SSC CHSL Tier-1 2024: Official Paper (Held On: 08 Jul, 2024 Shift 1) (Previous Year Paper)

SSC Combined Higher Secondary Level (CHSL) • 2024 • 100 questions • 60 minutes • Answer key and solutions

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ENGLISH LANGUAGE

Q1. The following sentence has been divided into three segments. One of them may contain an adverbial usage error. Select the option that has the segment with the error. If you don't find any error, select 'No error' as your answer.

Mrs. Arunima / speaks / Telugu well.

(a) Mrs. Arunima
(b) speaks
(c) No error
(d) Telugu well.

Q2. Parts of the following sentence have been given as options. Select the option that contains an error.

According to the encyclopaedia, a oasis is an area which is made fertile by a source of freshwater.

(a) According to the encyclopaedia,
(b) a oasis is an area
(c) a source of freshwater.
(d) which is made fertile by

Q3. The following sentence has been divided into four segments. Identify the segment that contains a grammatical error.

He have / workers from / Ireland and France / in his factory.

(a) in his factory.
(b) Ireland and France
(c) He have
(d) workers from

Q4. Select the most appropriate option that can substitute the underlined segment in the given sentence.

Sarita speaks French best.

(a) well
(b) better
(c) good
(d) worst

Directions

In the following passage, some words have been deleted. Read the passage carefully and select the most appropriate option to fill in each blank.

Family plays a vital role in our lives, serving as a source of love, support, and stability. It is (1) _____ the family unit that we develop lasting bonds, learn essential values, and find comfort during (2) ____ times. Families provide a nurturing environment for personal growth and emotional well - being. They (3) ____ guidance, share experiences, and create cherished memories. The strength and (4) ____ of a family contribute to individual happiness, societal harmony, and the (5) _____ of a strong community.

Q5. Select the most appropriate option to fill in blank 1.

(a) within
(b) between
(c) among
(d) beyond

Q6. Select the most appropriate option to fill in blank 2.

(a) initial
(b) wasteful
(c) joyful
(d) challenging

Q7. Select the most appropriate option to fill in blank 3.

(a) offer
(b) propose
(c) contribute
(d) deliver

Q8. Select the most appropriate option to fill in blank 4.

(a) disruption
(b) intrusion
(c) cohesion
(d) commotion

Q9. Select the most appropriate option to fill in blank 5.

(a) undermining
(b) erosion
(c) foundation
(d) collision

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

Erudite

(a) Strong
(b) Humble
(c) Educated
(d) Honest

Q11. Select the most appropriate option that can substitute the underlined segment in the given sentence.

I like played cricket after school.

(a) play
(b) playing
(c) having to play
(d) played

Q12. Select the most appropriate option that can substitute the underlined segment in the given sentence.

Yoga may manage pain and helping reduce stress.

(a) helped reduce
(b) help reduction for
(c) help reduced
(d) help in reducing

Q13. Select the most appropriate option that can substitute the underlined segment in the given sentence.

We have carried out an successful raid on a fraudulent minister.

(a) successful raid
(b) a successful raid

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(c) these successful raid
(d) the successful raid

Q14. Identify the most appropriate ANTONYM of the underlined word based on the context of the sentence.
He gave a haughty consent without honouring him with a single word.
(a) Happy
(b) Indifferent
(c) Modest
(d) Proud

Q15. Select the most appropriate homophone to fill in the blank.
The hospital is _____ the river.
(a) bi
(b) bye
(c) buy
(d) by

Q16. Select the most appropriate option to fill in the blank.
After finishing all my pending assignments, I plan to _____ in Goa.
(a) land a meal
(b) take a holiday
(c) go bankrupt
(d) forgive a debt

Q17. Select the most appropriate ANTONYM of the given word.
Forbidden
(a) Protected
(b) Allowed
(c) Prevented
(d) Banned

Q18. Select the most appropriate meaning of the given idiom.
Fish out of water
(a) To die soon
(b) To be out of place
(c) No knowledge of marine life
(d) Not good at swimming

Q19. Select the INCORRECTLY spelt word.
(a) Reimbursement
(b) Comendation
(c) Intertwined
(d) Competition

Q20. Select the INCORRECTLY spelt word from the given sentence.
They were good - hearted girls, unclean, clothed in rags and profiundly ignorant.
(a) Unclean
(b) Profiundly
(c) Hearted
(d) Clothed

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Q21. Select the most appropriate ANTONYM of the given word.

Generous

(a) Needy
(b) Mean
(c) Clever
(d) Considerate

Q22. Select the most appropriate option to fill in the blank.

The _____ today will be cloudy and humid.

(a) waiter
(b) weather
(c) wither
(d) whether

Q23. Select the most appropriate synonym of the given word.

Injustice

(a) Discrimination
(b) Equality
(c) Demand
(d) Complacency

Q24. Select the most appropriate meaning of the given idiom.

Bells and whistles

(a) Attractive but unnecessary features added to products
(b) An innovative development
(c) At a serious disadvantage
(d) To take on a difficult task

Q25. Select the option that will improve the underlined part of the given sentence. In case no improvement is needed, select ‘No improvement’.

Since my friend was not feeling well, she asked me to come over and take care of her.

(a) come into
(b) come through
(c) No improvement
(d) come across

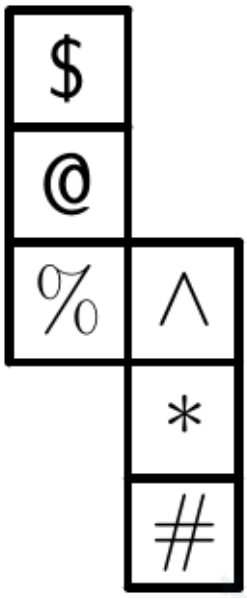
GENERAL INTELLIGENCE

Q26. In a certain code language, 'watch is disturb' is written as 'xr pa qm' and 'don't watch him' is written as 'tu bg pa'. How is ''watch' written in the given language?

(a) bg
(b) Xr
(c) pa
(d) tu

Q27. What would be the symbol on the opposite side of '@' if the given sheet is folded to form a cube?

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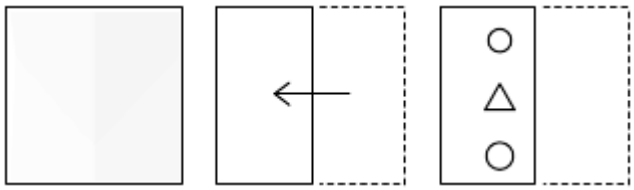
(a) λ
(b) •
(c) %
(d) #

Q28. What will come in the place of '?' in the following equation if '+' and '–' are interchanged and '×' and '÷' are interchanged?

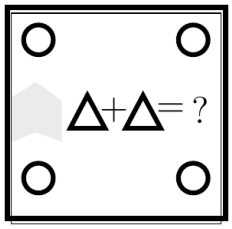
18 ÷ 9 + 24 × 3 – 16 = ?

(a) 450
(b) 170
(c) 980
(d) 678

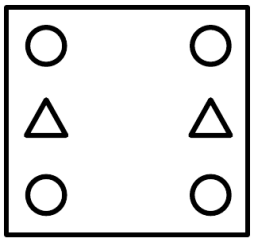
Q29. A paper is folded and cut as shown below. How will it appear when unfolded?



(a)

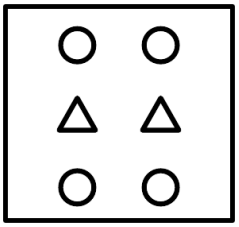


(b)

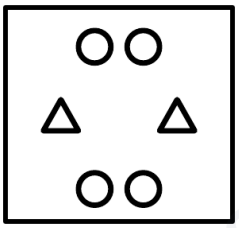


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(c)



(d)



Q30. In a certain code language, ‘call on him’ is coded as ‘ol ni vc’ and ‘awaiting your call’ is coded as ‘ni dx sb’. How is ‘call’ coded in that language?

(a) ni
(b) sb
(c) vc
(d) dx

Q31. 4 is related to 64 following a certain logic. Following the same logic, 9 is related to 729. To which of the following is 12 related following the same logic?

(NOTE : Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding /deleting /multiplying etc., to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

(a) 1788
(b) 1808
(c) 1420
(d) 1728

Q32. What should come in place of the question mark (?) in the given series based on the English alphabetical order?

DFA, HJE, LNI, PRM, ?

(a) TVO
(b) UVP
(c) UWR
(d) TVQ

Q33. If 'A' stands for '÷', 'B' stands for '×', 'C' stands for '+' and 'D' stands for '-', what will come in place of the question mark (?) in the following equation?

88 B 3 D 12 A 4 C 6 = ?

(a) 267
(b) 264
(c) 268
(d) 265

Q34. WVSO is related to XXUP in a certain way based on the English alphabetical order. In the same way, ONKG is related to PPMH. To which of the following is VURN related, following the same logic?

(a) XWSP
(b) WWTO
(c) XXTP
(d) XXSP

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Q35. If 19 November 2003 is Wednesday, then what will be the day of the week on 25 March 2011?

(a) Sunday
(b) Friday
(c) Tuesday
(d) Thursday

Q36. Select the set in which the numbers are related in the same way as are the numbers of the given sets.

(NOTE : Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g., 13 – Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

(9, 21, 193)

(12, 15, 184)

(a) (18, 8, 140)
(b) (8, 17, 140)
(c) (29, 6, 170)
(d) (24, 8, 192)

Q37. In a certain code language,

'A + B' means 'A is the mother of B',

'A – B' means 'A is the daughter of B',

'A × B' means 'A is the husband of B',

'A ÷ B' means 'A is the sister of B'.

Based on the above, how is M related to Q if 'M ÷ N – O × P + Q' ?

(a) Father's sister
(b) Mother
(c) Daughter
(d) Sister

Q38. What should come in place of the question mark (?) in the given series based on the English alphabetical order?

GEB, JHE, MKH, PNK, ?

(a) SNQ
(b) NSQ
(c) SQN
(d) NQS

Q39. Choose the alternative which closely resembles the mirror image of the given combination.



(a)



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(b)



(c)



(d)



Q40. Three of the following four are alike in a certain way and thus form a group. Which is the one that does NOT belong to that group?

(Note : The odd one out is not based on the number of consonants/vowels or their position in the letter cluster.)

(a) LNQ
(b) CEH
(c) TVY
(d) PQT

Q41. Which of the following numbers will replace the question mark (?) in the given series?

56, ?, 38, 29, 20

(a) 42
(b) 48
(c) 47
(d) 46

Q42. What will come in the place of the question mark (?) in the following equation, if '+'and '÷'are interchanged and '-'and '×' are interchanged?

44 ÷ 78 + 6 - 3 × 19 = ?

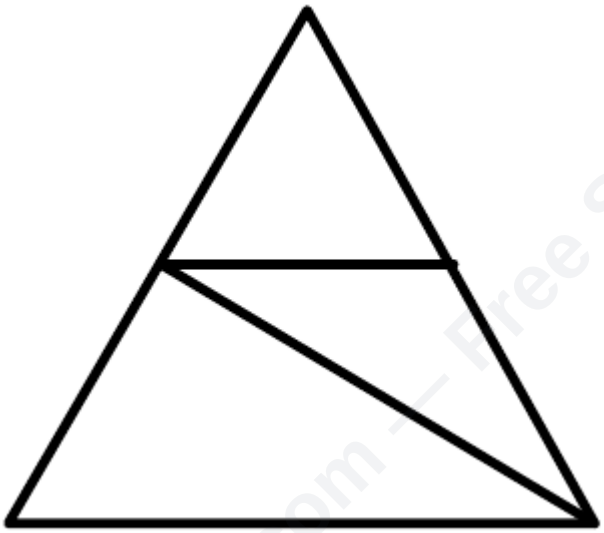
(a) 74
(b) 64
(c) 68
(d) 78

Q43. Each of the letters in the word MUSICAL is arranged in alphabetical order. How many letters are there in the English alphabetical series between the letter which is fourth from the left and the one which is second from the right in the new letter cluster thus formed?

(a) Five
(b) Seven
(c) Eight
(d) Six

Q44. How many triangles are there in the given figure?

