SSC CHSL Tier-1 2022: Official Paper (Held On: 10 March, 2023 Shift 3) (Previous Year Paper)

SSC Combined Higher Secondary Level (CHSL) • 2022 • 100 questions • 60 minutes • Answer key and solutions

Take this paper as a timed mock test

Practise under exam conditions, then review your answers after you submit.

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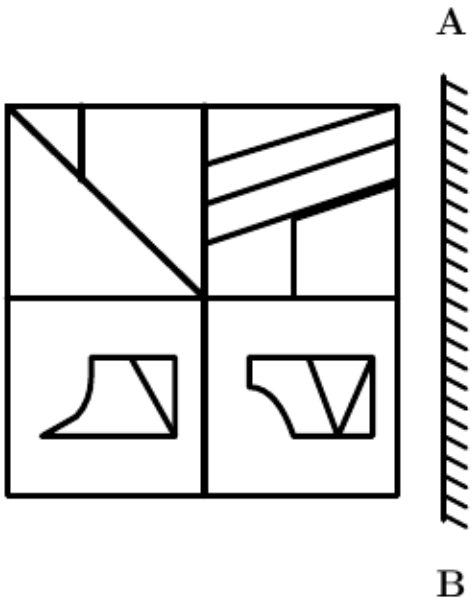
ENGLISH LANGUAGE

Q1. In the following question, four number pairs are given. In each pair the number on left side of(–) is related to the number of the right side of(–) with some Logic/Rule /Relation. Three pairs are similar on basis of same Logic/Rule/Relation. Select the odd one out from the given alternatives.

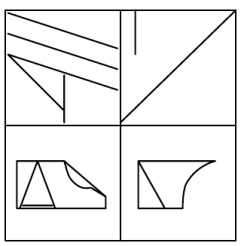
(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g.13 – Operations on 13 such as adding /subtracting /multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and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

(a) 3846 – 4856
(b) 4892 – 5902
(c) 4328 – 5348
(d) 3264 – 4274

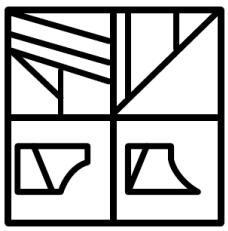
Q2. If a mirror is placed on the line AB, then out of the option figures which figure will be the right image of the question figure?



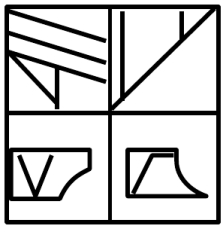
(a)



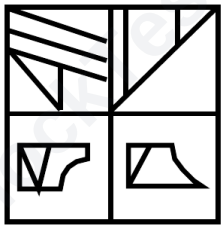
(b)



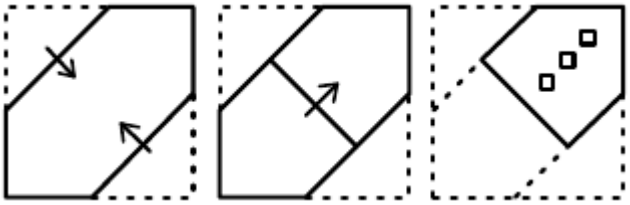
(c)



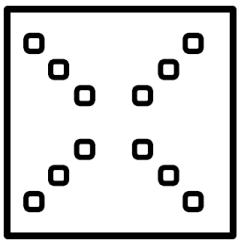
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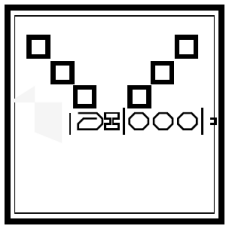
Q3. The sequence of folding a piece of paper and the manner in which the folded paper has been cut is shown in the following figures. How would this paper look when unfolded?



(a)

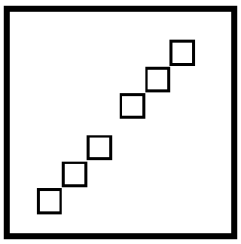


(b)

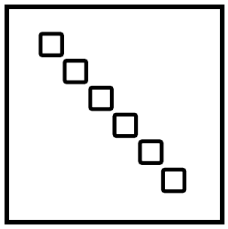


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(c)



(d)



Q4. In a certain code language, 'WENT' is coded as '2769', 'CORN' is coded as '8941', 'TIRE' is coded as '4652', 'OATS' is coded as '2380'. What is the code for 'OAI' in that code language?

(a) 905
(b) 836
(c) 935
(d) 835

Q5. By Interchanging the given two numbers (Not digits) which of the following equation will be correct?

4 and 6

(a) 18 × 7 ÷ 6 – 4 = 17
(b) 4 + 6 × 2 – 3 = 9
(c) 6 ÷ 2 – 4 × 3 = –16
(d) 6 ÷ 3 + 9 – 4 = 7

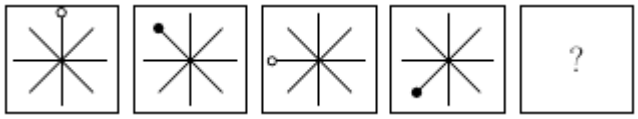
Q6. Select the option in which the numbers share the same relationship in set as that shared by the numbers in the given sets. (NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g.13 – Operations on 13 such as adding /subtracting /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)

(58, 29, 174)

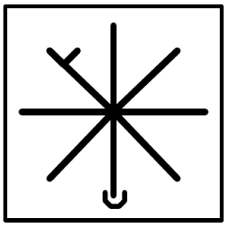
(62, 33, 190)

(a) (68, 43, 140)
(b) (44, 17, 172)
(c) (52, 13, 244)
(d) (74, 31, 210)

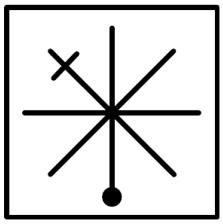
Q7. Select the figure from the given options that can replace the question mark (?) in the following series.



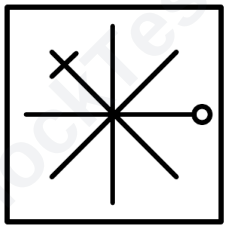
(a)



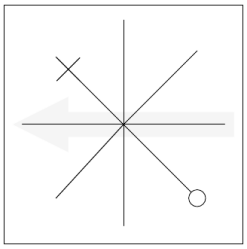
(b)



(c)



(d)



Q8. Pointing to the photograph of a man, Mohan said, "He is the brother of my mother's husband". How is the man related to Mohan?

(a) Father in law
(b) Nephew
(c) Son
(d) Uncle

Q9. Select the option that is related to the fourth number in the same way as the first number is related to the second number and fifth number is related to sixth number.

12 : 216 :: ? : 729 :: 24 : 1728

(a) 12
(b) 16
(c) 18
(d) 9

Q10. In the given word pairs, the first word is related to the second word following a certain logic. Study the given pairs carefully, and from the given options, select the pair that follows the same logic.

Asthma : Lungs

(a) Arthritis : Heart
(b) Liver : Anxiety
(c) Conjunctivitis : Ears

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(d) Cataract : Eyes

Q11. Select the correct option that indicates the arrangement of the given words in the order in which they appear in an English dictionary.

1. Conclude
2. Constitution
3. Connect
4. Consent
5. Consign

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

Q12. Words given on the left side of (::) are related with each other by some Logic/Rule /Relation. Select the missing word/word pair on the right side of (::) from the given alternatives based on the same Logic/Rule/Relation.

Chapter : Book :: Seat belt : ?

(a) Circle
(b) Blade
(c) Car
(d) Sew

Q13. In the following question, select the related letters from the given alternatives.

ZM : XK :: YL : ?

(a) YJ
(b) RJ
(c) WJ
(d) XJ

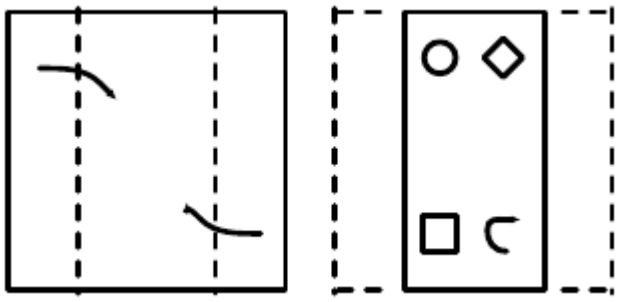
Q14. Select the option in which the numbers share the same relationship in set as that shared by the numbers in the given set. (NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g.13 – Operations on 13 such as adding /subtracting /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)

(38, 172, 314)

(42, 176, 318)

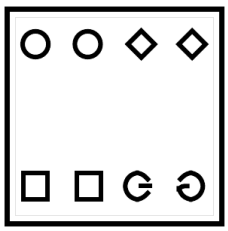
(a) (56, 190, 330)
(b) (12, 136, 278)
(c) (18, 152, 294)
(d) (32, 166, 318)

Q15. A piece of paper is folded and punched as shown below in the question figures. From the given answer figures, indicate how it will appear when opened?

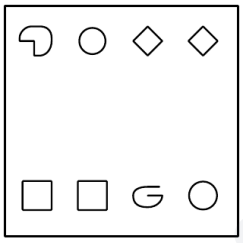


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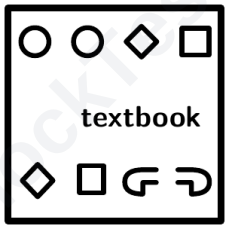
(a)



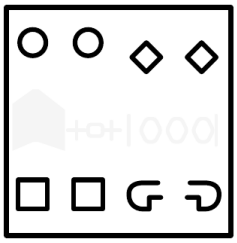
(b)



(c)



(d)

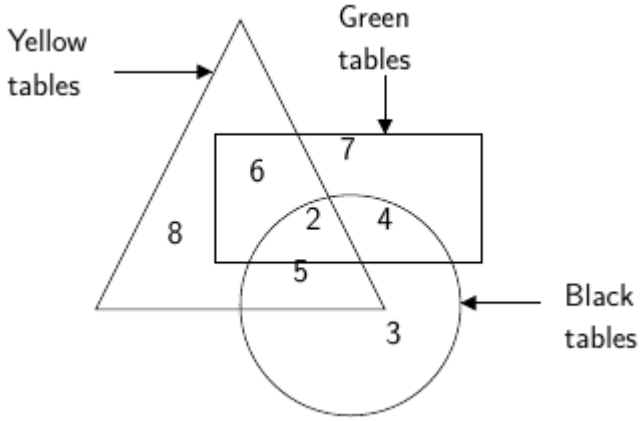


Q16. Select the combination of letters that when sequentially placed in the blanks of the given series will complete the series.

_ bc _ efa _ cd _ fa _ c _ ef _ bc _ ef

(a) abbebdad
(b) adbebbad
(c) adbebdad
(d) addebdad

Q17. How many black tables are there?



(a) 9
(b) 8
(c) 7
(d) 14

Q18. In a certain code language, ‘ENDED’ is coded as ‘GRJMN’. What is the code for ‘PLAYS’ in that code language?
(a) RPFFC
(b) RPGGC
(c) RPGGD
(d) RDGFC

Q19. In the following question some statements are given, followed by some conclusions based on those statements. Taking the given statements to be true even if they seemto be at variance from commonly known facts. Read all the conclusions and then decide which of the given conclusion logically follows the given statements.

