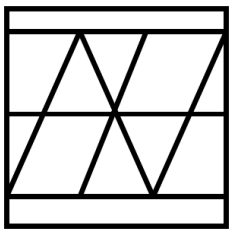
Question figure:



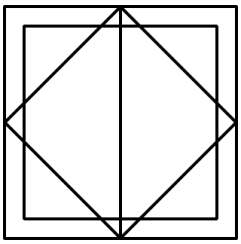
(a)



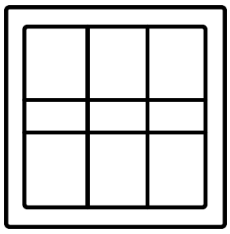
(b)



(c)



(d)



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Q47. Select the letter that can replace the question mark (?) in the following series.

C, E, G, F, E, G, I, H ?

(a) J
(b) I
(c) G
(d) E

Q48. If # means -, & means ÷, @ means ×, and ÷ means +, then what is the value of the following expression?

15 @ 2 ÷ 900 & 10 # 50

(a) 21
(b) 50
(c) 70
(d) 290

Q49. Study the given pattern carefully and select the number that can replace the question mark (?) in it.

11	17	8
5	3	15
3	7	?
361	729	1225

(a) 12
(b) 22
(c) 25
(d) 21

Q50. Select the number that can replace the question mark (?) in the following series.

211, 215, 231, 267, ?

(a) 312
(b) 421
(c) 296
(d) 331

QUANTITATIVE APTITUDE

Q51. If ΔABC is a right angled triangle with angle ABC = 90º, and AC = 10 cm, BC = 8 cm, then length of AB is:

(a) 12 cm
(b) 6 cm
(c) 2 cm
(d) 18 cm

Q52. The value of 18% of 15% of 25/9 of 3800 is:

(a) 583
(b) 285
(c) 385
(d) 582

Q53. If x : y = 3 : 2 and x + y = 90, then the value (x - y) is :

(a) 14
(b) 18
(c) 16
(d) 12

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Q54. The average of the ages of a group of 65 men is 32 years. If 5 men join the group, the average of the ages of 70 men is 34 years. Then the average of the ages of those 5 men joined later (in years) is:

(a) 60
(b) 65
(c) 55
(d) 50

Q55. In a Δ ABC, DE is parallel to BC, AD = 3 cm, AE = 4 cm and AC = 10 cm, then the value of BD in centimetres is:

(a) 4.5
(b) 7.5
(c) 3.5
(d) 5.5

Q56. If $kx^3 + 4x^2 + 3x - 4$ and $x^3 - 4x + k$ leave the same remainder when divided by (x - 3), then the value of k is:

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

Q57. If $(\sin x + \cos x)/(\sin x - \cos x) = 6/5$, then the value of $(\tan^2 x + 1)/(\tan^2 x - 1)$ is:

(a) 35/61
(b) 61/60
(c) 60/61
(d) 61/35

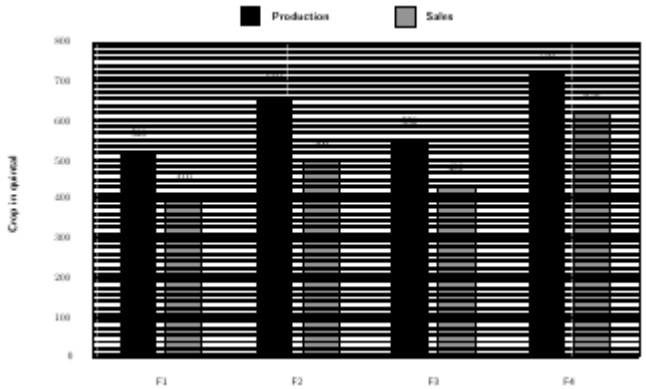
Q58. If $\sin x = 3/5$, $0 \le x \le 90^o$, then the value of cot x.sec x is:

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

Q59. The marked price of a book is Rs.900. What is the selling price of the book after giving two successive discounts each of 10% on it?

(a) Rs. 729
(b) Rs. 800
(c) Rs. 820
(d) Rs. 749

Q60. The given graph represents the production and sales of a certain crop in quintals by the farmers F1, F2, F3 and F4.



What is the ratio between the total sales and total production by all farmers?

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

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(d) 6 : 7

Q61. If a = 2b, then the value of (a + b)/(a - b) is:

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

Q62. The value of 8 - [8 - (5 + 8) - {8 - (8 - 5 + 8)} + 10] is:

(a) 20
(b) 5
(c) 0
(d) 10

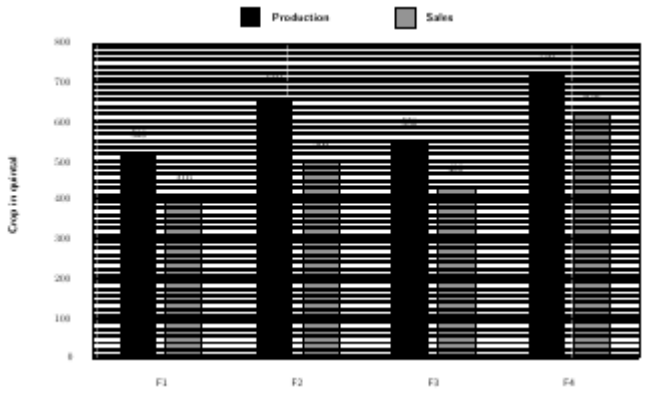
Q63. Ravi sells a chair to Mohan at a profit 10% and Mohan sells it to Govind at profit 20%. If Govind pays Rs. 1,320 for it. Then the cost price for Ravi is:

(a) Rs. 900
(b) Rs. 1,000
(c) Rs. 980
(d) Rs. 800

Q64. In a certain time, a sum of money becomes five times itself if the rate of the interest is 16% p.a. Then the certain time (in years) is:

(a) 30
(b) 38
(c) 32
(d) 25

Q65. The given graph represents the production and sales of a certain crop in quintals by the farmers F1, F2, F3 and F4.



What is the percentage less in the production by farmer F1 with respect to the production by farmer F2?

(a) 237/33%
(b) 217/33%
(c) 247/33%
(d) 227/33%

Q66. The value of $[(a^2 - b^2)^3 + (b^2 - c^2)^3 + (c^2 - a^2)^3] \div [(a - b)^3 + (b - c)^3 + (c - a)^3]$ is equal to:

(a) $(a + b)(b + c)(c + a)$
(b) $(a^2 + b^2)(b^2 + c^2)(c^2 + a^2)$
(c) $(a^2 - b^2)(b^2 - c^2)(c^2 - a^2)$
(d) $(a - b)(b - c)(c - a)$

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Q67. Ravi, Mohan, and Govind can complete a task in 12 days, 10 days and 15 days, respectively. In how many days can Ravi, Mohan and Govind together complete the same task?

(a) 6
(b) 4
(c) 8
(d) 2

Q68. The radius of circular cone is R ans its height is H. The volume of cone is:

(a) πR^2H
(b) $2/(3\pi R^2h)$
(c) $(\pi R^2H)/3$
(d) πRH^2

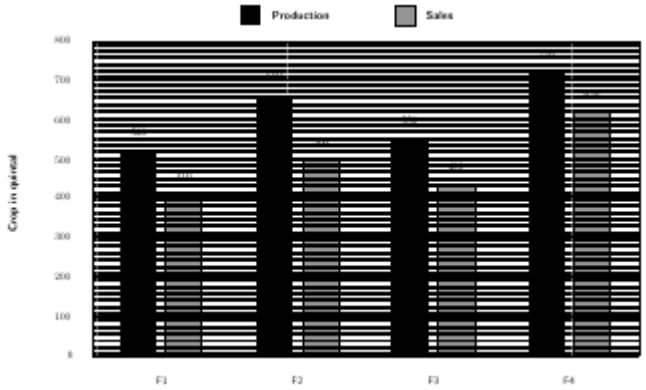
Q69. A motorboat goes 24 km in 2 hour along the stream and 10 km in 1 hour against the stream. The speed of the motorboat in kilometres per hour, is:

(a) 11
(b) 10
(c) 12
(d) 14

Q70. The length of tangents drawn from an external point to the circle are:

(a) parallel
(b) not equal
(c) equal
(d) perpendicular

Q71. The given graph represents the production and sales of a certain crop in quintals by the farmers F1, F2, F3, and F4.



Which farmer recorded the highest percentage of sales with respect to the production?

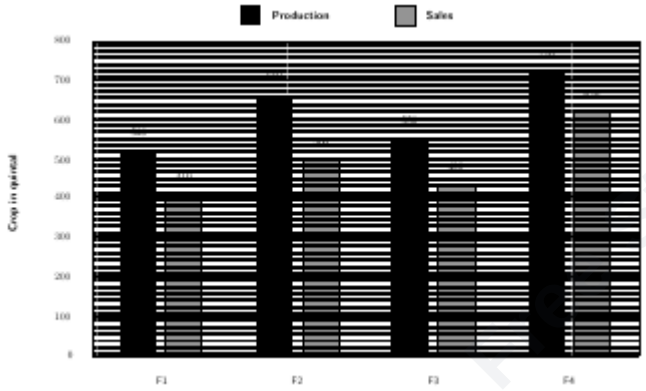
(a) F4
(b) F2
(c) F3
(d) F1

Q72. Which of the following numbers is divisible by both 7 and 11?

(a) 16,425
(b) 12,235
(c) 16,257
(d) 16,324

Q73. The given graph represents the production and sales of a certain crop in quintals by the farmers F1, F2, F3 and F4.

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What is the average of a crop in quintals, sold by all farmers?

(a) 490
(b) 470
(c) 530
(d) 510

Q74. A pair of tangents AB and AC are drawn from a point which is at a distance of 10 cm from the centre O of a circle of radius 6 cm, then the area in cm² of quadrilateral ABOC, is:

(a) 52
(b) 48
(c) 72
(d) 60

Q75. The value of (sin 30° cos 60° + cos 45° sin 45°)/(tan 60° cot 30°) is:

(a) 1/4
(b) 1/(√3)
(c) √3
(d) 2

GENERAL AWARENESS

Q76. Where were the first Winter Paralympics Games held?

(a) Russia
(b) Italy
(c) Korea
(d) Sweden

Q77. In the field of computing, what does VRML stand for?

(a) Virtual Reality Machine Language
(b) Visual Reality Mark Up Language
(c) Virtual Reality Mark Up Language
(d) Visual Reality Machine Language

Q78. When did Shuja-ud-daulah and Shah Alam sign treaties at Allahabad with Robert Clive?