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

Q45. In this question, three statements are given, followed by three conclusions numbered I, II and III. Assuming the statements to be true, even if they seem to be at variance with commonly known facts, decide which of the conclusion(s) logically follows/follow from the statements.

Statements :

No copper is silver.

All gold is copper.

All aluminium is gold.

Conclusions :

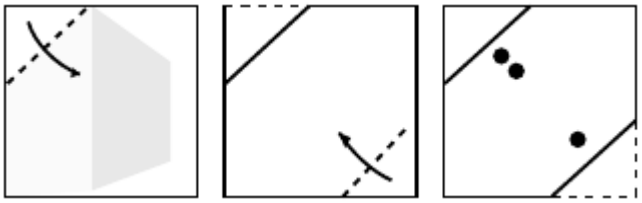
I. No aluminium is silver.

II. Some gold is silvers

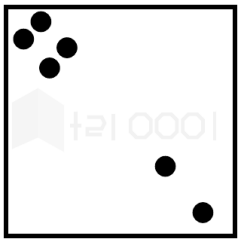
III. All aluminium is copper.

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

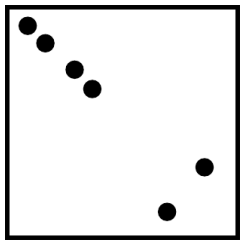
Q46. A square sheet of paper is folded along the dotted line successively along the directions shown and is then punched in the end. How would the paper look when unfolded?



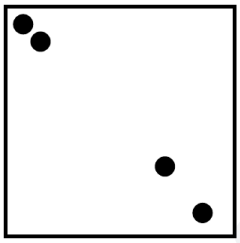
(a)



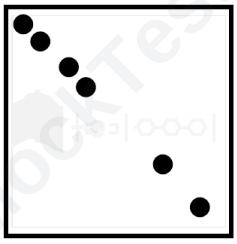
(b)



(c)



(d)



Q47. Select the correct mirror image of the given figure when the mirror is placed at MN as shown below.



(a)



(b)



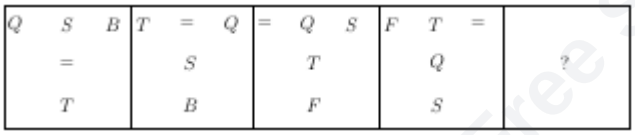
(c)



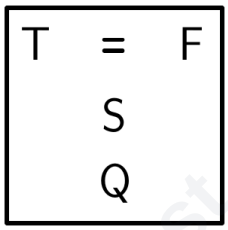
(d)



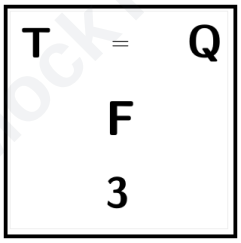
Q48. Which figure should replace the question mark (?) if the following figure series were to be continued?



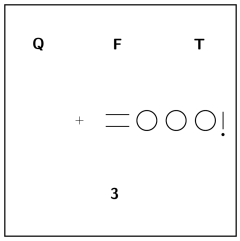
(a)



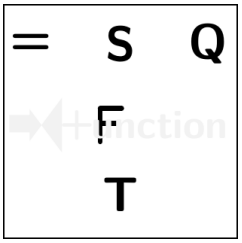
(b)



(c)



(d)



Q49. Select the word - pair that best represents a similar relationship to the one expressed in the pair of words given below.

(The words must be considered as meaningful English words and must not be related to each other based on the number of letters/number of consonants/vowels in the word.)

Withdraw : Extract

(a) Rent : Contrive

(b) Expend : Relish

(c) Exploit : Utilise

(d) Explore : Ignore

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Q50. What should come in place of the question mark (?) in the given series?

56, 53, 50, 47, 44, ?

(a) 42
(b) 41
(c) 40
(d) 43

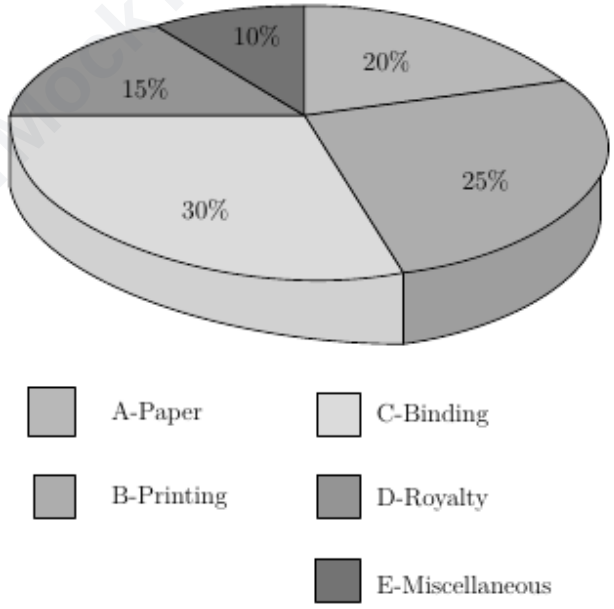
QUANTITATIVE APTITUDE

Q51. Antony and Julie can simultaneously complete a work of floor decoration in 15 days and Julie alone in 20 days. In how many days can Antony alone complete the work of floor decoration?

(a) 60
(b) 50
(c) 55
(d) 45

Q52. The given pie - diagram shows the expenditure incurred on the preparation of a book by a publisher, under various heads. Study the pie - diagram and answer the question that follows.

Various Expenditure (in percentage) incurred in publishing a book



The marked price of a book is 20% more than the CP. If the marked price of the book is 30, then what is the cost of paper used in a single copy of the book?

(a) Rs. 5
(b) Rs. 4.50
(c) Rs. 6.50
(d) Rs. 6

Q53. If cotA = 5/12 ,then find the value of (√(sec A-cosec A))/(√(sec A+cosec A)) - √(17/7).

(a) 24/√119
(b) -10/√119
(c) 0
(d) 10/√119

Q54. The list price of a hand mixer at a showroom is Rs. 2,000 and it is being sold at successive discounts of 15% and 10% What is its net selling price in rupees?

(a) 1,440
(b) 1,600

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(c) 1,530
(d) 1,560

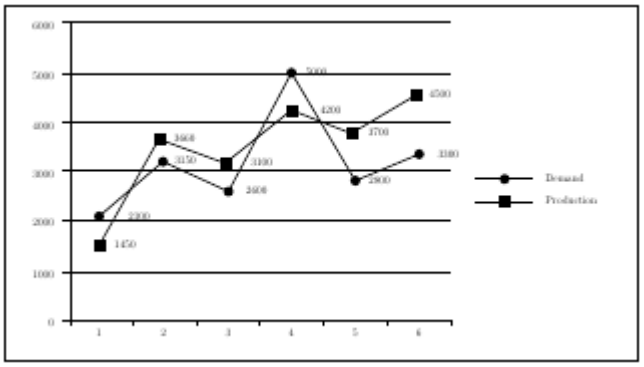
Q55. A father is presently 3 times his daughter's age. After 10 years he will be twice as old as her. Find the daughter's present age.
(a) 15 years
(b) 5 years
(c) 10 years
(d) 20 years

Q56. A's marks in Mathematics are directly proportional to practice time. In 6 hours of practice, A gets 70 marks. What should be the practice time (approximately) to get 90 marks?
(a) 8 hours
(b) 8.3 hours
(c) 7 hours
(d) 7.7 hours

Q57. An interval of 2 hours 25 minutes is wrongly estimated by 2 hours 30.5 minutes. The error percentage is:
(a) 2 21/29 %
(b) 323/29 %
(c) 2 27/29 %
(d) 319/29 %

Q58. A solid sphere of radius 8 cm is melted and then recast into small spherical balls each of diameter 4 cm. Find the number of balls thus obtained (used π = 22/7).
(a) 48
(b) 32
(c) 24
(d) 64

Q59. Study the given graph carefully and answer the question that follows. The graph shows the demand and production of different companies.



The ratio between the companies having more production than demand and more demand than the production is:
(a) 4 : 1
(b) 1 : 2
(c) 1 : 4
(d) 2 : 1

Q60. If the price of rice is reduced by 24%, it enables Alok to buy 10 kg more rice for Rs. 2,500. The reduced rate of rice per kg is:
(a) Rs. 25
(b) Rs. 60
(c) Rs. 50
(d) Rs. 75

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Q61. The average of the areas of 2 similar triangles is 706.5 m² whose perimeters are in the ratio of 6 : 11. What is 20% of the difference (in m²) in areas of both triangles?

(a) 153
(b) 149
(c) 164
(d) 157

Q62. If the radius of a sphere is increased by 5%, then by what percentage will the surface area of the sphere increase?

(a) 13.25%
(b) 10.25%
(c) 15.25%
(d) 11.25%

Q63. The weights of the five friends are 67 kg, 85 kg, 70 kg, 90 kg, and 103 kg. Find the average of their weights in kg.

(a) 83
(b) 90
(c) 80
(d) 87

Q64. Simplify the following expression.

$4 \times 7 - 3\{7 \times 4 \div (6 \times 2)\}$

(a) 21
(b) 12
(c) 19
(d) 4

Q65. The given table shows the number of entertainment shows (in hundreds) held in various cities. Study the table and answer the question that follows.

City	Entertainment Shows (in hundreds)				
	A	B	C	D	E
M	15	21	24	0.8	0.9
N	12.4	13	26	2	0.5
O	5.7	8	12	0.3	0.2
P	11.3	6	18	1	1.5
Q	17	12.4	11	3	0.4
R	14	10.5	9.8	0.7	0.1

What is the average number of entertainment shows held in city P?

(a) 750
(b) 766
(c) 756
(d) 700

Q66. Two circles of radii 16 cm and 4 cm, respectively, touch each other externally at Point A. PQ is the direct common tangent of these circles with centres C1 and C2, respectively. What is the length of PQ?

(a) 18 cm
(b) 20 cm
(c) 16 cm
(d) 15 cm

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Q67. The price of a car is decreased by 15% and 20% in two successive years respectively. What percentage of the price of the car is decreased after two years?

(a) 46%
(b) 25%
(c) 32%
(d) 15%

Q68. A person borrowed some money at the rate of 8% per annum for the first two years, at the rate of 11% per annum for the next three years, and at the rate of 16% per annum for the period beyond five years. If he pays a total interest of Rs. 21,400 at the end of nine years, how much money did he borrow (round to the nearest unit) ?

(a) Rs. 15,938
(b) Rs. 18,938
(c) Rs. 18,738
(d) Rs. 11,938

Q69. A shopkeeper charges his customer 14% more than the cost price. If a customer paid Rs. 18,240 for a mobile phone, then the cost price of the mobile phone was:

(a) Rs. 16,000
(b) Rs. 16,600
(c) Rs. 15,686.40
(d) Rs. 20,793.60

Q70. How many numbers between 10 and 65 are divisible by 2, 3 and 4?

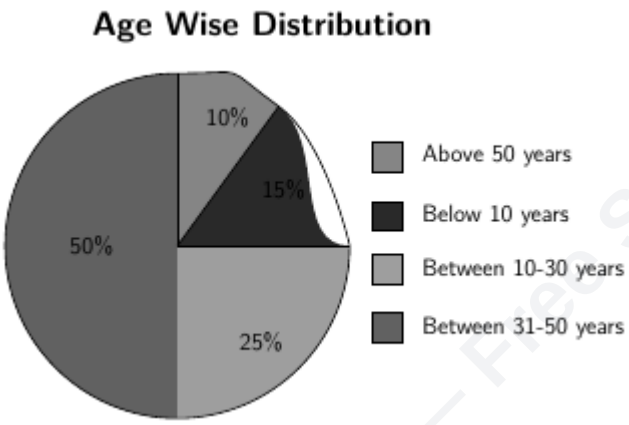
(a) 5
(b) 7
(c) 9
(d) 3

Q71. Study the given pie-charts and answer the question that follows.

The pie-charts show the characteristics of foreign tourists visiting India during a given year.



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If in a given year, 2,50,000 tourists visited India and the age wise distribution of data applies to all the countries, then the number of Russian tourists who visited India during the year and were in the age group above 50 years is:

(a) 3,850
(b) 385
(c) 375
(d) 3,750

Q72. A policeman is chasing a thief at a speed of 12 km/h, and the thief is running at a speed of 8 km/h. If the policeman started 30 minutes late, find the time taken by the policeman to catch the thief.