Statements:

I. No J is R

II. No R is C.

Conclusions:

I. All J are C.

II. Some R are J.

III. All C are R.

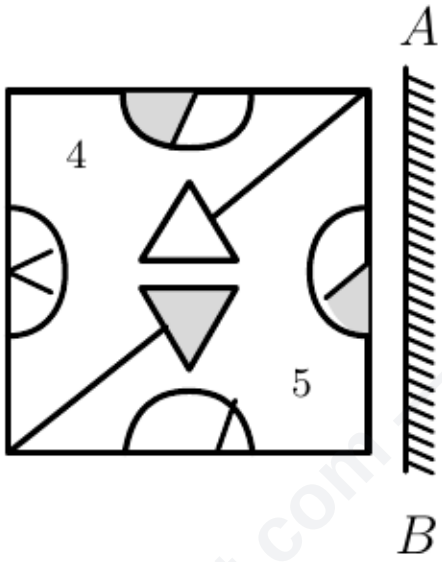
(a) Only conclusion I follows
(b) Only conclusion III follows
(c) Only conclusion II follows
(d) None of the conclusion follows

Q20. Three of the following words are alike in a certain way and one is different. Pick the word that is different from the rest.
(a) Geology
(b) Neurology
(c) Dermatology
(d) Gynaecology

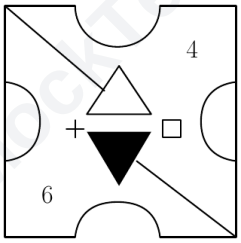
Q21. In the following question, select the odd letter/letters from the given alternatives.
(a) JJLP
(b) DDFK
(c) TTVZ
(d) RRTX

Q22. If a mirror is placed on the line AB, then out of the option figures which figure will be the right image of the question figure?

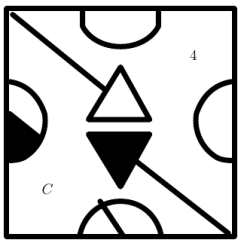
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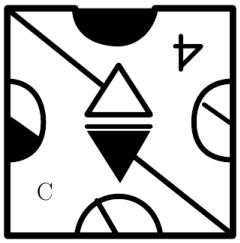
(a)



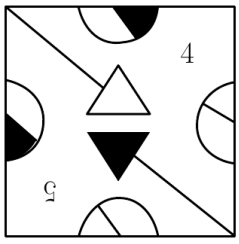
(b)



(c)



(d)

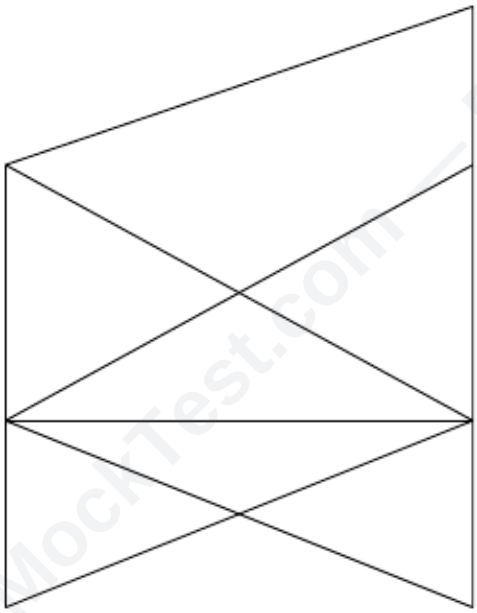


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Q23. If 40 @ 2 # 3 = 83 and 60 @ 2 # 5 = 125, then 39 # 13 @ 5 = ?

(a) 122
(b) 114
(c) 138
(d) 104

Q24. How many triangles are there in the given figure?



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

Q25. In the following question, select the missing number from the given series.

61, 88, 142, 223, 331, ?

(a) 466
(b) 468
(c) 472
(d) 476

GENERAL INTELLIGENCE

Q26. Which article of the Indian constitution is related with the Separation of judiciary from executive?

(a) 41
(b) 51
(c) 40
(d) 50

Q27. World Bank approved USD 350 million aid in May 2022 for the “Systems Reform Endeavors for Transformed Health Achievement” (SRESTHA) for _____ state in India.

(a) Gujarat
(b) Punjab
(c) Himachal Pradesh
(d) Bihar

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Q28. The _____ of a ray is the angle measured from the reflected ray to the normal surface.

(a) Angle of Diffusion
(b) Angle of Reflection
(c) Angle of Incidence
(d) Angle of Refraction

Q29. _____ won the Japanese Formula 1 Grand Prix 2022.

(a) Charles Leclerc
(b) Sergio Perez
(c) Max Verstappen
(d) Carlos Sainz Jr.

Q30. Which city existed in the Indus valley civilization?

(a) Dwarka
(b) Harappa
(c) Sanchi
(d) Muziris

Q31. The JALDOOT application launched in September 2022 is used by Gram Rojgar Sahyak to measure _____.

(a) Rainfall
(b) water level in well
(c) crop yield
(d) Humidity

Q32. In which year was the Arms Act passed in India?

(a) 1951
(b) 1955
(c) 1959
(d) 1964

Q33. _____ is the key circuit board holding the essential processing parts of a computer.

(a) Firmware
(b) Central Processing Unit
(c) Random Access Memory
(d) Motherboard

Q34. Which is the highest plateau in the world?

(a) East African Plateau
(b) Deccan plateau
(c) Western plateau
(d) Tibet plateau

Q35. Which of the following is not a regional name for East Coast (or part of it) of India?

(a) Coromandel Coast
(b) Tamil Nadu coast
(c) Utkal coast
(d) Malabar Coast

Q36. _____ is an ancient martial art that originated in peninsular India as a part of military training for warriors.

(a) Gatka
(b) Muay Thai
(c) Kalaripayattu
(d) Karate

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Q37. In October 2022, which among the following substances was mapped in abundance for the first time, by Chandrayaan-2, on moon?

(a) Hydrogen
(b) Chlorine
(c) Oxygen
(d) Sodium

Q38. Davis Cup is related with which of the following sports?

(a) Table Tennis
(b) Cricket
(c) Basketball
(d) Tennis

Q39. Who wrote the famous novel "Durgeshnandini"?

(a) Rabindranath Tagore
(b) Ishwar Chandra Vidyasagar
(c) Bankim Chandra Chatterjee
(d) Sarat Chandra Chattopadhyay

Q40. Which among the following is correct about Reverse Repo Rate?

(a) Reverse Repo Rate is a state in which the Value of Money is Falling and the Prices are rising, over a period of time.
(b) When bank deposit it's excess money in RBI then RBI provides some interest to that bank. This interest is known as Reverse Repo Rate.
(c) When RBI provides a loan to the bank for short-term between 1 to 90 days, RBI takes some interest from the bank which is termed as Reverse Repo Rate.
(d) When the money is borrowed or lent for more than a day up to 14 days it is called Reverse Repo Rate.

Q41. The plains from Ambala to the Sunderban stretch over nearly 1800 km, but the fall in its slope is hardly _____ metres.

(a) 550
(b) 300
(c) 600
(d) 450

Q42. In which of the following modes of data transmission, can the data flow in both directions but in only one direction at a time?

(a) Half-duplex
(b) Simplex
(c) Full-duplex
(d) Quarter-duplex

Q43. Which is the highest peak in the Himalayas in India?

(a) Kanchenjunga
(b) Nanga Parbat
(c) Nanda Devi
(d) Namcha Barwa

Q44. In October 2022, according to UN Multidimensional Poverty Index (MPI), which country has the largest number of poor people worldwide?

(a) Nigeria
(b) Indonesia
(c) Pakistan
(d) India

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Q45. Neelima performs Kalbeliya dance form. Which state does this dance form belong to?

(a) Punjab
(b) Rajasthan
(c) Uttarakhand
(d) Odisha

Q46. Which of the following music instruments are solid instruments?

(a) Tata Vadya
(b) Ghana Vadya
(c) Avanaddha Vadya
(d) Sushira Vadya

Q47. Pradhan Mantri Jan Arogya Yojana (PM-JAY) is the ambitious program launched by Government of India in 2018 to provide _____ access to the most vulnerable sections.

(a) healthcare
(b) services
(c) agricultural
(d) industrial

Q48. A ball possesses 3000 units of momentum. What would be the ball's new momentum if its velocity was doubled?

(a) 3000 units
(b) 6000 units
(c) 20000 units
(d) 9000 units

Q49. Who among the following appointed Aziz Khummar a wine distiller to high administrative post?

(a) Alauddin Khalji
(b) Muhammad Tughluq
(c) Jalaluddin Khalji
(d) Firuz Shah Tughluq

Q50. Which among the following is a bacterial disease?

(a) Rabies
(b) Leprosy
(c) Malaria
(d) Ebola

QUANTITATIVE APTITUDE

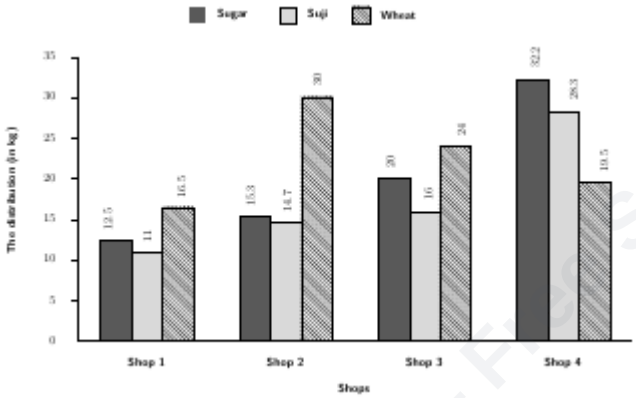
Q51. P alone can complete a piece of work in 10 days while Q alone can complete the same piece of work in 15 days. To complete the work in 4 days, R is hired by P and Q. How many days does R take to complete the work alone?

(a) 6 days
(b) 8 days
(c) 9 days
(d) 12 days

Q52. The following bar graph shows the distribution (in kg) of Sugar, Wheat and Suji, sold by four shops 1,2,3 and 4, on 1st September 2021.

The quantity of wheat sold by shop 1, shop 3 and shop 4 together is what percentage of the total sugar sold by all 4 shops?

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(a) 75%
(b) 65%
(c) 68%
(d) 72%

Q53. If θ = 45 degree, then what is the value of 2 cosec^2 θ + 3 $\sec^2$ θ ?

(a) 10
(b) 5
(c) 9
(d) 8

Q54. The table given below shows the salary of 6 employees of a company.

Employees	Salary
L	350
M	800
N	500
O	400
P	600
Q	450

What is the ratio of salary of L and M together to the salary of P and Q together?

(a) 23 : 21
(b) 17 : 18
(c) 4 : 23
(d) 23 : 19

Q55. Of the 5 subjects, the average marks of Rakesh in first 3 subjects was 75 and the average marks in the last 3 subjects was 82. If his marks in the third subject was 66, then what was his average marks in all the 5 subjects?