(a) 1764
(b) 1767
(c) 1766
(d) 1765

Q79. World's largest field hockey stadium based on the seating capacity is located in which country?

(a) Netherlands
(b) Pakistan
(c) Australia

(d) India

Q80. What is the radius of the moon?

(a) 1.74 x 10^5 m
(b) 1.79 x 10^6 m
(c) 1.74 x 10^6 m
(d) 1.78 x 10^6 m

Q81. The mixed economy is:

(a) co-existence of traditional and modern industries
(b) presence of domestic and foreign investments
(c) a market system of resource allocation, commerce, and trade in which free markets coexist with government intervention
(d) presence of subsistence and commercial farming

Q82. Which woman astronaut has set the record for the longest single spaceflight by a woman?

(a) Peggy Whitson
(b) Jessica Meir
(c) Christina Koch
(d) Sunita Williams

Q83. India is divided into how many earthquake zones (seismic zones)?

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

Q84. How many Grand Slam tournaments are played in a year in tennis?

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

Q85. Which technology do third generation computers use?

(a) Vacuum tubes
(b) Transistors
(c) Microprocessors
(d) Integrated circuits

Q86. Bylakuppe Monastery (Namdroling) is situated in which state of India?

(a) Karnataka
(b) Arunachal Pradesh
(c) Himachal Pradesh
(d) Maharashtra

Q87. What is the formula of butane gas?

(a) C4H10
(b) C4H6
(c) C5H10
(d) C4H8

Q88. Animals of which phylum have jointed legs?

(a) Mollusca
(b) Nematoda
(c) Arthropoda
(d) Echinodermata

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Q89. Who was the first Chief Election Commissioner of India?

(a) Sukumar Sen
(b) Om Prakash Rawat
(c) Kalyan Sundaram
(d) Mihir Sen

Q90. Velds are grasslands of:

(a) Australia
(b) Africa
(c) America
(d) Asia

Q91. The period of second five year plan in India was:

(a) 1956-61
(b) 1951-56
(c) 1969-74
(d) 1961-66

Q92. Which country launched the third ‘Long March-5', the largest carrier rocket of the country, in December 2019?

(a) China
(b) Russia
(c) India
(d) USA

Q93. Chenchus schedule tribe belongs to which state of India?

(a) West Bengal
(b) Telangana
(c) Nagaland
(d) Kerala

Q94. Which country has announced setting up of Gandhi Citizenship Education Prize?

(a) South Africa
(b) Germany
(c) Portugal
(d) India

Q95. What is the normal air pressure at sea level?

(a) 1013.25 millibars
(b) 985.14 millibars
(c) 886.13 millibars
(d) 1100.12 millibars

Q96. Who was the first Indian to join the Viceroy’s Executive Council?

(a) Satyendra Prasad Sinha
(b) Tej Bahadur Sapru
(c) PS Siwaswami Iyer
(d) Syed Ali Iman

Q97. Who won the 2019 Women’s World Rapid Chess Championship?

(a) Lei Tingjie
(b) Ekaterina Atalik
(c) Humpy Koneru
(d) Ju Wenjun

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Q98. Which zone separates the crust and mantle?

(a) Stratosphere
(b) Moho
(c) Lithosphere
(d) Asthenosphere

Q99. Who acts as the President during casual vacancy that arises due to death of the President?

(a) Lok Sabha Speaker
(b) Chief Justice of India
(c) Vice-President
(d) Nominated Lok Sabha member

Q100. Who has won DSC Prize for South Asian Literature 2019?

(a) Ruskin Bond
(b) Arundhati Roy
(c) Amitabha Bagchi
(d) Chetan Bhagat

ANSWER KEY

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

SOLUTIONS

Q1. Answer: (b) than hot coffee

The correct answer is 'than hot coffee'.

Key Points

• In the given sentence, the use of the preposition 'than' is incorrect.

• From the given sentence, the word 'Prefer' is usually followed by 'to' and not 'than' because the word itself means 'like something or someone more than another'.

• 'To' here refers to the relationship between orange juice and hot coffee or chilled grapes.

• Also, we use prefer "than" when the comparison is between infinitives to infinitives (infinitives are to+ first form of the verb).

• We use prefer "to" when the comparison is between noun to noun and gerund to gerund (gerund is V+ing form of the verb).

• Therefore, the preposition 'to' should be used in place of the preposition 'than'.

Hence, the correct answer is option 2.

Correct Sentence: The invited guests preferred orange juice to hot coffee or chilled grapes.

Q2. Answer: (a) As much as

The correct answer is 'As much as'.

Key Points

• In the underlined segment, the adjective 'many' is incorrect.

• The adjective 'many' means a large number. We use "as many as" for countable nouns.

• The adjective 'much' means a great amount or quantity. We use "as much as" for uncountable nouns.

• Therefore, the adjective 'much' should be used in place of the adjective 'many'.

Hence, the correct answer is option 1.

The Correct Sentence is: As much as I care for her, I still have to disagree with her on this topic.

Q3. Answer: (d) The members of the team were received by the coach with great excitement.

The correct answer is 'The members of the team were received by the coach with great excitement'.

Key Points

• In Active Voice, a sentence emphasizes the subject, performing an action.

• In Passive Voice, a sentence emphasizes the action or the object of the sentence.

• The given sentence is in the active voice and 'The coach' is the subject and 'the members of the team' is the object.

• When we convert this sentence into passive voice, the subject 'The coach' of the active voice becomes the object, the object 'the members of the team' becomes the subject.

• The passive format "'were + V3 (received)" should be used.

• This is the active and passive voice rule for the past simple tense.

Hence, the correct answer is option 4*.*

Additional Information

• Verbs of passive format have a different set of tenses (*V3 - Past participle or Third form of the Verb) as given below in the table:

TENSE	ACTIVE	PASSIVE	PASSIVE CONVERSION
Present Simple	He plays football	am/is/are + V3	Football is played by him
Present Continuous	He is playing football	am/is/are + being +V3	Football is being played by him
Present Perfect	He has played football	Has/have + been+ V3	Football has been played by him
Present Perfect Continuous	He has been playing football	Not used and unusual.	Not used and unusual
Past Simple	He played football	Was/were + V3	Football was played by him
Past Continuous	He was playing football	Was/were + being + V3	Football was being played by him
Past Perfect	He had played football	Had + been + V3	Football had been played by him
Past Perfect Continuous	He had been playing football	Not used and unusual	Not used and unusual
Future Simple	He will play football	Will + be + V3	Football will be played by him
Future Continuous	He will be playing football	Not used and unusual	Not used and unusual
Future Perfect	He will have played football	Will have been + V3	Football will have been played by him
Future Perfect Continuous	He will have been playing football	Not used and unusual	Not used and unusual

Q4. Answer: (c) ACDB

The correct answer is 'ACDB'.

Key Points

• The sentence 'A' is independent of any other sentences as it is giving general information about the noun "Anush". Hence, 'A' is the first part.

• The "street dog" mentioned in the sentence 'C' refers back to the 'stray dogs' mentioned in the sentence 'A'. Hence, 'C' follows 'A'.

• The pronoun "him" mentioned in the sentence 'D' refers back to the noun "Anush" mentioned in the sentence 'C'. Hence, 'D' follows 'C'.

• The sentence 'B' is the concluding sentence. Hence, 'B' is the last sentence.

Paragraph after rearranging the sentences: Anush was very afraid of stray dogs. One evening, when a street dog barked at him, Anush turned and started running. The dog ran after him barking loudly and fiercely. Anush's mother saw the dog chasing her son.

Hint

• Important Rules to Solve the Para Jumbles:
• Read the sentences attentively and try to comprehend the idea or theme of the sentence and eliminate the irrelevant options.
• Try to identify the opening (independent sentence) and closing sentences (concluding sentence).
• Try to identify the mandatory pairs. Two sentences can be connected through various connectors and other determinants.

Q5. Answer: (b) relocate

The correct answer is 'relocate'.

Key Points

• Let us explore the given options:-
• The word 'reschedule' means to change the time of a planned event.
• The word 'relocate' means to move to a new place and establish one's home or business there.
• The word 'reinstate' means to restore someone or something to their former position or state.
• The word 'restart' means to start again.

Hence, the correct answer is option 2*.*

Q6. Answer: (b) its

The correct answer is 'its'.

Key Points

• Let us explore the given options:-
• The word 'their' means belonging to or associated with the people or things previously mentioned or easily identified.
• The word 'its' means belonging to or associated with a thing previously mentioned or easily identified.
• The word 'their's' is a contraction of "there is" or "there has".
• The word 'it's' is a contraction of "it is" or "it has". "It's" is the same type of contraction as "where's" or "there's".

Hence, the correct answer is option 2*.*

Q7. Answer: (c) hit

The correct answer is 'hit'.

Key Points

• Let us explore the given options:-
• The word 'produced' means caused a particular result or situation to happen or exist.
• The word 'bagged' means succeeded in securing something.
• The word 'hit' means to reach a particular level, point, or figure.
• The word 'leaped' means moved quickly and suddenly.

Hence, the correct answer is option 3*.*

Q8. Answer: (d) severely

The correct answer is 'severely'.

Key Points

• Let us explore the given options:-
• The word 'dissatisfied' means not content or happy with something.
• The word 'conditionally' means in a way that is subject to one or more conditions or requirements being met.
• The word 'separate' means different; distinct.
• The word 'severely' means to an undesirably great or intense degree.

Hence, the correct answer is option 4*.*

Q9. Answer: (b) respiratory

The correct answer is 'respiratory'.

Key Points

• Let us explore the given options:-
• The word 'brain' is a person's mind.
• The word "respiratory' is relating to or affecting respiration or the organs of respiration.
• The word 'abdominal' is relating to the abdomen.
• The word 'renal' is relating to the kidneys.

Hence, the correct answer is option 2*.*

Q10. Answer: (a) Planned

The correct answer is 'Planned'.

Key Points

• The word 'Casual' means happening by chance.

• The antonyms of the word 'Casual' are "planned, intended, intentional".

• From the antonym of the given word, we can say that the word 'Planned' is the opposite in meaning.

• The word 'Planned' means design or make a plan in advance.

Hence, the correct answer is option 1. Let's see the meaning of other given options-

WORDS	MEANING
Informal	having a relaxed, friendly, or unofficial style, manner, or nature
Inspirational	providing or showing creative or spiritual inspiration
Immature	not fully developed

Additional Information

• The synonyms of the word 'Casual' are "unintended, unintentional, unplanned".