(a) 60 minutes
(b) 90 minutes
(c) 100 minutes
(d) 120 minutes

Q73. Let C be a circle with center O and AB be a chord of C such that the length of AB is equal to the radius of C. Let D be any point on major arc of AB. Find angle AOB and angle ADB, respectively.

(a) 100°; 80°
(b) 120°; 100°
(c) 90°; 60°
(d) 60°; 30°

Q74. The perimeter of a rectangle is 70 cm and its diagonal is 25 cm. The area of the rectangle is :

(a) 420 cm2
(b) 625 cm2
(c) 300 cm2
(d) 425 cm²

Q75. In a triangle ABC, D and E are two points on sides AB and AC, respectively, such that DE is parallel to BC and AD : DB = 3 : 5. If AC = 5.6 cm, then find the value (in cm) of AE.

(a) 2.5
(b) 2.1
(c) 2.3
(d) 1.9

GENERAL AWARENESS

Q76. Who was the first to develop a mathematical predictive heliocentric model of the solar system?

(a) Immanuel Kant
(b) Nicolaus Copernicus
(c) Galileo Galilei
(d) Pierre - Simon Laplace

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Q77. Which of the following teams won the 9^(th) Pro Kabaddi League 2022?

(a) UP Yoddhas
(b) Puneri Paltan
(c) Bengaluru Bulls
(d) Jaipur Pink Panthers

Q78. Name the web portal launched by the Department of Telecommunication sharing information on mobile towers and EMF Emission Compliances.

(a) National Optical Fibre Network
(b) Bharat Net
(c) Bharat Sanchar
(d) Tarang Sanchar

Q79. What is the duration of single round in free style wrestling?

(a) 2 min
(b) 3.5 min
(c) 2.5 min
(d) 3 min

Q80. What is the IUPAC name of the compound CH3NH2?

(a) Propan-1-amine
(b) Methanamine
(c) 2-Methyl propan-1-amine
(d) Ethanamine

Q81. In 2023, Praveen Chithravel won the men's triple jump event at the 'Prueba de Confrontacion' athletics meet held in _____.

(a) Portugal
(b) Cuba
(c) Canada
(d) Brazil

Q82. Which of the following causes enlargement and extension growth of cells?

(a) Turgor pressure
(b) Imbibition
(c) Pressure potential
(d) Osmotic pressure

Q83. Which Article provides that all minorities have the right to establish and administer educational institutions of their choice?

(a) Article 24
(b) Article 26
(c) Article 32
(d) Article 30

Q84. According to the census of India 2011, which state has the lowest population growth rate?

(a) Jharkhand
(b) Nagaland
(c) Punjab
(d) Uttar Pradesh

Q85. What happens in case of market equilibrium:

(a) Market demand = market supply
(b) There is no excess supply in the market

(a) Only (b)

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(b) Only (a)
(c) Neither (a) nor (b)
(d) Both (a) and (b)

Q86. In which year was the Marris College of Music established in India?
(a) 1922
(b) 1901
(c) 1919
(d) 1926

Q87. Which of the following is an example of system software?
(a) Adobe Photoshop
(b) Windows operating system
(c) Google Chrome
(d) Microsoft Word

Q88. Which amongst the following statements is correct about Mughal emperor Akbar ?
(a) He fought and won the third battle of Panipat against the Hindu King Hemu.
(b) He founded a new religion called 'Din - e Ilahi'.
(c) He was declared emperor in 1602.
(d) He was highly educated and knew many languages.

Q89. Bhavai is a dance form that belongs to which of the following states?
(a) Rajasthan
(b) Bihar
(c) Madhya Pradesh
(d) Odisha

Q90. As of March, 2024, who is the minister of the Ministry of Cooperation, Government of India?
(a) Smriti Zubin Irani
(b) Dharmendra Pradhan
(c) Nitin Gadkari
(d) Amit Shah

Q91. Mahavir Jayanti celebrates the birthday of Lord Mahavira who is the _____ Tirthankara of Jainism.
(a) 23^(rd)
(b) 24^(th)
(c) 25^(th)
(d) 26^(th)

Q92. In July 2021, which of the following persons declared herself/himself brand ambassador of 'Khadi Prakritik Paint', made from cow dung by the Khadi and Village Industries Commission?
(a) Nirmala Sitharaman
(b) Narendra Singh Tomar
(c) Rajnath Singh
(d) Nitin Gadkari

Q93. Which south - eastern Dravidian language has been approved by Odisha state to be included in the Eighth Schedule of the Constitution of India, on 10th July 2023?
(a) Kui
(b) Malto
(c) Tulu
(d) Kodagu

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Q94. Which of the following is NOT a part of Carnatic music?

(a) Charana
(b) Dhrupad
(c) Pallavi
(d) Varnam

Q95. In MS Word, which option allows you to insert a new column in a table while simultaneously shifting the existing columns to the right ?

(a) Insert Column to the Right
(b) Insert Table
(c) Insert Columns
(d) Insert Column to the Left

Q96. According to the Census 2011 of India, which metropolitan has the second highest population?

(a) Kolkata
(b) Chennai
(c) Mumbai
(d) Delhi

Q97. Brahmo Samaj was earlier known as :

(a) Prarthana Samaj
(b) Bramho Sabha
(c) Arya Samaj
(d) Veda Samaj

Q98. Which of the following committees recommended the inclusion of fundamental duties in the Constitution of India?

(a) Balwant Rai Mehta Committee
(b) Raja Mannar Committee
(c) Sarkaria Committee
(d) Swaran Singh Committee

Q99. Which is the waterbody that separates Andaman Islands and Nicobar Islands?

(a) Nine Degree Channel
(b) Ten Degree Channel
(c) Eleven Degree Channel
(d) Eight Degree Channel

Q100. According to the Department of Industrial Policy and Promotion, which of the following is NOT a core industry?

(a) Jute
(b) Crude oil
(c) Electricity
(d) Fertilisers

ANSWER KEY

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

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71	d	72	a	73	d	74	c	75	b	76	b	77	d	78	d	79	d	80	b
81	b	82	a	83	d	84	b	85	d	86	d	87	b	88	b	89	a	90	d
91	b	92	d	93	a	94	b	95	d	96	d	97	b	98	d	99	b	100	a

SOLUTIONS

Q1. Answer: (c) No error

The correct answer is Option 2.

Key Points

• The primary issue in the sentence is the placement of the adverb "well" in the phrase "speaks Telugu well."

• Typically, adverbs of manner like "well" should follow the verb they modify.

• In this case, however, the given sentence "speaks Telugu well" is grammatically correct, as the adverb "well" correctly follows the verb "speaks" and the object "Telugu".

• Thus, there is no adverbial usage error in the sentence.

Therefore, the correct answer is Option 3.

Correct Sentence: "Mrs. Arunima speaks Telugu well."

Additional Information

• Option 1: "Mrs. Arunima" – This part of the sentence is grammatically correct and does not contain any errors.

• Option 2: "speaks" – This part of the sentence is grammatically correct and does not contain any errors.

• Option 4: "Telugu well" – This part of the sentence is grammatically correct and does not contain any errors.

Q2. Answer: (b) a oasis is an area

The correct answer is Option 2.

Key Points

• The primary issue in the sentence is the use of the article "a" before the term "oasis."

• The correct article to use before a word starting with a vowel sound is "an".

• The correct phrase should be "an oasis," ensuring grammatical correctness.

• Thus, the error is located in Option 2 of the sentence.

Therefore, the correct answer is Option 2.

Correct Sentence: "According to the encyclopaedia, an oasis is an area which is made fertile by a source of freshwater."

Additional Information

• 1) "According to the encyclopaedia," – This part of the sentence is grammatically correct and does not require any changes.

• 3) "a source of freshwater." – This part of the sentence is grammatically correct and does not require any changes.

• 4) "which is made fertile by," – This part of the sentence is grammatically correct and does not require any changes.

Q3. Answer: (c) He have

The correct answer is Option 3.

Key Points

• The primary issue in the sentence is the use of the verb "have" with the singular subject "He."

• Singular subjects typically require the verb "has."

• The correct phrase should be "He has," ensuring grammatical correctness and clarity.

• Thus, the error is located in part 3 of the sentence.

Therefore, the correct answer is Option 3.

Correct Sentence: "He has workers from Ireland and France in his factory."

Additional Information

• Part 1: "in his factory." – This part of the sentence is grammatically correct and does not require any changes.

• Part 2: "Ireland and France" – This part of the sentence is grammatically correct and does not require any changes.

• Part 4: "workers from" – This part of the sentence is grammatically correct and does not require any changes.

Q4. Answer: (a) well

The correct answer is Option 1.

Key Points

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• The original sentence "Sarita speaks French best." is not grammatically correct.
• The correct usage should be "Sarita speaks French well."
• Using "well" is appropriate because it correctly modifies the verb "speaks."
• Thus, the error is located in the incorrect use of "best" in the sentence.

Therefore, the correct answer is Option 1.

Correct Sentence: "Sarita speaks French well."

Additional Information

• Option 2: "better" – This would imply a comparison and is not suitable without a comparative context.
• Option 3: "good" – "Good" is an adjective and should not be used to modify a verb.
• Option 4: "worst" – This is incorrect and would convey the opposite meaning.

Q5. Answer: (a) within

The solution is in Hindi. Read it online.

Q6. Answer: (d) challenging

The solution is in Hindi. Read it online.

Q7. Answer: (a) offer

The solution is in Hindi. Read it online.

Q8. Answer: (c) cohesion

The solution is in Hindi. Read it online.

Q9. Answer: (c) foundation

The solution is in Hindi. Read it online.

Q10. Answer: (c) Educated

The solution is in Hindi. Read it online.

Q11. Answer: (b) playing

html

The correct answer is Option 2.

Key Points

• The primary issue in the sentence is the incorrect verb form "played" after "like".
• The verb "like" should be followed by the gerund form "playing" when indicating an activity one enjoys.
• The correct phrase should be "I like playing cricket after school," ensuring grammatical correctness and clarity.

Therefore, the correct answer is Option 2.

Correct Sentence: "I like playing cricket after school."

Additional Information

• Option 1: "play" – This option is incorrect because "like" should be followed by a gerund ("playing"), not the base form of the verb ("play").
• Option 3: "having to play" – This option is incorrect as it changes the meaning of the sentence and is not the correct form after "like".
• Option 4: "played" – This option is incorrect because it repeats the original error of using the past tense form.

Q12. Answer: (d) help in reducing

The correct answer is Option 4.

Key Points

• The primary issue in the sentence is the incorrect verb form "helping."
• The verb "help" should be used in its base form to maintain parallel structure with "manage."
• The correct phrase should be "help in reducing," ensuring grammatical correctness and clarity.
• Thus, the error is located in the underlined segment of the sentence.

Therefore, the correct answer is Option 4.

Correct Sentence: "Yoga may manage pain and help in reducing stress."

Additional Information

• Option 1: "helped reduce" – This option uses the past tense "helped," which is not appropriate in this context.

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• Option 2: "help reduction for" – This option is grammatically incorrect and does not fit the context of the sentence.
• Option 3: "help reduced" – This option is grammatically incorrect and does not fit the context of the sentence.

Q13. Answer: (b) a successful raid

The correct answer is Option 2.

Key Points

• The sentence requires the article "a" before the noun phrase "successful raid".
• The phrase "an successful raid" is incorrect because "an" is used before words that start with a vowel sound, and "successful" starts with a consonant sound.
• The correct phrase should be "a successful raid".
• Thus, the error is located in the original segment of the sentence.

Therefore, the correct answer is Option 2.

Correct Sentence: "We have carried out a successful raid on a fraudulent minister."

Additional Information

• Option 1: "successful raid" – This option is incorrect because it omits the necessary article "a".
• Option 3: "these successful raid" – This option is incorrect because "these" is a plural demonstrative adjective used before plural nouns, while "raid" is singular.
• Option 4: "the successful raid" – This option is grammatically correct but changes the meaning slightly by specifying a particular raid, which may not be the intended meaning.

Q14. Answer: (c) Modest

The solution is in Hindi. Read it online.

