SSC CHSL Tier-1 2021: Official Paper (Held On : 8 June 2022 Shift 3) (Previous Year Paper)

SSC Combined Higher Secondary Level (CHSL) • 2021 • 100 questions • 60 minutes • Answer key and solutions

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ENGLISH LANGUAGE

Q1. Select the option that expresses the given sentence in passive voice.

She has written many books.

(a) Many books were writing her.
(b) Many books were being written by her.
(c) Many book have written her.
(d) Many books have been written by her.

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

Satiate

(a) State
(b) Saturate
(c) Satisfy
(d) Starve

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

A. For the next two years the Franks and another family lived cloistered in the ‘Secret Annex’ of an old office building.

B. In 1942, with the Nazis occupying Holland, a thirteen-year-old Jewish girl, Anne, and her family fled their home in Amsterdam and went into hiding.

C. In her diary Anne Frank recorded vivid impressions of these experiences during this period.

D. Cut off from the outside world, they faced hunger, boredom, the constant cruelties of living in confined quarters, and the ever-present threat of discovery and death.

(a) CDAB
(b) BADC
(c) BCAD
(d) BACD

Q4. Select the most appropriate meaning of the given idiom.

Tick all the boxes

(a) To make a bad situation worse
(b) To fulfill the required norms
(c) To be extremely happy
(d) To make a decision

Q5. Select the most appropriate meaning of the given idiom.

Once in a blue moon

(a) Blue sky
(b) On a full moon night
(c) Very rarely

(d) At one time in space

Q6. Parts of the given sentence have been given as options. One of them may contain an error. Select the part that contains the error from the given options. If you don't find any error, mark 'No error' as your answer.

The General have ordered that the troops should move immediately.

(a) immediately
(b) No error
(c) that the troops should move
(d) The General have ordered

Q7. Select the INCORRECTLY spelt word.

(a) Copulate
(b) Ignision
(c) Portion
(d) Horticulture

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

Child's play

(a) An easy task
(b) Cricket
(c) A restricted playground
(d) Children's drama

Q9. Select the option that will improve the underlined part of the given sentence.

She does not helping to getting angry when she sees someone being treated unfairly.

(a) is not help to being getting angry
(b) may not help to got angry
(c) will not help to gets angry
(d) cannot help getting angry

Q10. Select the option that expresses the given sentence in active voice.

The sweet mangoes were eaten by the children.

(a) The children were eating the sweet mangoes.
(b) The children was eating the sweet mangoes.
(c) The children are eating the sweet mangoes.
(d) The children ate the sweet mangoes.

Q11. Complete the sentence with an appropriate synonym of the word mentioned in the bracket.

If you're feeling brave, try this _____ (savoury) dish made by me.

(a) salty
(b) stale
(c) stinky
(d) stenchy

Q12. Select the option that expresses the given sentence in active voice.

The old woman was helped by the boy while crossing the road

(a) The boy has helped the old woman while crossing the road.
(b) The boy is helping the old woman while crossing the road.
(c) The boy was helped the old woman while crossing the road.
(d) The boy helped the old woman while crossing the road.

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Q13. Select the option that can be used as a one-word substitute for the given group of words.

The activity of writing dictionaries

(a) Biography
(b) Lexicography
(c) Bibliography
(d) Theology

Q14. Select the option that can be used as a one-word substitute for the given group of words.

One who is well-versed in many languages

(a) Verbose
(b) linguist
(c) Polyglot
(d) Stalwart

Q15. The following sentence has been split into four segments. Identify the segment that contains a grammatical error.

The careful crafted personality / of Anahita / did not help her much / in the electoral campaign.

(a) did not help her much
(b) The careful crafted personality
(c) of Anahita
(d) in the electoral campaign

Q16. The following sentence has been split into four segments. Identify the segment that contains an INCORRECTLY spelt word.

It was really surprising / that the two bosom friends fought / over such a triviale matter / and stopped all communications with each other.

(a) It was really surprising
(b) over such a triviale matter
(c) and stopped all communications with each other
(d) that the two bosom friends fought

Q17. Select the most appropriate synonym of the highlighted word

His modest nature made all the difference.

(a) courageous
(b) dry
(c) shy
(d) horrific

Q18. Select the most appropriate option that can substitute the underlined segment in the given sentence. If there is no need to substitute it, select 'No substitution required'.

If they are going out, surely we will follow them.

(a) went out
(b) go out
(c) were going
(d) No substitution required

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

Stupendous

(a) Stunning
(b) Magnifying
(c) Shining
(d) Amplifying

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Q20. Select the INCORRECTLY spelt word.

(a) Allimony
(b) Hallucinate
(c) Structural
(d) Halloween

Directions

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

Living organisms (1)_____ their own kind through a process called reproduction. Plants also increase in number through the process of reproduction. Different plants reproduce in different ways. Most of the flowering plants produce seeds. Plants produce many seeds. Few of these seeds (2)_____ and germinate into new plants. When a seed gets the (3)_____ amount of air, water, soil and sunlight, it grows into a plant. Fruits have seeds (4)_____ them. When a fruit (5)_____ up, the seeds inside it can be used to grow new plants of the same kind.

Q21. Select the most appropriate option to fill in blank number 1.

(a) design
(b) construct
(c) spread
(d) create

Q22. Select the most appropriate option to fill in blank number 2.

(a) prevail
(b) exist
(c) survive
(d) bear

Q23. Select the most appropriate option to fill in blank number 3.

(a) helpful
(b) equal
(c) right
(d) valid

Q24. Select the most appropriate option to fill in blank number 4.

(a) interior
(b) inside
(c) inner
(d) inward

Q25. Select the most appropriate option to fill in blank number 5.

(a) soaks
(b) dries
(c) wipes
(d) dehydrates

GENERAL INTELLIGENCE

Q26. In a certain code language, ‘PALACE’ is written as ‘ZKZOVX’ and ‘DEVINE’ is written as ‘VWREVM’. How will ‘SLOWLY’ be written in that language?

(a) HODLBO
(b) OHLDOB
(c) OHDLBO
(d) HOLDOB

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Q27. Manoj is the son of Eyup's father's sister. Ronaldo is the son of Rihana, who is the mother of Jorge and grandmother of Eyup. Dario is the father of Sheila and the grandfather of Manoj. Rihana is the wife of Dario. How is the wife of Jorge related to Sheila?

(a) Cousin
(b) Daughter
(c) Sister
(d) Sister-in-law

Q28. Which letter cluster will replace the question mark (?) to complete the given series?

GODT, JMAV, MKXX, PIUZ, ?

(a) SGRC
(b) SHRB
(c) SHRC
(d) SGRB

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

6789 : 34 :: 1786 : 26 :: 4327 : ?

(a) 25
(b) 20
(c) 30
(d) 35

Q30. Two statements are given followed by two conclusions numbered I and II. Assuming the statements to be true, even if they seem to be at variance with commonly known facts, decide which of the conclusions logically follow(s) from the statements.

Statements:

Some books are pens.

All pens are pencils.

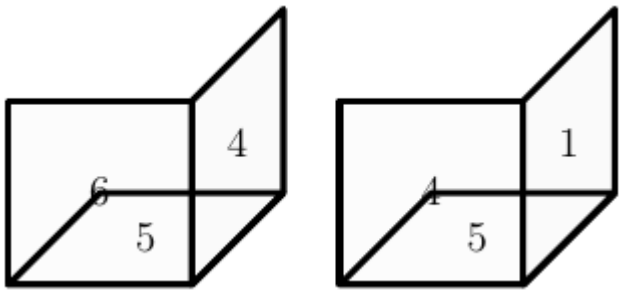
Conclusions:

I. Some pencils are books.

II. Some books are not pencils.

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

Q31. Two different positions of the same dice are shown, the six faces of which are numbered from 1 to 6. What is the sum of the numbers that are opposite '5' and '4' ?



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

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Q32. The second number in the given number-pairs is obtained by performing certain mathematical operation(s) on the first number. The same operation(s) is/are followed in all the number-pairs, except one. Find that odd number-pair.

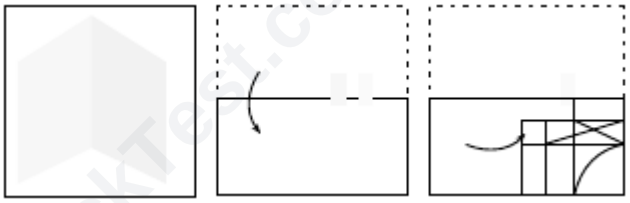
(a) 4 : 15
(b) 12 : 143
(c) 8 : 66
(d) 3 : 8

Q33. Which of the following numbers will replace the question mark (?) in the given series?

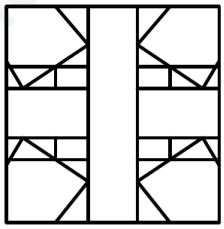
23, 138, 143, ?, 575, 1150

(a) 525
(b) 500
(c) 572
(d) 553

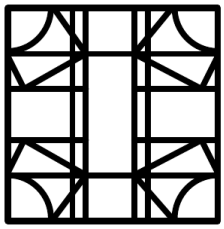
Q34. A paper is folded and cut as shown. How will it appear when unfolded?



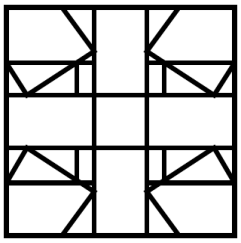
(a)



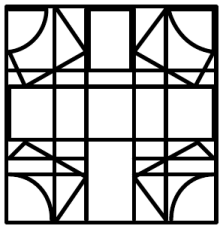
(b)



(c)



(d)



Q35. Pointing to a woman on the stage, Noor said, “She is the wife of the son-in-law of the wife of my father”. How is the woman related to Noor?

(a) Mother
(b) Daughter
(c) Sister
(d) Sister-in-law

Q36. Select the option that is related to the fifth term in the same way as the second term is related to the first term and the fourth term is related to the third term.

BRIGHT : THGIRB :: DANGER : REGNAD :: FOREST : ?

(a) ESTFOR
(b) REFOST
(c) RESTOF
(d) TSEROF

Q37. Which of the following numbers will replace the question mark (?) in the given series?

4, 21, 41, 66, 98, 141, 197, 270, ?

(a) 326
(b) 362
(c) 361
(d) 316

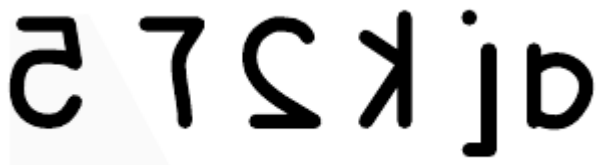
Q38. Select the correct mirror image of the given combination when the mirror is placed at MN as shown.