• Example of 'Casual' in a sentence:

• She had a purposeful air, and it became evident that this was not a casual visit.

Q11. Answer: (c) The traveler inquired if there would be a shelter for strangers.

The correct answer is 'The traveler inquired if there would be a shelter for strangers'

Key Points

• The given sentence is a direct speech.

• The basic rules for changing or converting direct speech into indirect speech:

• The commas and inverted commas are removed and the 'question mark' is replaced by 'full stop' and 'if' is included.

• The present simple tense format 'Subject + V1 (will) + Object' will be changed into the past simple tense format 'Subject + V2 (would) + Object'.

Hence, the correct answer is option 3.

Additional Information

• The following table will enable us to know how tense changes into Indirect speech:-

Direct Speech	Indirect Speech
Present simple (Subject +V1st + Object)	Past simple (Subject +V2 + Object)
Present continuous (Subject +is/am/are+V1 +ing+ Object)	Past Continuous (Subject +was/were+V1 +ing+ Object)
Present perfect (Subject + has/have+V3+Object)	Past perfect (Subject+had+V3+Object)
Past simple (Subject+V2+Object)	Past perfect (Subject+had+V3+Object)
Past Continuous (Subject +was/were+V1 +ing+ Object)	Past perfect continuous (Subject +had been+V1 +ing+ Object)
Future simple (Subject+ will/shall+V1+object)	Present Conditional (Subject+ would+V1+object)
Future Continuous (Subject +will/shall+be+V1 +ing+ Object)	Conditional Continuous (Subject +would+be+V1 +ing+ Object)

Q12. Answer: (b) Something promising is there in any difficult situation

The correct answer is 'Something promising is there in any difficult situation'.

Key Points

• Given Idiom: Every cloud has a silver lining means there is something good in everything that’s bad.

• Example: Don't be so grumpy and pessimistic every cloud has a silver lining.

• From the given options, the second option is the most appropriate meaning of the given idiom.

Hence, the correct answer is option 2.

Mistake Points

• We may think from the phrase "Every cloud has a silver lining" that it is all about a silver lining on a cloud, but the correct answer is option 2. So be careful while dealing with such questions.

Additional Information

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• It appears that the origin of this phrase is in 1634 from John Milton's poem "Comus." The phrase has been in use in its exact form since the mid-1800s.

Q13. Answer: (c) funniest

The correct answer is 'funniest'.

Key Points

• Let us explore the given options:

• The adjective 'primary' means of chief importance; principal.

• The adjective 'major' means important, serious, or significant.

• The adjective 'funniest' means causing laughter or amusement; humorous.

• The adjective 'real' means actually existing as a thing or occurring in fact; not imagined or supposed.

Complete Sentence: The funniest part of this issue is that the investigation officer himself turned out to be the culprit.

Hence, the correct answer is option 3.

Q14. Answer: (b) DCAB

The correct answer is 'DCAB'.

Key Points

• The sentence 'D' is independent of any other sentences as it is giving general information about the nouns "Navin and Jathin". Hence, 'D' is the first part.

• The pronoun "They" mentioned in the sentence 'C' refers back to the nouns 'Navin and Jathin' mentioned in the sentence 'D'. Hence, 'C' follows 'D'.

• The phrase "group of young men" mentioned in the sentence 'A' is linked with the noun "village" mentioned in the sentence 'C'. Hence, 'A' follows 'C'.

• The sentence 'B' is the concluding sentence. Hence, 'B' is the last sentence.

Paragraph after rearranging the sentences: Navin and Jathin were brothers and brave fighters. They lived in a jungle hideout on the banks of a river in the village. Navin and Jathin gathered a group of young men and trained them in the fighting. They wanted to build their own village where people could live without fear.

Hint

• Important Rules to Solve the Para Jumbles:

• Read the sentences attentively and try to comprehend the idea or theme of the sentence and eliminate the irrelevant options.

• Try to identify the opening (independent sentence) and closing sentences (concluding sentence).

• Try to identify the mandatory pairs. Two sentences can be connected through various connectors and other determinants.

Q15. Answer: (c) Entirely false and fabricated

The correct answer is 'Entirely false and fabricated'.

Key Points

• Given Idiom: Made out of whole cloth means completely fabricated and not based on reality at all.

• Example: This report is positively denied in official circles, who affirm that nothing of the kind occurred, but that the story is made out of whole cloth.

• From the given options, the third option is the most appropriate meaning of the given idiom.

Hence, the correct answer is option 3.

Mistake Points

• We may think from the phrase "Made out of whole cloth" that it is all about something made out of the cloth, but the correct answer is option 3. So be careful while dealing with such questions.

Additional Information

• In the 15th century, this expression referred to something fabricated from cloth that ran the full length of the loom. However, by the 1800s it was common practice for tailors to deceive their customers and, instead of using whole cloth, actually make garments from pieced goods. Their advertising slogan, "cut out of whole cloth," thus came to mean "made up, false."

Q16. Answer: (b) Hymn

The correct answer is 'Hymn'.

Key Points

• Let us explore the given options:-

• 'Epic' is a long poem.

• 'Hymn' is a religious song or poem of praise to God or a god.

• 'Elegy' is a poem of serious reflection, typically a lament for the dead.
• 'Ode' is a classical poem of a kind originally meant to be sung.
Hence, the correct answer is option 2*.*

Q17. Answer: (b) Homogeneous

The correct answer is 'Homogeneous'.
Key Points
• Let us explore the given options:-
• 'Homosexual' means sexually attracted to people of one's own sex.
• 'Homogeneous' means of the same kind; alike.
• 'Homonymous' means having the same name.
• 'Homophony' is the quality or state of being having the same sound.
Hence, the correct answer is option 2*.*

Q18. Answer: (b) Querulous

The correct answer is 'Querulous'.
Key Points
• The word 'Quarrelsome' means 'the feeling or displaying an eagerness to fight'
• The synonyms of the word 'Quarrelsome' are "querulous, rude, petulant".
• From the synonym of the given word, we can say that the word 'Querulous' has the same in meaning.
• The word 'Querulous' means complaining in a rather petulant or whining manner.
Hence, the correct answer is option 2. Let's see the meaning of other given options:-

WORDS	MEANING
Pragmatic	dealing with things sensibly and realistically
Ambiguous	not clear or decided
Opaque	not able to be seen through; not transparent

Additional Information
• The antonyms of the word 'Quarrelsome' are "calm, quiet, relaxed".
• Example of 'Quarrelsome' in a sentence:
• The boy is quarrelsome and ready to fight at the drop of a hat.

Q19. Answer: (d) Unlikely

The solution is in Hindi. Read it online.

Q20. Answer: (d) Balancing

The correct answer is 'Balancing'.
Key Points
• The word 'Adjustment' means the act or process of changing something to fit a new use or situation.
• The synonyms of the word 'Adjustment' are "balancing, attunement, adjusting".
• From the synonym of the given word, we can say that the word 'Balancing' is the same in meaning.
• The word 'Balancing' means to make equal in amount, degree, or status.
Hence, the correct answer is option 4. Let's see the meaning of other given options:-

WORDS	MEANING
Cooperating	assisting someone or complying with their requests
Coordinating	matching or harmonizing attractively
Compromising	settle a dispute by mutual concession

Additional Information
• The antonyms of the word 'Adjustment' are "unbalancing, disproportioning, supporting".
• Example of 'Adjustment' in a sentence:
• The company made an adjustment in my salary.

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Q21. Answer: (b) As long as

The correct answer is 'As long as'.

Key Points

• In the underlined segment, the phrase 'So much as' is incorrect.

• The phrase 'So much as' means even.

• The phrase 'As long as' means provided that.

• The phrase 'In as much as' means since, because or to the extent that.

• The phrase 'As much to' means the same to.

Hence, the correct answer is option 2.

Correct Sentence: As long as you are their class teacher, you are responsible for their performance in the examination.

Q22. Answer: (b) Simultaneoues

The correct answer is 'Simultaneoues'.

Key Points

• Let us explore the options:-

• 'Simulation' means the imitation of a situation or process.

• 'Simultaneoues': There is no such word in English or we can say that there is some spelling mistake in this word.

• The correct spelling is 'Simultaneous' which means occurring, operating, or done at the same time.

• 'Stylistics' is the study of the distinctive styles found in particular literary genres and in the works of individual writers.

• 'Synthetic' means (of a substance) made by chemical synthesis, especially to imitate a natural product.

Hence, the correct answer is option 2.

Q23. Answer: (c) tumor

The correct answer is 'tumor'.

Key Points

• Let us explore the given options:

• The noun 'tremor' means a sudden feeling of fear or excitement.

• The noun 'treasure' means a number of precious metals, gems, or other valuable objects.

• The noun 'tumor' means the swelling of a part of the body, generally without inflammation.

• The noun 'tuber' means a much thickened underground part of a stem or rhizome.

Complete Sentence: There was a huge tumor in the stomach.

Hence, the correct answer is option 3.

Q24. Answer: (c) Everyone are

The solution is in Hindi. Read it online.

Q25. Answer: (d) Navigetion

The correct answer is 'Navigetion'.

Key Points

• Let us explore the options:-

• 'Combination' is a joining or merging of different parts or qualities in which the component elements are individually distinct.

• 'Molestation' is a sexual assault or abuse of a person.

• 'Condonation' means the implied pardon of an offense by treating the offender as if it had not been committed.

• 'Navigetion': There is no such word in English or we can say that there is some spelling mistake in this word.

• The correct spelling is 'Navigation' which means the process or activity of accurately ascertaining one's position and planning and following a route.

Hence, the correct answer is option 4.

Q26. Answer: (b) Track

The logic is:

Boxing : Ring → A boxing ring, often referred to simply as a ring or euphemistically the squared circle, is the space in which a boxing match occurs.

Similarly,

Race : ? → A race track (racetrack, racing track or racing circuit) is a facility built for racing of vehicles, athletes, or animals.

Hence, ‘Track’ is the correct answer.

Q27. Answer: (d) 13

The logic is:

25 × 5 – 5 = 120

23 × 7 – 7 = 154

Similarly,

? × 13 – 13 = 156

=> ? × 13 = 156 + 13

=> ? × 13 = 169

=> ? = 13

Hence, ‘13’ is the correct answer.

Q28. Answer: (c) 4913

The logic is:

2197 : 12167 → $13^3 : (13 + 10)^3$

Similarly,

343 : ? → $7^3 : (7 + 10)^3$

=> ? = 17^3

=> ? = 4913

Hence, ‘4913’ is the correct answer.

Q29. Answer: (d) Brother

According to given conditions,

T is the brother of M.