Q15. Answer: (d) by

The correct answer is Option 4.

Key Points

• Homophones are words that sound the same but have different meanings and spellings.
• In the given sentence, "by" is the correct homophone to indicate proximity or location.
• The other options (bi, bye, buy) do not fit the context of the sentence.

Therefore, the correct answer is Option 4.

Q16. Answer: (b) take a holiday

The correct answer is Option 2.

Key Points

• The sentence implies that after completing the pending assignments, the speaker plans to take a break or enjoy leisure time.
• Option 2, "take a holiday," fits perfectly in this context as it aligns with the idea of relaxing or enjoying time in Goa.
• Other options like "land a meal," "go bankrupt," or "forgive a debt" do not make logical sense in this context.

Therefore, the correct answer is Option 2.

Q17. Answer: (b) Allowed

The solution is in Hindi. Read it online.

Q18. Answer: (b) To be out of place

The solution is in Hindi. Read it online.

Q19. Answer: (b) Comendation

The solution is in Hindi. Read it online.

Q20. Answer: (b) Profiundly

The solution is in Hindi. Read it online.

Q21. Answer: (b) Mean

The solution is in Hindi. Read it online.

Q22. Answer: (b) weather

The correct answer is Option 2.

Key Points

• The noun "weather" refers to the atmospheric conditions at a particular time and place.
• The sentence is describing the atmospheric conditions for today, so the appropriate word to use is "weather".
• Options 1, 3, and 4 are incorrect in this context.
Therefore, the correct answer is Option 2.
Complete Sentence: "The weather today will be cloudy and humid."
Additional Information
• Option 1: "waiter" is incorrect because a waiter is a person who serves food and drinks in a restaurant.
• Option 3: "wither" is incorrect because wither means to become dry and shriveled.
• Option 4: "whether" is incorrect because whether is a conjunction used to express a doubt or choice between alternatives.

Q23. Answer: (a) Discrimination

The solution is in Hindi. Read it online.

Q24. Answer: (a) Attractive but unnecessary features added to products

The solution is in Hindi. Read it online.

Q25. Answer: (c) No improvement

The correct answer is Option 3.
Key Points
• The phrase "come over" is appropriate in this context as it means to visit someone, which fits the given scenario.
• The other options ("come into", "come through", "come across") do not convey the intended meaning of visiting someone.
• Therefore, no improvement is needed for the underlined part of the sentence.
Therefore, the correct answer is Option 3.
Correct Sentence: "Since my friend was not feeling well, she asked me to come over and take care of her."
Additional Information
• Option 1: "come into" – This means to enter a place, which is not appropriate in this context.
• Option 2: "come through" – This means to succeed in a difficult situation, which is not appropriate in this context.
• Option 4: "come across" – This means to find something by chance, which is not appropriate in this context.

Q26. Answer: (c) pa

The logic followed here is:
Thus, the code for 'watch' is 'pa'.
Hence, the correct answer is "Option 3".

Q27. Answer: (b) •

From the given open Dice:
$ and % is the opposite sides.
^ and # is the opposite sides.
@ and * is the opposite sides.
Hence, the correct answer is "Option 2".

Q28. Answer: (b) 170

BODMAS Table:
Given e×pression: 18 ÷ 9 + 24 × 3 – 16 = ?
After interchanging : '+' <=> '–' and '×' <=> '÷'
Then we get, 18 × 9 − 24 ÷ 3 + 16
? = 18 × 9 − 8 + 16
? = 162 - 8 + 16
? = 178 - 8 = 170
Hence, the correct answer is "Option 2".

Q29. Answer: (c) [figure]

The paper after unfolded will be:
Hence, the correct answer is "Option 3".

Q30. Answer: (a) ni

The logic followed here is:

Hence, the correct answer is "Option 1".

Q31. Answer: (d) 1728

The logic followed here is:

Logic: (1st number)^3 = 2nd number.

Now,

For, 4 : 64

=> $4^3 = 64$

For, 9 : 729

=> $9^3 = 729$

Similarly, for 12 : ?

=> $12^3 = 1728$

Hence, the correct answer is "Option 4".

Q32. Answer: (d) TVQ

The logic followed here is:

Hence, the correct answer is "Option 4".

Q33. Answer: (a) 267

Given Equation: 88 B 3 D 12 A 4 C 6 = ?

BODMAS Rule:

Decoding the given information:

Alphabet	A	B	C	D
Meaning	÷	×	•	•

Now replacing the sign from left to right using BODMAS Rule, we get:

=> 88 × 3 - 12 ÷ 4 + 6 = ?

=> 88 × 3 - 3 + 6 = ?

=> 264 - 3 + 6 = ?

=> 270 - 3 = 267.

Hence, the correct option is "Option 1".

Q34. Answer: (b) WWTO

The logic followed here is:

For, WVSO is related to XXUP

For, ONKG is related to PPMH

Similarly, for 'VURN'

Hence, the correct answer is "Option 2".

Q35. Answer: (b) Friday

Given: 19 November 2003 was Wednesday.

Now,

2003 to 2010 = 7 Years (5 Ordinary Years and 2 Leap Years).

So, 2 Leap Years have 4 odd days,

And, 5 Ordinary Years have 5 odd days.

Total odd days = 4 + 5 = 9.

9 odd days → 9/7 = 1 week and 2 odd days.

then, 19 November 2010 will be Wednesday + 2 = Friday.

Now, the number of days between 19 November 2010 to 25 March 2011

= 11 (remaining days in November) + 31 (December) + 31 (January) + 28 (February) + 25 (March) = 126 days.

= 126 days → 126/7 = 18 weeks and 0 odd days.

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So, 25 March 2011 will be Friday + 0 = Friday.
Hence, the correct answer is "Option 2".

Q36. Answer: (b) (8, 17, 140)

The logic followed here is:
Logic: (1st number × 2nd number) + 4 = 3rd number.
Now,
For, (9, 21, 193)
=> (9 × 21) + 4 = 189 + 4 = 193.
For, (12, 15, 184)
=> (12 × 15) + 4 = 180 + 4 = 184.
Similarly, for (8, 17, 140)
=> (8 × 17) + 4 = 136 + 4 = 140.
Hence, the correct answer is "Option 2".

Q37. Answer: (d) Sister

Family Chart:
Decoding the Symbols:

Symbol	•	•	×	÷
Meaning	Mother	Daughter	Husband	Sister

Given: M ÷ N – O × P + Q
It means: M is the sister of N, N is the daughter of O, O is the husband of P and P is the mother of Q.
So, M is the sister of Q.
Hence, the correct answer is "Option 4".

Q38. Answer: (c) SQN

The logic followed here is:
Hence, the correct answer is "Option 3".

Q39. Answer: (d) [figure]

The correct mirror image of the given figure is:
Hence, the correct answer is "Option 4".

Q40. Answer: (d) PQT

The logic followed here is:
Option 1) LNQ
Option 2) CEH
Option 3) TVY
Option 4) PQT
Here, 'PQT' is odd among the given options.
Hence, the correct answer is "Option 4".

Q41. Answer: (c) 47

The logic followed here is:
Hence, the correct answer is "Option 3".

Q42. Answer: (b) 64

BODMAS Table:
Given e×pression: 44 ÷ 78 + 6 - 3 × 19 = ?
After interchanging: '+' <=> '÷' and '-' <=> '×'
Then 44 + 78 ÷ 6 × 3 - 19 = ?
? = 44 + 13 × 3 - 19
? = 44 + 39 - 19

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? = 83 - 19 = 64

Hence, the correct answer is "Option 2".

Q43. Answer: (d) Six

Given word: 'MUSICAL'

After arranged in alphabetical order:

Alphabets	M	U	S	I	C	A	L
Alphabetical order	A	C	I	L	M	S	U

After arranged in alphabetical order,

Fourth alphabet from the left end is: L,

Second alphabet from the right end is: S,

Now,

there are 6 letters between L and S.

L	M	N	O	P	Q	R	S

Hence, the correct answer is "Option 4".

Q44. Answer: (c) 5

The triangles are:

So, there are '5' triangles in the given figure.

Hence, the correct answer is "Option 3".

Q45. Answer: (d) Both conclusions I and III

Given Statements:

No copper is silver.

All gold is copper.

All aluminium is gold.

The least possible Venn diagram for the given statement is:

Conclusions:

I. No aluminium is silver - True (Because, All aluminium is gold, all gold is copper and no copper is silver, so No aluminium is silver).

II. Some gold is silvers - False (Because, All gold is copper and no copper is silver, so it can not be possible only).

III. All aluminium is copper - True (Because, All aluminium is gold, and all gold is copper, implies that All aluminium is copper).

So, Both conclusions I and III follow.

Hence, the correct answer is "Option 4".

Q46. Answer: (d) [figure]

The paper after unfolded will be:

Hence, the correct answer is "Option 4".

Q47. Answer: (d) [figure]

The correct mirror image of the given figure is:

Hence, the correct answer is "Option 4".

Q48. Answer: (b) [figure]

The logic followed here is:

From figure 1 to figure 2 and figure 3 to figure 4:

• Corner letters are shifting their position in clockwise direction.

• And middle letters interchange their position.

From figure 2 to figure 3 and figure 4 to figure 5:

• Top three and middle letter shift their position in anticlockwise direction.

• Added a new letter/ number in Bottom middle position in each figure.

Hence, the correct answer is "Option 2".

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Q49. Answer: (c) Exploit : Utilise

The logic followed here is:
Logic: Synonym Relationship.
Here,
Withdraw : Extract → Withdraw and Extract are synonyms, meaning to take out or remove.
Similarly,
Exploit : Utilise → Exploit and Utilise are synonyms, meaning to make use of something effectively.
Hence, the correct answer is "Option 3".

Q50. Answer: (b) 41

The logic follows here,
Hence, the correct answer is "Option 2".

Q51. Answer: (a) 60

Given:
Antony and Julie together can complete the work in 15 days
Julie alone can complete the work in 20 days
Formula used:
Work rate of Antony and Julie together = Work rate of Antony + Work rate of Julie
Work rate = 1 / Time taken to complete the work
Calculation:
Work rate of Antony and Julie together = 1/15
Work rate of Julie alone = 1/20
=> 1/15 = Work rate of Antony + 1/20
=> Work rate of Antony = 1/15 - 1/20
=> Work rate of Antony = (4 - 3) / 60
=> Work rate of Antony = 1/60
=> Time taken by Antony alone = 1 / (Work rate of Antony)
=> Time taken by Antony alone = 60 days
Therefore The correct answer is option 1.

Q52. Answer: (a) Rs. 5

Given:
Marked Price (MP) = Rs. 30
MP is 20% more than Cost Price (CP)
Percentage of expenditure on paper = 20%
Formula used:
MP = CP + 20% of CP
Cost of paper = 20% of CP
Calculation:
30 = CP + 0.2 × CP
=> 30 = 1.2 × CP
=> CP = 30 / 1.2
=> CP = 25
Cost of paper = 20% × 25
=> Cost of paper = 0.2 × 25
=> Cost of paper = 5
Therefore The cost of paper used in a single copy of the book is Rs. 5.

Q53. Answer: (b) -10/√119

Given:
If cotA = (5)/(12)
Formula used:

cotA = (adjacent)/(opposite)
secA = (hypotenuse)/(adjacent)
cosecA = (hypotenuse)/(opposite)
Calculation:
For cotA = (5)/(12)
Let opposite = 12k and adjacent = 5k
=> hypotenuse = √((12k)² + (5k)²)
=> hypotenuse = √(144k² + 25k²)
=> hypotenuse = √(169k²)
=> hypotenuse = 13k
secA = (hypotenuse)/(adjacent) = (13k)/(5k) = 13/5
cosecA = (hypotenuse)/(opposite) = (13k)/(12k) = 13/12
Given expression: √((secA - cosecA)) / √((secA + cosecA)) - √((17)/(7))
=> √((13/5 - 13/12)) / √((13/5 + 13/12)) - √((17)/(7))
=> √((156 - 65)/60) / √((156 + 65)/60) - √((17)/(7))
=> √((91)/(60)) / √((221)/(60)) - √((17)/(7))
=> √((91)/(60) × (60)/(221)) - √((17)/(7))
=> √((91)/(221)) - √((17)/(7))
=> (√(7×13))/(√(17×13)) - √((17)/(7))
=> √(7)/(√(17)) - √((17)/(7))
=> √((7)/(17)) - √((17)/(7))
=> (√((7)/(17)) - (√((17)/(7))))
Rationalize to get a common base:
=> (√((7)/(17)) × √((7)/(7))) - (√((17)/(7)) × √((17)/(17)))
=> (√((49)/(119))) - (√((289)/(119)))
=> (7)/(√(119)) - (17)/(√(119))
=> (7 - 17)/(√(119))
=> -10/(√(119))
Therefore The correct answer is option (2).