(a)

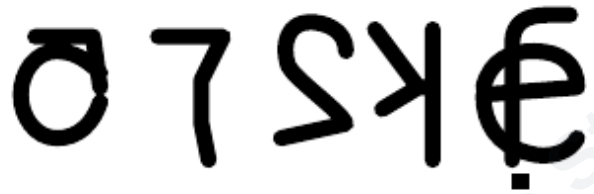


(b)



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(c)



(d)

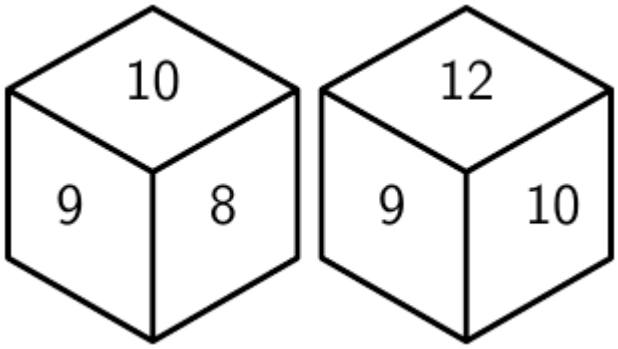


Q39. Select the option that is related to the fifth term in the same way as the second term is related to the first term and fourth term related to third term.

9876 : 26 :: 8671 : 18 :: 3427 : ?

(a) 15
(b) 13
(c) 14
(d) 12

Q40. Two different positions of the same dice are shown, the six faces of which are numbered from 7 to 12. Select the number that will be on the face opposite to the one showing ‘8’.



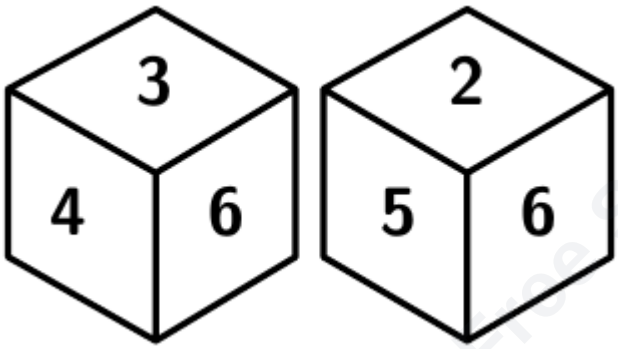
(a) 11
(b) 10
(c) 9
(d) 12

Q41. In a certain code language, 'TABLE' is written as '2012125' and 'CHAIR' is written as '381918'. How will 'STAND' be written in that language?

(a) 19201158
(b) 19201154
(c) 19201144
(d) 19201146

Q42. Two different positions of the same dice are shown, the six faces of which are numbered from 1 to 6. Select the number that will be on the face opposite to the one showing ‘6’.

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

Q43. In a certain code language, “SPOT” is written as “POST”, and “PLOT” is written as “LOPT”. How will “SINK” be written in that language?

(a) KINS
(b) KNIS
(c) NISK
(d) INSK

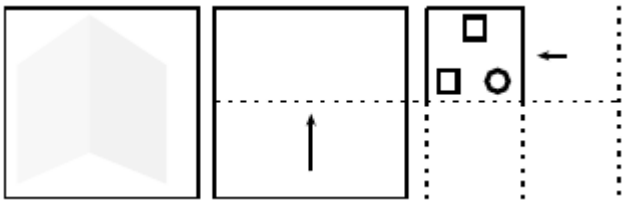
Q44. Which letter-cluster will replace the question mark (?) to complete the given series?
QTGC, RBVY, ?, TRZQ, UZOM

(a) SDJV
(b) SJKU
(c) SWTI
(d) SLAY

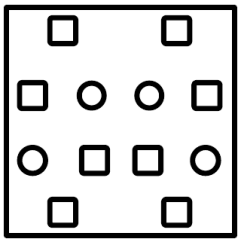
Q45. Which of the following numbers will replace the question mark (?) in the given series?
600,1500, 3750, 9375, ?

(a) 23437.50
(b) 21427.50
(c) 23126.50
(d) 22125.25

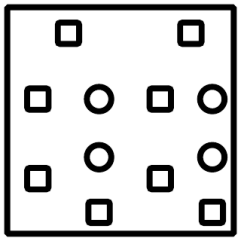
Q46. A paper is folded and cut as shown. How will it appear when unfolded?



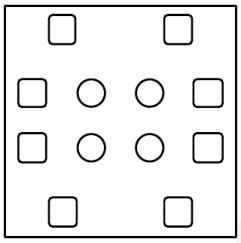
(a)



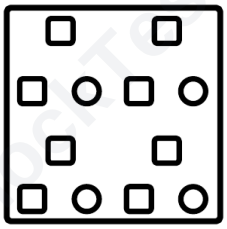
(b)



(c)



(d)



Q47. The second number in the given number pairs is obtained by performing certain mathematical operation(s) on the first number. The same operation(s) are followed in all the number pairs EXCEPT one. Find that odd number pair.

(a) 48 - 62
(b) 32 - 40
(c) 64 - 80
(d) 56 - 70

Q48. Select the correct combination of mathematical signs to sequentially replace the * signs and to balance the given equation.

75 * 85 * 17 * 12 * 6 * 8

(a) ×, –, ÷, +, =
(b) +, ×, ÷, –, =
(c) ×, ÷, –, +, =
(d) +, ÷, –, ×, =

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

First row - 12, 25, 19

Second row - 35, 50, 60

Third row - 24, 70, ?

(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) 58
(b) 46
(c) 30
(d) 34

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Q50. Which of the following numbers will replace the question mark (?) in the given series?

14, 17, 23, 35, 59, ?

(a) 127
(b) 107
(c) 118
(d) 103

QUANTITATIVE APTITUDE

Q51. If Priya and Renu can do a job in 12 hours (working together at their respective constant speeds) and Priya can do the job alone in 18 hours, in how many hours can Renu do the job alone?

(a) 36
(b) 24
(c) 27
(d) 21

Q52. The following table shows the sales of cars of four manufacturers for the period from 2015 to 2020 in a metropolitan city (all the figures are in thousands).

Manufacturer	2015	2016	2017	2018	2019	2020
A	44	48	47	50	52	51
B	40	41	41	41	42	43
C	36	38	40	42	44	50
D	48	44	44	42	42	43

What are the total sales of cars of the four manufacturers under consideration in the city in the entire period of 6 years (from 2015 to 2020)?

(a) 1650000
(b) 1053000
(c) 1052000
(d) 1651000

Q53. If $\sec^2 \theta = 4/3$, then the value of $\operatorname{cosec}(\theta + 30°)$ is _____. [θ an acute angle.]

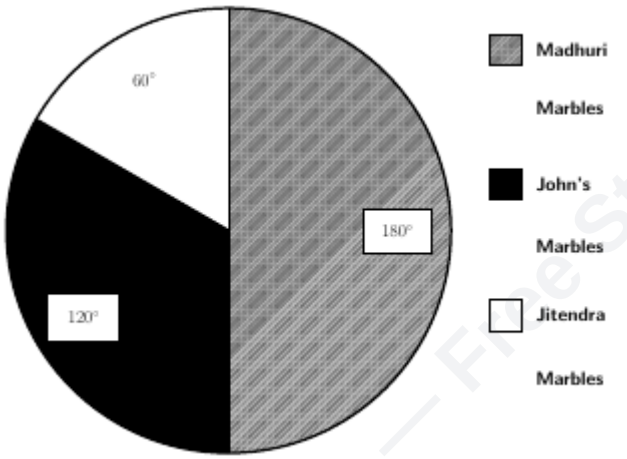
(a) $-2/\sqrt{3}$
(b) $2/\sqrt{3}$
(c) $1/\sqrt{3}$
(d) $-1/\sqrt{3}$

Q54. If px3 + x2 + 3x + q is exactly divisible by (x + 2) and (x - 2), then the values of p and q are:

(a) p=-3/4 and q = 4
(b) p=3/4 and q = 4
(c) p=3/4 and q = -4
(d) p=-3/4 and q = -4

Q55. The following pie chart is the distribution of 36 marbles among three persons. The number of marbles that Madhuri has is _____.

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(a) 18
(b) 20
(c) 16
(d) 12

Q56. Study the given table and answer the question that follows.

Given that the total number of students is 100.

Subject	Marks out of 100				
80 and above	60 and above	40 and above	20 and above	0 and above	
A	9	31	81	92	100
B	4	20	67	81	100
C	7	26	74	87	100

If at least 60% marks in B and C are required for pursuing Post-doc in B, how many students in total will be eligible to pursue higher studies in B and C?

(a) 38
(b) 36
(c) 46
(d) 48

Q57. The surface area of a cube is 726 cm^2. Find the volume of the cube

(a) 2744 cm^3
(b) 1729 cm^3
(c) 1331 cm^3
(d) 2197 cm^3

Q58. If a number 7P323Q is completely divisible by 88, then the values of P and Q, respectively, are:

(a) 3; 2
(b) 2; 3
(c) 4; 2
(d) 9; 2

Q59. If a : b = 2 : 5 and b : c = 3 : 4, find the value of a : b : c.

(a) 6 : 16 : 21
(b) 2 : 5 : 7
(c) 6 : 15 : 20
(d) 3 : 8 : 10

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Q60. Find the length of diagonal of a cuboid 13 m long, 7 m broad and 3 m high.

(a) √207 m
(b) √232 m
(c) √327 m
(d) √227 m

Q61. If half of the quantity of sugar in a bag was sold at a profit of 20%, a quarter of the quantity of sugar in the bag was sold at a profit of 16%, and the remaining sugar in the bag was sold at a profit of 24%, and the total profit obtained by selling all the sugar in the bag was Rs. 90, what was the cost price of the entire quantity of sugar in the bag?

(a) Rs. 450
(b) Rs. 750
(c) Rs. 500
(d) Rs. 400

Q62. If two circles of radii 28 cm and 18 cm touch each other externally, then the length of a common tangent is _____. [Give your answer correct to 2 decimal places.]

(a) 40.90 cm
(b) 42.00 cm
(c) 44.90 cm
(d) 44.12 cm

Q63. How much water (in ml) should be added to 300 ml of a 75% milk and water mixture so that it becomes a 45% milk and water mixture?

(a) 300
(b) 250
(c) 150
(d) 200

Q64. The marked price of a shirt is Rs. 1,200. The shopkeeper gives successive discounts of 25% and 20%. Find the selling price of the shirt.

(a) Rs. 660
(b) Rs. 640
(c) Rs. 720
(d) Rs. 680

Q65. A batch of 30 students took an intelligence test in an institution. 20 of them scored an average of 75 marks and the remaining students scored an average of 87 marks. What is the average score of the entire batch of students?

(a) 79
(b) 75
(c) 78
(d) 77

Q66. Find the value of p from the following.

12/3÷4/9timesp/9=11/4×2/3÷1/6

(a) 12
(b) 18
(c) 20
(d) 6

Q67. Sundar lends a sum of Rs. 6,000 to Mahesh at an interest rate of 10% p.a., compounded annually. What will be the amount at the end of 2 years?

(a) Rs. 7,160
(b) Rs. 7,250
(c) Rs. 7,200
(d) Rs. 7,260

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Q68. At 19% discount, the selling price of a book is Rs. 453.60. What is its marked price (in Rs.)?

(a) 690
(b) 490
(c) 520
(d) 560

Q69. Kumar's salary is Rs. 30,000 per month. He spends 25% of this on food and rent and 20% of the remaining on education. But he pays 5% of his total salary on paying the income tax and saves Rs. 8,000 after all these three deductions. What is the amount (in Rs. .) available with him after his savings?