(a) 76
(b) 84
(c) 80
(d) 81

Q56. The sum of three consecutive even numbers is 126. What is the product of the smallest and the largest numbers?

(a) 1840
(b) 1950
(c) 1760
(d) 1620

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Q57. Sides of a triangle are 12 cm, 9 cm and 9 cm. What is the radius of the circumcircle of this triangle?

(a) 181/√5
(b) 27/√5
(c) (27√5)/10
(d) 54/√5

Q58. Three circles of radius 7 cm are placed in such a way that each circle touches the other two. What will be the area of the portion enclosed by these three circles?

(a) 49√3 - 77 cm²
(b) 40√3 - 66 cm²
(c) 50√3 - 66 cm²
(d) 55√3 - 77 cm²

Q59. The profit earned by selling a jacket for Rs. 9610 is equal to the loss incurred by selling the same jacket for Rs. 7690. What should be the selling price of the jacket to earn 10 percent profit?

(a) Rs. 9256
(b) Rs. 9275
(c) Rs. 9416
(d) Rs. 9515

Q60. The weight of Ayush and Abhishek are in the ratio of 8 : 5. Abhishek's weight increases by 40 percent and the total weight of Ayush and Abhishek both increase by 60 percent. If the total weight becomes 104 kg, then what is the weight of Ayush after the increment?

(a) 60 kg
(b) 75 kg
(c) 69 kg
(d) 72 kg

Q61. If $((15)^3+(4)^3)/(15^2+4^2-k)=19$, then what is the value of K?

(a) -60
(b) 120
(c) 60
(d) -120

Q62. Which of the following is the smallest among (14)^(1/3),(12)^(1/2),(16)^(1/6) & (25)^(1/12) ?

(a) (14)^(1/3)
(b) (25)^(1/12)
(c) (16)^(1/6)
(d) (12)^(1/2)

Q63. In a mixture, milk and water are in ratio of 1 : 4. Some milk is added to the mixture because of which ratio of milk and water becomes 2 : 1. How much milk was added as a percentage of initial mixture?

(a) 140 percent
(b) 700 percent
(c) 240 percent
(d) 400 percent

Q64. The marked price of an article is 20 percent more than its cost price. What maximum discount percentage can be offered by the shopkeeper to sell his article so that there is no loss?

(a) 16.67 percent
(b) 12.56 percent
(c) 15.33 percent
(d) 13.33 percent

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Q65. If $x^2+1/(x^2)=38$, then what is the value of $x-1/x$?

(a) 6
(b) 7
(c) 8
(d) 10

Q66. What is the value of an angle subtended by a chord at the centre of the circle, if the angle subtended by this chord at the circumference is 66° ?

(a) 90°
(b) 66°
(c) 132°
(d) 33°

Q67. If $a + b + c = 0$, then what is the value of $a^3 + b^3 + c^3$?

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

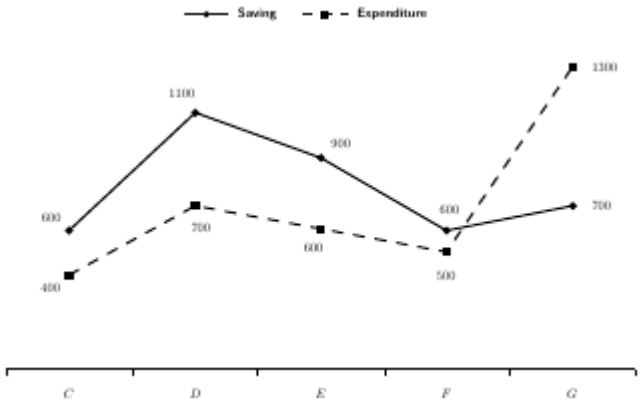
Q68. If $\sin\theta = \sqrt{3}\cos\theta$, then what is the value of $(3\sin^2\theta + \cos\theta)/(2\cos\theta + 5)$?

(a) 19/25
(b) 18/5
(c) 11/24
(d) 3/2

Q69. If $\sin(C + D) = \sqrt{3}/2$ and $\sec(C - D) = 2/\sqrt{3}$ then what is the value of C and D?

(a) 45 degree and 15 degree
(b) 30 degree and 30 degree
(c) 15 degree and 30 degree
(d) 60 degree and 30 degree

Q70. The line chart given below shows the saving and expenditure of 5 companies C, D, E, F and G.



Income = Saving + Expenditure

What is the ratio of total expenditure to the total incomes of all the companies?

(a) 31 : 71
(b) 74 : 35
(c) 71 : 31
(d) 35 : 74

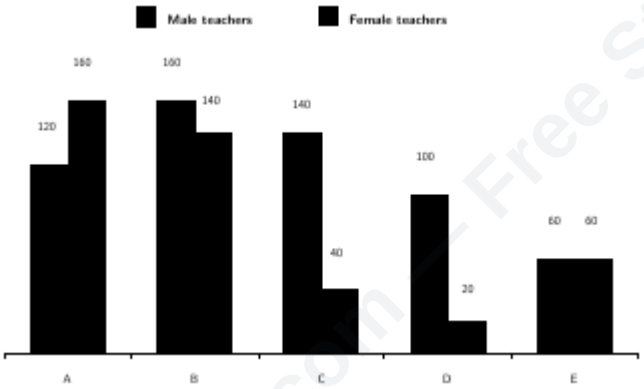
Q71. Nutan gets two offers of loan from a bank and an app. The app offered Rs. 10,000 at 15 Percent per annum compounded annually for 2 years and the bank offered the same amount at the same rate and for the same time but on simple interest. Find the difference between the interests.

(a) Rs. 375

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(b) Rs. 400
(c) Rs. 250
(d) Rs. 225

Q72. The bar graph given below shows the number of male teacher and female teachers in 5 schools.



K1 = The total number of male teachers in all the 5 schools.
K2 = The total number of female teachers in all the 5 schools.
What is the value of (K1 - K2)?

(a) 160
(b) 140
(c) 180
(d) 200

Q73. The length of the direct common tangent is 24 cm for two circles whose radii are 16 cm and 6 cm. What is the distance between their centres?

(a) 26 cm
(b) 23 cm
(c) 28 cm
(d) 32 cm

Q74. Radius of a circle is 18 cm. Angle made by chord AB at the centre of this circle is 60 degree. What is the length of this chord?

(a) 36 cm
(b) 18 cm
(c) 27 cm
(d) 9 cm

Q75. Vivek starts moving at the speed of 70 km/hr at 8 : 00 am. Neeraj starts moving in the same direction after 4 hours of Vivek at the speed of 120 km/hr. Which of the following statement(s) is/are correct?

I. Neeraj and Vivek meet each other at 5 : 36 pm.

II. Total distance covered by both Neeraj and Vivek till 4 pm is 1080 km.

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

GENERAL AWARENESS

Q76. Select the most appropriate meaning of the given idiom.

Ace in the hole

(a) To create noisy disturbances so that competitors are unable to work.
(b) A major advantage that one keeps hidden until an ideal time.

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(c) To attempt to do the impossible.
(d) To suffer an injury on the lower body.

Q77. Choose the word that means the same as the given word.

Calibrate

(a) Gauze
(b) Assail
(c) Gauge
(d) Affront

Q78. Fill in the blank with an appropriate option.

The social _____ is going to meet with all of us tomorrow with the plans so we can make a decision.

(a) army
(b) worker
(c) toddler
(d) labour

Q79. Parts of the following sentence are given as options. Identify the part that contains a grammatical error. If there is no error, select 'No error'.

He has been / told many a times to / mind his manners.

(a) No error
(b) He has been
(c) told many a times to
(d) mind his manners.

Q80. Fill in the blank with an appropriate option.

In humans, lack of sleep leads to _____ memory and reduced cognitive abilities.

(a) attended
(b) impaired
(c) thankless
(d) witnessed

Q81. The given sentence is in active voice. Change the voice of the sentence. Select the correct option from the sentences given in options.

The story explores the conflicting range of human emotions.

(a) The conflicting range of human emotions had explored by the story.
(b) The conflicting range of human emotions did explored by the story.
(c) The conflicting range of human emotions is explored by the story.
(d) The conflicting range of human emotions has explored by the story.

Q82. Some parts of one or more sentences have been jumbled up, and labelled A, B, C and D. Select the option that gives the correct sequence in which these parts can be rearranged to form a meaningful and grammatically correct sentence.

At Paris, just after dark

A. of meditation and a meerschaum, in company

B. one gusty evening in the autumn

C. of 18, I was enjoying the twofold luxury

D. with my friend Auguste Dupin, in his little back library

(a) CDBA
(b) ADBC
(c) BCAD
(d) DCBA

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Q83. Find the part of the given sentence that has an error in it. If there is no error, choose 'No error'.

I just don't like the themes of todays music.

(a) No error
(b) I just don't
(c) like the themes of
(d) todays music.

Q84. Select the most appropriate one-word substitution for the given group of words.

A man who is womanish in his habits

(a) Effeminate
(b) Indictment
(c) Hooch
(d) Infidel

Q85. Rearrange the parts of the sentence in correct order.

P. more stringent mobility control and physical distancing policies

Q. East Asian governments (except for Japan) implemented

R. as well as more comprehensive testing, tracing

S. and isolation policies since the early stages

(a) PSRQ
(b) QPRS
(c) PRSQ
(d) QSPR

Q86. In the following question, out of the given four alternatives, select the alternative which best expresses the meaning of the Idiom/Phrase.

Over and above

(a) Above all
(b) To sum up the conversation
(c) In addition to
(d) Highest rank

Q87. Fill in the blank with an appropriate option.

In this engineering design project you will learn how to build an infinity mirror, with built-in lights that make the mirror look like a deep _____ with no end.

(a) tunnel
(b) lodge
(c) funeral
(d) signal

Q88. Choose the word that can substitute the given group of words.

Book giving information about everything

(a) Dictionary
(b) Encyclopedia
(c) Phonebook
(d) Thesis

Q89. Select the word that is closest in meaning to the word given below.

Whimsical

(a) Weak
(b) Respectful
(c) Humiliated
(d) Funny

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Q90. Choose the word that means the same as the given word.

Instigate

(a) Deterrence
(b) Settle
(c) Raise
(d) Complaisance

Q91. Choose the word that is opposite in meaning to the given word.

Inept

(a) Wanting
(b) Competent
(c) Barred
(d) Callow

Q92. Choose the incorrectly spelt word.

(a) Practical
(b) Glowing
(c) Released
(d) Frighter

Q93. Choose the sentence with no spelling error.

(a) The joy definitely lies in cooking for others.
(b) The joy definitely lyes in cooking for others.
(c) The joy defintely lies in cooking for others.
(d) The joy definitely lies in cokking for others.

Q94. Choose the word that can substitute the given group of words.

A lover of oneself, of one's advancement

(a) Philistine
(b) Mercenary
(c) Cynic
(d) Egoist

Q95. Select the correct indirect form of the given sentence.