Q54. Answer: (c) 1,530

Given:
List price (P) = Rs. 2,000
First discount = 15%
Second discount = 10%
Formula used:
Net Selling Price (SP) = P × (1 - d1) × (1 - d2)
Where, d1 and d2 are the successive discounts
Calculation:
SP = 2000 × (1 - 0.15) × (1 - 0.10)
=> SP = 2000 × 0.85 × 0.90
=> SP = 2000 × 0.765
=> SP = 1530
Therefore The correct answer is option (3).

Q55. Answer: (c) 10 years

Given:
A father is presently 3 times his daughter's age. After 10 years he will be twice as old as her.
Formula used:
Let the daughter's present age be D years.
Father's present age = 3D years
After 10 years:

Daughter's age = D + 10

Father's age = 3D + 10

According to the problem, after 10 years, father will be twice as old as daughter:

3D + 10 = 2(D + 10)

Calculation:

3D + 10 = 2(D + 10)

=> 3D + 10 = 2D + 20

=> 3D - 2D = 20 - 10

=> D = 10

Therefore The correct answer is option 3.

Q56. Answer: (d) 7.7 hours

Shortcut Trick

For direct proportion, the ratio of Marks to Time remains constant.

Time required for 90 marks = (Time for 70 marks ÷ 70) × 90

=> Required Time = (6 ÷ 70) × 90

=> Required Time = 540 ÷ 70

=> Required Time = 54 ÷ 7 ≈ 7.714 hours

Therefore The correct answer is 7.7 hours.

Alternate Method

Direct Proportion

70 Marks

Time = 6 Hours

90 Marks

Time = ?

Given:

Marks scored in 6 hours = 70

Target marks = 90

Formula Used:

When two quantities are directly proportional, their ratio is constant: M1 ÷ T1 = M2 ÷ T2

Calculations:

=> Let the required practice time be T hours.

=> 70 ÷ 6 = 90 ÷ T

=> 70 × T = 90 × 6

=> 70T = 540

=> T = 540 ÷ 70

=> T = 54 ÷ 7

=> T ≈ 7.714 hours

Therefore The correct answer is 7.7 hours.

Additional Information

Direct Proportion

When two quantities increase or decrease together at a constant ratio. The general formula is x1 ÷ y1 = x2 ÷ y2.

Inverse Proportion

When an increase in one quantity results in a proportional decrease in another quantity. The general formula is x1 × y1 = x2 × y2.

Compound Ratio

The ratio obtained by multiplying the antecedents and the consequents of two or more ratios. For ratios a:b and c:d, the compound ratio is ac:bd.

Q57. Answer: (b) 323/29 %

Given:

An interval of 2 hours 25 minutes is wrongly estimated by 2 hours 30.5 minutes.

Formula used:

Error Percentage = |(True Value - Estimated Value)/(True Value)| × 100

Calculations:

True Value = 2 hours 25 minutes = 2 × 60 + 25 = 145 minutes

Estimated Value = 2 hours 30.5 minutes = 2 × 60 + 30.5 = 150.5 minutes

Error = |145 - 150.5| = 5.5 minutes

Error Percentage = |5.5/145| × 100

=> Error Percentage = 5.5/145 × 100

=> Error Percentage = 550/145

=> Error Percentage ≈ 3.79%

Therefore The correct answer is 3 23/29 %.

Q58. Answer: (d) 64

Given:

A solid sphere of radius 8 cm is melted and then recast into small spherical balls each of diameter 4 cm.

Formula used:

Volume of sphere = $(4/3)\pi r^3$

Calculation:

Volume of the original sphere = $(4/3)\pi(8)^3$

=> Volume of the original sphere = $(4/3)\pi(512)$

=> Volume of the original sphere = $(2048/3)\pi$

Volume of one small ball = $(4/3)\pi(2)^3$

=> Volume of one small ball = $(4/3)\pi(8)$

=> Volume of one small ball = $(32/3)\pi$

Number of small balls = Volume of the original sphere / Volume of one small ball

=> Number of small balls = $(2048/3)\pi$ / $(32/3)\pi$

=> Number of small balls = 2048 / 32

=> Number of small balls = 64

Therefore The correct answer is option (4).

Q59. Answer: (d) 2 : 1

Given:

We are analyzing the graph to find the ratio between companies where production is greater than demand and where demand is greater than production.

Formula used:

Compare the production and demand for each company and count how many have:

• Production greater than demand

• Demand greater than production

Calculation:

Companies with production greater than demand:

• Company 2: Production = 3660, Demand = 3150

• Company 3: Production = 3100, Demand = 2600

• Company 5: Production = 3700, Demand = 2800

• Company 6: Production = 4500, Demand = 3300

Total companies where production > demand = 4

Companies with demand greater than production:

• Company 1: Production = 1450, Demand = 2100

• Company 4: Production = 4200, Demand = 5000

Total companies where demand > production = 2

Ratio:

Ratio of companies with more production than demand to those with more demand than production = 4:2 = 2:1

Therefore The required ratio is 2:1.

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Q60. Answer: (b) Rs. 60

Given:

If the price of rice is reduced by 24%, it enables Alok to buy 10 kg more rice for Rs. 2,500.

Formula used:

Let the original price per kg be Rs. x.

Reduced price per kg = x - 0.24x = 0.76x

Quantity bought at original price = 2500/x

Quantity bought at reduced price = 2500/0.76x

According to the question:

2500/0.76x - 2500/x = 10

Calculations:

2500/0.76x - 2500/x = 10

=> 2500 (1/0.76x - 1/x) = 10

=> 2500 (x - 0.76x)/(0.76x²) = 10

=> 2500 (0.24x)/(0.76x²) = 10

=> 2500 × 0.24/(0.76x) = 10

=> 600/0.76x = 10

=> 600 = 7.6x

=> x = 600/7.6

=> x = 78.95

Reduced price per kg = 0.76 × 78.95

=> Reduced price per kg = Rs. 60

Therefore The correct answer is option (2).

Q61. Answer: (a) 153

Given:

The average of the areas of 2 similar triangles is 706.5 m² whose perimeters are in the ratio of 6 : 11.

Formula used:

If the perimeters of two similar triangles are in the ratio a : b, then the ratio of their areas will be a² : b².

Calculation:

Let the areas of the two triangles be A1 and A2.

Given the average area, we have:

(A1 + A2) / 2 = 706.5

=> A1 + A2 = 706.5 × 2

=> A1 + A2 = 1413

The ratio of their areas will be (6²) : (11²) = 36 : 121.

Let the areas be 36k and 121k where k is a constant.

So,

36k + 121k = 1413

=> 157k = 1413

=> k = 1413 / 157

=> k = 9

Therefore,

A1 = 36 × 9 = 324

A2 = 121 × 9 = 1089

The difference in areas is:

1089 - 324 = 765

20% of the difference in areas:

20% of 765 = 0.20 × 765

=> 153

Therefore The correct answer is option 1.

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Q62. Answer: (b) 10.25%

Given:

The radius of a sphere is increased by 5%.

Formula used:

Surface Area of Sphere = $4\pi r^2$

Calculation:

Let the original radius be r.

New radius = r + 5% of r = r + 0.05r = 1.05r

Original surface area = $4\pi r^2$

New surface area = $4\pi(1.05r)^2$

=> New surface area = $4\pi(1.1025r^2)$

=> New surface area = $4\pi r^2 \times 1.1025$

Percentage increase in surface area = (New surface area - Original surface area) / Original surface area × 100

=> Percentage increase = $(4\pi r^2 \times 1.1025 - 4\pi r^2) / 4\pi r^2 \times 100$

=> Percentage increase = (1.1025 - 1) × 100

=> Percentage increase = 0.1025 × 100

=> Percentage increase = 10.25%

Therefore The correct answer is option 2.

Q63. Answer: (a) 83

Shortcut Trick

Assume a base average of 80 kg.

Calculate deviations: (67−80), (85−80), (70−80), (90−80), (103−80) → −13, +5, −10, +10, +23.

Sum of deviations = −13 + 5 − 10 + 10 + 23 = +15.

Average deviation = 15 ÷ 5 = +3.

Actual Average weight = Base + Average deviation = 80 + 3 = 83 kg.

Therefore The correct answer is 83 kg.

Alternate Method

Given:

Weights of five friends = 67 kg, 85 kg, 70 kg, 90 kg, and 103 kg.

Formula Used:

Average = (Sum of all observations) ÷ (Total number of observations)

Calculations:

=> Total Weight = 67 + 85 + 70 + 90 + 103

=> Total Weight = 415 kg

=> Total Number of friends = 5

=> Average weight = 415 ÷ 5

=> Average weight = 83 kg

Therefore The correct answer is 83 kg.

Additional Information

Sum of Observations

The sum of observations is always equal to the Average × Number of observations.

Property of Deviation

The algebraic sum of the deviations of a set of observations from their arithmetic mean is always zero.

Effect of Constant on Average

If every observation in a data set is increased, decreased, multiplied, or divided by a constant 'k', the average is also changed by the same constant 'k'.

Q64. Answer: (a) 21

Shortcut Trick

Apply the BODMAS rule directly to the expression.

=> 4 × 7 − 3 {28 ÷ 12}

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=> 28 − 3 × (7/3)

=> 28 − 7 = 21

Therefore The correct answer is 21.

Alternate Method

Given:

4 × 7 − 3 {7 × 4 ÷ (6 × 2)}

Formula Used:

BODMAS Rule (Brackets, Of, Division, Multiplication, Addition, Subtraction)

Calculations:

=> Step 1: Solve the innermost round bracket (6 × 2)

=> 4 × 7 − 3 {7 × 4 ÷ 12}

=> Step 2: Solve the multiplication inside the curly braces

=> 4 × 7 − 3 {28 ÷ 12}

=> Step 3: Simplify the division inside the curly braces

=> 4 × 7 − 3 {7 / 3}

=> Step 4: Perform the multiplication operations outside

=> (4 × 7) − (3 × 7 / 3)

=> 28 − 7

=> Step 5: Perform the final subtraction

=> 21

Therefore The correct answer is 21.

Additional Information

BODMAS Rule

It determines the correct sequence of mathematical operations to simplify expressions systematically: Brackets (), {}, []), Of, Division, Multiplication, Addition, and Subtraction.

Order of Brackets

When working with nested brackets, always resolve them from the inside out. Begin with round parenthesis (), proceed to curly braces {}, and conclude with square brackets [].

Left-to-Right Evaluation

Multiplication and Division share the same priority level in the order of operations. They should generally be evaluated from left to right as they appear in the expression.

Q65. Answer: (c) 756

Given:

City P Shows: A = 11.3, B = 6, C = 18, D = 1, E = 1.5

Formula used:

Average = Total Shows / Number of Categories

Calculations:

Total Shows in City P = 11.3 + 6 + 18 + 1 + 1.5

=> Total = 37.8

Number of Categories = 5

=> Average = 37.8 / 5

=> Average = 7.56

Therefore The average number of entertainment shows held in city P is 7.56 hundreds or 756 shows.

Q66. Answer: (c) 16 cm

Given:

Radius of Circle 1 (r1) = 16 cm

Radius of Circle 2 (r2) = 4 cm

Formula used:

PQ = √(d² - (r1 - r2)²)

Where, d = r1 + r2

Calculations:

d = r1 + r2 = 16 + 4 = 20 cm

r1 - r2 = 16 - 4 = 12 cm

PQ = √(20² - 12²)

=> PQ = √(400 - 144)

=> PQ = √256

=> PQ = 16 cm

Therefore The correct answer is 16cm.