(a) 8500
(b) 7500
(c) 7250
(d) 8550

Q70. If $x^3 + y^3 = 416$ and $x + y = 8$, then find x^4 + y^4.

(a) 3002
(b) 3204
(c) 3004
(d) 3104

Q71. Simplify the following expression.

$32^3 - 3(32^2)(12) + 3(32)(12^2) - 12^3$

(a) 8000
(b) 4000
(c) 16000
(d) 800

Q72. A ship sails out to a mark at the speed of 15 km/h and sails back to the starting point at the speed of 10 km/h. The average speed of sailing of the ship is:

(a) 12 km/h
(b) 15 km/h
(c) 13 km/h
(d) 14 km/h

Q73. A woman spends 25% of her income. If her expenditure is Rs. 1,250, then find her income.

(a) Rs. 2,500
(b) Rs. 5,000
(c) Rs. 1,250
(d) Rs. 1,000

Q74. Three cities, A, B, and C are located such that they form the vertices of an equilateral triangle if joined by straight lines. Rashid travels from A to B at the speed of 40 km/h, from B to C at the speed of 60 km/h and from C to A at the speed of 72 km/h. Find the average speed of Rashid for the entire journey.

(a) 54 km/h
(b) 562/3 km/h
(c) 55 km/h
(d) 571/3 km/h

Q75. The perimeter of an equilateral triangle is 75 cm. Find its area.

(a) $625\sqrt{2}/4$ cm²
(b) 625√3/4 cm2
(c) 625√3/3 cm2
(d) 125√3/4 cm2

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GENERAL AWARENESS

Q76. Which of the following terms is NOT related with cricket?

(a) Googly
(b) Full toss
(c) Short pitch
(d) Striking circle

Q77. Sawdust is used to adulterate:

(a) vinegar
(b) cheese
(c) coriander powder
(d) milk

Q78. Rajkumar Singhjit Singh was awarded the Padma Shri in 1986 for his contribution to which of the following dance forms?

(a) Kathakali
(b) Kathak
(c) Mohiniyattam
(d) Manipuri

Q79. In 1978, the _____ to the Constitution removed the right to property from the list of Fundamental Rights.

(a) 42^(nd) Amendment
(b) 44^(th) Amendment
(c) 46^(th) Amendment
(d) 43^(rd) Amendment

Q80. Who among the following Tennis players won the Laureus World Sportsman of the Year Award 2021?

(a) Mohamed Salah
(b) Rafael Nadal
(c) Billie Jean King
(d) Max Parrot

Q81. How many players can remain outside the circle in the first six overs of a T20 cricket match?

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

Q82. Which of the following are the most primitive non-vascular plants?

(a) Bryophytes
(b) Pteridophytes
(c) Angiosperms
(d) Gymnosperms

Q83. Which functional group compound is obtained by the reaction of an oxoacid with a hydroxyl compound, such as alcohol or phenol?

(a) Carbonyls
(b) Esters
(c) Amines
(d) Carboxylic acids

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Q84. Mallikarjun Mansur, an Indian classical singer from Karnataka and an excellent vocalist in Khayal style, belonged to which of the following Gharanas of music?

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

Q85. The Government of India, in February 2022, approved Rs. 26,275 crores for an umbrella scheme for the modernisation of the police force in India for the next how many years?

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

Q86. Who among the following personalities has been conferred the prestigious Padma Shri Award for his contribution to Folk Dance form Panthi?

(a) Vinayak Vishnu Khedekar
(b) Gopal Prasad Dubey
(c) Dr. Radhe Shyam Barle
(d) Ghanakanta Bora Borbayan

Q87. V Satyanarayana Sharma is recognised as a _____ classical dancer.

(a) Kuchipudi
(b) Odissi
(c) Manipuri
(d) Sattriya

Q88. Which of the following pairs is NOT correctly matched?

(a) Pandit Birju Maharaj – Kathak
(b) Kelucharan Mohapatra − Odissi
(c) Guru Bipin Singh – Kuchipudi
(d) Uday Shankar – Fusion

Q89. Which of the following is NOT a part of the process of the manufacture of steel in India?

(a) Ginning
(b) Blast furnace
(c) Pig iron
(d) Shaping metal

Q90. Which sportsperson’s autobiography is titled ‘Mind Master: Winning Lessons From A Champion's Life’?

(a) Leander Paes
(b) Baichung Bhutia
(c) Rahul Dravid
(d) Viswanathan Anand

Q91. What layer of Earth's mantle lies beneath the lithosphere that has enough pressure and heat to allow rocks to flow like a liquid with a viscous, caramel-like consistency?

(a) Asthenosphere
(b) Mesosphere
(c) Troposphere
(d) Exosphere

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Q92. Pandit Birju Maharaj was honoured with the Padma Vibhushan in _____.

(a) 1986
(b) 1990
(c) 1992
(d) 1984

Q93. What do you call a base that dissolves in water?

(a) Alkali
(b) Alkene
(c) Aldehyde
(d) Alcohol

Q94. Which of the following novels is set in the background of life in New Delhi after the declaration of Emergency in the 1970's?

(a) Such a Long Journey
(b) The Heart Has its Reasons
(c) Rich Like Us
(d) The House of Blue Mangoes

Q95. Which part of the ocean layer is the flattest and smoothest in the world?

(a) Trenches
(b) Continental slope
(c) Deep sea plains
(d) Continental shelf

Q96. Which of the following classical music instruments is performed by Pandit Shiv Kumar Sharma?

(a) Violin
(b) Santoor
(c) Kanjira
(d) Veena

Q97. Which of the following is a function of money?

(A) Used as a store of value
(B) Used as a measure of value
(C) Used as a medium of exchange

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

Q98. Who among the following has written the novel 'The Blue Umbrella'?

(a) Vikram Seth
(b) Aravind Adiga
(c) Ruskin Bond
(d) Devdutt Pattanaik

Q99. Pandit Pannalal Ghosh also known as Amal Jyoti Ghosh, was a _____ player and composer.

(a) sitar
(b) sarod
(c) tabla
(d) bansuri

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Q100. Which team won the men's bronze medal in Asian Table Tennis Championship 2021 in Doha?

(a) China
(b) Sri Lanka
(c) Bangladesh
(d) India

ANSWER KEY

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

SOLUTIONS

Q1. Answer: (d) Many books have been written by her.

The correct answer is 'Many books have been written by her.'

Key Points

• The given sentence is in Present Perfect Tense and in Active voice.

• The rule for changing a sentence in Present Perfect Tense From Active Voice to Passive Voice:

• Interchange the object and subject with each other, i.e. object of the active sentence become the subject of the passive sentence.

• The helping verb comes before the object in the passsive voice as the passive voice starts with the object of the active voice.

• Convert the verb into past participle or 3^(rd) form of the verb.

• Structure: Subject + has/have + V3 + Object (Active Voice)

Object + has/have + been + V3 + by + Subject (Passive Voice)

• Solution: She has written many books. (Active Voice)

Many books have been written by her. (Passive Voice)

• Therefore the correct answer is 'Many books were written by her.'

Q2. Answer: (c) Satisfy

The correct answer is 'Satisfy'.

Key Points

• The most appropriate synonym for the given word 'Satiate' is 'Satisfy'.

• The meaning of the word 'Stiate' is 'satisfied to the full; sated'.

• The meaning of the word 'Satisfy' is 'meet the expectations, needs, or desires of (someone)'.

• Hence, the appropriate answer is 'Satisfy'.

Additional Information

• Let's understand the other options.

• State- the particular condition that someone or something is in at a specific time.

• Saturate- cause (something) to become thoroughly soaked with water or other liquid so that no more can be absorbed.

• Starve- suffer or die or cause to suffer or die from hunger.

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Q3. Answer: (b) BADC

The correct answer is BADC.

Key Points

• The most appropriate order to put the given sentences in, to form a meaningful and coherent paragraph is BADC.

• A paragraph should always start from the time and the situation and then about the people and their experiences and in the end how they co-operate with the situation.

• So, Sentence B shows the time and the situation, Sentence A shows the time and people, sentence D shows their experience and Sentence C shows the method of co-operation that Anne Frank used.

• Hence the appropriate answer is BADC.

• Solution: In 1942, with the Nazis occupying Holland, a thirteen-year-old Jewish girl, Anne, and her family fled their home in Amsterdam and went into hiding. For the next two years the Franks and another family lived cloistered in the ‘Secret Annex’ of an old office building.Cut off from the outside world, they faced hunger, boredom, the constant cruelties of living in confined quarters, and the ever-present threat of discovery and death. In her diary Anne Frank recorded vivid impressions of these experiences during this period.

Q4. Answer: (b) To fulfill the required norms

The correct answer is To fulfill the required norms.

Key Points

• The most appropriate meaning for the given idiom 'Tick all the boxes' is 'To fulfill the required norms'.

• Tick all the boxes: fulfil all the necessary requirements

• If you're after summer thrills then this ticks all the boxes.

Additional Information

• Let's look at some synonyms for the given idiom.

• Pass inspection

• Satisfy requirements

• Suffice

Q5. Answer: (c) Very rarely

The correct answer is Very rarely.

Key Points

• The most appropriate meaning for the given idiom 'Once in a blue moon' is 'Very rarely'.

• Once in a blue moon: something extremely rare in occurrence

• E.g. That company puts on a good performance only once in a blue moon.

Additional Information

• Let's look at some similar idioms.

• A snowball's chance in hell: Your proposal is too radical — it has a snowball's chance in hell of being approved.

• Like getting blood from a stone: Convincing fussy eaters to try new foods is like trying to get blood out of a stone.

• Like finding needle in a haystack: Trying to find a lost child during the IT fair would be like searching for a needle in a haystack!

Q6. Answer: (d) The General have ordered

The correct answer is 'The General have ordered'.

Key Points

• The part that contains the error is 'The General have ordered'.

• The word 'Have' is used with the pronouns I, you, we, and they.

• 'Has' is used with he, she, it and other names or designations.

• Hence, considering the above-mentioned points, the correct answer is The General have ordered.

• The correct sentence would be: The General has ordered that the troops should move immediately.

Q7. Answer: (b) Ignision

The correct answer is 'Ignision'.

Key Points

• The correct spelling of 'Ignision' according to the English dictionary is 'Ignition'.

• The word 'Ignition' means 'the electrical system in an engine that causes the fuel to burn or explode in order to start the engine'.

• Hence, the most appropriate answer is 'Ignision'.

Additional Information

• Let's understand the meaning of the other options.

• Copulate- to engage in sexual intercourse.

• Portion- an individual's part or share of something.

• Horticulture- the art or practice of garden cultivation and management.

Q8. Answer: (a) An easy task

The correct answer is 'An easy task'.

Key Points

• The most appropriate meaning for the given idiom 'Child's play' is 'An easy task'.

• Child's play: to be very easy

• E.g. Using computers nowadays is child's play.

Additional Information

• Let's look at some similar idioms.

• It's a piece of cake: something easily done

• For him, taking tests is a piece of cake.

• A walk in the park: something that is very easy to accomplish

• As any director will tell you, doing Shakespeare isn't a walk in the park.