Gloria said, "His relatives are landing tomorrow."

(a) Gloria said that his relatives are landing the next day.
(b) Gloria said that his relatives were landing the previous day.
(c) Gloria said that his relatives were landing the next day.
(d) Gloria said that his relatives have been landing the next day.

Directions

In the following passage some of the words have been deleted. Read the passage carefully and select the correct answer for the given blank out of the four alternatives.

People may seek fashion as part of (1) ____ they are and may want to be a fashion lover, which may lead them to spend more time (2) __ out the latest fashion trends and more money than others on fashion products. We all know the good feeling that goes (3) __ walking out of a store with a new shade of lipstick or after ordering a killer pair of boots online. They call it retail therapy for a reason, and more than one scientific study has (4) __ its effectiveness. Shopping takes time and concentration, whether it is being done online (5) ____ in your favourite store.

Q96. Select the most appropriate option to fill in blank number 1.

(a) which
(b) whom
(c) whose
(d) who

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Q97. Select the most appropriate option to fill in blank number 2.

(a) freaking
(b) seeking
(c) doing
(d) making

Q98. Select the most appropriate option to fill in blank number 3.

(a) off in
(b) within
(c) up in
(d) along with

Q99. Select the most appropriate option to fill in blank number 4.

(a) held back
(b) summed up
(c) backed up
(d) sold on

Q100. Select the most appropriate option to fill in blank number 5.

(a) if
(b) and
(c) or
(d) so

ANSWER KEY

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

SOLUTIONS

Q1. Answer: (c) 4328 – 5348

The logic followed here is:

Option 1) 3846 – 4856 = -1010

Option 2) 4892 – 5902 = -1010

Option 3) 4328 – 5348 = -1020

Option 4) 3264 – 4274 = -1010

So, 'Option 3" is odd among the given option.

Hence, the correct answer is "Option 3".

Mistake PointsIn the options, you have given pairs and you need to find the difference of the numbers given. All the pairs would have similar difference except the one which is option 3rd.

So, option 3rd will be the correct answer.

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Q2. Answer: (c) [figure]

The correct mirror image of the given figure when the mirror is placed at line AB will be:

Hence, "Option 3" is the correct answer.

Q3. Answer: (c) [figure]

The paper when unfolded will appear as shown below:

Hence, 'option 3' is the correct answer.

Q4. Answer: (d) 835

Given:

‘WENT’ is coded as ‘2769’,

‘CORN’ is coded as ‘8941’,

‘TIRE’ is coded as ‘4652’,

‘OATS’ is coded as ‘2380’,

Here,

'O' is coded as '8'.

'I' is coded as '5'.

either 'A' or 'S' is coded as '3' or '0'.

'T' is coded as '2'.

'E' is coded as '6'.

'R' is coded as '4'.

'N' is coded as '9'.

'W' is coded as '7'.

'C' is coded as '1'.

So, according to the options 'OAI' will be coded as '835'.

Hence, the correct answer is "Option 4".

Q5. Answer: (c) 6 ÷ 2 – 4 × 3 = –16

BODMAS Table:

Given: By Interchanging '4 and 6' and checking the option:

Option 1) 18 × 7 ÷ 6 – 4 = 17

After interchanging '4 and 6':

=> 18 × 7 ÷ 4 – 6 = 17

=> 18 × 1.75 – 6 = 17

=> 31.5 – 6 = 17

=> 25.5 ≠ 17.

Option 2) 4 + 6 × 2 – 3 = 9

After interchanging '4 and 6':

=> 6 + 4 × 2 – 3 = 9

=> 6 + 8 – 3 = 9

=> 14 - 3 = 9

=> 11 ≠ 9.

Option 3) 6 ÷ 2 – 4 × 3 = –16

After interchanging '4 and 6':

=> 4 ÷ 2 – 6 × 3 = –16

=> 2 – 6 × 3 = –16

=> 2 – (-18) = –16

=> -16 = -16.

L.H.S = R.H.S

Option 4) 6 ÷ 3 + 9 – 4 = 7

After interchanging '4 and 6':

=> 4 ÷ 3 + 9 – 6 = 7

=> 1.33 + 9 – 6 = 7

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=> 10.33 – 6 = 7

=> 4.33 ≠ 7.

Hence, the correct answer is "Option 3".

Q6. Answer: (d) (74, 31, 210)

The logic followed here is:

Logic: (1st number + 2nd number) × 2 = 3rd number.

Now,

(58, 29, 174)

→ (58 + 29) × 2

→ 87 × 2 = 174.

(62, 33, 190)

→ (62 + 33) × 2

→ 95 × 2 = 190.

Similarly, for (74, 31, 210)

→ (74 + 31) × 2

→ 105 × 2 = 210.

Hence, the correct answer is "Option 4".

Q7. Answer: (a) [figure]

The logic followed here is:

Step I: The small crossed line is shifted two places in clockwise direction.

Step II: The circle has been shaded in alternate figure.

Step III: The circles are shifted one place in anticlockwise direction.

Hence, the correct answer is "Option 1".

Q8. Answer: (d) Uncle

Family Chart:

Given:

Pointing to the photograph of a man, Mohan said, "He is the brother of my mother's husband".

So, The man is Uncle of Mohan.

Hence, the correct answer is "Option 4".

Q9. Answer: (c) 18

The logic followed here is:

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

Now,

12 : 216

→ (12 ÷ 2)^3 = 6^3 = 216.

24 : 1728

→ (24 ÷ 2)3 = 123 = 1728.

Similarly, for 18 : 729

→ (18 ÷ 2)3 = 93 = 729.

Hence, the correct answer is "Option 3".

Q10. Answer: (d) Cataract : Eyes

The pattern followed here is:

Asthma : Lungs → Asthma is a disease that affects the Lungs.

Similarly,

Cataract : Eyes → A Cataract is a clouding of the lens in the eye that affects vision, thus a condition that affects the Eyes.

Hence, the correct answer is "Option 4".

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Q11. Answer: (c) 1, 3, 4, 5, 2

The correct order of the words as they would appear in the English dictionary will be:

1. Conclude
3. Connect
4. Consent
5. Consign
2. Constitution

So, The correct order is '1, 3, 4, 5, 2'.

Hence, the correct answer is "Option 3".

Q12. Answer: (c) Car

The pattern followed here is:

Chapter : Book → A Chapter is part of a Book.

Similarly,

Seat belt : Car → A Seat belt is part of a Car..

Hence, the correct answer is "Option 3".

Q13. Answer: (c) WJ

The logic followed here is:-

ZM : XK

Similarly, YL : ?

Hence, the correct answer is "Option 3".

Q14. Answer: (c) (18, 152, 294)

The logic followed here is:

Logic: (2nd number × 2) - 1st number + 8 = 3rd number.

Now,

For, (38, 172, 314)

=> (172 × 2) - 38 + 8

=> 344 - 38 + 8

=> 352 - 38 = 314.

For, (42, 176, 318)

=> (176 × 2) - 42 + 8

=> 352 - 42 + 8

=> 360 - 42 = 318.

Similarly, for (18, 152, 294)

=> (152 × 2) - 18 + 8

=> 304 - 18 + 8

=> 312 - 18 = 294.

Hence, the correct answer is "Option 3".

Q15. Answer: (d) [figure]

The paper when unfolded will appear as shown below:

Hence, 'option 4' is the correct answer.

Q16. Answer: (c) adbebdad

The logic followed here is:

Given Sequence: _ bc _ efa _ cd _ fa _ c _ ef _ bc _ ef

Now, putting the letters in the blank spaces given in the option one by one:

Option 1) abbebdad → abcbef / abcdef / abcdef / abcdef

Option 2) adbebbad → abcdef / abcdef / abcbef / abcdef

Option 3) adbebdad → abcdef / abcdef / abcdef / abcdef

Here, 'Option 3' followed a pattern.

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Option 4) addebdad → abcdef / adcdef / abcdef / abcdef
Hence, the correct answer is "Option 3".

Q17. Answer: (d) 14

According to the given Venn diagram:
The shaded area shows the "total number of black tables".
So, the total number of black tables are = 2 + 4 + 5 + 3 = 14,
Hence, the correct answer is "14".

Q18. Answer: (b) RPGGC

The logic followed here is:
'ENDED' is coded as 'GRJMN',
Similarly, for 'PLAYS'
So, 'PLAYS' is coded as 'RPGGC'.
Hence, the correct answer is "Option 2".

Q19. Answer: (d) None of the conclusion follows

Given Statements:
I. No J is R
II. No R is C.
The least possible Venn diagram for the given statement is:
I. All J are C - False (No definite relation given between J and C, so it can be possible only).
II. Some R are J - False (Because No R and C).
III. All C are R - False (Because No R and C).
So, None of the conclusion follows.
Hence, the correct answer is "Option 4".

Q20. Answer: (a) Geology

The logic followed here is:
Option 1) Geology → Study of the earth's solid material and structures.
Option 2) Neurology → Study of the nervous system.
Option 3) Dermatology → Study of skin and its diseases.
Option 4) Gynaecology → Study of the female reproductive system and its diseases.
Here, all the options are branches of medical science,
Geology is study of earth and its structures.
Hence, the correct answer is "Option 1".

Q21. Answer: (b) DDFK

The logic followed here is:
Option 1) JJLP
Option 2) DDFK
Option 3) TTVZ
Option 4) RRTX
So, 'DDFK' is the odd one.
Hence, the correct answer is "Option 2".

Q22. Answer: (b) [figure]

The correct mirror image of the given figure when the mirror is placed at line AB will be:
Hence, "Option 2" is the correct answer.

Q23. Answer: (d) 104

The logic followed here is:
Here,
@ means ×

means +

Now,

For, 40 @ 2 # 3 = 83

=> 40 × 2 + 3 = 83.

For, 60 @ 2 # 5 = 125

=> 60 × 2 + 5 = 125.

For, 39 # 13 @ 5 = ?

=> 39 + 13 × 5

= 39 + 65 = 104.

Hence, the correct answer is "104".

Mistake Points The symbols given in the last term is opposite form the previous Two.

So, calculate it carefully.

Q24. Answer: (d) 16

The triangles are:

So, there are '16' triangles in the given figure.

Hence, the correct answer is "Option 4".

Q25. Answer: (a) 466

The logic followed here is:

So, '466' will complete the series.

Hence, the correct answer is "Option 1".

Q26. Answer: (d) 50

The correct answer is Article-50.

Key Points

• Directive Principles of State Policy

• To separate the judiciary from the executive in the public services of the State (Article 50).

• To promote equal justice and to provide free legal aid to the poor (Article 39 A).

• To organise village panchayats and endow them with the necessary powers and authority to enable them to function as units of self-government (Article 40).

• To secure for all citizens a uniform civil code throughout the country (Article 44).

Additional Information

• Directive Principles of State Policy

• Indian Constitution borrowed the idea of directive principles of state policy from Ireland.

• The makers of the Constitution of India were influenced by the Irish Home Rule Movement and other national movements of Ireland.