Q67. Answer: (c) 32%

Shortcut Trick

For two successive percentage decreases of a% and b%, the effective percentage decrease is given by the formula: (a + b − (a × b)/100)%.

Given: a = 15% and b = 20%.

Net Decrease = 15 + 20 − (15 × 20) / 100

Net Decrease = 35 − 300 / 100 = 35 − 3 = 32%.

Therefore The correct answer is 32%.

Alternate Method

Given:

First year decrease = 15%

Second year decrease = 20%

Calculations:

=> Let the initial price of the car be Rs. 100.

=> Price after 1^(st) year decrease (15%) = 100 − (15% of 100) = 100 − 15 = Rs. 85.

=> Price after 2^(nd) year decrease (20%) = 85 − (20% of 85).

=> 20% of 85 = (20 × 85) / 100 = 1700 / 100 = Rs. 17.

=> Price after 2 years = 85 − 17 = Rs. 68.

=> Total decrease in price = Initial Price − Final Price = 100 − 68 = 32.

=> Total percentage decrease = (32 / 100) × 100 = 32%.

Therefore The correct answer is 32%.

Additional Information

Successive Percentage Change Formula

For two successive changes of x% and y%, the net change is (x + y + (xy/100))%. Use positive values for increase and negative values for decrease.

Successive Discount Rule

A series of discounts d1, d2, d3... can be calculated using the multiplying factor method: Final Value = Initial Value × (1 − d1/100) × (1 − d2/100)...

Percentage Decrease vs. Final Value

If a value is decreased by x%, the remaining value is (100 − x)% of the original value.

Q68. Answer: (b) Rs. 18,938

Given:

A person borrowed some money at the rate of 8% per annum for the first two years, at the rate of 11% per annum for the next three years, and at the rate of 16% per annum for the period beyond five years. If he pays a total interest of Rs. 21,400 at the end of nine years, how much money did he borrow (round to the nearest unit)?

Formula used:

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

Where,

P = Principal amount

R = Rate of interest

T = Time period

Calculation:

Let the borrowed amount be P.

Interest for the first 2 years at 8%:

SI1 = P × 8 × 2 / 100
=> SI1 = 0.16P
Interest for the next 3 years at 11%:
SI2 = P × 11 × 3 / 100
=> SI2 = 0.33P
Interest for the remaining 4 years at 16%:
SI3 = P × 16 × 4 / 100
=> SI3 = 0.64P
Total interest paid after 9 years:
SI_(total) = SI1 + SI2 + SI3
=> 21400 = 0.16P + 0.33P + 0.64P
=> 21400 = 1.13P
=> P = 21400 / 1.13
=> P = 18938.0531
=> P ≈ Rs. 18,938
Therefore The correct answer is option 2.

Q69. Answer: (a) Rs. 16,000

Shortcut Trick
Let the Cost Price (CP) be 100%.
As the shopkeeper charges 14% more, Selling Price (SP) = 100% + 14% = 114%.
According to the question, 114% = Rs. 18,240.
1% = 18,240 ÷ 114 = Rs. 160.
100% (CP) = 160 × 100 = Rs. 16,000.
Therefore The correct answer is Rs. 16,000.
Alternate Method
Given:
Selling Price (SP) of the mobile phone = Rs. 18,240
Profit percentage (markup) = 14%
Formula Used:
Cost Price (CP) = [SP ÷ (100 + Profit %)] × 100
Calculations:
=> Cost Price (CP) = [18,240 ÷ (100 + 14)] × 100
=> CP = [18,240 ÷ 114] × 100
=> CP = 160 × 100
=> CP = Rs. 16,000
Therefore The correct answer is Rs. 16,000.
Additional Information
Profit and Loss Basic Formulas
Profit = Selling Price (SP) − Cost Price (CP). Profit % = (Profit ÷ CP) × 100.
Selling Price for Loss
If there is a loss, SP = CP × [(100 − Loss %) ÷ 100].
Marked Price and Discount
Selling Price = Marked Price (MP) − Discount. Discount is always calculated on the MP.
Cost Price for Loss
CP = [SP × 100] ÷ (100 − Loss %).

Q70. Answer: (a) 5

Given:
How many numbers between 10 and 65 are divisible by 2, 3, and 4?
Formula used:
To find numbers divisible by 2, 3, and 4, we need to find numbers divisible by LCM(2, 3, 4).

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LCM(2, 3, 4) = 12
Calculation:
Numbers between 10 and 65 divisible by 12:
First number: 12 × 1 = 12
Second number: 12 × 2 = 24
Third number: 12 × 3 = 36
Fourth number: 12 × 4 = 48
Fifth number: 12 × 5 = 60
=> There are 5 numbers between 10 and 65 that are divisible by 12.
Therefore The correct answer is option 1.

Q71. Answer: (d) 3,750

Given:
Total tourists = 2,50,000
Russian tourists = 15%
Tourists above 50 years = 10%
Formula used:
Russian tourists = Total tourists × Percentage of Russian tourists
Russian tourists above 50 years = Russian tourists × Percentage of tourists above 50 years
Calculation:
Russian tourists = 2,50,000 × 15%
=> Russian tourists = 37,500
Russian tourists above 50 years = 37,500 × 10%
=> Russian tourists above 50 years = 3,750
Therefore The number of Russian tourists above 50 years is 3,750.

Q72. Answer: (a) 60 minutes

Shortcut Trick
Lead distance of thief = Speed × Time = 8 × (30/60) = 4 km.
Relative speed = Policeman speed − Thief speed = 12 − 8 = 4 km/h.
Time to catch = Lead distance ÷ Relative speed = 4 ÷ 4 = 1 hour.
Time in minutes = 1 × 60 = 60 minutes.
Therefore The correct answer is 60 minutes.
Alternate Method
Given: Speed of Policeman = 12 km/h, Speed of Thief = 8 km/h, Start delay = 30 minutes.
Formula Used: Time = Distance ÷ Relative Speed; Distance = Speed × Time.
Policeman (P)
Thief (T)
Catch (M)
Lead = 4 km
Chase = 8 km
Vp = 12 km/h
Vt = 8 km/h
=> Time lead = 30 minutes = 30/60 hours = 0.5 hours.
=> Initial distance (Lead) = Speed of Thief × Time lead = 8 × 0.5 = 4 km.
=> Relative speed = (12 − 8) km/h = 4 km/h.
=> Time taken by policeman to catch = Initial distance ÷ Relative speed = 4 ÷ 4 = 1 hour.
=> 1 hour = 60 minutes.
Therefore The correct answer is 60 minutes.
Additional Information
Relative Speed in Same Direction
When two objects move in the same direction, the relative speed is the difference between their individual speeds: V_(rel) = V1 −

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V2.

Relative Speed in Opposite Direction

When two objects move towards each other or away from each other in opposite directions, the relative speed is the sum: V_(rel) = V1 + V2.

Unit Conversion

To convert km/h to m/s, multiply the speed by 5/18. To convert m/s to km/h, multiply by 18/5.

Q73. Answer: (d) 60°; 30°

Given:

Let C be a circle with center O and AB be a chord of C such that the length of AB is equal to the radius of C. Let D be any point on the major arc of AB. Find angle AOB and angle ADB, respectively.

Formula used:

1. The angle subtended by a chord equal to the radius in a circle is 60º.

2. The angle subtended by the same chord at the circumference on the major arc is half of the angle subtended at the center.

Calculation:

Given AB = radius of C

=> angle AOB = 60º

For angle ADB,

=> angle ADB = 1/2 × angle AOB

=> angle ADB = 1/2 × 60º

=> angle ADB = 30º

Therefore The correct answer is option (4).

Q74. Answer: (c) 300 cm2

Given:

The perimeter of a rectangle is 70 cm and its diagonal is 25 cm.

Formula used:

Perimeter (P) = 2(l + b)

Diagonal (d) = √(l² + b²)

Area (A) = l × b

Calculation:

2(l + b) = 70

=> l + b = 35

√(l² + b²) = 25

=> l² + b² = 625

Let l + b = 35 and l² + b² = 625

We know (l + b)² = l² + b² + 2lb

=> 35² = 625 + 2lb

=> 1225 = 625 + 2lb

=> 600 = 2lb

=> lb = 300

Therefore The correct answer is option 3.

Q75. Answer: (b) 2.1

Given:

In a triangle ABC, D and E are two points on sides AB and AC, respectively, such that DE is parallel to BC and AD : DB = 3 : 5.

AC = 5.6 cm

Formula used:

Since DE is parallel to BC, triangles ADE and ABC are similar.

Therefore, AD/DB = AE/EC

Given AD : DB = 3 : 5, we can write AD/DB = 3/5

Calculation:

Let AE = x, then EC = AC - AE = 5.6 - x

According to the similarity ratio, AD/DB = AE/EC

=> 3/5 = x / (5.6 - x)

=> 3(5.6 - x) = 5x

=> 16.8 - 3x = 5x

=> 16.8 = 8x

=> x = 16.8 / 8

=> x = 2.1

Therefore The correct answer is option 2.

Q76. Answer: (b) Nicolaus Copernicus

The correct answer is Nicolaus Copernicus.

Key Points

• Nicolaus Copernicus (1473 - 1543) was born in Kingdom of Poland.

• Nicolaus work "De revolutionibus orbium coelestium" (On the Revolutions of the Celestial Spheres), gives the information about heliocentric model.

• it provided information that the Sun in centre of Universe and rotation of Planets around the sun.

• It was published in 1543, the year of his death.

Additional Information

• Immanuel Kant (1724-1804) is widely known for modern philosophy.

• His important work "Critique of Practical Reason," Kant discusses his theory of ethics, including the famous concept of the Categorical Imperative, which is a universal moral law.

• He also made contributions to "Nebular Hypothesis," proposing that solar systems develop from rotating clouds of gas, anticipating later theories of stellar and planetary formation.

• Galileo Galilei (1564 - 1642) was Italain Mathematician, Physicist, and Astronomer

• Galileo is famous for his improvements to the telescope.

• He made contributions to the study of motion and mechanics, the laws of falling bodies.

• Pierre Simon - Laplace (1749 - 1827): was French Mathematician and Astronomer

• He laid the foundations of statistics and probability theory.

• His work in mathematics led to the development of Laplace's equation.

• He also developed the Laplace Nebular Hypothesis independently of Kant.

Q77. Answer: (d) Jaipur Pink Panthers

The correct answer is Jaipur Pink Panthers.

Key Points

• Jaipur Pink Panthers team was formed in 2014.

• It is owned by Bollywood actor Abhishek Bachhann.

• Their home ground is Sawai Maan Singh Stadium Jaipur.

• The team has won Pro Kabaddi league title in 2014.

Additional Information

• Kabaddi is sport originated in India. The hindi meaning "Holding Hands"

• It is played between two teams consisting of 7 players in each team.

• Some important tournaments are: Pro Kabaddi League, Kabaddi world Cup, Asian Games, Southa Asian Games, Kabaddi masters, Federation Cup, Super Kabaddi League.

• The terms related to Kabaddi are: Raid, Defense, Scoring, Duration.

Q78. Answer: (d) Tarang Sanchar

The correct answer is Tarang Sanchar.

Key Points

• Tarang Sanchar, a web portal for information sharing on mobile towers and EMF Emission Compliances, has been launched by the Department of Telecom (DoT), Ministry of Communications, to generate confidence and conviction about the safety and harmlessness of mobile towers, as well as dispelling myths and misconceptions.

• The EMF Portal provides a public interface with a simple map-based search tool for seeing mobile towers in the neighborhood of any location.

• Anyone may request an EMF emission measurement at a site by paying a small cost of Rs. 4000/- online.

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• The test will be conducted by the DoT's Local Telecom Enforcement Resource and Monitoring (TERM) filed unit (the requestor may be present if he so wishes), and test reports will be supplied.

Additional Information

• National Optical Fibre Network (NOFN): An initiative aimed at connecting 250,000-gram panchayats with optical fiber to improve broadband access in rural India.

• BharatNet: The upgraded version of NOFN, focusing on providing high-speed internet connectivity to rural and remote areas through a robust optical fiber infrastructure.