• It's a cinch: an easy thing to do

• It sounds difficult, but compared to full-time work it was a cinch.

Q9. Answer: (d) cannot help getting angry

The correct answer is 'cannot help getting angry'.

Key Points

• The most appropriate option to improve the underlined part of the given sentence is 'cannot help getting angry'.

• The expression 'can't help getting angry' is used to talk about becoming angry about something.

• The underlined sentence is grammatically incorrect.

• The words do/does are not used with words that are in continuous tense, i.e. verbs following 'ing'.

• Hence, the most appropriate answer is 'can't help getting angry'.

Q10. Answer: (d) The children ate the sweet mangoes.

The correct answer is 'The children ate the sweet mangoes.'

Key Points

• The given sentence is in Past tense and in Passive Voice.

• The rule for changing a sentence in Past Tense from Passive Voice to Active Voice:

• Interchange the object and the subject with each other, i.e. object of the passive sentence becomes the subject of the active sentence.

• The helping verb get's removed as it is a simple past sentence.

• Convert the verb from the 3rd form of the verb to the 2nd form of the verb.

• Structure: Subject + V2 + Object (Active Voice)

Object + was/were + V3 +by + Subject (Passive Voice)

• Solution: The sweet mangoes were eaten by the children. (Passive Voice)

The children ate the sweet mangoes. (Active Voice)

• Therefore, the correct answer is 'The children ate the sweet mangoes.'

Q11. Answer: (a) salty

The solution is in Hindi. Read it online.

Q12. Answer: (d) The boy helped the old woman while crossing the road.

The correct answer is 'The boy helped the old woman while crossing the road'.

Key Points

• The given sentence is in Past tense and in Passive Voice.

• The rule for changing a sentence in Past Tense from Passive Voice to Active Voice:

• Interchange the object and the subject with each other, i.e. object of the passive sentence becomes the subject of the active

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sentence.

• The helping verb get's removed as it is a simple past sentence.

• Convert the verb from the 3rd form of the verb to the 2nd form of the verb.

• Structure: Subject + V2 + Object (Active Voice)

Object + was/were + V3 +by + Subject (Passive Voice)

• Solution: The old woman was helped by the boy while crossing the road. (Passive Voice)

The boy helped the old woman while crossing the road. (Active Voice)

• Therefore, the correct answer is 'The boy helped the old woman while crossing the road'.

Q13. Answer: (b) Lexicography

The correct answer is 'Lexicography'.

Key Points

• The most appropriate one-wor substitute for 'The activity of writing dictionaries' is 'Lexicography'.

• Let's understand the other options.

• Biography- an account of someone's life written by someone else.

• Bibliography- a list of the books referred to in a scholarly work, typically printed as an appendix.

• Theology- the study of the nature of God and religious belief.

Q14. Answer: (c) Polyglot

The correct answer is Polyglot.

Key Points

• The most appropriate one-word substitute for the given group of words 'One who is well-versed in many languages' is 'Polyglot'.

• Let's understand the other options.

• Verbose- using or expressing in more words than are needed.

• Linguist- a person who studies linguistics.

• Stalwart- loyal, reliable, and hard-working.

Q15. Answer: (b) The careful crafted personality

The correct answer is 'The careful crafted personality'.

Key Points

• The segment that contains a grammatical error is 'The careful crafted personality'.

• The word 'careful' is an adjective and the word 'carefully' is an adverb of manner.

• The adverb 'carefully' is used when the mannerisms of a person are being talked about.

• Since the mannerisms of Anahita are being talked about, therefore the error lies in the segment 'The careful crafted personality'.

• So the correct sentence is: The carefully crafted personality of Anahita did not help here much in the electoral campaign.

Therefore, the correct answer is "Option 2".

Q16. Answer: (b) over such a triviale matter

The correct answer is 'over such a triviale matter'.

Key Points

• The correct spelling of 'triviale' according to the English dictionary is 'trivial'.

• The word 'trivial' means 'of little value or importance.'

• Hence, the most appropriate answer is 'over such a triviale matter'.

Q17. Answer: (c) shy

The correct answer is 'shy'.

Key Points

• The most appropriate synonym for the given word 'modest' is 'shy'.

• The meaning of the word 'modest' is 'unassuming in the estimation of one's abilities or achievements'.

• The meaning of the word 'shy' is 'nervous or timid in the company of other people.'

• Hence, the most appropriate answer is 'shy'.

Additional Information

• Let's understand the other options.

• Courageous- not deterred by danger or pain; brave.

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• Dry- free from moisture or liquid; not wet or moist.
• Horrific- very bad and shocking.

Q18. Answer: (b) go out

The correct answer is 'go out'.

Key Points

• The given sentence is grammatically incorrect.
• Here, 'go out' should be used instead of 'are going out'.
• The given sentence is an example of a conditional sentence.
• The type 1 conditional is used to refer to the present or future where the situation is real.
• Type 1 conditional refers to a possible condition and its probable result.
• Let's look at the structure of these kinds of sentences: If + simple present, simple future
• Example: If you don't hurry, you will miss the train.
• Thus, the correct answer is Option 2.

Correct Sentence: If they go out, surely we will follow them.

Q19. Answer: (a) Stunning

The correct answer is Stunning.

Key Points

• The most appropriate synonym for the given word 'Stupendous' is 'Stunning'.
• The meaning of the word 'Stupendous' is 'extremely impressive'.
• The meaning of the word 'Stunning' is 'extremely impressive or attractive'.
• Hence, the most appropriate answer is 'Stunning'.

Additional Information

• Let's understand the other options.
• Magnifying- make (something) appear larger than it is, especially with a lens or microscope.
• Shining- giving off or reflecting light; radiant; bright.
• Amplifying- increase the volume of (sound), especially using an amplifier.

Q20. Answer: (a) Allimony

The correct answer is Allimony.

Key Points

• The correct spelling of 'Alimony' according to the English dictionary is 'Alimony'.
• The word 'Alimony' means 'financial support that a person is ordered by a court to give to their spouse during separation or following divorce; maintenance.'
• Hence, the most appropriate answer is 'Allimony'.

Additional Information

• Let's understand the other options.
• Hallucinate- experience an apparent sensory perception of something that is not actually present.
• Structural- relating to or forming part of the structure of a building or other item.
• Halloween- the night of 31 October, the eve of All Saints' Day, often celebrated by children dressing up in frightening masks and costumes. Halloween is thought to be associated with the Celtic festival Samhain when ghosts and spirits were believed to be abroad.

Q21. Answer: (d) create

The correct answer is Create.

Key Points

• The most appropriate answer to fill the blank is 'create'.
• The meaning of the word 'create' is 'bring (something) into existence'.
• Hence, the most appropriate word is 'create'.

Additional Information

• Let's understand the other options.
• Design- the arrangement of the features of an artifact, as produced from following a plan or drawing.
• Construct- build or make (something, typically a building, road, or machine).

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• Spread- open out (something) so as to extend its surface area, width, or length.

Q22. Answer: (c) survive

The correct answer is 'survive'.

Key Points

• The most appropriate word to fill the blank is 'survive'.
• The word 'survive' means 'continue to live or exist, especially in spite of danger or hardship'.
• Hence, the most appropriate answer is 'survive'.

Additional Information

• Let's understand the other options.
• Prevail- prove more powerful or superior.
• Exist- live, especially under adverse conditions.
• Bear- carry the weight of; support, endure.

Q23. Answer: (c) right

The correct answer is 'right'.

Key Points

• The most appropriate answer is 'right'.
• The meaning of the word 'right' is 'true or correct as a fact'.
• Hence, the appropriate word to fill in the blank is 'right'.

Additional Information

• Let's understand the other options.
• Helpful- giving or ready to give help.
• Equal- being the same in quantity, size, degree, or value.
• Valid- (of an argument or point) having a sound basis in logic or fact; reasonable or cogent.

Q24. Answer: (b) inside

The correct answer is 'inside'.

Key Points

• The most appropriate answer is 'inside'.
• The meaning of the word 'inside' is 'the inner side or surface of something'.
• Hence, the appropriate word to fill in the blank is 'inside'.

Additional Information

• Let's understand the other options.
• Interior- situated on or relating to the inside of something; inner.
• Inner- situated inside or further in; internal.
• Inward- directed or proceeding towards the inside; coming in from outside.

Q25. Answer: (b) dries

The correct answer is 'dries'.

Key Points

• The most appropriate answer is 'dries'.
• The meaning of the word 'dries' is 'to become dry'.
• Hence, the appropriate word to fill in the blank is 'dries'.

Additional Information

• Let's understand the other options.
• Soaks- make or allow (something) to become thoroughly wet by immersing it in liquid.
• Wipes- clean or dry (something) by rubbing with a cloth, a piece of paper, or one's hand.
• Dehydrates- lose a large amount of water from the body.

Q26. Answer: (c) OHDLBO

Here, the alphabets and their positions are shown as below:

The logic here is: The reverse of each letter is taken. The 1st two letters interchange their positions, similarly next two letters do and so on,

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‘PALACE’ is written as ‘ZKZOVX’

And,

‘DEVINE’ is written as ‘VWREVM’

Similarly,

‘SLOWLY’ be written as '?'

Hence, the code language is 'OHDLBO' for the given word.

Q27. Answer: (d) Sister-in-law

The Family chart is:

According to the given statements, we will get,

Hence, the wife of Jorge is 'sister in law' to Sheila.

Q28. Answer: (d) SGRB

Here, the alphabets and their positions are shown below:

The logic here is:

Hence, the code language is 'SGRB' for the missing place.

Q29. Answer: (b) 20

The pattern followed in the given series is:

Sum of all the digits in the first term + 4 = Second term

Let's apply the patter on the given series:

6789 : 34 :: 1786 : 26 :: 4327 : ?

(6 + 7 + 8 + 9) + 4 = 34

30 + 4 = 34

34 = 34

6789 : 34 :: 1786 : 26 :: 4327 : ?

(1 + 7 + 8 + 6) + 4 = 26

22 + 4 = 26

26 = 26

6789 : 34 :: 1786 : 26 :: 4327 : ?

(4 + 3 + 2 + 7) + 4 = ?

16 + 4 = ?

20 = Answer

Hence the correct answer is option 2)

Q30. Answer: (d) Only conclusion I follows

The least possible Venn diagram is given below:

Conclusion:

I. Some pencils are books → Follow → (As all pens are pencils and some books are pens. So, some pencils are books. This is true.

II. Some books are not pencils → Does not follow → (As some books are pens and all pens are pencils. So, some books are pencils. This is not true.

Hence, only conclusion I is true.

Q31. Answer: (d) 5

Here, we have two dices given and two common faces.

So, when we rotate the 2nd dice in such a way that it looks like the 1st one only as face 6 and face 1 are opposite to each other as shown below:

Next, we can see that numbers 2 and 3 are not there and so they will be the opposite of either number 4 or number 5.

Thus, number 2 will be opposite number 5 and number 3 will be opposite number 4.

So, sum of the numbers that are opposite to 4 and 5 = 3 + 2 = 5

Hence, the sum of the numbers that are opposite to '4 and 5' is '5'.

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Q32. Answer: (c) 8 : 66

Here, the pattern is: Each 1st term square is taken and then subtracted by 1 to get the 2nd term.