• Part IV of the Indian constitution deals with the directive principles of state policy.

• Directive principles of state policy(DPSP) deal with economic and cultural rights.

• Directive Principles of state policy(DPSP) are non-justiciable.

• Directive principles of state policy aimed at the establishment of the welfare state.

Q27. Answer: (a) Gujarat

The correct answer is Gujarat.

Key Points

• The World Bank has sanctioned USD 350 million to Gujarat to implement the Systems Reform Endeavours for Transformed Health Achievement in Gujarat (SHRESTHA-G).

• Under the SHRESTHA-Gujarat project, the government will undertake the initiative to improve the quality of the health system of the state by expanding the health services to the rural and urban people.

Important Points

• The project also focuses to increase the quality of non-communicable and psychiatric services in the state as well as the quality of mother and child nutrition services.

• The five-year total cost of the project will be around USD 500 million which is approximately Rs 3,750 crore.

• Of this, USD 350 billion which is approximately Rs 2,625 crore, will be provided by the World Bank.

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• While Gujarat will spend Rs 1125 crore in five years.

Additional Information

• Gujarat:

• Number of Districts - 33.

• Lok Sabha seats - 26.

• Rajya Sabha seats - 11.

• State Animal - Asiatic lion.

• State Bird - Greater flamingo.

• National Parks - Vansda National Park, Blackbuck National Park, Gir Forest National Park, Marine National Park.

• Dams - Sardar Sarovar Dam(Narmada River), Ukai Dam (Tapti River), Dantiwada Dam (Banas River), Kadana dam (Mahi River), Kamleshwar Dam(Hiran River).

• Registered GI: Agates of Cambay, Kutch Embroidery, Patan Patola.

Q28. Answer: (b) Angle of Reflection

The correct answer is Angle of Reflection.

Key Points

Reflection-

• When the light rays fall on the plane surface and deviate from their path in the same medium or when a ray of light incident on the plane surface is reflected back into the same medium it is termed as Reflection.

• Example - Plane Mirror.

Laws of Refraction:

• The incident ray, the refracted ray, and the normal interface of two transparent media at the point of incidence, all lie in the same plane.

• The ratio of the sine of the angle of incidence to the sine of the angle of refraction is a constant, for the light of a given color and for the given pair of media.

• This law is also known as Snell’s law of refraction.

Explanation:

• When a ray of light is incident normally on the surface it retraces its path after reflection.

Angle of incidence = Angle of reflection = 90°

So, when the light ray is an incident normal to a surface then the reflected ray will be perpendicular to the surface

Additional Information

• For refraction-

• The Normal, Incident ray and Refracted ray lie on the same plane at the point of Incidence.

• For reflection-

• The Normal, Incident ray, reflected ray lie on the same plane at the point of Incidence

Q29. Answer: (c) Max Verstappen

The correct answer is Max Verstappen.

Key Points

• Red Bull's Max Verstappen on 9th Oct 2022 won the Japanese F1 Grand Prix to become world champion for the second successive season.

• Red Bull' Sergio Perez & Ferrari's Charles Leclerc came at the 2nd and 3rd positions respectively.

• It was Verstappen's maiden Japanese GP win.

• Earlier, Sergio Perez had won the Singapore F1 Grand Prix on 2nd Oct 2022.

Additional Information

• List of 2022 F1 Race Winners:

• Singapore F1 Grand Prix: Sergio Perez

• Dutch Formula 1 Grand Prix: Max Verstappen

• Belgian Grand Prix: Max Verstappen

• Hungarian Grand Prix: Max Verstappen

• Bahrain Grand Prix: Charles Leclerc (Ferrari-Monaco)

• Saudi Arabian Grand Prix: Max Verstappen (Red Bull – Netherlands);

• Australian Grand Prix: Charles Leclerc (Ferrari-Monaco).

• Azerbaijan Grand Prix: Max Verstappen
• Canadian Grand Prix: Max Verstappen
• Spanish Grand Prix: Max Verstappen
• British Grand Prix: Carlos Sainz
• Austrian F1 Grand Prix: Charles Leclerc

Q30. Answer: (b) Harappa

The correct answer is Harappa.

Key Points

• Harappan Sites were discovered by Dayaram Sahni in 1921.
• The Indus Civilization marked the beginning of city life and is also known as the Harappan Civilization
• The Indus Valley Civilization was spread from present-day North-East Afghanistan to Pakistan and North-West India.
• This civilization flourished in the river basins of the Ghaggar-Hakra river and the Indus.
• Indus valley civilization is one of the four oldest civilizations in the world.
• It is also known as Harappan Civilization and is well-known for its organized planning based on the grid system.
• John Marshall was the first researcher to use the term, 'Indus Valley Civilization'.
• Indus Valley Civilization spread from the year 2500 – 1750 BC according to radio-carbon dating.
• The most distinctive feature of the Harappan Civilization was its urbanization.
• Moreover, sheep and goats, dogs, humped cattle buffalo, and elephants were domesticated in the Indus Valley Civilization.
• The capital cities are Mohenjodaro and Harappa.
• The port cities are Sutkagendor, Balakot, Lothal, Allahdino, and Kuntasi.
• The Indus valley people were well-acquainted with the use of both cotton and wool.

Additional Information

• Name of the major cities are given below:
• Mohenjodaro (Sind)-It is located on the right bank of the Indus.
• Kalibangan (Rajasthan)-It was on the banks of the river Ghaggar river
• Chanhudaro-It lies on the left bank of the Indus in the south of Mohenjodaro.
• Lothal- It is located at the head of the Gulf of Cambay.
• Surkotada (Gujarat)-It is at the head of the Rann of Kutch.
• Banawali (Haryana)-It was situated on the banks of the now-extinct Sarasvati
• Dholavira (Gujarat)-It excavated is in the Kutch district

Q31. Answer: (b) water level in well

The correct answer is water level in well.

Key Points

• The current web page context reports that the Ministry of Rural Development (MoRD), Government of India launched the JALDOOT App on September 27th, 2022 at Krishi Bhawan, New Delhi.
• The app was developed to capture the water level of selected wells in a village across the country.
• The app will enable Gram Rojgar Sahayak (GRS) to measure the water level of selected wells twice a year (pre-monsoon and post-monsoon).
• In every village, an adequate number of measurements will be taken to ensure that the water level is captured accurately.

Additional Information

Scheme/Policy	Launch Year
Pradhan Mantri Jan Dhan Yojana (PMJDY)	2014
Swachh Bharat Mission	2014
Pradhan Mantri Ujjwala Yojana	2016
Pradhan Mantri Fasal Bima Yojana	2016
Atal Pension Yojana	2015
Pradhan Mantri Mudra Yojana (PMMY)	2015
Pradhan Mantri Jeevan Jyoti Bima Yojana	2015

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Pradhan Mantri Suraksha Bima Yojana	2015
Sukanya Samriddhi Yojana	2015
Pradhan Mantri Awas Yojana (PMAY)	2015
Digital India	2015
Make in India	2014
Skill India	2015
Startup India	2016
Atal Innovation Mission	2016
Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (AB-PMJAY)	2018
Pradhan Mantri Kisan Samman Nidhi (PM-KISAN)	2019
National Education Policy (NEP)	2020

Q32. Answer: (c) 1959

The correct answer is 1959.

Key Points

• Year of Enactment: The Arms Act was enacted by the Parliament of India in the year 1959.

• Purpose: The act was implemented to regulate the acquisition, possession, manufacture, sale, import, and export of arms and ammunition in India.

• License Requirement: According to this act, citizens are required to obtain a valid license to manufacture, sell, or possess firearms.

• Penalties: The act specifies penalties for the possession, acquisition or carrying of illegal arms or ammunition.

• The penalties can include imprisonment and/or fines.

• Amendments: Over the years, the act has been amended several times to address emerging challenges and to strengthen the provisions concerning the possession and usage of arms and ammunition in the country.

Additional Information

Act	Year
The Indian Penal Code	1860
The Indian Evidence Act	1872
The Indian Contract Act	1872
The Transfer of Property Act	1882
The Negotiable Instruments Act	1881
The Factories Act	1948
The Constitution of India	1950
The Hindu Marriage Act	1955
The Arms Act	1959
The Dowry Prohibition Act	1961
The Companies Act	2013
The Goods and Services Tax Act	2017
The Citizenship Amendment Act	2019
The Farmers' Produce Trade and Commerce (Promotion and Facilitation) Act	2020

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Q33. Answer: (d) Motherboard

The correct answer is Motherboard.

Key Points

• Motherboard: The motherboard is the main circuit board of a computer.

• It houses the CPU, RAM, and other essential components.

• It also provides the electrical connections by which the other components of the system communicate.

Additional Information

Firmware	**Firmware is a type of software that provides control, monitoring and data manipulation of engineered products and systems. It's typically stored in the read-only memory of a hardware device.**
Central Processing Unit (CPU)	The CPU is the primary component of a computer that performs most of the processing inside the computer. It's often called the "brain" of the computer.
Random Access Memory (RAM)	RAM is a type of computer memory that can be read from and written to by the processor. It's a volatile memory, meaning it loses its contents when the computer is turned off or restarted.

Q34. Answer: (d) Tibet plateau

The correct answer is Tibetan Plateau

Key Points

• With an elevation of 4,500 metres and an area of 2,500,000 square kilometres.

• The Tibetan Plateau is the longest Plateau in the world.

• It covers 7 countries and given below is the list of the countries and the region the Plateau covers:

• China (Tibet, Qinghai, western Sichuan, Northern Yunnan, Southern Xinjiang, Western Gansu)

• India (Ladakh, Lahaul & Spiti, Gilgit Baltistan)

• Nepal (Northern Nepal)

• Bhutan

• Tajikistan (Eastern Tajikistan)

• Kyrgyzstan (Southern Kyrgyzstan)

Additional Information

• East African Plateau:

• The East African Plateau is a large plateau in the eastern part of central Africa in Uganda, Kenya, and Tanzania.

• Its elevation is mostly between 1000 and 1500 meters

• Western Plateau of Australia: The Western Plateau (sometimes referred to as the Australian Shield), is Australia's largest drainage division

• It is composed predominantly of the remains of the ancient rock shield of Gondwana.

• Deccan plateau is the most extensive peninsular plateau covering an area of about 422,000 square kilometres which accounts for 43% of India's landmass.

• This plateau rises more than 1000 meters in the South and 100 meters in the North.

• This plateau is drained by rivers including Krishna, Godavari, penner, and Kaveri.

• It lies to the south of the river Narmada.

Q35. Answer: (d) Malabar Coast

The correct answer is Malabar coast.

Key Points

• The Western Ghats:

• The western ghat is the mountain range parallel to the western coast of the Indian peninsula.

• The total length of the western ghat is around 1600 km.

• The western ghat region is spread from Tapti to Kanyakumari.

• It passes through the Indian states of Tamil Nadu, Kerala, Karnataka, Goa, Maharashtra, and Gujarat.

• Anamudi is the highest peak of the western ghat.

• All important rivers of Peninsular India originate from the western ghat.