• Bharat Sanchar Nigam Limited (BSNL): A state-owned telecommunications company in India that plays a crucial role in providing telecom services, including broadband, across urban and rural areas.

Q79. Answer: (d) 3 min

The correct answer is 3 min.

Key Points

• In freestyle wrestling, a single round lasts for 3 minutes, with a 30-second break between the first and second periods.

• Wrestlers typically compete in two periods of 3 minutes each in international competitions.

• Rules and Scoring: Wrestlers can score points through various techniques, including takedowns, reversals, and near falls. Matches are won by accumulating points or pinning the opponent.

• Weight Classes: Freestyle wrestling has multiple weight classes to ensure fair competition, allowing wrestlers to compete against others of similar size and weight.

Additional Information

• Freestyle wrestling is a style of competitive grappling where wrestlers can use a variety of holds, throws, and techniques to gain control over their opponent.

• Unlike Greco-Roman wrestling, athletes in freestyle can attack their opponent's legs and use both upper and lower body techniques.

Q80. Answer: (b) Methanamine

The correct answer is Methanamine.

Key Points

• Methylamine (CH3NH2) is a simple amine, which is a derivative of ammonia (NH3) where one hydrogen atom is replaced by a methyl group (CH3).

• Methylamine is a colorless gas at room temperature with a strong, fishy odor.

• It is highly soluble in water due to its ability to form hydrogen bonds.

• Methylamine is used in the production of various chemicals, including pharmaceuticals, pesticides, and surfactants. It is also involved in the synthesis of other amines and is used in organic chemistry as a reagent.

• As an amine, methylamine can act as a base and can participate in nucleophilic substitution reactions, making it an important building block in organic synthesis.

• Methylamine is flammable and can be toxic if inhaled or ingested.

Additional Information

Compound Name	IUPAC Name	Molecular Formula	Structure
Propan-1-amine	Propan-1-amine	C3H9N	CH3-CH2-CH2-NH2
2-Methylpropan-1-amine	2-Methylpropan-1-amine	C4H9N	CH3-CH(CH3)-CH2-NH2
Ethanamine	Ethanamine	C2H5N	CH3-CH2-NH

Q81. Answer: (b) Cuba

The correct answer is Cuba.

Key Points

• In 2023, Praveen Chithravel participated in the ‘Prueba de Confrontacion’ athletics meet in Cuba, where he excelled in the men’s triple jump event.

• The ‘Prueba de Confrontacion’ is an athletics competition that brings together athletes from various countries to compete in multiple track and field events.

Additional Information

Country	Capital	Currency	Recent Important Sports Event

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Portugal	Lisbon	Euro (EUR)	UEFA Euro 2024 Qualifiers (2023)
Cuba	Havana	Cuban Peso (CUP)	Central American and Caribbean Games (2023)
Canada	Ottawa	Canadian Dollar (CAD)	FIFA Women's World Cup (2023)
Brazil	Brasília	Brazilian Real (BRL)	Copa do Mundo de Futebol Sub-20 (2023)

Q82. Answer: (a) Turgor pressure

The correct answer is Turgor pressure.

Key Points

• Enlargement and extension growth of cells is primarily caused by cell turgor pressure and cell wall expansion.

• In plants, this growth is driven by water uptake, which increases turgor pressure within the cells, leading to expansion.

• Additionally, the synthesis of new cell wall materials allows for cell elongation.

• Other factors, such as hormonal regulation (e.g., auxins), also play a role in promoting cell growth and elongation.

Additional Information

• Imbibition

• It is the process by which a substance (usually a solid, like seeds or plant tissues) absorbs water and swells.

• This occurs due to the affinity of water molecules for the polar surfaces of the solid. In seeds, imbibition triggers metabolic activities, leading to germination.

• Example: When dry seeds are placed in water, they absorb water, swell, and become turgid, preparing for germination.

• Pressure Potential

• Pressure potential is the physical pressure exerted by the fluid (usually water) within the cell against the cell wall.

• In plant cells, when water enters the cell through osmosis, it creates turgor pressure that pushes the plasma membrane against the cell wall, contributing to the overall water potential.

• Pressure potential is essential for maintaining cell structure and rigidity, allowing plants to stand upright and grow.

• Osmotic Pressure

• It is the pressure required to prevent the flow of water across a semipermeable membrane due to osmotic potential (the tendency of water to move into a solution).

• It results from differences in solute concentration on either side of a membrane. Water moves from an area of lower solute concentration (higher water potential) to an area of higher solute concentration (lower water potential).

• It is crucial for processes like nutrient uptake, cell hydration, and overall water balance in cells and organisms.

Q83. Answer: (d) Article 30

The correct answer is Article 30.

Key Points

• Article 30 specifically states that all minorities, whether based on religion or language, have the right to establish and administer educational institutions of their choice.

• The article not only grants the right to establish educational institutions but also ensures that minorities can administer these institutions according to their own management and governance structures.

• Article 30 serves as a safeguard against any discriminatory policies that might hinder the establishment or functioning of educational institutions by minorities.

• The Supreme Court of India has elaborated on the scope of Article 30 in various judgments, affirming the right of minorities to manage their institutions without undue interference from the state.

Additional Information

Article	Title	Description
24	Prohibition of Employment of Children in Factories, etc.	Prohibits the employment of children below the age of 14 years in factories, mines, and hazardous jobs, ensuring protection against exploitation.

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25	Freedom of Conscience and Free Profession, Practice, and Propagation of Religion	Guarantees the right to freedom of conscience and the right to freely profess, practice, and propagate religion, subject to public order, morality, and health.
32	Right to Constitutional Remedies	Provides the right to individuals to approach the Supreme Court for the enforcement of fundamental rights, allowing for legal recourse against violations.

Q84. Answer: (b) Nagaland

The correct answer is Nagaland.

Key Points

• According to the Census of India 2011, Nagaland experienced the lowest population -0.58% growth rate among Indian states.

• Nagaland is the only state in India that has recorded a Negative population growth as per the 2011 census.

• It shows that Nagaland recorded Negative Growth in Population Minus 0.47% Decadal Population Growth.

• As per the census 2001, 19,88,602 (total population) now that has declined to 19,80,602 (census 2011).

• It is bordered by the state of Assam to the West, Manipur to the South, Arunachal Pradesh to the North, and the Sagaing Region of Myanmar to the East. Kohima is the capital of Nagaland state.

Additional Information

• The Population growth rate of Jharkhand was 22.42% over the decade 2001-2011.

• The Population growth rate of Punjab was 13.89% over the decade 2001-2011.

• The Population growth rate of Uttar Pradesh was 20.09% over the decade 2001-2011.

Q85. Answer: (d) Both (a) and (b)

The correct answer is Both (a) and (b).

Key Points

• The market attains equilibrium when the market supply and market demand of a commodity become equal.

• The term supply refers to how much of a certain product, item, commodity, or service suppliers are willing to make available at a particular price

• Demand refers to how much of that product, item, commodity, or service consumers are willing and able to purchase at a particular price

• Supply and demand are economic forces of the free market that control what suppliers are willing to produce and what consumers are willing and able to purchase.

Additional Information

• If the market price is above the equilibrium value, there is an excess supply in the market (a surplus), which means there is more supply than demand.

• If the market price is below the equilibrium value, then there is an excess in demand (supply shortage).

Q86. Answer: (d) 1926

The correct answer is 1926.

Key Points

• This School was founded by Vishnu Narayan Bhatkhande in Lucknow.

• Named after Rai Umanath Bali who was known as Marris.

• It became a University in 2000 and was renamed as Bhatkhande Music Institute University.

• This institute has been a significant center for Hindustani Classical music.

Additional Information

• Kalakshetra Foundation (Chennai) was founded by Rukmini Devi Arundale in 1936.

• Sangeet Natak Akademi (New Delhi) was founded in 1952.

• Swarnabhoomi Academy of Music (Chennai) was founded in 2010.

• Prayaag Sangeet Samiti(Allahabad) was founded in 1926.

• Rabindra Bharti University(Kolkata) was founded in 1962.

• Bhartiya Vidya Bhavan(Mumbai) was founded by K.M. Munshi in 1938.

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Q87. Answer: (b) Windows operating system

The correct answer is Windows Operating System.

Key Points

• Windows operating system is owned by Microsoft.

• The first operating system Windows 1.0 was released on November 20, 1985.

• The latest operating system windows 11 was launched in 2021.

• Other examples of system software are Device Drivers, Utility programs, NTFS, FAT32, Hyper-V etc.

Additional Information

• Adobe Photoshop is a powerful and widely used editing software. It was first released in 1990.

• Google Chrome was released on September 2, 2008. Initially released only on Microsoft Windows.

• Chrome is based on the open-source project Chromium and it uses the V8 JavaScript engine.

• Microsoft Word was first released in 1983 under the name Multi-Tool Word.

• The main types of Software are System software, Application Software, Programming Software, Driver Software, Firmware, Utility software.

Q88. Answer: (b) He founded a new religion called ‘Din - e Ilahi’.

The correct answer is He founded a new religion called 'Din - e Ilahi'.

Key Points

• Din - e Ilahi also known as the "Religion of God".

• It was founded by The Mughal Emperor, Akbar(1556-1605) in 1582.

• It has the combined elements of Islam, Hinduism, Jainism, Christianity and Zoroastrianism.

• Akbar's full name was "Jalal-ud-din Muhammad Akbar".

Additional Information

• Akbar was the son of Emperor Humayun. Initially, his regent and guardian was Bairam Khan.

• The third battle of Panipat was fought between the Maratha Empire led by Sadashivrao Bhau and the Durrani Empire led by Ahmad Shah Durrani.

• The third battle of Panipat was won by the Durrani Empire and is known as one of the bloodiest wars of the 18th century.

• Akbar did not receive formal education, he could not read or write but could communicate in Persian, Arabic, and Hindi.

• Akbar established Ibadat Khana(House of Worship) for Scholars and Intellectuals in Fatehpur Sikri.

• Akbar court featured the Navratnas(Nine Jewels), a group of talented advisors.

Q89. Answer: (a) Rajasthan

The correct answer is Rajasthan.

Key Points

• Bhavai is the dance form associated with Rajasthan.

• It is associated with the Bhavai community.

• Bhavai is a storytelling dance of themes from Hindu Mythology, social issues, and everyday life.

• The main instruments used are Dholak, Flute, and Sarangi.

Additional Information

State	Dances
Rajasthan	Ghoomar, Chari, Ginad, Jhulan Leela, Kalbeliya, Bhavai, Kachchhi Ghodi.
Bihar	Bidesia Dance, Jat-Jatin Dance, Lori Dance, Nautanki Dance.
Madhya pradesh	Karma, Saila-Reena, Goncho, Bhagoriya, Chatkora, Thapti, Lehangi, Lota Dance.
Odisha	Ghumura Dance, Sambalpuri Dance, Chaiti Ghoda Dance, Ranappa Dance, Gotipua Dance

Q90. Answer: (d) Amit Shah

The correct answer is Amit Shah.

Key Points

• Amit Shah is the current Minister of Cooperation as of March 2024.

• He also holds the position of Union Home Minister.
• The Ministry of Cooperation was established in July 2021 to strengthen the cooperative movement in India2.
• The Ministry aims to promote cooperative-based economic development models, including the creation of cooperative societies.

Additional Information

• Annpurna Devi: Currently serves as the Minister of Women and Child Development.
• Dharmendra Pradhan: Holds the portfolio of Minister of Education and Minister of Skill Development and Entrepreneurship.
• Nitin Gadkari: Serves as the Minister of Road Transport and Highways.

Q91. Answer: (b) 24^(th)

The correct answer is 24th.

Key Points

• Lord Mahavira is the last and 24th Tirthankara of Jainism.
• The festival usually falls in March or April, according to the Gregorian calendar
• Birth: Born in 540 BCE in Kundagrama, Bihar, India.
• Parents: Father - Siddhartha, Mother - Trishala.
• Renunciation: At the age of 30, he renounced worldly life and became an ascetic.
• Enlightenment: Achieved Kevala Jnana (omniscience) after 12 years of rigorous penance.
• Teachings: Emphasized Ahimsa (non-violence), Satya (truth), Asteya (non-stealing), Brahmacharya (chastity), and Aparigraha (non-attachment).
• Followers: Established a fourfold community (Chaturvidha Sangha) consisting of monks, nuns, laymen, and laywomen.
• Nirvana: Attained Nirvana at the age of 72 in 468 BCE at Pavapuri, Bihar.