We will check all the options as:

1) 4 : 15 => $(4)^2 - 1 = 16 - 1 = 15$

2) 12 : 143 => (12)2 = 144 - 1 = 143

3) 8 : 66 => (8)2 = 64 - 1 ≠ 65. This is an odd one

4) 3 : 8 => (3)2 = 9 - 1 = 8

Hence, the odd number pair is '8 : 66'.

Q33. Answer: (c) 572

Here the pattern followed is as below:

Hence, the missing number is '572'.

Q34. Answer: (d) [figure]

Here, we have a paper that is folded two times and then some design is made on it.

So, we get figure 2 below when the 1st fold is opened.

Hence, we will get option 4 as the correct answer.

Q35. Answer: (c) Sister

Family chart:

According to the given statement:

Hence, the woman is 'sister' to Noor.

Q36. Answer: (d) TSEROF

Here, the pattern is: The word is written from right to left.

BRIGHT : THGIRB

And,

DANGER : REGNAD

Similarly,

FOREST : ?

Hence, the code language is 'TSEROF' for the missing place.

Q37. Answer: (b) 362

The pattern followed here is:

3, 5, 7, 11, 13, 17, 19 form a series of consecutive prime numbers.

Hence, the missing number is 362.

Q38. Answer: (b) [figure]

Here, we are given the word and we need to find the mirror image of it.

First keep in mind that, in mirror image the first letter will be the last letter of the given word. Also, the size of the letters will not change i.e. capital letters will appear capital only.

The correct mirror image of the given combination when the mirror is placed at MN is as shown below :-

Detailed Explanation :-

• The line XY is the mirror.

• The word ''

'' ends with ''

''. So, the mirror image will be ''

'' → Option 4 is eliminated.

• Also, the letters '

' and '

' are used. So, the mirror image will be '

' and '

' respectively. → Options 1 and 3 are eliminated.

Hence, the mirror image of the given word is 'option 2'.

Additional Information

• In a mirror image Left changes to rightand theright changes to leftwheretop and bottom remains the same.

• When placement of mirror not given, by default we will assume it in vertical direction.

• The starting letter word will be at last after the mirror image drawn with left changes to right and right changes to left.

Q39. Answer: (d) 12

Logic : Sum of digits of first number - Number of digits in first number = Second number

9876 : 26

9 + 8 + 7 + 6 = 30

30 - 4 = 26

8671 : 18

8 + 6 + 7 + 1 = 22

22 - 4 = 18

Similarly, 3427 : ?

3 + 4 + 2 + 7 = 16

16 - 4 = 12

Hence, 'option 4' is the correct answer.

Q40. Answer: (d) 12

Here, we can see that number 9 and 10 are common in both the dices.

So, we will rotate the dice in such a way that, the positions of both the numbers are the same.

From this, we can say that the number 12 is opposite to number 8.

Hence, the number '12' will be on the face opposite the one showing ‘8’.

Q41. Answer: (c) 19201144

Here, the alphabets and their positions are shown below:

So, for the word TABLE and CHAIR, we have:

'TABLE' is written as '2012125'

And,

'CHAIR' is written as '381918'

Similarly,

'STAND' be written as '?'

Hence, the code language is '19201144' for the given word.

Q42. Answer: (d) 1

Here, we have two dice and a common face number 6 on it.

So, we will start writing numbers from 6 of the dice in the clockwise direction

1st dice: 6 - 4 - 3

2nd dice: 6 - 5 - 2

As we can see all the numbers are present except number 1, and so number 1 is opposite to number 6.

Hence, the number 1 will be on the face opposite the one showing the number 6.

Q43. Answer: (d) INSK

Here the pattern is:

The position of the last letter is same. But the 1st letter will go to 3rd position, 2nd letter will move to 1st position and 3rd letter will go to 2nd position.

“SPOT” is written as “POST”

“PLOT” is written as “LOPT”

Similarly,

“SINK” be written as '?'

Hence, code language is 'INSK' for the given word.

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Q44. Answer: (b) SJKU

Here, the alphabets and their positions are shown as below:

The logic here is:

Hence, the missing place is "SJKU".

Q45. Answer: (a) 23437.50

Here, the pattern is:

Each term is divided by 0.4 to get the next consecutive term.

So, we have,

Hence, the next number is '23437.50' in the series.

Q46. Answer: (c) [figure]

Here, the paper is folded two times and some designs are made.

So, when we open the 1st fold we will get,

Hence, the correct answer is 'option 3'.

Q47. Answer: (a) 48 - 62

Here, the pattern is:

The 2nd term is the number we get when the 1st term is divided by 8. And one zero is written after that number to get the final answer.

So, from the options, we can say that,

1) 48 ÷ 8= 6, it should be 60 and not 62. This is not true.

2) 32 ÷ 8 = 4, it is 40

3) 64 ÷ 8 = 8, it is 80

4) 56 ÷ 8 = 7, it is 70

Hence, the number pair '48 - 62' is the odd one out.

Q48. Answer: (d) +, ÷, –, ×, =

Here, we need to apply the combination of signs to get the correct equation.

Given: 75 * 85 * 17 * 12 * 6 * 8

BODMAS Rule is:

First we will check options one by one as below:

1) ×, –, ÷, +, =

=> 75 × 85 - 17 ÷ 12 + 6 = 8

Applying BODMAS rule, we will get,

=> 75 × 85 - 1.41 + 6 = 8

=> 6375 - 1.41 + 6 = 8

=> 6379.59 ≠ 8, this is not possible

2) +, ×, ÷, –, =

=> 75 + 85 × 17 ÷ 12 - 6 = 8

Applying BODMAS rule, we will get,

=> 75 + 85 × 1.41 - 6 = 8

=> 75 + 119.85 - 6 = 8

=> 188.85 ≠ 8, this is not possible

3) ×, ÷, –, +, =

=> 75 × 85 ÷ 17 - 12 + 6 = 8

Applying BODMAS rule, we will get,

=> 75 × 5 - 12 + 6 = 8

=> 375 - 12 + 6 = 8

=> 369 ≠ 8, this is not possible

4) +, ÷, –, ×, =

=> 75 + 85 ÷ 17 - 12 × 6 = 8

Applying BODMAS rule, we will get,

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=> 75 + 5 - 12 × 6 = 8

=> 75 + 5 - 72 = 8

=> 8 = 8, this is possible

Hence, the combination of signs '+, ÷, –, ×, =' is used to get the correct balanced equation.

Q49. Answer: (d) 34

The logic followed here is:

Third Number = (First number × 2) - (Second number ÷ 5)

First row - 12, 25, 19 → (12 × 2) - (25 ÷ 5) = 24 - 5 = 19

Second row - 35, 50, 60 → (35 × 2) - (50 ÷ 5) = 70 - 10 = 60

Similarly,

Third row - 24, 70, ? → (24 × 2) - (70 ÷ 5) = 48 - 14 = 34

Hence, 'option 4' is the correct answer.

Q50. Answer: (b) 107

Here, we have the pattern as:

The 1st term is added by 3 to get the next term, and again the next term is added by double of 3 (i.e. 6) to get the next term, and so on.

So, we have,

Hence, the next term is 107 in the given series.

Q51. Answer: (a) 36

Given:- Priya + Renu can do the job in 12 hours, whereas Priya alone can do it in 18 hours

To find:- Time taken by Renu to complete the job

Formula used:- Work done = Time × Efficiency

Calculation:- Let the total work be the LCM(12, 18)

Total work (job) = 72 units

Let the efficiency of Priya and Renu be P and R,

According to the question,

(P + R) × 12 = 72

=>(P + R) = 6

Now it is given that Priya takes 18 hours to complete the work alone

=>P × 18 = 72

=>P = 4

The efficiency of Priya is 4

=>R = 6 - 4 = 2

The efficiency of Renu is 2,

Now by using the formula of work done

=>72 = Time × 2

=> 72/2 = 36 = Time

Renu will take 36 hours to complete the job.

Q52. Answer: (b) 1053000

Given:- A data in a tabulated form where sales of car from 2015 to 2020 by different manufacturers are mentioned and all the figures are in thousands

To find:- total sales of cars from 2015 to 2020

Concept used:- Basic addition of values

Calculation:- Total sales in year 2015 = 44 + 40 + 36 + 48 = 168

Total sales in year 2016 = 48 + 41 + 38 + 44 = 171

Total sales of cars 2017 = 47 + 41 + 40 + 44 = 172

Total sales of cars 2018 = 50 + 41 + 42 + 42 = 175

Total sales of cars 2019 = 52 + 42 + 44 + 42 = 180

Total sales of cars 2020 = 51 + 43 + 50 + 43 = 187

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Total sales from 2015 to 2020 = 168 + 171 + 172 + 175 + 180 + 187

=>Total sales from 2015 to 2020 = (170 - 2) + (170 +1)+ (170 + 2) + (170 + 5) + (180) + (180 + 7)

=>Total sales from 2015 to 2020 = 170 × 4 + 180 × 2 + (8 - 2 + 7) = 1053

Since the figures were in thousands,

=>Total sales from 2015 to 2020 = 1053 × 1000 = 1053000

The total sales of cars of the four manufacturers under consideration in the city in the entire period of 6 years is 1053000

Q53. Answer: (b) 2/√3

Given:- sec2 θ = 4/3

To find:- cosec (θ + 30°)

Formula used:- sec θ = Hypotenuse/Base, Cosec θ = Hypotenuse/Height

calculation:- It is given that sec2 θ = 4/3

On taking square root both sides,

=>sec θ = 2/√3

Since θ is an acute angle then In a right-angled triangle,

Base = √3 unit and hypotenuse = 2 units

Now by using the Pythagorean theorem in a right triangle,

=>Hypotenuse² = Base² + height²

=> 2² = (√3)² + height²

=>Height = 1 unit

Since Cosec θ = Hypotenuse/Height

=> Cosec θ = 2/1 = 2

=> Sin θ = Height/Hypotenuse = 1/2

=>Cos θ = Base/Hypotenuse = √3/2

Now by using the conversion of Cosec θ, cosec θ = 1/sin θ

=>cosec (θ + 30°) = 1/(sin (30+θ))

Using the formula, sin(a + b) = sin a cos b + cos a sin b

=> 1/(sin (30+θ)) = 1/(sin 30°.cos θ + cos 30°.sinθ)

using the standard value of sin 30° and cos 30° as 1/2 and √3/2 respectively, and using Sin θ and Cos θ by 1/2 and √3/2 respectively,

=> 1/(sin (30+θ)) = 1/(1/2.√3/2 + √3/2.1/2)

=> 1/(sin (30+θ)) = 4/2√3

=> 1/(sin (30+θ)) = 2/√3

The value of cosec (θ + 30°) is 2/√3

Alternate Method

It is given that sec2 θ = 4/3 then => sec θ = 2/√3 => sec 30° = 2/√3, so θ = 30°

Now, cosec (θ + 30°) => cosec (30° + 30°) => cosec 60° = 2/√3

Q54. Answer: (d) p=-3/4 and q = -4

Given:- px3 + x2 + 3x + q is exactly divisible by (x + 2) and (x - 2)