Hence, ‘Brother’ is the correct answer.

Q30. Answer: (d) 4 and 1/4

Let the number be a.

According to question:

$a + 1/a = 17/4$

=> $(a^2 + 1)/a = 17/4$

=> $4(a^2 + 1) = 17a$

=> $4a^2 + 4 = 17a$

=> $4a^2 – 17a + 4 = 0$

=> $4a^2 – (16 + 1)a + 4 = 0$

=> $4a^2 – 16a – a + 4 = 0$

=> $4a (a – 4) – 1(a – 4) = 0$

=> $(4a – 1) = 0$ or $(a – 4) = 0$

=> $a = 1/4$ or $a = 4$

Hence, ‘4 and 1/4’ is the correct answer.

Q31. Answer: (b) 196

The logic is:

1) 224 → 15^2 - 1

2) 196 → 14^2

3) 360 → 19^2- 1

4) 528 → 23^2 - 1

Hence, ‘196’ is the odd one out.

Q32. Answer: (a) [figure]

When the mirror is placed on line MN in the question figure, then the correct mirror image of the question figure is shown below:

Hence, ‘option 1’ is the correct answer.

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Q33. Answer: (d) 216

The number of cubes in the given figure is 6 × 6 × 6

= 216

Hence, '216' is the correct answer.

Q34. Answer: (b) [figure]

The paper when unfolded will appear as shown below:

Hence, 'option 2' is the correct answer.

Q35. Answer: (d) 29

The pattern followed here is:

According to the alphabetical positions of the letters,

Note: Sum of the place value of the letters is equal to the number between the letters.

C10G

H20L

L17E

L?Q

So '?' will be replaced by 29 in L?Q.

Hence, '29' is the correct answer.

Q36. Answer: (a) 41

Number of persons who like only teaching and playing but NOT cooking = 21 + 6 + 14

= 41

Hence, '41' is the correct answer.

Q37. Answer: (c) opmn

1) oomn

mnop / mnoo / mnop / mnop

No particular pattern is formed/repeated when the series is divided into four equal parts.

2) oppn

mnop / mnop / pnop / mnop

No particular pattern is formed/repeated when the series is divided into four equal parts.

3) opmn

mnop / mnop / mnop / mnop

'mnop' is repeating itself when the series is divided into four equal parts.

4) mpmo

mnmp / mnop / mnop / moop

No particular pattern is formed/repeated when the series is divided into four equal parts.

Hence, 'opmn' is the correct answer.

Q38. Answer: (d) LKM

The pattern followed here is:

According to the alphabetical positions of the letters,

Instead of 'LKM', it should be 'LMK'.

Hence, 'LKM' does NOT belong to the following series.

Q39. Answer: (b) OBCF

The pattern followed here is:

According to the alphabetical positions of the letters,

Letters are coded by their place values.

21	**6**	**8**	**3**
U	F	H	C

15	6	5	4
O	F	E	D

Similarly,

15	2	3	6
O	B	C	F

Hence, ‘OBCF’ is the correct answer.

Q40. Answer: (c) 738

The logic is:

$3^3 + 3 = 30$

$5^3 + 5 = 130$

$7^3 + 7 = 350$

$9^3 + 9 = 738$

Hence, ‘738’ is the correct answer.

Q41. Answer: (c) OOLXSJ

The pattern followed here is:

According to the alphabetical positions of the letters,

Similarly,

Hence, ‘OOLXSJ’ is the correct answer.

Q42. Answer: (a) 32

The number of triangles in the given figure is shown below:

Total triangle in the given figure = 32

1. Counting triangle only in one square.

Number of partition in square = 8

Total number of triangle in square= 8 × 2 = 16

2. There is another symmetrical square inside the first square.

So,

Total number of triangle = 16 × 2 = 32.

Hence 32 is the correct answer.

Q43. Answer: (d) 2

The answer figure ‘2’ when placed in the blank space of the question figure will complete the pattern, which is shown below:

Hence, ‘option 4’ is the correct answer.

Q44. Answer: (c) Neither conclusion 1 nor 2 follows.

The least possible Venn diagram is:

1. All animals are birds. → False (It is definite)

2. All animals are men. → False (It can be possible but it is not definite)

Hence, neither conclusion 1 nor 2 follows.

Q45. Answer: (d) T

The pattern followed here is:

According to the alphabetical positions of the letters,

In place of ‘T’, it should be ‘S’.

Hence, ‘T’ is the odd one out.

Q46. Answer: (b) [figure]

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

Hence, ‘option 2’ is the correct answer.

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Q47. Answer: (c) G

The pattern followed here is:

According to the alphabetical positions of the letters,

Hence, ‘G’ is the correct answer.

Q48. Answer: (c) 70

Symbol	#	&	@	÷
Meaning	•	÷	×	•

Given expression: 15 @ 2 ÷ 900 & 10 # 50

By replacing the symbols by their meaning, we get:

15 × 2 + 900 ÷ 10 – 50

= 30 + 90 – 50

= 120 – 50

= 70

Hence, ‘70’ is the correct answer.

Q49. Answer: (a) 12

The logic is:

1^(st) column: $(11 + 5 + 3)^2 = 361$

2^(nd) column: $(17 + 3 + 7)^2 = 729$

Similarly,

3^(rd) column: $(8 + 15 + ?)^2 = 1225$

=> $(8 + 15 + ?) = \sqrt{1225}$

=> $(8 + 15 + ?) = \sqrt{(35 \times 35)}$

=> 23 + ? = 35

=> ? = 35 – 23

=> ? = 12

Hence, ‘12’ is the correct answer.

Q50. Answer: (d) 331

The logic is:

Hence, ‘331’ is the correct answer.

Q51. Answer: (b) 6 cm

Given:

In ΔABC

angle ABC = 90º

AC = 10 cm

BC = 8 cm

Formula Used:

Pythagoras therom

AC2 = AB2 + BC2

Calculation:

Using pythagoras therom

$10^2 = AB^2 + 8^2$

$100 - 64 = AB^2$

$AB^2 = 36$

AB = 6 cm

Therefore The length of AB is 6 cm

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Q52. Answer: (b) 285

Given:

18% of 15% of 25/9 of 3800

Calculation:

18% of 15% of 25/9 of 3800 = (18/100) × (15/100) × (25/9) × 3800

18% of 15% of 25/9 of 3800 = 15 × 19 => 285

Therefore The value of 18% of 15% of 25/9 of 3800 is 285

Q53. Answer: (b) 18

Given:

x : y = 3 : 2

x + y = 90

Calculation:

Let us take the value of x and y be 3a and 2a

x + y = 3a + 2a

=> 3a + 2a = 90

=> 5a = 90

=> a = 18

=> x = 3a = 54

=> y = 2a = 36

=> x - y = 54 - 36 = 18

Therefore The value (x - y) is 18

Q54. Answer: (a) 60

Given:

The average age of 65 men = 32 years

Number of new men added = 5

The average ages of 70 men = 34 years

Formula Used:

Average = Sum of the observation/Total number of observation

Calculation:

Sum of the age of men = Average × Total number of men

Sum of the age of 65 men = 32 × 65 = 2080

Sum of the age of 70 men = 70 × 34 = 2380

Sum of the age of 5 men = Sum of the age of 70 men - Sum of the age of 65 men

Sum of the age of 5 men = 2380 - 2080 = 300

Average of 5 men added newly = 300/5 = 60

Therefore The average of the ages of those 5 men joined later is 60

Q55. Answer: (a) 4.5

Given:

In Δ ABC

DE is parallel to BC

AE = 4 cm

AD = 3 cm

AC = 10 cm

Concept Used:

AAA' similarity rule

If three angles of two triangles are equal then corresponding sides of similar triangles are proportional

Calculation:

If DE is parallel to BC

angle A = angle A (Common)

angle ADE = angle ABC (corresponding angles of parallel sides are equal)

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angle AED = angle ACB (corresponding angles of parallel sides are equal)
By AAA similarity Δ ABC and Δ ADE are similar
then corresponding sides of two triangle are in ratio
AD/AB = AE/AC = DE/BC
(AD/AB) = (AE/AC)
=> 3/AB = 4/10
=> AB = 15/2 = 7.5 cm
As, AB = AD + BD
=> 7.5 = 3 + BD
=> 7.5 - 3 = BD
=> BD = 4.5 cm
Therefore The value of BD is 4.5 cm

Q56. Answer: (b) -1

Given:
Dividend1 = kx3 + 4x2 + 3x - 4
Dividend2 = x3 - 4x + k
Divisor = (x - 3)
Formula Used:
Dividend = (divisor × quotient) + Reminder
Calculation:
x - 3 = 0
Then, x = 3
By substituting the value of x, we'll get
$kx3 + 4x2 + 3x - 4 = k(3)^3 + 4(3)^2 + 3(3) - 4 = 27k + 36 + 9 - 4 = 27k + 41$ ----(i)
$x3 - 4x + k = 3^3 - 4(3) + k = 27 - 12 + k = 15 + k$ ----(ii)
Both the dividends leave equal reminders then equating (i) and (ii)
27k + 41 = 15 + k
=> 26k = -26
=> k = -1
Therefore The value of k is -1

Q57. Answer: (b) 61/60

Given:
(sin x + cos x)/(sin x - cos x) = 6/5
Concept Used:
Componendo & dividendo
a/b = c/d
then (a + b)/(a - b) =(c + d)/(c - d)
Calculation:
(sin x + cos x)/(sin x - cos x) = 6/5
By using componendo & dividendo
(sinx + cosx + sinx - cos x)/(sinx + cosx - sinx + cosx) = (6 + 5)/(6 - 5)
(2sinx/2cosx) = (sinx/cosx) = 11/1
$\tan^2x = (\sin^2x/\cos^2x) = 11^2/1^2 = 121$
$\tan^2x + 1 = 121 + 1 = 122$
$\tan^2x - 1 = 121 - 1 = 120$
$(\tan^2x + 1)/(\tan^2x - 1) = 122/120 = 61/60$
Therefore The value of $(\tan^2x + 1)/(\tan^2x - 1)$ is 61/60

Q58. Answer: (a) 5/3

Given:
Sinx = 3/5

Formula Used:
sinθ = perpendicular/hypotenuse
cosθ = Base/hypotenuse
cotθ = cosθ/sinθ
Calculation:
cotx × secx = (cosx/sinx) × 1/cosx = 1/sinx
=> cotx × secx = 1/(3/5) = 5/3
Therefore The value of cot x.sec x is 5/3

Q59. Answer: (a) Rs. 729

Given
MP of book is Rs.900.
Two successive discount is 10% each
Formula used
MP(1 - D/100) = SP
D = Discount5
SP = Selling Price
MP = Marked Price
Calculation
MP of a book is Rs.900.
=> Net discount = 10 + 10 - (10 × 10)/100
=> 19%
=> MP(1 - D/100) = SP
=> MP(1 - 19//100) = SP
=> MP × 81/100 = SP
=> SP = MP × 81 / 100
=> SP = 900 × 81 / 100
Therefore Selling Price of book is Rs.729
Alternate Method
MP SP
10 9
10 9
100 81
100 unit = 900
81 unit = 900 × 81 / 100
Therefore SP is Rs.729

Q60. Answer: (c) 4 : 5

Given

Farmer	Production	Sales
F1	520	410
F2	660	500
F3	550	430
F4	720	620
Total	2450	1960

Calculation:
Sales : Production = 196 : 245
=> Sales : Production = 4 : 5
Therefore Ratio of Sales : Production is 4 : 5

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Q61. Answer: (a) 3

Given:

If a = 2b

Calculation:

If a = 2b

=> (a + b) / (a - b) = (2b + b) / (2b - b)

=> 3b / b

Therefore The value of (a + b)/(a - b) is 3.