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• The major hill stations of the western ghat are Amboli ghat, Matheran, Mahabaleshwar, Panchgani, and Kudremukh.

• Eastern Ghats:

• A discontinuous range of mountains along India's eastern coast runs parallel to the Bay of Bengal.

• They are eroded and cut through by the four major rivers of peninsular India, Godavari, Mahanadi, Krishna and Kaveri.

• Some of the important ranges include the Shevaroy hills, Javadi hills, the Palconda range, the Nallamala hills, the Mahendragiri hills, etc.

Confusion Points

• Coromandel Coast

• It is the coastal plain in eastern Tamil Nadu state.

• It is bounded by the Utkal Plains to the north, the Bay of Bengal to the east, and the Kaveri delta to the south and the Eastern Ghats to the west.

• Extending over an area of about 22,800 square kilometres.

Additional Information

• Coastal plains of India -

• From Gujarat to Mumbai Coast – Kathiawar Coast

• Coast from Mumbai to Goa – Konkan Coast

• The Malabar Coast is a stretch of coastline along the southwestern part of India, primarily located in the state of Kerala. It extends from the southern part of the state of Maharashtra, passes through the state of Goa, and runs along the entire length of the state of Kerala – Malabar Coast

Q36. Answer: (c) Kalaripayattu

The correct answer is Kalaripayattu.

Key Points

• Kalaripayattu is the martial art form prevalent in the Indian state of Kerala.

• The word meaning of Kalaripayattu is “art of the battlefield".

• It is believed to be Lord Vishnu is the founder of martial arts in India.

• Kalaripayattu is considered as the oldest form of martial arts in India.

• Kalaripayattu was used as a code of combat by the dynasties in South India.

• Kalaripayattu is considered the most scientific type of martial art form in the world.

Additional Information

• Other important art forms in Kerala are:

• Kathakali.

• Mohiniyattam.

• Chakyar Koothu.

• Theyyam.

• Ottamthullal.

• Important art forms in Tamil Nadu are:

• Kolattam.

• Bharatanatyam.

• Bommalattam.

• Chakkai Attam.

• Devaraattam.

• Therukoothu.

• Important art forms in Karnataka are:

• Yakshagana.

• Somana Kunita.

• Jagghalige Kunita.

• Krishna Parijata.

Q37. Answer: (d) Sodium

The correct answer is Sodium.

Key Points

• The X-ray spectrometer 'CLASS' on the Chandrayaan-2 Orbiter has mapped an abundance of sodium on the moon for the first

time, according to ISRO.

• The findings of the spectrometer were published in 'The Astrophysical Journal Letters' in the last week of Sept 2022.

• The new findings will be helpful in the study of surface-exosphere interaction on the moon.

Additional Information

• Chandrayaan-2 is India's 2nd moon mission which was successfully launched by GSLV-MkIII-M1 from Second Launch Pad at Satish Dhawan Space Centre, Sriharikota in Andhra Pradesh.

• In 2019, Chandrayaan-2 was launched with an orbiter and a lander named Vikram, and a six-wheeled rover named Pragyaan ISRO.

• The orbiter is still functional and the lander crashed before its induction in any research operation.

• The spacecraft was launched on its mission to the Moon on 22 July 2019 by a GSLV Mark III-M1.

• It got a failure when was entering the atmosphere of the moon.

• According to a failure analysis report submitted to ISRO, the crash was caused by a software glitch. ISRO may re-attempt a landing in 2022 with Chandrayaan-3.

• India's first mission to the moon, Chandrayaan1 was launched from Sriharikota.

• It was successfully launched on October 22, 2008.

• Chandrayaan-1 operated for 312 days.

• It confirmed the presence of lunar water.

• The evidence of lunar caves was also confirmed by the Chandrayaan-I.

Q38. Answer: (d) Tennis

The correct answer is Tennis.

Key Points

• The Davis Cup is the premier international team event in men's tennis.

• It is run by the International Tennis Federation (ITF) and Kosmos Holding and is contested annually between teams from competing countries in a knock-out format.

• It is described by the organisers as the "World Cup of Tennis", and the winners are referred to as the World Champion team.

• The competition began in 1900 as a challenge between Great Britain and the United States.

• By 2016, 135 nations entered teams into the competition. The most successful countries over the history of the tournament are united states (winning 32 titles and finish as runners-up 29 times) and Australia (winning 28 titles, including four with New Zealand as Australia, and finishing as runners-up 19 times).

• The current champions are Italy, who beat Australia to win their second title in 2023.

• The women's equivalent of the Davis cup is the Fed Cup. Australia, the Czech Republic, and the United States are the only countries to have won both Davis Cup and Fed Cup titles in the same year.

• The Davis cup did not allow professional players to compete until 1973, five years after the start of the Open Era.

Additional Information

• Thomas Cup, trophy signifying world supremacy in the sport of badminton.

• In India, Indian Super League is related to Indian football.

• Beighton Cup is related to Hockey.

Q39. Answer: (c) Bankim Chandra Chatterjee

The correct answer is Bankim Chandra Chatterjee.

Key Points

• Bankim Chandra Chatterjee is the author of "Durgeshnandini".

• "Vande Mataram" was written by Bankim Chandra Chatterjee.

• It was first composed in the Sanskrit language in the year of 1870s (1875). Later in 1882, it was included in the Bengali novel Anandamath.

• Other notable works of Bankim Chandra Chatterjee:

• Anandmath, Kapalkundala, Komalakanter Doptor, Mrinalini, Krishnakanter Will, Bishbrikhsha, Rajsingho, Sitaram, Devi Chaudhurani.

Additional Information

Ishwar Chandra Vidyasagar	Rabindranath Tagore	Sarat Chandra Chattopadhyay
Barna Parichay	Gitanjali	Devdas
Bidhaba Bibaha	Kabuliwala	Parineeta

Borno Porichoy	Chokher Bali	Biraj Bou
Jeevan Vidya	Ghare-Baire	Shesh Prashna
Bangla Byakaran	The Home and the World	Shrikanto
Upakramanika	Shesher Kobita	Datta
Karna Parba	Jogajog	Nishkriti
Sakuntala	Muktadhara	Grihadaha

Q40. Answer: (b) When bank deposit it's excess money in RBI then RBI provides some interest to that bank. This interest is k...

The correct answer is When bank deposit it's excess money in RBI then RBI provides some interest to that bank. This interest is known as Reverse Repo Rate.

Key Points

• The reverse repo rate is the rate of interest at which the RBI borrows funds from other banks in the short term.

• This is done by RBI selling government bonds/securities to banks with the commitment to buy them back at a future date.

• The banks use the reverse repo facility to deposit their short-term excess funds with the RBI and earn interest on it.

• RBI can reduce liquidity in the banking system by increasing the rate at which it borrows from banks.

• Hiking reverse repo rate ends up reducing the liquidity and pushes up interest rates.

• An increase in the reverse repo rate means that banks earn higher returns by lending to RBI. This indicates a hike in the deposit rates.

Additional Information

Monetary Policy tool	Description
Repo Rate	• The (fixed) interest rate at which the Reserve Bank provides overnight liquidity to banks against the collateral of government and other approved securities under the liquidity adjustment facility (LAF).
Reverse Repo Rate	• The (fixed) interest rate at which the Reserve Bank absorbs liquidity, on an overnight basis, from banks against the collateral of eligible government securities under the LAF.
Marginal Standing Facility	• A facility under which scheduled commercial banks can borrow an additional amount of overnight money from the Reserve Bank by dipping into their Statutory Liquidity Ratio (SLR) portfolio up to a limit at a penal rate of interest
Open Market Operation	• It is the sale and purchase of government securities and treasury bills by the RBI
Statutory Liquidity Ratio	• It is the money that commercial banks need to keep with themselves in the form of cash, gold, or government-authorized securities (Bonds) before providing credit to the customers. - Banks get some interest on this reserve fund. - SLR is decided by the Reserve Bank of India.
Cash Reserve Ratio	• It is the minimum amount of deposit that the commercial banks have to hold as reserves with the central bank. - It is in the form of cash only - Bank will not get any interest on the deposit from the central bank - RBI decides the CRR. - CRR is maintained on a daily basis.

Q41. Answer: (b) 300

The correct answer is 300.

Key Points

• The fall in slope refers to the change in elevation over a given distance.

• In this case, the plains from Ambala to the Sunderban stretch over nearly 1800 km.

• The phrase "fall in its slope is hardly" suggests that the change in elevation is minimal.

• Therefore, we need to find the option that represents a small value for the fall in slope.

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• Among the given options, option 2) 300 represents the smallest value.

• This implies that the change in elevation over the 1800 km stretch is only 300 meters.

• The small value of 300 meters indicates that the terrain between Ambala and the Sunderban has a relatively gentle slope or gradient, as the elevation change is minimal over the given distance.

Additional Information

• About the Sunderban:

• The Sunderban is a vast mangrove forest located in the delta region of the Ganges, Brahmaputra, and Meghna rivers in India and Bangladesh.

• It is one of the largest mangrove ecosystems in the world and is recognized as a UNESCO World Heritage Site.

• The Sunderban is famous for its rich biodiversity and is home to numerous species of plants, animals, and birds.

• It is particularly known for its population of Bengal tigers, which are adapted to the mangrove environment.

• The area also supports other wildlife such as crocodiles, snakes, deer, and various bird species.

• The Sunderban plays a crucial role in maintaining the ecological balance of the region.

• It acts as a natural barrier, protecting the surrounding areas from storm surges and tidal waves.

• The mangrove forests also serve as a nursery for many aquatic species and help in stabilizing the coastline by preventing erosion.

• Tourism is an important aspect of the Sunderban, with visitors coming to explore its unique ecosystem and wildlife.

• Boat safaris are a popular way to experience the mangrove forests and observe the diverse flora and fauna.

• Overall, the Sunderban is not only a significant ecological hotspot but also a major tourist attraction, drawing nature enthusiasts and researchers from around the world.

Q42. Answer: (a) Half-duplex

The correct answer is Half Duplex.

Key Points

• The method of communication in which transmission can take place in both directions, but happens only in one direction at a time, is called half-duplex communication.

• In this mode of communication, data can be sent and received, but not at the same time.

• Instead, data is transmitted in one direction, then the communication channel switches to transmit data in the opposite direction.

• This mode of communication is commonly used in walkie-talkies, two-way radios, and some forms of computer networking.

Additional Information

• Duplex communication is a method of communication in which data can be transmitted and received simultaneously in both directions.

• Simplex communication is a method of communication in which data can only be transmitted in one direction, from the sender to the receiver, and not in the opposite direction.

• In other words, in simplex communication, data can flow in only one direction along a communication channel.

Q43. Answer: (a) Kanchenjunga

The correct answer is Kanchenjunga

Key Points

• Kanchenjunga:

• It is the third-highest mountain in the world with an elevation of 8586 m.

• It is situated on the border between Nepal and Sikkim.

• It is a part of the Great Himalayan Mountain Range.

• It is the highest mountain peak in the Himalayas in India.

• Out of the five peaks, three lie on the border with Sikkim, and two peaks are solely in Nepal.