To find:- The value of p and q

Concept used:- If f(x) is divisible by (x + a) and (x - b) then (-a) and (-b) are the factors of f(x)

Calculation:- Since the equation is divisible by (x + 2) and (x - 2) then 2 and -2 are factors of the equation f(x)

=>f(-2) = f(2) = 0

f(x) = px3 + x2 + 3x + q

=>f(-2) = 0 = p(- 2)³ + (2)² + 3(- 2) + q

=>0 = -8p + 4 - 6 + q

=>-8p + q - 2 = 0

=>-8p + q = 2 ----------(i)

Similarly,

=>f(2) = 0 = p(2)3 + (2)2 + 3(2) + q

=> 8p + 4 + 6 + q = 0

=> 8p + q = -10 ----------(ii)

On adding the eq(i) and (ii),

=>(- 8p + q) + (8p + q) = 2 - 10

=> 2q = -8

=>q = -4

Substituting the value of q in eq(ii),

=> 8p + (-4) = -10

=> 8p = -6

=> p = (-6)/8 = (-3)/4

The value of p is (-3)/4 and the value of q is -4

Q55. Answer: (a) 18

Given:- Pie chart with data of the distribution of 36 marbles

To find:- number of marbles Madhuri has

Concept used:- In the pie chart, 360° = 100%

Calculation:- The portion of Madhuri is of 180°,

In percentages,

=>360° = 100%

then, 1° = (100%)/360

=>180° = (100%)/360°× 180° = 50%

So the share of Madhuri is 50% of the total marbles

=>Total number of marbles Madhuri has = 50% of 36

=>Total number of marbles Madhuri has = 50/100× 36 = 18

Madhuri has 18 marbles

Q56. Answer: (c) 46

Given:- A data in tabulated form having marks of different subjects by 100 students

To find:- Number of students who scored above 60 in subjects B and C

Calculation:- As mentioned in the question, Students scoring at least 60% marks in B and C are eligible for higher studies in subjects B and C,

The total marks is 100

=>60% of total marks = 60/100× 100 = 60 marks

So, the students who scored 60 and above are eligible for higher studies in subjects B and C

=>Total number of students who scored 60 and above in B = 20

=>Total number of students who scored 60 and above in C = 26

Total students who are eligible to pursue higher studies in B and C = 20 + 26 = 46

46 students are eligible to pursue higher studies in subjects B and C.

Q57. Answer: (c) 1331 cm^3

Given:- The surface area of cube = 726 cm2

To find:- Volume of cube

Formula used:- Surface area of cube = 6 × $(side)^2$, Volume of cube = $(side)^3$

Calculation:- Let the side of cube be ' a cm '

Surface area of cube = 726 cm^2

=>6 × a^2 = 726

=>a^2 = 121

=>a= 11 cm

Volume of cube = $(side)^3$ = $(a)^3$

=>Volume of cube = $(11)^3$

=>Volume of cube = 1331 cm^3

The volume of cube is 1331 cm^3.

Q58. Answer: (d) 9; 2

Given:- 7P323Q is divisible by 88

To find:- The value of P and Q

Concept used:- Divisibility of 11 and divisibility of 8

Calculation:- It is given that the number 7P323Q is completely divisible by 88

Since the number 88 is divisible by 11 this means the number 7P323Q must be divisible by 11 and 8

=>The divisibility of 8 states that if the last three digits are divisible by 8 then the number is divisible by 8,

The last three digits of the number are 23Q,

The last three digits can only be divisible by 8 if the value of Q is 2

=>Divisibility of 11 states that the number is divisible by 11 if the difference between the sum of digits in odd places and the sum of digits in even places is divisible by 11 or 0.

In the given number, 7P3232, the digits in odd places and even places are,

Digits of even places = P, 2, 2

Digits of Odd places = 7, 3, 3

Difference = (7 + 3 + 3) - (P + 2 + 2)

=>Difference = 9 - P

The ' P ' can't be negative therefore, the difference should have to be 0

=>9 - P = 0

=>P = 9

The value of P is 9 and the value of Q is 2

Q59. Answer: (c) 6 : 15 : 20

Given:- a : b = 2 : 5 and b : c = 3 : 4

To find:- The value of a : b : c

Calculation:- a : b = 2 : 5

On multiplying the ratio by 3,

=>a : b = 6 : 15

It is given that, b : c = 3 : 4

On multiplying the ratio by 5,

=> b : c = 15 : 20

Now, a : b = 6 : 15 and b : c = 15 : 20

=>a : b : c = 6 : 15 : 20

The value of a : b : c is 6 : 15 : 20

Q60. Answer: (d) √227 m

Given:- Length(L) = 13 m, Breadth(B) = 7 m, Height(H) = 3 m

To find:- Diagonal cuboid

Formula used:- Diagonal of cuboid = $\sqrt{(L^2+B^2+H^2)}$

Calculation- By using the formula,

Diagonal = $\sqrt{(L^2+B^2+H^2)}$

=>Diagonal = $\sqrt{(13^2+7^2+3^2)}$

=>Diagonal = $\sqrt{(169+49+9)}$

=>Diagonal = $\sqrt{227}$

Therefore The diagonal of cuboid is √227 m

Q61. Answer: (a) Rs. 450

Given:

The total profit obtained by selling all the sugar = Rs. 90

To find:

Cost price of the entire quantity of sugar

Formula used:

Cost price × profit% = Selling price

Calculation:

Let the cost price of sugar be Rs. x per Kg
Suppose there is 200 kg of sugar in the bag,
=>Total price of the sugar in the bag = 200 × x = 200x
As per the question,
=> The profit on 100 kg of sugar = 20%
=> The profit on 50 kg of sugar = 16% [quarter of the quantity of the sugar, 1/4× 200]
=> The profit on 50 kg of sugar = 24% [Left amount is 50 kg]
Total profit on cost price = Rs. 90
=> 20/100×100x + 16/100× 50x + 24/100× 50x = 90
=> 20x + 8x + 12x = 90
=> x = 9/4
The Cost price of sugar = 200x = 200 × 9/4
=>The Cost price of sugar = 450
The cost price of sugar is Rs. 450

Q62. Answer: (c) 44.90 cm

Given:
Radius (R) = 28 cm
radius (r) = 18 cm
Formula Used:
Length of common tangent = 2√(R × r)
R & r are radii
Calculation:
Solution:
Length of common tangent = 2√(28 cm × 18 cm)
= 2√(504 cm²)
= 2 × √(504 cm²)
≈ 2 × 22.47 cm
≈ 44.90 cm (rounded to 2 decimal places)
Therefore, the length of the common tangent between the two circles is approximately 44.90 cm.

Q63. Answer: (d) 200

Given:
Mixture of milk and water = 75%
Required percentage mixture of milk and water = 45%
Volume of mixture = 300 ml
Concept used:
Concentration before mixture = Concentration after mixture
Calculation:
=> Let the amount of water mixed is x ml.
=> The concentration of milk in the initial mixture = 75%
=> Volume of mixture = 300 ml
=> Final concentration of milk = 45%
=> So, after adding, Volume of mixture = 300 + x
=> The amount of milk in the mixture is remain unchanged.
=> 75% × 300 = 45% × (300 + x)
=> 75/100× 300=45/100× (300+x)
=> (75× 3× 100)/45=300+x
=> 500 = 300 + x
=> x = 500 – 300 = 200 ml.
Hence, the amount of water mixed in the mixture is 200 ml to reduce the concentration from 75% to 45%.

Q64. Answer: (c) Rs. 720

Given:- Marked price = 1200 and two successive discounts of 25% and 20%

To find:- Selling price

Formula used:- Selling price = (1- (first discount)/100)(1- (second discount)/100) × Marked price

Calculation:- By using the formula,

=>Selling price = (1-25/100)× (1-20/100)×1200

=>Selling price = (1-1/4)× (1-1/5)×1200

=>Selling price = (3/4)× (4/5)×1200

=>Selling price = Rs. 720

The selling price of the shirt after two successive discounts is Rs. 720

Q65. Answer: (a) 79

Given:- Total students = 30, Number of students score 75 = 20 and Number of students scored 87 = 10

To find:- Average of the batch

Formula used:- Average = (Sum of observation)/(Total number of observation)

Calculation:- The sum of marks who scored 75 = 20 × 75

Total sum of marks of students who scored 75 marks = 1500

The sum of marks of students who scored 87 marks = 10 × 87

Total sum of marks of students who scored 87 marks = 870

Total marks scored by the batch = 1500 + 870 = 2370

By using the formula of average,

=>Average = 2370/30

∴ Average = 79

The average marks of the batch is 79

Q66. Answer: (a) 12

Given:- 12/3÷4/9×p/9=11/4×2/3÷1/6

To find:- The value of p

Calculation:- It is given that 12/3÷4/9×p/9=11/4×2/3÷1/6,

Solving the Left-hand side,

=> 12/3÷4/9×p/9 = 5/3÷4/9×p/9

=> 12/3÷4/9×p/9 = 5/3×9/4×p/9

=> 12/3÷4/9×p/9 = 5p/12

Solving the Right-hand side,

=> 11/4×2/3÷1/6 = 5/4×2/3÷1/6

=> 11/4×2/3÷1/6 = 5/4×2/3×6/1

=> 11/4×2/3÷1/6 = 60/12 = 5

Equating the Left-hand side and right-hand side,

=> 5p/12 = 5

=> p = 12

The value of p in the expression is 12

Alternate Method 12/3÷4/9×p/9=11/4×2/3÷1/6

=> 5/3×9/4×p/9=5/4×2/3×6

=> Solving we get, P = 2 × 6 = 12

Q67. Answer: (d) Rs. 7,260

Given:- Principal amount = Rs.6000, time period = 2 years, compounded annually with rate = 10% p.a.

To find:- Final amount Mahes has to give,

Formula used:- A = P(1+r/n)^(nt)

Calculation:- As it is mentioned that the interest will be compounded yearly,

∴ n = 1 [Means rate would be applied once in a year]

By using the formula of compound interest,

=>Final amount = P(1+r/1)^(1× t)

=>Final amount = 6000(1+10/100)²

=>Final amount = 6000(11/10)²

=>Final amount = 6000 × 121/100

=>Final amount = 60 × 121 = 7260

At the end of 2 years, the final amount will be Rs. 7260

Shortcut Trick

=> Principle → Amount

=> 10 → 11

=> 10 → 11

=> Total → 100 → 121

Therefore If Principle = 100x, then Amount = 121x

=> 100x = 6000

=> x = 60

Therefore Amount = 121x = 121 × 60 = Rs. 7260.

Q68. Answer: (d) 560

Given:- Discount of 19% on Marked price and Selling price = Rs. 453.60

To find:- Marked price of the book

Concept used:- Selling price = Marked price - Discount% on marked price

Calculation:- Let the marked price be M,

=>M - 19% of M = Selling Price

=>M - 19M/100 = 453.60

=>81M = 45360

=>M = 560

The marked price of the book is Rs. 560

Q69. Answer: (a) 8500

Shortcut Trick

Total Salary = Rs. 30,000

Food & Rent (25% of Total) = 0.25 × 30,000 = Rs. 7,500

Education (20% of Remaining) = 0.20 × (30,000 − 7,500) = 0.20 × 22,500 = Rs. 4,500

Income Tax (5% of Total) = 0.05 × 30,000 = Rs. 1,500

Total Deductions = 7,500 + 4,500 + 1,500 = Rs. 13,500

Amount available after savings = Total Salary − Total Deductions − Savings = 30,000 − 13,500 − 8,000 = Rs. 8,500

Therefore The correct answer is Rs. 8500.