Q62. Answer: (c) 0

Given:

8 - [8 - (5 + 8) - {8 - (8 - 5 + 8)} + 10]

Concept used:

Calculation:

8 - [8 - 13 - {8 - 11} + 10]

=> 8 - [8 - 13 +3 + 10]

=> 8 - 8

Therefore This value is 0

Q63. Answer: (b) Rs. 1,000

Given

Ravi sells a chair to Mohan at a profit 10%.

Mohan sells it to Govind at profit 20%.

Govind pays Rs.1,320 for it.

Formula used

Profit ={(SP - CP) / CP} × 100

SP = Selling Price

CP = Cost Price

Calculation

Let Cost Price be Rs.x

=> After sells chair to Mohan at 10% CP becomes x × 110 / 100

=> This CP becomes SP for Govind. Govind got profit of 20% = x × (110 / 100) × 120 / 100

=> x (11 × 12) / 100 = 1320

=> x = (1320 × 100) /132

Therefore CP of chair is Rs.1000

Alternate Method

Net profit = 10 + 20 + (10 × 20) / 100 = 32%

CP × (1 + 32 / 100) = 13200

CP = Rs.1000

Q64. Answer: (d) 25

Given:

A sum of money becomes five times itself

Rate =16% p.a

Formula used:

SI = (P × R × T) / 100

SI = Simple Interest

P = Principal

T = Time

R = Rate

Calculation:

Let initially Principal be x

=> It becomes 5x in t time perod

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=> Simple interest = 5x - x
=> 4x
=> 4x = (x × 16 × t) / 100
=> 4 × 100 = 16t
=> t = 25 years
Therefore It takes 25 years to become 5 times

Q65. Answer: (b) 217/33%

Given:

Farmer	Production	Sale
F1	520	410
F2	660	500
F3	550	430
F4	720	620
Total	2450	1960

Calculation:
Production difference between F1 and F2 = 660 - 520
=> 140
=> Percentage = 140 / 660 × 100 = 217/33%
Therefore 217/33%

Q66. Answer: (a) (a + b)(b + c)(c + a)

Given
$[(a^2 - b^2)^3 + (b^2 - c^2)^3 + (c^2 - a^2)^3] \div [(a - b)^3 + (b - c)^3 + (c - a)^3]$
Formula used
We know than if (a + b + c) = 0
Then, $a^3 + b^3 + c^3 = 3abc$
Calculation
$(a^2 - b^2) + (b^2 - c^2) + (c^2 - a^2) = 0$, then
=> (a2 - b2)³ + (b2 - c2)³ + (c2 - a2)³ = 3(a2 - b2)(b2 - c2)(c2 - a2)
=> Similarly
=> (a - b) + (b - c) + (c - a) = 0
=> Then, $(a - b)^3 + (b - c)^3 + (c - a)^3 = 3(a - b)(b - c)(c - a)$
=> {(a2 - b2)3 + (b2 - c2)3 + (c2 - a2)³} / {(a - b)3 + (b - c)3 + (c - a)3}
=> {3(a2 - b2)(b2 - c2)(c2 - a2)} / 3{(a - b)(b - c)(c - a)}
=> {(a + b)(a - b)(b + c)(b - c)(c + a)(c - a)} / {(a - b)(b - c)(c - a)}
Therefore (a + b)(b + c)(c + a)
Let put the any values of a, b and c
L et a be 0, b be 1 and c be 2
$\{(0 - 1)^3 + (1 - 4)^3 + (4 - 0)^3\} / (0 - 1)^3 + (1 - 2)^3 + (2 - 0)^3$
(-1 -27 + 64) / (-1 + -1 + 8)
36 / 6 = 6
Now satisfy option
1 = (0 + 1((1 + 2)(2 + 0) = 6
Therefore Option 1 is correct

Q67. Answer: (b) 4

Given:
Ravi, Mohan, and Govind can complete a task in 12 days, 10 days and 15 days, respectively.
Calculation:

Ravi can complete a task in 12 days
=> Ravi can do one day work = 1/12
Mohan can complete a task in 10 days
=> Mohan can do one day work = 1/10
Govind can complete a task in 15 days
=> Govind can do one day work = 1/15
Ravi, Mohan and Govind work together in one day
=> 1/12 + 1/10 + 1/15
=> (5 + 6 + 4)/60
=> 1/4
Ravi, Mohan and Govind can finish the wrok in
=> 4 days
Therefore Ravi, Mohan and Govind together complete the same task in 4 days.
Ravi, Mohan, and Govind can complete a task in x days, y days and z days.
Formula used:
The three person work together, they can finish the work in xyz/(xy + yz + zx)
The number of days taken by Ravi, Mohan and Govind together complete the same task
=> 12 × 10 × 15/(12 × 10 + 10 × 15 + 15 × 12)
=> 1800/450
=> 4 days
Therefore Ravi, Mohan and Govind together complete the same task in 4 days.
Ravi + Mohan + Govind work together = total work unit/per day unit
=> 180/(15 + 18 + 12)
=> 180/45
=> 4 days
Therefore Ravi, Mohan and Govind together complete the same task in 4 days.

Q68. Answer: (c) (π R²H)/3

Given:
The radius of circular cone = R
Height of cone = H
Calculation:
The volume of circular cone = (1/3) × Base area × Height
=> The volume of circular cone = (1/3) × πR² × H
=> The volume of circular cone = (1/3)πR²H
Therefore The volume of cone is (1/3)πR2H.

Q69. Answer: (a) 11

Given:
A motorboat goes 24 km in 2 hour along the stream and 10 km in 1 hour against the stream.
Formula used:
Speed of motor boat = 1/2(downstream speed + upstream speed)
Calculation:
Speed of motor boat along with stream(downstream speed) = distance/time
=> 24/2
=> 12 km/hr
Speed of motor boat against with stream(upstream speed) = distance/time
=> 10/1
=> 10 km/hr
According to the question,
Speed of motor boat = 1/2(downstream speed + upstream speed)
=> (12 + 10)/2

=> 11 km/hr

Therefore The speed of the motorboat in kilometres per hour, is 11.

Q70. Answer: (c) equal

Given:

A circle with center O, OX, and OY are two tangents to be the circle drawn from an external point Z.

Construction:

Join OX, OY, and OZ.

Calculation:

It is known that a tangent at any point of a circle is perpendicular to the radius through the point of contact.

OX perpendicular to ZX

OY perpendicular to ZY

In ΔOXZ and ΔOYZ

=> OZ = OZ (common side)

=> OX = OY (radius)

=> angle OXZ = angle OYZ = 90^o (It is known that a tangent at any point of a circle is perpendicular to the radius through the point of contact.)

Then, ΔOXZ is congrants to ΔOYZ

=> ZX = ZY (Corresponding part of a triangle are equal.)

Therefore The length of tangents drawn from an external point to the circle are equal.

Q71. Answer: (a) F4

Given:

	F1	F2	F3	F4
Production	520	660	550	720
Sale	410	500	430	620

Concept used:

Percentage = (sale/production) × 100

Calculation:

According to the question,

F1 farmer percentage of sales with respect to the production

=> (410/520)× 100

=> 78.8%

F2 farmer percentage of sales with respect to the production

=> (500/660)× 100

=> 75.75%

F3 farmer percentage of sales with respect to the production

=> (430/550)× 100

=> 78.18%

F4 farmer percentage of sales with respect to the production

=> (620/720)× 100

=> 86.11%

Therefore F4 farmers recorded the highest percentage of sales with respect to the production.

Q72. Answer: (d) 16,324

Concept used:

Divisibility of 11 – Difference between the sum of digits at odd and even places will be zero or multiple of 11.

Divisibility of 7 – Subtract the twice of unit digit from remaining number and check if Resultant number is divisible by 7

Calculation:

Divisibility of 11 – Difference between the sum of digits at odd and even places will be zero or multiple of 11.

Divisibility of 7 – Subtract the twice of unit digit from remaining number and check if Resultant number is divisible by 7

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We firstly check the numbers divisible by 11, if it satisfies then we proceed to check the divisibility of 7
16425 : (5 + 4 + 1) – (2 + 6)
=> 10 – 8 = 2
Not equal to zero or multiple of 11, hence not divisible by 11.
12235 : (5 + 2 +1) – (3 + 2)
=> 9 – 5 = 4
4 is not equal to zero or multiple of 11, hence not divisible by 11
16257 : (6 + 5) - (7 + 2 + 1)
=> 11 – 10 = 1
1 is not equal to zero or multiple of 11, hence not divisible by 11
16324 : (4 + 3 + 1) – (2 + 6)
=> 8 – 8 = 0
Difference is equal to zero, hence divisible by 11
For this only we check divisibility of 7
1632 – (2 × 4)
=> 1632 – 8 = 1624
162 – (2 × 4)
=> 162 – 8 = 154
15 – (2 × 4)
=> 15 – 8 = 7
This number is also divisible by 7
Therefore 16324 is divisible by both 7 and 11.

Q73. Answer: (a) 490

Given:

	F1	F2	F3	F4
Production	520	660	550	720
Sale	410	500	430	620

Concept used:
Average of a crop in quintals = sum of all sold crop/number of farmer
Calculation:
Sum of all farmer sold of a crop in quintals = F1 + F2 + F3 + F4
=> 410 + 500 + 430 + 620
=> 1960 quintals
Average of a crop in quintals, sold by all farmers
=> 1960/4
=> 490 quintals
Therefore The average of a crop in quintals, sold by all farmers is 490.