Additional Information Mount Everest

• It is the highest peak in the world with a height of 8848m

• Located in Solukhumbu district Nepal

• It is named in honor of Sir George Everest.

K2

• It is the second-highest mountain in the world with a height of 8611m

• Located in Gilgit Baltistan POK

• Discovered by T. G. Montgomerie, Survey of India.

Nanda Devi

• It is India's second-largest peak with a height of 7816m

• Located in Chamoli Uttrakhand.

Namcha Barwa:

• It is located on the eastern side of the Great Canyon of Yarlung Tsangpo River.

• It is a mountain located in the Tibet region with an elevation of 7782 m.

Q44. Answer: (d) India

The correct answer is India.

Key Points

• The Global Multidimensional Poverty Index (MPI) of 2022 was released by United Nations Development Programme (UNDP) and Oxford Poverty and Human Development Initiative (OPHI).

• It was first launched in 2010.

• India has the largest number of poor people followed by Nigeria.

• Bihar is the poorest state in India.

Additional Information

• The MPI monitors 10 major indicators of deprivations.

• These are:

Dimensions	Indicators	Poverty Measures
1. Health	• Nutrition - Child mortality	
2. Education	• Years in schooling - School attendance	• Intensity of poverty - Headcount ratio
3. Standard of Living	• Cooking fuel - Sanitation - Drinking water - Electricity - Housing - Assets	

Q45. Answer: (b) Rajasthan

The correct answer is Rajasthan.

Key Points

• The folk dance known as the Kalbelia dance is essential to the Kalbelia culture.

• Since the Kalbelias are recognized as traditional snake charmers, this dance is also referred to as the Sapera dance.

• Previously, this nomadic tribe would move from location to location bartering snake venom.

• The Kalbelia is a snake-taming tribe from Rajasthan, India's Thar Desert.

• Men play the instruments and give the music, but only women perform it.

• In 2010, it was added to the list of Intangible Cultural Heritage (ICH) maintained by the United Nations Educational, Scientific, and Cultural Organizations (UNESCO).

• Kathputli, Bhavai, Gair, Kachchhi Ghodi, Chang/Dhamal, Ghoomar, and Terah Taali are some other folk dances of Rajasthan.

Additional Information

State	Folk Dance
Andhra Pradesh	Kolattam
Arunachal Pradesh	Bardo Chham
Assam	Bihu
Bihar	Jat-Jatin
Chhattisgarh	Raut Nacha
Goa	Dekhnni
Gujarat	Garba
Haryana	Jhumar
Himachal Pradesh	Nati

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Jammu and Kashmir	Rouff
Jharkhand	Chhau
Karnataka	Yakshagana
Kerala	Thiruvathirakali
Madhya Pradesh	Grida
Maharashtra	Lavani
Manipur	Manipuri
Meghalaya	Nongkrem
Mizoram	Cheraw Dance
Nagaland	Zeliang
Odisha	Danda Nata
Punjab	Bhangra
Rajasthan	Ghoomar
Sikkim	Singhi Chham
Tamil Nadu	Karagattam
Telangana	Lambadi
Tripura	Hojagiri
Uttar Pradesh	Kathak
Uttarakhand	Langvir Nritya
West Bengal	Chhau

Q46. Answer: (b) Ghana Vadya

The correct answer is Ghana Vadya.

Key Points

• Ghana Vadya or Idiophones/Solid instruments which do not require tuning-

• The earliest instruments invented by man are said to be the Ghana Vadya.

• Once constructed, this variety of instruments does not need special tuning prior to playing.

• They are principally rhythmic in function and are best suited as an accompaniment to folk and tribal music and dance.

• E.g - Jal Tarang, Ghatam etc.

Additional Information

Instruments have been listed below.

• Avanaddha Vadya or Membranophones/Percussion instruments -

• In the Avanaddha Vadya category of instruments, the sound is produced by striking the animal skin which has been stretched across an earthern or metal pot or a wooden barrel or frame.

• E.g - Tabla, Mridangam, Nagara, Damaru etc.

• Sushira Vadya or Aerophones/Wind instruments -

• In the Sushira Vadya group, the sound is produced by blowing air into a hollow column.

• The pitch of the note is determined by controlling the air passage and the melody is played by using the fingers to open and close the instrument.

• E.g - Flutes, Shehnai, Nadaswaram, etc.

• Tata Vadya or Chordophones/Stringed instruments -

• The tata vadya is a category of instruments in which sound is produced by the vibration of a string or chord.

• These vibrations are caused by plucking or by bowing on the string which has been pulled taut.

• E.g - Veena, Sitar, Sarangi etc.

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Q47. Answer: (a) healthcare

The correct answer is healthcare.

Key Points

• Prime Minister Narendra Modi launched the Ayushman Bharat - Pradhan Mantri Jan Aarogya Yojana from Ranchi in Jharkhand on 23rd September 2018.

• Over two crore people have availed of treatment under Ayushman Bharat Pradhan Mantri Jan Arogya Yojana.

• The scheme, which is the world's largest health care program, provides a cover of up to Rs. 5 lacks per family per year for secondary and tertiary care hospitalization to over 10.74 crore poor and vulnerable families.

• It helps to reduce hospital expenditure and mitigate financial risk.

• It provides cashless and paperless access to services for the beneficiaries at the point of service.

Additional Information

• The insurance cost is shared by the center and the state mostly in the ratio of 60:40.

• There are about 1,400 packaged rates for various medical procedures under the scheme.

• These packaged rates also mention the number of average days of hospitalization for a medical procedure and supporting documents that are needed.

• Under no circumstances can hospitals charge the beneficiary.

• The scheme also has prescribed a daily limit for medical management.

• National Health Agency has been constituted as an autonomous entity under the Society Registration Act, 1860 for effective implementation of PMJAY in alliance with state governments.

• This includes the formulation of PMJAY policies, development of operational guidelines, implementation mechanisms, coordination with state governments, and monitoring and oversight of PMJAY amongst others.

Q48. Answer: (b) 6000 units

The correct answer is 6000 units.

Key Points

Let's call the original velocity of the ball 'v'. Then, the new velocity of the ball is 2v.

Now, we can use the momentum formula to find the new momentum of the ball:

Momentum = mass x velocity

The mass of the ball is the same before and after the velocity is doubled, so we can write:

Momentum = constant x velocity

The constant here is the mass of the ball. Since the mass is the same, we can say:

Momentum 1 = constant x v

Momentum 2 = constant x 2v

where Momentum 1 is the original Momentum and Momentum 2 is the new momentum.

We can solve for Momentum 2 by using the fact that Momentum1 = 3000:

Momentum 2 = constant x 2v = 2 x (constant x v) = 2 x Momentum1

Momentum 2 = 2 x 3000 = 6000 units

Therefore, if the velocity of the ball is doubled, the ball's new Momentum would be 6000 units.

Q49. Answer: (b) Muhammad Tughluq

The correct answer is Muhammad Tughluq.

Key Points

• Muhammad Tughluq appointed Ladha and Pira, two gardeners to high administrative posts.

• Sultan Muhammad Tughluq appointed:

• Aziz Khummar, a wine distiller,

• Firuz Hajjam, a barber,

• Manka Tabbakh, a cook, and

• Two gardeners, Ladha and Pira, to high administrative posts.

• Ziyauddin Barani, a mid-fourteenth-century chronicler, reported their appointments as a sign of Sultan’s loss of political judgment and his incapacity to rule.

• Barani had criticized Muhammad Tughluq for that appointment.

• Tughluq's appointment reflected the socio-economic stereotypes that may have been prevalent in those times.

• The authors of Persian tawarikh criticized the Delhi Sultans for appointing the “low and base-born” to high offices.

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Additional Information

• Allauddin Khalji

• Allauddin Khalji was the emperor of the Khalji dynasty.

• He was known to drive back the Mongols' invasion from India.

• Alauddin instituted a number of significant administrative changes, related to revenues, price controls, and society.

• Alauddin conquered the kingdoms of Gujarat, Jaisalmer, Ranthambore, Chittor, Malwa, Siwana and Jalore.

• Jalaluddin Khalji

• The founder of the Khilji dynasty was Jalal-Ud-din Firuz Khalji.

• He was also called “Clemency Jalal-uddin” as he followed peace and wanted to rule without violence.

• He appointed Ala-ud-din Khilji as the Governor of Kara. Alauddin was his son-in-law and also nephew.

• Jalal-ud-din was treacherously murdered by Ala-Ud-din Khilji his son-in-law.

• Firuz Shah Tughluq

• He was the third ruler of the Tughlaq dynasty after the death of Mohammad-bin Tughlaq.

• He imposed Jizya tax on all non-Muslims and did not even exempt Brahmins and beggers as done by his predecessors.

• He built Feroz Shah Kotla (Kotla means fortress), peppered Delhi with gardens, constructed canals, hunting lodges, and repaired Qutub Minar, Hauz Khas (royal tank), and Surajkund (lake of the Sun).

Q50. Answer: (b) Leprosy

The correct answer is Leprosy.

Key Points

• The main cause of leprosy is Mycobacterium.

• Leprosy, also known as Hansen's disease, is caused by slow-growing bacteria called Mycobacterium leprae.

• It is an infectious disease that causes nerve damage in the skin, arms, and legs and also causes skin sores.

• The main symptoms include disfiguring skin sores, lumps, or bumps.

Additional Information

Disease	Virus
AIDS	HIV
Chickenpox	Varicella-zoster virus
Common cold	Rhinovirus, coronavirus
Dengue fever	Dengue virus
Ebola virus disease	Ebola virus
Flu (influenza)	Influenza virus
Hepatitis A	Hepatitis A virus
Hepatitis B	Hepatitis B virus
Hepatitis C	Hepatitis C virus
Herpes	Herpes simplex virus
Human papillomavirus (HPV) infection	Human papillomavirus
Measles	Measles virus
Mumps	Mumps virus
Polio	Poliovirus
Rabies	Rabies virus
SARS	SARS-CoV
Smallpox	Variola virus
Zika fever	Zika virus

Q51. Answer: (d) 12 days

Shortcut Trick

Total Work = LCM(10, 15, 4) = 60 units

Efficiency: P = 6, Q = 4, P + Q + R = 15

Efficiency of R = 15 − (6 + 4) = 5 units/day

Time for R alone = 60 ÷ 5 = 12 days

Therefore The correct option is D.

Alternate Method

Given:

Time taken by P = 10 days

Time taken by Q = 15 days

Time taken by P + Q + R together = 4 days

Formula Used:

Total Work = Time × Efficiency

Entity	Time	Quantity	Efficiency
P	10	60	6
Q	15	4	
P + Q + R	4	15	

Calculations:

=> Efficiency of P = 60 ÷ 10 = 6 units/day

=> Efficiency of Q = 60 ÷ 15 = 4 units/day

=> Efficiency of P + Q + R = 60 ÷ 4 = 15 units/day

=> Efficiency of R = (Efficiency of P + Q + R) − (Efficiency of P + Efficiency of Q)

=> Efficiency of R = 15 − (6 + 4) = 5 units/day

=> Time taken by R alone = Total Work ÷ Efficiency of R

=> Time taken by R alone = 60 ÷ 5 = 12 days

Therefore The correct option is D.