Alternate Method

Given:

Monthly Salary = Rs. 30,000

Savings = Rs. 8,000

Calculations:

=> Expenditure on Food and Rent = 25% of 30,000 = (25/100) × 30,000 = Rs. 7,500

=> Remaining Salary after Food and Rent = 30,000 − 7,500 = Rs. 22,500

=> Expenditure on Education = 20% of 22,500 = (20/100) × 22,500 = Rs. 4,500

=> Income Tax = 5% of Total Salary = (5/100) × 30,000 = Rs. 1,500

=> Total Amount Deducted (Expenses + Tax + Savings) = 7,500 + 4,500 + 1,500 + 8,000 = Rs. 21,500

=> Amount available after savings = Total Salary − Total Deductions = 30,000 − 21,500 = Rs. 8,500

Therefore The correct answer is Rs. 8500.

Additional Information

Percentage of Remaining

When a percentage is applied to the remaining amount, always subtract the previous expenditure from the total before calculating the next value.

Total Salary Components

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Total Salary = Total Expenditure + Savings + Taxes. The amount available is what remains after specific deductions are made.

Q70. Answer: (d) 3104

Given:- x3 + y3 = 416 and x + y = 8

To find:- x4 + y4

Formula used:- $(x^2 + y^2)^2 = x4 + y4 + 2x2y2$

Calculation:- x + y = 8 --------(i)

On squaring both sides,

$=>(x + y)^2 = 8^2$

$=>x^2 + y^2 + 2xy = 64$ ---- (ii)

On cubing the equation (i) on both sides,

$=>(x + y)^3 = 8^3$

$=>x^3 + y^3 + 3xy(x + y) = 512$

substituting the values, x3 + y3 = 416 and x + y = 8

=>416 + 3xy(8) = 512

=> 24xy = 512 - 416 = 96

=> xy = 4

Putting the value xy = 4 in the equation (ii),

=>x2 + y2 + 2(4) = 64

=>x2 + y2 = 56

Now squaring the above equation both sides,

$=>(x2 + y2)^2 = 56^2$

=> x4 + y4 + 2x2y2 = 3136

=> x4 + y4 = 3136 - 2x2y2

$=> x4 + y4 = 3136 - 2(xy)^2$

Putting the value, xy = 4 in the above equation

$=> x4 + y4 = 3136 - 2(4)^2$

=> x4 + y4 = 3136 - 32 = 3104

∴The value of x4 + y4 is 3104

Q71. Answer: (a) 8000

Given:- 323 - 3(322)(12) + 3(32)(122) - 123

To find:- The value of expression, $323 - 3(322)(12) + 3(32)(12^2) - 123$

Formula used:- $(a - b)^3 = a^3 - 3(a)^2b + 3a(b)^2 - b^3$

Calculation:- The given expression is an expanded form of (a - b)3

=>a3 - 3(a)2b + 3a(b)2 - b^3 ---------(i)

=>323 - 3(322)(12) + 3(32)(122) - 123 ----------(ii)

On comparing eq(i) and (ii),

we can observe that, a = 32 and b = 12

$=>(32 - 12)^3 = 323 - 3(322)(12) + 3(32)(122) - 123$

$=>323 - 3(322)(12) + 3(32)(122) - 123 = 20^3 = 8000$

∴The value of the expression is 8000

Q72. Answer: (a) 12 km/h

Given:- Sailing out speed:- 15 km/h sailing back speed:- 10km/h

To find:- The average speed of sailing of ship

Formula used:- Average speed = 2ab/(a+b), a and b are the going and returning speed

Calculation:- By using the formula, the Average speed = 2ab/(a+b)

=>Average speed = (2× 15× 10)/(15+10)

=>Average speed = 300/25

=>Average speed = 12 km/h

The average speed of sailing of the ship is 12 km/h.

Q73. Answer: (b) Rs. 5,000

Given:- 25% of income is spent by the women and expenditure = Rs.1250

To find:- Her income

Concept used:- Income - expenditure = Spent amount

Calculation:- Let the income of women be Rs. x

According to the question,

25% of x = 1250

=> 25/100× x = 1250

=> 1/4× x = 1250

=>x = 1250 × 4

=>x = 5000

The income of the women is Rs. 5,000

Q74. Answer: (a) 54 km/h

Given:- Speed for traveling A to B, B to C, and C to A is 40 km/h, 60km/h, and 72km/h respectively.

To find:- Average speed

Formula used:- Average speed = (Total distance)/(Total time taken)

Calculation:- Let the distance from A to B be ' x km '

It is given that the vertices form the equilateral triangle,

=>AB = BC = CA = x km

Total distance travelled by Rashid = x + x+ x = 3x km

By using the relation between speed, distance, and time, time=distance/speed

=>Time is taken to cover A to B = x/40

Similarly, the time taken by Rashid to cover B to C and C to A is x/60 and x/72 respectively,

=>Average speed = 3x/(x/40+x/60+x/72)

=>Average speed = 12x/(x/10+x/15+x/18)

=>Average speed = 54 km/h

The average speed of Rashid is 54 km/h.

Q75. Answer: (b) 625√3/4 cm2

Given:- Perimeter = 75 cm

To find:- Area of the triangle

Formula used:- Area of equilateral triangle = √3/4(side)², perimeter of an equilateral triangle = 3 × side

Calculation:- Let the side of triangle be ' a cm'

Perimeter of equilateral triangle = 3 × a

=>3 × a = 75

=>a = 25 cm

Area of an equilateral triangle = √3/4(side)²

=>Area = √3/4(a)²

=>Area = √3/4(25)² = 625√3/4

The area of the equilateral triangle is 625√3/4 cm²

Q76. Answer: (d) Striking circle

The correct answer is Striking circle.

Key Points

• The maximum number of players must enter the striking circle when you have to score a goal.

• It is an elongated semicircle on a hockey field in front of the goal.

• The striking "circle" is actually a 16 yard half-circle around the front of the goal.

Additional Information

• The delivery known in cricket today as the "googly".

• A full toss is a type of delivery in the sport of cricket.

• A short pitched is a delivery made by the bowler that results in having the ball bouncing close to the bowler.

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Q77. Answer: (c) coriander powder

The correct answer is coriander powder.

Key Points

• Chemicals that become contaminants when mixed with other chemicals are known as adulterants. To increase the quantity while lowering the quality, adulterants are introduced to pure substances.

• This spice is contaminated with husk, ash, and dung powder. Consuming tainted coriander powder might result in gas, constipation, and cramping in the stomach.

• In general, food is considered adulterated if it contains a dangerous or harmful chemical that could endanger human health. Examples of tainted foods include Brie cheese contaminated with Listeria monocytogenes and apple cider contaminated with E. coli O157:H7.

• Coriander powder is also adulterated with sawdust. The procedure used to check for adulterants in the case of the chilli powder can be utilised. Tea granules sawdust can be used to tamper with loose tea powder. Adulterators mix artificial colour along with some flavours.

Additional Information

• Acetic acid and water are combined to create vinegar through a two-step fermentation process. First, yeast consume any liquid derived from a plant source, such as fruits, whole grains, potatoes, or rice, and feed on the sugar or starch therein. It ferments into alcohol.

• Cheese is a dairy product made from the coagulation of milk protein casein. It comes in a broad variety of flavours, textures, and forms. It is made out of milk-derived proteins and fat, typically from the milk of cows, buffalo, goats, or sheep.

• In essence, milk is an emulsion of fat, protein, dissolved sugar (carbohydrate), minerals, and vitamins in water. All mammals' milk contains these ingredients, though the amounts vary between and within species and across species.

Q78. Answer: (d) Manipuri

The correct answer is Manipuri.

Key Points

• Rajkumar Singhjit Singh is a leading exponent, choreographer and a guru of Indian classical dance form of Manipuri.

• He was awarded with the sangeet Natak Akademi Award in 1984.

• The Manipuri dance, also referred to as the Manipuri Raas Leela.

Additional Information

• Kathakali is a major form of classical Indian dance.

• Kathak is one of the eight major forms of Indian classical dance.

• Mohiniyattam is an Indian classical dance form that developed.

Q79. Answer: (b) 44^(th) Amendment

The correct answer is 44th Amendment.

Key Points

• The 44th Amendment of 1978 removed the right to property from the list of fundamental rights.

• A new provision, Article 300-A, was added to the constitution.

• Which provided that "no person shall be deprived of his property save by authority of law.

Additional Information

• The 42th Amendment Act was enacted in 1976.

• The 46th Amendment has empowered the states to tax the value of goods involved in a work contract in same manner as it did when contracts were separable.

• The 43rd Amendment Act was enacted in 1977.

Q80. Answer: (b) Rafael Nadal

The correct answer is Rafael Nadal.

Key Points

• Rafael Nadal is a Spanish tennis player.

• He won the Laureus World Sportsman of the Year Award 2021.

• He is currently ranked world No. 3 in singles by the Association of Tennis Professionals.

• He has been ranked world No. 1 for 209 weeks.

Additional Information

• Mohamed Salah is an Egyptian footballer.

• Billie Jean King is an American former world No. 1 tennis player.

• Max Parrot is a Canadian snowboarder.

Q81. Answer: (c) 2

The correct answer is 2.

Key Points

• 2 players can remain outside the circle in the first six overs of a T20 cricket match.
• T20 is a shortened game format of cricket.
• A newly-introduced variant of cricket from the general one-day matches.
• T20 match format is a form of limited overs cricket in that it involves two teams, each with a single innings.

Additional Information

• The key features is that each team bats for a maximum of 20 overs.
• The team batting first will set the highest possible total.
• While the side taking the second innings will need to overtake that target.

Q82. Answer: (a) Bryophytes

The correct answer is Bryophytes.

Key Points

• Non-vascular plants are plants without a vascular system consisting of xylem and phloem.
• Bryophytes are the most primitive non-vascular plants.
• They may possess simpler tissues that have specialized functions for the internal transport of water.
• The Bryophytes are a praposed taxonomic division.

Additional Information

• A pteridophytes is a vascular plant that disperses spores.
• Angiosperms are the flowering plants that bear flowers and fruits, and form the clade
• The gymnosperms are a group of seed-producing plants that includes conifers, cycades etc.

Q83. Answer: (b) Esters

The correct answer is Esters.

Key Points

• An ester is a chemical compound derived from an oxoacid.
• Esterification is the general name for a chemical reaction in which two reactants.
• Esters compound is obtained by the reaction of an oxoacid with a hydroxyl compound, such as alcohol or phenol
• Esters are common in Organic chemistry and biological materials.

Additional Information

• In organic chemistry, a carbonyls group is a functional group composed of a carbon atom double-bonded to an oxygen atom.
• Amines are compounds and functional groups that contain a basic nitrogens atom with lone pair.
• A carboxylic acid is an organic acid that contains a carboxyl group attached to an R-group.