Q74. Answer: (b) 48

Given:
A pair of tangents AB and AC are drawn from a point which is at a distance of 10 cm from the centre O of a circle of radius 6 cm.
Formula used:
Area of triangle = 1/2 × base × height
Area of quadrilateral = 2 × Area of triangle
Calculation:
In Δ ABO is congruent to Δ ACO,
Then, Area of quadrilateral ABOC is twice the Area of Δ ABO.
In Δ ABO
OA = 10 cm
OB = 6 cm

Since, tangent is perpendicular to radius at the point of contact.
By pythagoras' theorem,
=> $AB^2 = AO^2 – OB^2$
=> AB = √(AO2 – OB2)
=> √(100 – 36)
=> √64
=> AB = 8 cm
Area of Δ ABO = (1/2)× AB × OB
=> (1/2)× 8 × 6
=> 24 cm^2
Area of quadrilateral ABOC = 2 × Area of Δ ABO
=> 2 × 24 cm^2
=> 48 cm^2
Therefore The area in cm2 of quadrilateral ABOC, is 48.

Q75. Answer: (a) 1/4

Shortcut Trick
Substitute standard trigonometric values: Numerator = (1/2 × 1/2) + (1/√2 × 1/√2) = 1/4 + 1/2 = 3/4.
Denominator = √3 × √3 = 3.
Result = (3/4) ÷ 3 = 1/4.
Therefore The correct answer is 1/4.
Alternate Method
Given:
Expression: (sin 30° cos 60° + cos 45° sin 45°) ÷ (tan 60° cot 30°)
Trigonometric Ratios:
=> sin 30° = 1/2
=> cos 60° = 1/2
=> sin 45° = 1/√2
=> cos 45° = 1/√2
=> tan 60° = √3
=> cot 30° = √3
Calculation:
=> Value = [(1/2 × 1/2) + (1/√2 × 1/√2)] ÷ (√3 × √3)
=> Value = [1/4 + 1/2] ÷ 3
=> Value = [1/4 + 2/4] ÷ 3
=> Value = [3/4] ÷ 3
=> Value = 3 / (4 × 3) = 1/4
Therefore The correct answer is 1/4.
Additional Information
Complementary Angle Ratios
Sin θ = Cos (90° − θ) and Tan θ = Cot (90° − θ). This confirms sin 30° = cos 60° and tan 60° = cot 30°.
Standard Values
Always remember: sin 45° = cos 45° = 1/√2, tan 45° = 1, and tan 30° = 1/√3.
Pythagorean Identity
$\sin^2\theta + \cos^2\theta = 1$. For example, $\sin^2 45° + \cos^2 45° = (1/\sqrt{2})^2 + (1/\sqrt{2})^2 = 1/2 + 1/2 = 1$.

Q76. Answer: (d) Sweden

The correct answer is Sweden.
Important Points
• The first Winter Paralympics Games were held in Sweden in 1976.
• In these games, athletes with physical disabilities (mobility disabilities, amputations, blindness and cerebral palsy) participate.
• 53 athletes from 16 nations participated in 1976.

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• These are held after every 4 years.
• Organized and managed by International Paralympic Committee.
• These games are directly preceded by Winter Olympic Games.
• Classification of Paralympic Games –
• Alpine Skiing: 2 events – Slalom and Giant Slalom
• Biathlon: Combination of cross-country skiing with target shooting
• Cross-country Skiing: (known as Nordic Skiing) have 15 classifications
• Ice Sledge Hockey: only for males
• Wheelchair Curling: coed team event and need a wheelchair for mobility
• Para-snowboarding: introduced in 2012

Additional Information

• Russia: 11^(th) edition in 2014 (opened by President Vladimir Putin)
• Italy: 9^(th) edition in 2006 (opened by President Carlo Azegilo Ciampi), 14^(th) edition in 2026 (upcoming)
• Korea: 12^(th) edition in 2018 (opened by President Moon Jae-in)
• Current President of South Korea: Yoon Suk-yeol (2022)
• The 13^(th) edition will be held in Beijing China in March 2022.
• In the 1976 edition, there were only 2 sports i.e. Alpine Skiing and Cross-country skiing.

1976 Winter Paralympics Games logo held in Sweden

Q77. Answer: (c) Virtual Reality Mark Up Language

The correct answer is Virtual Reality Mark Up Language.

Key Points

• VRML stands for Virtual Reality Mark Up Language.
• It is initials, originally known as the Virtual Reality Markup Language before 1995.
• It is a standard 3-dimensional (3D) interactive vector graphics representation file format, designed especially with the World Wide Web in mind.
• VRML is a text file format where, for example, it is possible to specify vertices and edges for a 3D polygon along with the surface color, UV-mapped textures, shininess, transparency, etc.
• URLs can be associated with graphical components so that when the user clicks on a specific graphical component, a web browser can pick up a web page or a new VRML file from the Internet.
• The user may interact with animations, sounds, lighting, and other aspects of the virtual world or they may be triggered by external events such as timers.
• A special Script Node enables the program code (e.g. written in Java or ECMAScript) to be added to a VRML file.
• VRML files are commonly referred to as "worlds" and have the extension .wrl (for example, island. wrl).
• VRML files are in plain text and usually compress well using gzip.
• It is useful for faster transfers over the Internet (some gzip compressed files use the .wrz extension).
• Many 3D modeling programs can save objects and scenes in VRML format.

Apartment Ground Plan in VRML

Q78. Answer: (d) 1765

The correct answer is 1765.

Important Points

• Treaty of Allahabad was signed in 1765 by Shuja-ud-Daulah and Shah Alam II with Robert Clive marking the beginning of British Rule in India.
• Through this treaty, East India Company was granted to collect taxes from the eastern province of Bengal-Bihar-Orrisa in return for which Shah Alam II was given Kora and Allahabad.
• The company promised to support Shuja-ud-Daulah, Nawab of Awadh against attacks which made him dependent on the company for which he had paid Rs. 53 lakhs.
• This treaty followed the Battle of Buxar in which Mughal emperors were lost to the Company.
• This treaty made the company richer and now they didn't require any money from England.
• Treaty of Allahabad was written by I'tisam-ud-Din who was a diplomat to the Mughal Empire.

Additional Information

• Treaties signed in 1766: Treaty of Batticaloa (Dutch Imperial possession in Sri Lanka)

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• Nawab of Bengal was having only judicial powers but the power to collect revenue and taxed was vested in the company.

Q79. Answer: (b) Pakistan

The correct answer is Pakistan.

Important Points

• World's largest field hockey stadium having the maximum seating capacity is in Lahore, Pakistan named Gadaffi Hockey Stadium.

• It has a capacity of 45000.

• It is named after Muammar Gadaffi, the former Libyan leader.

• The final match of the 1990 Hockey World Cup was played at this stadium.

Additional Information

Hockey stadiums in –

• Netherlands: Hazelaarweg Stadion, Sportpark Klein Zwitserland, Wagener Stadium.

• Australia: Perth Hockey Stadium, Rockhampton Hockey Association (Stadium), Marrara Hockey Stadium.

• India: Sardar Vallabh Bhai Patel Stadium, Major Dhyan Chand Stadium, Jaypee Sports City Hockey Stadium.

• Birsa Munda International Hockey Stadium in Rourkela is the largest stadium in India.

Gadaffi National Stadium or National Hockey Stadium, Lahore

Q80. Answer: (c) 1.74 x 10^6 m

The correct answer is 1.74 x 10^6m.

Important Points

• The radius of the moon is 1737.1 km or 1.74 × 10^6 m.

• Moon is the only natural satellite of Earth.

• Moon is the 5^(th) largest satellite in the Solar System.

• Moon's age is believed to be 4.53 billion years.

• Moon is 2,38,855 miles away from the earth.

• The gravitational influence of the Moon produces tides on Earth and lengthens the Earth's day.

• Other Points about Moon –

• Planetary mass object and differentiated rocky body

• Lacks atmosphere, hydrosphere, and magnetic field

• Sidereal period: 27.3 days and Synodic period: 29.5 days

• The lunar surface is non-reflective

• Components of Lunar surface: Silica, Alumina, Lime, Iron Oxide, Magnesia, Titanium dioxide, Sodium oxide

Additional Information

• 1^(st) manmade object to reach the moon: Luna 2 spacecraft (crewless) in 1959 by the Soviet Union

• 1^(st) successful soft landing: Luna 9 in 1966

• 1^(st) manned mission: Apollo 8 in 1968

• Lunar Eclipse: (Full moon) Earth is between Sun and Moon

• Solar Eclipse: (New moon) Moon is between Earth and Sun

Tinted reddish moon during the lunar eclipse

Q81. Answer: (c) a market system of resource allocation, commerce, and trade in which free markets coexist with government i...

The correct answer is a market system of resource allocation, commerce, and trade in which free markets coexist with government intervention.

Key Points

• In a socialist society the government decides what goods are to be produced in accordance with society's needs.

• In a mixed economy, the market will supply whatever goods and services it can produce well, and the government will provide essential goods and services that the market fails to do.

• The mixed economic system is described as an economic system which combines the elements of a planned economy with those of a market economy.

• It is a mixture of capitalism and socialism, comprising both private and public corporations.

• A mixed economy structure is adopted by most developed economies.

• The elements of a capitalist economy and the elements of a command economy are synthesized into a mixed economic structure.

• Free economies co-exist with government interference in a mixed economic environment, and private businesses coexist with public enterprises.

• The benefits of a mixed economy include efficient production and capital distribution, as well as social security development.

Flowchart showing Mixed Economy Model

Q82. Answer: (c) Christina Koch

The correct answer is Christina Koch.

Important Points

• The longest-ever single spaceflight by a woman was accomplished by NASA astronaut Christina Koch.

• At about 09:12 GMT, the Russian Soyuz spacecraft carrying Koch parachuted down to the grasslands of Kazakhstan.

• She spent 328 days on the International Space Station (ISS), surpassing the previous record set by fellow American Peggy Whitson.

• Her stay is only 12 days shy of Scott Kelly, who was on the ISS from 2015-2016, setting the all-time US record.

• On 28 December 2019, Ms. Koch exceeded the 289-day mark held by fellow American Ms. Whitson.

• Yet her return to Earth is setting the marker to beat for future space explorers.

• Koch accomplished 5,248 orbits of the Earth during her mission and traveled 223 million km (139 million miles) - the equivalent of 291 round trips from Earth to the Moon.