Additional Information

• The 23rd Tirthankara was Parshvanatha.
• Jainism has a total of 24 Tirthankaras, each of whom is considered a spiritual teacher.
• Mahavir Jayanti is observed with prayers, processions, and charitable acts.

Important PointsOther Important Jain Festivals:

• Paryushana: Celebrated in August-September, it is one of the most important Jain festivals, focusing on repentance and forgiveness.
• Diwali: Celebrated in October-November, it marks the Nirvana (liberation) of Lord Mahavira.
• Mahamastakabhisheka: Held every 12 years, this grand festival involves the anointing of the statue of Lord Bahubali.
• Kartik Purnima: Celebrated in November, it marks the day when Lord Mahavira attained Nirvana.
• Maun Ekadashi: Observed in November-December, it is a day of fasting and silence.

Q92. Answer: (d) Nitin Gadkari

The correct answer is Nitin Gadkari.

Key Points

• Nitin Gadkari declared himself the brand ambassador of Khadi Prakritik Paint in July 2021.
• Khadi Prakritik Paint is made from cow dung and developed by the Khadi and Village Industries Commission (KVIC).
• The paint is eco-friendly, non-toxic, and cost-effective.
• It contains anti-bacterial and anti-fungal properties and is available in two variants: distemper and emulsion.
• Khadi Prakritik Paint aims to promote rural employment and sustainable development.

Additional Information

• Nirmala Sitharaman is the current Finance Minister of India.
• Narendra Singh Tomar is the Minister of Agriculture and Farmers' Welfare.
• Rajnath Singh is the Minister of Defence.

Q93. Answer: (a) Kui

The correct answer is: Kui

Key Points

• Kui is a South-Eastern Dravidian language spoken by the Kandha community.
• The Odisha state cabinet approved the proposal to include Kui in the Eighth Schedule of the Constitution of India on 10th July 2023.
• Kui is traditionally written using the Odia script.

• Inclusion in the Eighth Schedule will help in the preservation, promotion, and propagation of the language and culture.

Additional Information

• Malto is a Dravidian language spoken by the Malto people in Jharkhand, Bihar, and West Bengal.

• Tulu is a Dravidian language spoken by the Tuluva people in Karnataka and Kerala.

• Kodagu (also known as Coorgi) is a Dravidian language spoken by the Kodava people in Karnataka.

Q94. Answer: (b) Dhrupad

The correct answer is Dhrupad.

Key Points

• Dhrupad is a genre of classical music that is a part of the Hindustani music tradition, not Carnatic music.

• It is one of the oldest forms of North Indian classical music and has its origins in the ancient text of Samaveda.

• Dhrupad is characterized by its spiritual, meditative nature and the use of a specific style of singing.

• It is distinct from Carnatic music, which is a classical music tradition from South India.

Additional Information

• Charana

• Charana is a part of Carnatic music compositions.

• It refers to the concluding section of a composition, often following the Pallavi and Anupallavi sections.

• This section typically elaborates on the theme introduced in the earlier parts.

• Pallavi

• Pallavi is the thematic line of a song in Carnatic music.

• It is often the first section of a composition and is usually repeated throughout the song.

• Pallavi sets the tone and mood for the entire composition.

• Varnam

• Varnam is a form of song in Carnatic music.

• It is typically composed in two parts: the Purvanga (first half) and Uttaranga (second half).

• Varnams are often used as warm-up pieces and are known for their complexity and technical demands.

Q95. Answer: (d) Insert Column to the Left

The correct answer is: Option 4) Insert Column to the Left

Key Points

In Microsoft Word, when working with tables:

• "Insert Column to the Left" adds a new column to the left of the selected cell/column, pushing the existing columns to the right.

• "Insert Column to the Right" (Option 1) adds a new column to the right, shifting subsequent columns further right (but does not move the selected column).

• "Insert Table" (Option 2) is irrelevant—it creates a new table.

• "Insert Columns" (Option 3) is not a standard option; Word specifies left/right insertion.

Why Option 4?

The question asks for inserting a column while shifting existing columns to the right, which only happens when inserting to the left of a selected column.

Correct Choice: Option 4 (Insert Column to the Left)

Q96. Answer: (d) Delhi

The correct answer is Delhi.

Key Points

• The population of Delhi in 2011 was approximately 16.8 million.

• The metropolitan area with the highest population is Mumbai, which had a population of about 20.4 million.

• The third largest metropolitan area was Kolkata, with a population of around 14.1 million.

• The 2011 Census was the 15th national census since 1871 and was conducted in two phases—house listing and population enumeration.

• The 2011 Census of India was the 7th national census conducted after independence in 1947.

Additional Information

• Total Population:

• India's total population was approximately 1.21 billion (1,210,854,977).

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• Growth Rate:
• The population growth rate from 2001 to 2011 was 17.7%, a decrease from the previous decade's rate of 21.5%.
• Gender Ratio:
• The overall sex ratio was 940 females for every 1,000 males.
• Child sex ratio (ages 0-6) was 919 girls for every 1,000 boys.
• Urban vs. Rural:
• Urban population: 31.16% (approximately 377 million).
• Rural population: 68.84% (approximately 833 million).
• Literacy Rate:
• The national literacy rate was 74.04%.
• Male literacy: 82.14%; Female literacy: 65.46%.
• States and Union Territories:
• Uttar Pradesh was the most populous state, with over 199 million people.
• The least populous state was Sikkim, with about 610,577 people.
• Scheduled Castes and Scheduled Tribes:
• Scheduled Castes: 16.6% of the population.
• Scheduled Tribes: 8.6% of the population.
• Literacy by State:
• Kerala had the highest literacy rate at 93.91%.
• Bihar had the lowest literacy rate at 61.80%.

Q97. Answer: (b) Bramho Sabha

The correct answer is Brahmo Sabha

Key Points

• Brahmo Samaj was earlier known as the Brahmo Sabha.
• It was founded in1828 by Raja Ram Mohan Roy and others as a reform movement within Hinduism.
• Keshab Chandra Sen expanded the movement in the 1860s and introduced new ideas, forming the Brahmo Samaj of India in 1866.
• Raja Ram Mohan Roy is known as the "Father of the Bengal Renaissance".
• He was against the practice of sati(widow immolation), which led to the eventual legal ban on the practice in 1829.

Additional Information

• Arya Samaj:-
• Founded in 1875 by Swami Dayananda Saraswati in Mumbai, India.
• Emphasizes the teachings of the Vedas as the ultimate authority in Hinduism.
• The organization has published many texts and pamphlets promoting its teachings and reforms, including Satyarth Prakash (The Light of Truth).
• Prarthana Samaj:-
• Founded in 1867 in Mumbai (then Bombay) by Dr. Atmaram Pandurang and a group of like-minded individuals.

Notable members included M. G. Ranade, Gopal Ganesh Agarkar, and R. G. Bhandarkar, who contributed to its ideals and initiatives.

• Veda Samaj:-
• Established in 1864 in Madras (now Chennai) by S. Ramasamy (also known as Veda Vyasar).
• Aimed to promote a return to the original teachings of the Vedas, emphasizing monotheism and rational spirituality.

Q98. Answer: (d) Swaran Singh Committee

The correct answer is Swaran Singh Committee.

Key Points

• The Swaran Singh Committee recommended the inclusion of Fundamental Duties in the Constitution of India.
• The committee was constituted in 1976 by the Indian government to recommend amendments to the Constitution.
• The committee proposed that citizens have certain duties towards the nation, which led to the incorporation of Part IV-A in the Constitution, containing Article 51A.
• The recommendations were accepted, and the Forty-Second Amendment to the Constitution was enacted in 1976, officially adding the Fundamental Duties.

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• The Constitution currently enumerates 11 Fundamental Duties.

Additional Information

• Balwant Rai Mehta Committee:-

• Established in 1957 by the Government of India to examine and recommend measures for the effective implementation of the Panchayati Raj system.

• Led by Balwant Rai Mehta, who was a prominent political leader and advocate for local self-governance.

• Recommended a three-tier structure for Panchayati Raj consisting of:

• Gram Panchayat (village level)

• Panchayat Samiti (block level)

• Zila Parishad (district level)

• Raja Mannar Committee:-

• Established in 1965 by the Government of Tamil Nadu to review and recommend reforms in the administration of local self-governments.

• Chaired by Raja Mannar, a prominent figure known for his contributions to public administration and governance.

• Proposed the establishment of a two-tier system for local self-governance, consisting of:

• Village Panchayats

• District Panchayats

• Sarkaria Committee:-

• Established in 1983 by the Government of India to review the relationship between the Centre and the states.

• Chaired by Ranjit Singh Sarkaria, a former judge of the Supreme Court of India.

• Addressed concerns related to the distribution of powers and responsibilities between the Centre and the states.

• Reviewed the role of the Governor in the states and its implications for state autonomy.

Q99. Answer: (b) Ten Degree Channel

The correct answer is Ten Degree Channel.

Key Points

• The Ten Degree Channel is situated between the Andaman Islands to the north and the Nicobar Islands to the south in the Bay of Bengal.

• The channel is approximately 150 kilometers wide at its narrowest point.

• The channel plays a crucial role in maritime navigation, connecting the Bay of Bengal to the Andaman Sea.

• The Ten Degree Channel is a major trade route for goods traveling from the South China Sea and Pacific to the Indian Ocean.

• Barren Island, located in the Andaman Islands, is home to Asia's only active volcano.

• The Andaman and Nicobar Islands are home to 96 wildlife sanctuaries and one biosphere reserve.

Additional Information

• The Nine Degree Channel separates the Laccadive Islands to the west from the Malabar Coast of India to the east.

• The Eleven Degree Channel lies south of the Nicobar Islands, separating them from the Indonesian islands.

• The Eight Degree Channel is situated between the Lakshadweep Islands to the north and the Maldives to the south.

• The Great Nicobar Biosphere Reserve is the only biosphere reserve in the Andaman and Nicobar Islands.

• The reserve includes Galathea National Park and Campbell Bay National Park.

• It was added to UNESCO's Man and Biosphere Programme in 2013 to promote sustainable development.

Important Points

• The Man and the Biosphere (MAB) Programme is a scientific program by UNESCO that aims to improve the relationship between people and the environment.

• The program was launched in 1971 and uses a combination of natural and social sciences to achieve its goals.

Q100. Answer: (a) Jute

The correct answer is Jute.

Key Points

• Core industries are crucial for the economy as they provide essential goods and services.

• The Department for Promotion of Industry and Internal Trade (DPIIT) in India considers the following eight sectors to be the core industries:

• cement

• coal

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• crude oil
• electricity
• fertilizers
• natural gas
• refinery products
• steel
• Industries that are NOT considered core industries could include sectors like textiles, consumer goods, or services.
• The growth rate of the core sector is a crucial indicator of the overall health of the Indian economy.
• A strong growth rate in the core sector often signals a positive economic outlook.

Additional Information

• The eight core industries make up 40.27% of the Industrial Production (IIP)'s weight.
• The weightage of the core industries, in decreasing order, is refinery products, electricity, steel, coal, crude oil, natural gas, cement, and fertilizers.
• To improve the core sector growth in the country the prominent measures taken recently are as follows:
• The National Infrastructure Pipeline is expected to significantly boost infrastructure and spur growth impulses in the economy.
• Infrastructure and housing schemes that will stimulate the production and sale of cement, steel, and other construction materials resulting in a multiplier effect on the economy:-
• Make in India
• PradhanMantri Gram SadakYojana
• PradhanMantriAwaasYojana – Gramin
• PM AwaasYojana (Urban)
• Swachh Bharat Mission
• JalJeevan Mission to provide ‘HarGharJal’
• As part of Atmanirbhar Bharat Abhiyan, a Production Linked Incentive (PLI) scheme has been announced to enhance the production of ‘Speciality Steel’, incorporating four different product categories.
• The Integrated Power Development Scheme (IPDS) has been approved to facilitate state utilities to ensure quality and reliable 24x7 power supply in the urban areas

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