Q84. Answer: (d) Jaipur-Atrauli Gharana

The correct answer is Jaipur-Atrauli Gharana.

Key Points

• Mallikarjun Mansur was an Indian classical singer from Karnataka belongs to Jaipur-Atrauli Gharana.
• The Jaipur-Atrauli Gharana is an Hindustani music apprenticeship fraternity.
• It was founded by Alladiya Khan in the late-19th century.

Additional Information

• The Darbhanga Gharana is a gharana, or tradition, of the Hindustani classical music dhrupad.
• The Gwalior Gharana is one of the oldest Khyal Gharana in Indian classical music.
• The Patiala Gharana is one of the vocal gharanas.

Q85. Answer: (c) 5

The correct answer is 5.

Key Points

• The Government of India, in February 2022, approved Rs. 26,275 crores for an umbrella scheme for the modernisation of the police force in India for the 5 years.

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• While the United Nations recommended standard is 222 police per lakh persons.

• India's sanctioned strength is 181 police per lakh persons.

• The actual police strength in India is at 137 police per lakh persons.

Additional Information

• Under the new policy, the existing 26 cadres have been divided into five zones in the new policy by the Department of Personnel and Training of Government of India.

• According to a survey by IPF, Andhra Pradesh, Telangana, Assam, Kerala and Sikkim are on top in the IPF Smart Policing Index 2021.

• Lord Cornwallis created a permanent police force in India.

Q86. Answer: (c) Dr. Radhe Shyam Barle

The correct answer is Dr. Radhe Shyam Barle.

Key Points

• Panthi dance is one of the important dance forms ofChhattisgarh ,State of India.

• This Indian folk dance is basically a prominent ritual of the Satnami community of Chhattisgarh.

• Dr. Radhe Shyam Barle has made his contribution in promoting and disseminating the messages of Baba Guru Ghasidas through Panthi.

Additional Information

• Vinayak Vishnu Khedekar is among the 102 persons chosen for Padma Shri awards announced on Monday.

• Gopal Prasad Dubey is an Indian classical dancer, known for his expertise in the Indian classical dance form of Chhau.

• Shri Ghanakanta Bora is one of the most eminent exponents.

Q87. Answer: (a) Kuchipudi

The correct answer is Kuchipudi.

Key Points

• V Satyanarayana Sharma was an Indian classical dancer and choreographer, considered by many as one of the leading exponents of the classical dance form of Kuchipudi.

• He was known for his portrayal of female characters such as Usha, Satyabhama, Mohini etc.

• The Government of India awarded him the fourth highest civilian honour of the Padma Shri, in 1970.

Additional Information

• Sonal Mansingh, a dancer of Odissi, a classical Indian dance form that originated in Orissa.

• Elam Endira Devi is an Indian classical dancer and teacher, known for her expertise and scholarship in the classical dance form of Manipuri.

• Mahapurush Srimanta Sankardev is credited with developing Sattriya dance.

Q88. Answer: (c) Guru Bipin Singh – Kuchipudi

The correct answer is Guru Bipin Singh - Kuchipudi.

Key Points

• Guru Bipin Singh was a director, choreographer and teacher of Manipuri dance. Singh, the son of a vocalist and a traditional doctor, started dancing and singing as a child before concentrating on Manipuri dance, notably under Guru Amudon Sharma and with the help of the monarch of Manipur.

• He made a living as a film choreographer, but he never lost sight of his aim to advance understanding of the classical dance form.

• He founded the Govindji Nartanalaya dance school for women in Imphal and the Manipuri Nartanalaya dance school in Calcutta in 1972 as part of this endeavour.

• Kuchipudi is one of the eight major Indian classical dances. The founder of Kuchipudi dance is Shri Siddhendra Yogi. He has developed his skills and polished Kuchipudi dancing techniques along with other esteemed academics and artists.

• In the Indian state of Andhra Pradesh, the village of Kuchelapuram is where Kuchipudi gets its name.

Additional Information

• Pandit Birju Maharaj represented the Lucknow "Kalka-Bindadin" Gharana of Kathak dance in India as a performer, composer, and singer.

• Legendary Indian classical dancer, mentor, and representative of the Odissi dance, Kelucharan Mohapatra.

• Indian dancer Uday Shankar is most recognised for inventing the fusion form of dance.

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Q89. Answer: (a) Ginning

The correct answer is Ginning.

Key Points

• Almost all the steel manufactured today uses 2 processes-basic oxygen steelmaking and electric arc furnaces.

• This is the first step in the manufacturing of pure steel.

• In this step, the raw materials like iron ore, coal, and lime are melted in a blast furnace.

Additional Information

• Blast refers to the combustion air being "forced" or supplied above atmospheric pressure.

• Pig iron, is also known as crude iron.

• Hot forging can be defined as a metal shaping process in which a malleable metal part.

Q90. Answer: (d) Viswanathan Anand

The correct answer is Viswanathan Anand.

Key Points

• ‘Mind Master: Winning Lessons From A Champion's Life’ is autobiography of Viswanathan Anand.

• Viswanathan Anand is an Indian chess grandmaster and a five-time world chess champion.

• He became the first grandmaster from India in 1988.

• In 2022, he was elected the deputy president of FIDE.

Additional Information

• Leander Paes is a retired professional tennis player from India.

• Baichung Bhutia is an Indian former professional footballer who played as a striker.

• Rahul Dravid is a former Indian cricketer and captain of the Indian national team, currently serving as its head coach.

Q91. Answer: (a) Asthenosphere

The correct answer is Asthenosphere.

Key Points

• The asthenosphere is the mechanically weak and ductile region of the upper mantle of Earth.

• The asthenosphere layer of Earth's mantle lies beneath the lithosphere that has enough pressure and heat to allow rocks to flow like a liquid with a viscous, caramel-like consistency.

• It lies below the lithosphere, between approx. 80 and 200 km below the surface.

• The lower boundary of the asthenosphere is not well defined.

Additional Information

• The mesosphere is the third layer of the atmosphere.

• The troposphere is the first and lowest layer of the atmosphere of the Earth.

• The exosphere is the outermost layer of the earth's atmosphere.

Q92. Answer: (a) 1986

The correct answer is 1986.

Key Points

• Pandit Birju Maharaj was an Indian dancer, composer, and singer.

• Pandit Birju Maharaj was honoured with the Padma Vibhushan in 1986.

• He was a descendant of the Maharaj family of Kathak dancers.

• Pandit Birju Maharaj is the face of the Kalka-Bindadin Gharana of Lucknow.

Additional Information

• The Padma Vibhushan is the second-highest civilian award of the Republic of India.

• The award is given for "exceptional and distinguished service".

• Padma Awards 2022: Yoga Guru Swami Sivananda, Ghulam Nabi Azad among winners.

Q93. Answer: (a) Alkali

The correct answer is Alkali.

Key Points

• An alkali is a basic, ionic salt of an alkali metal.

• An alkali can also be defined as a base that dissolves in water.

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• A solution of a soluble base has a pH greater than 7.0.
• Alkali metals have high thermal and electrical conductivity.

Additional Information

• An alkene is a hydrocarbon containing a carbon-carbon double bond.
• An aldehyde is an organic compound containing.
• An alcoholic drink is a drink that contains ethanol.

Q94. Answer: (c) Rich Like Us

The correct answer is Rich Like Us.

Key Points

• Rich Like Us is a historical and political fiction novel by Nayantara Sahgal.
• It is set in the background of life in New Delhi after the declaration of Emergency in the 1970's.
• Nayantara Sahgal is an Indian writer who writes in English.
• She is a member of the Nehru-Gandhi family.

Additional Information

• Such a Long Journey is a 1991 novel by Rohinton Mistry.
• The Heart Has its Reasons dwells on the fine balance between love and family.
• The House of Blue Mangoes narrates the story of the Neelam Illam.

Q95. Answer: (c) Deep sea plains

The correct answer is Deep sea plains.

Key Points

• Deep sea plains of the ocean layer are the flattest and smoothest in the world.
• An abyssal plain is an underwater plain on the deep ocean floor.
• Usually found at depths between 3,000 metres and 6000 metres.
• Lying generally between the foot of a continental rise and a mid-ocean ridge.

Additional Information

• Ocean trenches are long, narrow depressions on the seafloor.
• Continental slopes are temporary depositional sites for sediments.
• A continental shelf is the edge of a continent that lies under the ocean.

Q96. Answer: (b) Santoor

The correct answer is Santoor.

• Pandit Shiv Kumar Sharma was an Indian classical musician and santoor player.
• The Indian santoor instrument is a trapezoid-shaped hammered dulcimer and a variation of the Iranian Santoor.
• The instrument is generally made of walnut and has 25 bridges.
• The violin is sometimes known as a fiddle.
• The kanjira is a South Indian frame drum.
• In the ancient texts, Narada is credited with inventing the Veena.

Q97. Answer: (a) A, B and C

The correct answer is A, B, and C.

Key Points

• Money has taken many forms through the ages, but money consistently has three functions: store of value, unit of account, and medium of exchange.
• The most important function of money is that it serves as a medium of exchange.
• In a barter economy, it was difficult to exchange goods since the exchange in a barter system required a double coincidence of wants.

Additional Information

• Medium of exchange and measure of value are the two primary functions of money.
• Money helps in maximizing consumers.
• It helps and promotes saving.

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Q98. Answer: (c) Ruskin Bond

The correct answer is Ruskin Bond.

Key Points

• The Blue Umbrella is a 1980 Indian novel written by Ruskin Bond.

• It was adapted into a 2005 Hindi film by the same name which later won the National Film Award for Best Children's Film.

• A prolific Anglo-Indian writer in English, Ruskin Bond has written novels, short stories, non-fictional pieces and essays for children.

Additional Information

• Vikram Seth CBE, FRSL is an Indian novelist and poet.

• Aravind Adiga is an Indian writer and journalist.

• Devdutt Pattanaik is a mythologist from Mumbai, India.

Q99. Answer: (d) bansuri

The correct answer is Bansuri.

Key Points

• Pannalal Ghosh was a disciple of Allauddin Khan, and is credited with popularizing the flute as a concert instrument in Hindustani classical music.

• A bansuri is an ancient side-blown flute originating from the Indian subcontinent.

• Panna babu, he explains, pioneered the bansuri as a classical instrument.

Additional Information

• The sitar was invented in medieval India.

• The sarod, with almost the identical roundish belly of the Seniya rabab.

• A tabla is a pair of twin hand drums from the Indian subcontinent.

Q100. Answer: (d) India

The correct answer is India.

Key Points

• The Indian men’s team won the bronze medal in their event at the Asian Table Tennis Championships 2021 in Doha, Qatar after a 3-0 loss to top seeds South Korea in the semi-finals.

• The bronze medal-winning Indian team comprised of Sathiyan Gnanasekaran, Sharath Kamal, Harmeet Desai, Sanil Shetty, and Manav Thakkar.

Additional Information

• The Indian women’s team of Sutirtha Mukherjee, Archana Girish Kamath and Sreeja Akula secured a fifth-place finish with a 3-1 win over Thailand in the playoff.

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