Additional Information

• Peggy Whitson currently holds the record for a woman's most time spent in space, recorded over the span of three 2002-2017 spaceflights.

A file photo of Christina Koch

Q83. Answer: (a) 4

The correct answer is 4.

Important Points

• Based on historical seismic activity, the Bureau of Indian Standards has categorized regions in India into four seismic zones: zones II, III, IV and V.

• Of these, the most seismically active area is Zone V and the least active is Zone II.

• There is a history of devastating earthquakes on the Indian subcontinent.

• The key cause for the high frequency and severity of earthquakes is that the Indian plate is driving into Asia at a rate of roughly 47 mm/year.

• India's geological figures indicate that about 54 percent of the land is prone to earthquakes.

• Research by the World Bank and the United Nations predicts that by 2050, about 200 million urban dwellers in India will be vulnerable to storms and earthquakes.

• The most recent edition of India's seismic zoning map given in India's earthquake-resistant design code [IS 1893 (Part 1) 2002] assigns four degrees of seismicity in terms of zone factors for India.

• In other words, unlike its previous edition, which consisted of five or six zones for the region, India's earthquake zoning map divides India into four seismic zones (zones 2, 3, 4, and 5).

• According to the new zoning map, the maximum degree of seismicity is predicted in Zone 5, while the lowest level of seismicity is correlated with Zone 2.

• Additional Information:

• In late 2025, the Bureau of Indian Standards (BIS) released a major revision to the national seismic hazard map (under the new Earthquake Design Code, 2025).

• This update officially introduced Zone VI as the highest-risk category.

• However, later In March 2026, the government withdrew the 2025 seismic code

• The notification introducing Zone VI was cancelled

• India reverted back to the old 2016 code (IS 1893:2016)

Revised earthquake hazard zone map of India

Q84. Answer: (c) 4

The correct answer is 4.

Important Points

• The four annual tennis tournaments, also known as majors, are collectively called the Grand Slam.

• The ITF—the International Tennis Federation—operates the Grand Slam.

• The Grand Slam tournaments consist of the mid-January Australian Open, the late May French Open or Roland Garros, the Wimbledon at the end of June and the US Open at the end of August.

• The four Grand Slam tennis tournaments are played over the course of 2 weeks.

• The oldest is Wimbledon Tennis, established in 1877, then comes the US Open in 1881 followed by the French Open in 1891, and the last is Australian Open in 1905.

• The Australian tennis and US tournaments are played on hard courts, the French Open on clay courts, and the Wimbledon on grass courts.

• Before 1924-1925, the French Open tournament was not considered a Grand Slam.

• Together, the four majors are considered a "boxed set" of Grand Slam tournaments in all three disciplines (singles, doubles, and mixed doubles).

• During the course of a lifetime, winning all four majors is considered a career Grand Slam.

• It is considered a non-calendar year Grand Slam to win the four majors in consecutive events, but not in the same year.

Q85. Answer: (d) Integrated circuits

The correct answer is Integrated Circuits.

Key Points

• The third-generation period in computing was from 1965-1971.

• Integrated circuits (ICs) have been used in third-generation computers instead of transistors.

• Along with the related circuitry, a single IC has multiple transistors, resistors, and capacitors.

• An American electrical engineer named Jack Kilby invented the IC.

• This advancement has enhanced the compactness, reliability, and performance of computers.

• Remote processing, time-sharing and multiprogramming operating systems have been used in this generation.

• During that generation, high-level languages (FORTRAN-II TO IV, COBOL, PASCAL PL/1, BASIC, ALGOL-68, etc.) were also used.

• The main features of third-generation are −

• IC used

• More reliable in comparison to previous two generations

• Smaller size

• Generated less heat

• Faster

• Lesser maintenance

• Costly

• AC required

• Consumed lesser electricity

• Supported high-level language

• Some computers of this generation were −

• IBM-360 series

• Honeywell-6000 series

• PDP (Personal Data Processor)

• IBM-370/168

• TDC-316

A Third Generation Computer

Q86. Answer: (a) Karnataka

The correct answer is Karnataka.

Important Points

• Bylakuppe Monastery famously known as Namdroling Nyingmapa Monastery or Golden Temple is situated in Mysore, Karnataka.

• This monastery is home to the Sangha community and the largest teaching center of Tibetan Buddhism in the world.

• Drubwang Padma Norbu Rinpoche established this monastery in 1963 who was the 11^(th) throne holder of the Palyul lineage.

• It was initially constructed using bamboo.

• His Holiness Dalai Lama bestowed the name ‘Namdroling’ to this monastery.

• The complete name of this monastery is Thegchog Namdrol Shedrub Dargyeling which means “Land of Increasing Practice and Teaching of the Utmost Yana that achieves spontaneous Liberation”.

Additional Information

• Dharma Centres around the world –Canada, Hong Kong, Indonesia, Macau, Malaysia, Nepal, the Philippines, Singapore, Taiwan, USA

• Branches of Namdroling Monastery –Namdroling Jr, High School, Ngagyur Nyingma Institute, Ngagyur Rigzod Editorial Committee, Rigzod Computer Section, Palyul Dictionary Editorial Committee, Padma Mani Translation Committee, Ngagyur Nyingma Research Center, Ngagyur Nyingma Nunnery, Tshogyal Editorial Committee, Samtan Odsalling Retreat Center, Nunnery Retreat Center, TT Daycare Medical Center, PDL Guest House

Namdroling Monastery, Bylakuppe – Mysore, Karnataka)

Q87. Answer: (a) C4H10

The right answer is C4H10.

Key Points

• Butane is a gaseous component (at room temperature and atmospheric pressure) of the Alkane group having the chemical formula as C4H10.

• It is a colourless, highly flammable, and easily liquefied gas.

• In the abundance of oxygen, it forms Carbon dioxide, but if limited oxygen is available, then it forms Carbon Monoxide.

$2C_4H_{10} + 13O_2 \rightarrow 8CO_2 + 10H_2O$ (oxygen in plenty)

$2C_4H_{10} + 9O_2 \rightarrow 8CO + 10H_2O$ (oxygen is limited)

• Uses –

• Gasoline blending

• Fuel gas

• Fragrance extraction solvent

• Feedstock for the manufacture of ethylene and butadiene

• Ingredient for synthetic rubber

• Isobutane to enhance the Octane number of gasoline in refineries

Additional Information

• C_4H_6 – 1-Butyne: extremely flammable and reactive colourless gas used in the synthesis of organic compounds

• C_5H_{10} – Pentene: By-product of thermal cracking of petroleum

• C_4H_8 – Butene: Minor constituent of crude oil and a colourless gas

• It was discovered by Edward Frankland, but its properties were described by Edmund Ronalds who found it in a dissolved state in crude petroleum.

Molecular diagram of Butane

Q88. Answer: (c) Arthropoda

The correct answer is Arthropoda.

Key Points

• Arthropoda is a group of invertebrate animals having an exoskeleton, a segmented body and jointed legs.

• Their body consists of segments with a pair of appendages.

• Their reproduction occurs by internal fertilization (terrestrial species) and internal or external fertilization (aquatic species).

• They have an open circulatory system.

• Types of Arthropods –

• Insects: Ants, Aphids, Butterflies, Grasshoppers, Termites, and etc.

• Arachnids: Scorpion, Mites, Spiders

• Crustacean: Crabs, Fish, Lobsters, Shrimp, and etc.

• Their evolution dates back to the Cambrian period.

• They are a source of food for humans.

• They are pollinators of crops.

• Some species spread diseases to humans, livestock, and crops.

• Largest phylum of invertebrate animals.

Additional Information

• Mollusca – 2nd largest phylum of invertebrate animals mostly found in marine and freshwater having the soft body divided into head, visceral mass, muscular foot, and mantle. Examples: Snail, Octopus, Squid, Oyster, Clams, and etc.

• Nematoda: bilaterally symmetrical, elongate and tapered at both ends; an important role in nutrient recycling in the soil feed. They cause diseases such as Ascariasis, Enterobiasis, Filariasis, and etc. Examples: Ascarids, Worms

• Echinodermata: marine animals having a star-like appearance, Echinoderms (Phylum Echinodermata) are a diverse, exclusively marine group of invertebrates.

• Examples: Starfish, Sea urchins, Crinoids, etc.

• All arthropods lay eggs except Scorpion who directly give birth to young.

Popular species of Arthropods

Q89. Answer: (a) Sukumar Sen

The correct answer is Sukumar Sen.

Important Points

• Indian Civil Servant, Sukumar Sen was the first Chief Election Commissioner of India who oversaw India's general election in 1951-52 and 1957.

• He was succeeded by Kalyan Sundaram.

• He was also the 1^(st) Chief Election Commissioner in Sudan.

• He was 1^(st) Vice-Chancellor of the University of Burdwan.

• He was awarded Padma Bhushan.

• Election Commission of India:

• Formed: 25 January 1950.

• Objective: Election to the offices of President, Vice President, Parliament, Legislative Assemblies and Councils.

• Operates under Article 324.

• Removal of Chief Election Commissioner – By a resolution passed by parliament (the two-third majority in Lok Sabha and Rajya Sabha).

• Removal of Election Commissioner – By President of India on the recommendation of Chief Election Commissioner.

• Article 324 – Article 329: Related to the Election Commission of India.

Additional Information

• Om Prakash Rawat: 1977 batch IAS officer of Madhya Pradesh, served as 22^(nd) Chief Election Commissioner of India

• Kalyan Sundaram: 1^(st) Law Secretary of Independent India, served as 2^(nd) Chief Election Commissioner of India, chaired 5^(th) Law Commission of India

• Mihir Sen: 1^(st) Indian to swim the English Channel (Dover to Calais); the only man to swim Palk Strait, Dardanelles, Bosphorus, Gibraltar, and Panama Canal in one calendar year; World's greatest long-distance swimmer – Guinness Book of Records

Sukumar Sen – 1^(st) Chief Election Commissioner of India

Q90. Answer: (b) Africa

The correct answer is Africa.

Important Points

• Veldts are grasslands of Southern Africa (South Africa, Lesotho, Eswatini, Zimbabwe, and Botswana).

• Veldts are covered with grass or low shrub.

• On the basis of elevation classified as High Veld, Middle Veld, and Low Veld.

• Climate: Mild winter (May – September), Hot Summer (November – March), Coldest month (July).

• Rainfall: Average annual rainfall is between 15 – 30 inches.

• Support a variety of natural vegetation, Red grass in bush veldts and Acacia and Marula in high veldts.

• Surrounded by Drakensberg mountain on the east.

• Main crops: Maize, Barley, Potatoes, Oats.

• Rich reserves of minerals.

• Grasslands –

• The area where vegetation is dominated by grass cover.

• Naturally occurring in all continents except Antarctica.

• Largest biomass on earth and dominate the landscape (31% - 34% area of the earth).

• Types: Natural, Semi-natural, Agricultural.

Additional Information

• Grasslands of

• Australia: Downs, Tropical grasslands include Savanna ecoregion.
• America: Prairies (North America), Pampas (South America).
• Asia: Steppes (Europe and Asia).
• Banni Grassland in Kutch, Gujarat is Asia's largest and finest grassland.
Veldts of Africa

Q91. Answer: (a) 1956-61

The correct answer is 1956-61.

Important Points

• The Second Five Year Plan in India was planned under the leadership of Jawaharlal Nehru for the period from 1956 to 1961.
• It was based on the P.C. Mahalanobis model built-in 1953.
• Its main emphasis was on the country's economic growth.
• This plan lagged below its 4.5 percent target growth rate and reached a 4.27 percent growth rate.
• This plan was opposed by many experts, and India faced a payment crisis in 1957 as a result.

Additional Information

• In India, the first five-year plan was initiated in 1951 and India has witnessed twelve Five Year Plans since then.
• However, the existing government scrapped the Five-Year plan system and a new mechanism was placed in motion.

Drafting of the Second Five Year Plan

Q92. Answer: (a) China

The correct answer is China.

Important Points

• In December 2019, China launched the third Long March-5, the country's largest carrier rocket, from the Wenchang Space Launch Centre in southern China's Hainan Province.
• At 8:45 pm (Beijing time), the rocket, coded as Long March-5 Y3, blasted off from the coastal launch centre carrying the Shijian-20 science experiment satellite weighing over eight tons, the nation's heaviest and most advanced communications satellite.
• The satellite was sent into its targeted orbit about 2,220 seconds later.
• The Long March-5 is a massive two-stage rocket capable of carrying a payload of 25 tons, equal to the weight of 16 cars, to low Earth orbit, 14 tons at geostationary orbit, eight tons at Earth-Moon orbit, or five tons at Earth-Mars orbit, more than twice the capacity of the existing main Long March series rockets.
• According to the China Aerospace Science and Technology Corporation, the rocket is capable of sending probes to explore Jupiter and other planets in the solar system in tandem with an upper stage (CASC).
• The rocket is about 57 meters in length, equal to a 20-story building's height, with a core stage 5 meters in diameter and four boosters 3.35 meters in diameter.
• The Long March-5 is much larger than the previous carrier rockets of China.
• It has a takeoff weight of around 870 tons and a thrust of about 1,000 tons.

Long March-5

Q93. Answer: (b) Telangana

The correct answer is Telangana.

Important Points

• The Chenchus are Adivasi, a declared Scheduled Caste found in the Indian states of Andhra Pradesh, Telangana, Karnataka and Odisha.
• They are an aboriginal tribe whose traditional way of life is focused on hunting and gathering.

The Chenchus, a member of the Dravidian language family, speak the Chenchu language.

• The Chenchus relationship with non-tribal individuals has been largely symbiotic in general.
• Few Chenchus also tended to specialize in harvesting forest goods for export to non-tribal individuals.
• The Chenchus are referred to as one of the forest-dependent primitive tribal groups who do not cultivate land but hunt for a living.
• Non-tribal people living among them, rent land from the Chenchus and pay for a portion of the harvest.
• With the aid of the Chenchus, other people also settled among them and learnt agriculture from them, and land was also allocated there to the nomadic Banjara herders who grazed their cattle in the forest.
• The Chenchus have reacted unenthusiastically to government attempts to persuade them to take up agriculture themselves.

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The Chenchus of Telangana

Q94. Answer: (c) Portugal

The correct answer is Portugal.

Important Points

• In 2019, Portuguese Prime Minister Antonio Costa announced the creation of a Gandhi Citizenship Education Prize while attending the second meeting of the National Committee for the Commemoration of the 150th Anniversary of Mahatma Gandhi, chaired by President Ram Nath Kovind at the Rashtrapati Bhavan.

• Mr. Costa, the only foreign prime minister to be part of the commission, said that Portugal will start the prize to spread the values of Gandhi, as per a statement by the Union Culture Ministry.

• Mr. Costa added that the award will be inspired by the thoughts and quotations of Gandhi each year and that the first edition of the award would be devoted to animal welfare.

• Gandhi said, "The greatness of a country can be judged by the way its animals are treated,"

• For his work on Gandhian principles, Antonio Costa is known as the "Gandhi of Lisbon".

Additional Information

• The capital city of Portugal is Lisbon.

• President :Marcelo Rebelo de Sousa

Important Points The incumbent prime minister of Portugal is Luís Montenegro, who took office on 2 April 2024 as the 14th prime minister of the Third Portuguese Republic.

Q95. Answer: (a) 1013.25 millibars

The correct answer is 1013.25 millibars.

Important Points

• The normal air pressure at sea level is 1,013.2 millibars.

• The air at the surface is denser due to gravity, which hence has greater pressure.

• Air pressure is measured using a mercury barometer or aneroid barometer.

• The value of what we call standard sea-level pressure is 760mm of mercury, 1013.25 x103 dynes per square centimeter, 14.70 pounds per square inch, 1013.25 millibars, or simply one standard atmosphere which is 101.325 kilopascals.

• The air majorly contains 72 percent nitrogen and 21 percent oxygen, in addition to a small amount of carbon dioxide, hydrogen, etc.

• Air has weight and thus, like liquids, it exerts pressure.

• A force is exerted by the atmospheric air on all objects in the atmosphere and on the earth.

• The force or thrust exerted on a unit area by the atmospheric air is defined as atmospheric pressure.

• 1.013 x 105 Pa is the approximate value of atmospheric pressure on the earth's surface.

• The standard atmospheric pressure is 0.760 mHg at 0 °C.

• This is a pressure equal to 101325 Pa.

Q96. Answer: (a) Satyendra Prasad Sinha

The correct answer is Satyendra Prasad Sinha.

Important Points

• The Indian Councils Act 1909 allowed the Governor-General to nominate one Indian member to the Executive Council, leading to the election of the first Indian member, Satyendra Prasanna Sinha.

• Lord Satyendra Prasanna Sinha, 1st Baron Sinha, was a prominent lawyer and statesman in British India.

• He was the first Governor of Bihar and Orissa, the first Indian Advocate-General of Bengal, the first Indian to join the Executive Council of the Viceroy, and the first Indian to join the British Ministry.

• Sinha established a successful law practice in Calcutta after returning to India in 1886.

• Sinha became Standing Counsel to the Government of India in 1903, overriding the English Barrister's claims.

• He was the first Indian to be appointed in 1905 as Bengal's Advocate-General, a post confirmed in 1908.

• He was knighted on 1 January 1915 in the New Year Honours.

• At the Bombay session of Congress, Sinha was elected President of the Indian National Congress in 1915.

Satyendra Prasad Sinha

Q97. Answer: (c) Humpy Koneru

The correct answer is Humpy Koneru.

Important Points

• Koneru Humpy, the young female Grandmaster of India, won the 2019 World Rapid Championship title.

• In the Women's World Rapid Chess Championship, in the tiebreaker series (Armageddon game), she defeated Lei Tingjie of China and won the title.

• Her FIDE score in January 2010 was 2614, which gave her second place (after Judget Polgar) in the world ranking of female chess players.

• She was awarded the Arjuna Award in 2003 and the Padma Shri Award in 2007.

• She won the Women's World Team Chess Championship bronze medal in 2015.

• In the FIDE Women's Grand Prix series, Koneru Humpy was the runner-up in 2009-2011, 2011-12, 2013-14, and 2015-16.

Koneru Humpy won the 2019 World Rapid Championship title

Q98. Answer: (b) Moho

The correct answer is Moho.

Key Points

• The boundary between the crust and the asthenosphere (upper reaches of the mantle) where there is a discontinuity in the seismic velocity forms the Mohorovicic (Moho) discontinuity.

• It occurs at an average depth of approximately eight kilometers below the ocean basin and 30 kilometers below the continental surface.

• A change in rock composition from rocks containing feldspar (above) to rocks containing no feldspar (below) is thought to be the cause of the Moho.

• Mohorovicic Discontinuity (Moho) separates the mantle from the crust.

• Asthenosphere is the highly viscous part of the mantle, mechanically weak and ductile.

• Seismic discontinuities are the regions of the earth where, due to a marked change in physical or chemical properties, seismic waves act much differently compared to the surrounding regions.

• Gutenberg Discontinuity: the mantle and the outer core lie between them.

Mohorovicic (Moho) discontinuity

Q99. Answer: (c) Vice-President

The correct answer is Vice President.

Key Points

• After the President, the Vice President of India is the second-highest constitutional office in India.

• Article 63 of the Indian Constitution specifies that "There shall be a Vice President of India."

• In the absence of the President due to illness, retirement, impeachment or other conditions, the Vice President serves as President.

• The Vice President of India is also the ex officio Chairperson of the Rajya Sabha.

• When a bill is introduced in Rajya Sabha, the vice president decides whether or not it is a financial bill.

• If in his view, a bill introduced in the Rajya Sabha is a money bill, he would refer the case for a decision to the Speaker of the Lok Sabha.

• Article 66 of the Indian Constitution lays down the way in which the Vice President is chosen.

• The Vice-President shall be chosen indirectly, by means of a single transferable vote, by members of an electoral college composed of members of both Houses of Parliament, in accordance with the system of proportional representation, and shall be elected by secret ballot by an electoral council.

Additional Information

• The current Vice President of India is Jagdeep Dhankar.

Q100. Answer: (c) Amitabha Bagchi

The correct answer is Amitabha Bagchi.

Important Points

• The novel Half The Night Is Gone by Amitabha Bagchi has won 2019 $25,000 DSC Prize for South Asian Literature, topping a shortlist of six works of fiction.

• The winner was announced at the IME Nepal Literature Festival in Pokhara, Nepal, where the winner's trophy was presented to Bagchi by Pradeep Gyawali, Nepal's foreign minister.

• His novel, a post-colonial saga that unfolds over three generations, explores human relationships and the interconnection of fates and cultures in a thoroughly Indian context while paying close attention to detail and the inventive use of language.

• His debt to more than one modern Hindi writer is acknowledged by Bagchi himself.

Amitabha Bagchi receiving the DSC Prize for South Asian Literature 2019

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