Additional Information

Inverse Relation of Time and Efficiency

Time taken to complete a work is inversely proportional to the efficiency of the worker. Time = 1 ÷ Efficiency (keeping work constant).

Combined Work Formula

If A, B, and C can do a work in x, y, and z days respectively, their combined 1-day work is (1/x + 1/y + 1/z).

Work and Wages

Wages are distributed in the direct ratio of the amount of work done, which is also the ratio of efficiencies if they work for the same duration.

Q52. Answer: (a) 75%

Calculation:

Total wheat sold by Shop 1, shop 3, and Shop 4

16.5 + 24 + 19.5

60

Total Sugar sold by all shops

12.5 + 15.3 + 20 + 32.2

80

According to the question:

60/80 × 100 = 75%

Therefore Option 1 is the correct answer.

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Q53. Answer: (a) 10

Given:

$\theta = 45°$

Concept Used:

$\text{cosec}^2\theta = 1/\sin^2\theta$

$\sec^2\theta = 1/\cos^2\theta$

Calculation:

Find the value of $\sin^2\theta$ and $\cos^2\theta$

$\sin^2\theta = \sin(45°)^2 = (1/\sqrt{2})^2 = 1/2$

$\cos^2\theta = \cos(45°)^2 = (1/\sqrt{2})^2 = 1/2$

Find the value of $\text{cosec}^2\theta$ and $\sec^2\theta$

$\text{cosec}^2\theta = 1/\sin^2\theta = 1/(1/2) = 2$

$\sec^2\theta = 1/\cos^2\theta = 1/(1/2) = 2$

Find the value of $2\,\text{cosec}^2\theta + 3\sec^2\theta$

$2\,\text{cosec}2\theta + 3\sec2\theta = 2 \times 2 + 3 \times 2 = 4 + 6 = 10$

So, the value of $2\,\text{cosec}2\theta + 3\sec2\theta$ is 10.

Q54. Answer: (a) 23 : 21

Given:

Salary of employee L: 350

Salary of employee M: 800

Salary of employee P: 600

Salary of employee Q: 450

Calculation:

To find the ratio of salary of L and M together to the salary of P and Q together, we need to add the salary of L and M and divide it by the sum of salary of P and Q.

Find the sum of salary of L and M

Sum of salary of L and M = 350 + 800 = 1150

Find the sum of salary of P and Q

Sum of salary of P and Q = 600 + 450 = 1050

Find the ratio of salary of L and M together to the salary of P and Q together

Ratio = Sum of salary of L and M / Sum of salary of P and Q = 1150/1050 = 1150 : 1050 = 23 : 21

So, the ratio of salary of L and M together to the salary of P and Q together is 23 : 21.

Q55. Answer: (d) 81

Given:

The average mark of Rakesh in the first 3 subjects was 75

The average marks in the last 3 subjects were 82

Rakesh's marks in the third subject were 66

Formula:

Average = Total marks/Number of subjects

Calculation:

Find the total marks Rakesh scored in the first 3 subjects

Average = Total marks/Number of subjects

Total marks in first three subject = 75 × 3 = 225

Find the total marks Rakesh scored in the last 3 subjects

Total marks in the last 3 subjects = 82 × 3 = 246

Find the total marks Rakesh scored in all 5 subjects

Total marks in all 5 subjects = Total marks in the first 3 subjects + Total marks in the last 3 subjects - Marks in the third subject

225 + 246 - 66

225 + 246 - 66

405

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Find the average marks of Rakesh in all 5 subjects

Average marks in all 5 subjects = Total marks in all 5 subjects/Number of subjects

= 405/5

= 81

So, Rakesh's average mark in all 5 subjects was 81.

Q56. Answer: (c) 1760

Given:

The sum of three consecutive even numbers is 126.

Formula:

The sum of n consecutive even numbers can be found using the formula: n/2 × (first number + last number)

Calculation:

The sum of three consecutive even numbers is 126, which can be represented as x + (x + 2) + (x + 4) = 126, where x is the smallest of the three numbers.

To find the value of x, we can simplify the equation and solve for x:

3x + 6 = 126

3x = 120

x = 40

Therefore, the smallest of the three numbers is 40, the largest is 40 + 4 = 44, and the product of the smallest and the largest numbers is 40 × 44 = 1760.

Q57. Answer: (c) (27√5)/10

Given:

The sides of a triangle are 12 cm, 9 cm, and 9 cm

Formula used:

Area of the triangle = √[s (s – a) (s – b) (s – c)] where s = (a + b + c)/2

Circum-radius of the triangle = abc/[4 × area of triangle]

Calculation:

Area of the triangle = √[s (s – a) (s – b) (s – c)] where s = (a + b + c)/2

Side of the triangle are, a = 12 cm, b = 9 cm and c = 9 cm, then

s = (12 + 9 + 9)/2 = 30/2 = 15 cm

Area of the triangle = √[15 (15 – 12) (15 – 9) (15 – 9)] = √[15 × 3 × 6 × 6] = √5 × 6 × 3 = 18√5 cm2

As we know,

Circum-radius of the triangle = abc/[4 × area of triangle] = (12 × 9 × 9)/(4 × 18√5) = (27√5)/10

Therefore Option 3 is the correct answer.

Q58. Answer: (a) 49√3 - 77 cm²

Given:-

(1) Three circles of radius(r) 7 cm are placed in

such a way that each circle touches the other two

Formula used:-

(1) Area of a Sector of Circle = (θ /360) × πr²

[where, r = Radius]

(2) Area of equilateral triangle = (√3/4)a²

[where, a = Length of the side]

Solution:-

We can conclude that the centers of circles form

an equilateral triangle with = r + r = 2r

The area enclosed between circles =

Area of a triangle - 3 (Area of the sector)

The angle subtended by sector in an equilateral triangle = 60

Area of a Sector of Circle = (θ /360) × πr2

=> (60/360) × (22/7) × 7² => 77/3

3 (Area of the sector) =77 ----(1)
Area of equilateral triangle = (√3/4)a2
a = Length of the side = 2r = 2(7) =14 cm
=> (√3/4) × 14^2 = 49√3 ---(2)
Subtraction equation(2) - equation(1)
Therefore The area enclosed between circles = 49√3 - 77 cm^2.

Q59. Answer: (d) Rs. 9515

Given:
Profit earned by selling the jacket for Rs. 9610 is equal to the loss incurred by selling the same jacket for Rs. 7690.
Formulas:
Profit = Selling price - Cost price
Loss = Cost price - Selling price
Solution:
Let's assume the Cost price of the jacket = C
Profit = Rs. 9610 - C
Loss = C - Rs. 7690
Since the profit earned is equal to the loss incurred, we can set up the equation:
Rs. 9610 - C = C - Rs. 7690
To solve for C, we can simplify the equation:
2C = Rs. 9610 + Rs. 7690
2C = Rs. 17300
C = Rs. 8650
Now that we have the cost price (C), we can calculate the selling price for a 10% profit.
Profit = 10% of Cost price
Profit = (10/100) × Rs. 8650
Profit = Rs. 865
Selling price for a 10% profit = Cost price + Profit
Selling price for a 10% profit = Rs. 8650 + Rs. 865
Selling price for a 10% profit = Rs. 9515
Therefore, the selling price of the jacket to earn a 10% profit should be Rs. 9515.

Q60. Answer: (c) 69 kg

Shortcut Trick
The new total weight is 104 kg, which represents a 60% increase (or 160% of the initial weight).
Initial total weight = 104 ÷ 1.6 = 65 kg.
Initial weight of Abhishek = (5 / 13) × 65 = 25 kg.
New weight of Abhishek (after 40% increase) = 25 × 1.4 = 35 kg.
New weight of Ayush = Final total weight − New weight of Abhishek = 104 − 35 = 69 kg.
Therefore The correct answer is 69 kg.
Alternate Method
Given:
Initial weight ratio of Ayush to Abhishek = 8 : 5
Abhishek's weight increases by 40%.
Total weight increases by 60% to become 104 kg.
Initial Total Weight = 65 kg (100%)
Ayush: 40 kg
Abhishek: 25 kg
+40%
+60% overall
Final Total Weight = 104 kg (160%)
Ayush: 69 kg

Abhishek: 35 kg

Calculations:

=> Let the initial weight of Ayush be 8x and Abhishek be 5x.

=> Total initial weight = 8x + 5x = 13x

=> The total weight increased by 60%, making the final weight 160% of the initial.

=> 13x × (160 / 100) = 104

=> 13x × 1.6 = 104

=> 20.8x = 104

=> x = 104 ÷ 20.8 = 5

=> Initial weight of Abhishek = 5x = 5 × 5 = 25 kg

=> New weight of Abhishek = 25 × (140 / 100) = 35 kg

=> Final weight of Ayush = Final total weight − Final weight of Abhishek

=> Final weight of Ayush = 104 − 35 = 69 kg

Therefore The correct answer is 69 kg.

Additional Information

Percentage Increase

When a value increases by R%, the new value becomes Base Value × (1 + R/100). Here, a 60% overall increase means multiplying the base weight by 1.6 to get the final total weight.

Weighted Average (Alligation Method)

The overall percentage change is the weighted average of the individual percentage changes: Overall % = (Ratio1 × Change1 + Ratio2 × Change2) ÷ Total Ratio.

Ratio Independence

When quantities are given in a fixed ratio, their actual individual values can be directly scaled and calculated as soon as the total initial or final amount is known, skipping the need for multiple variables.

Q61. Answer: (c) 60

Calculation:

$((15)^3+(4)^3)/(15^2+4^2-k)=19$

$(3375+64)/(225+16-k)=19$

$3439/(241-k)=19$

$3439 - 19 \times 241 = -19\ k$

$3439 - 4579 = -19\ k$

$-1140 = -19k$

$k = 60$

Therefore Option 3 is the correct answer.

Q62. Answer: (b) (25)^(1/12)

Firstly, we have to find the L.C.M. of all the powers so that we can equate the bases.

L.C.M. of 2, 3, 6, 12 = 12

=> (14)1/3 = (14)12/3 = (14)^4

=> (12)1/2 = (12)12/2 = (12)^6

=> (25)1/12 = (25)12/12 = $(25)^1$

=> (16)1/6 = (16)12/6 = (16)2

Here, $(25)^1$is smallest.

So (25)^(1/12) is smallest.

Therefore Option 2 is the correct answer.

Q63. Answer: (a) 140 percent

Shortcut Trick

Since only milk is added, the quantity of water remains constant throughout.

Initial Milk : Water = 1 : 4

Final Milk : Water = 2 : 1 => 8 : 4 (Multiplying by 4 to equalize the water parts)

Milk added = Final milk parts − Initial milk parts = 8 − 1 = 7 units.

Total initial mixture = 1 + 4 = 5 units.

Percentage of milk added = (7 ÷ 5) × 100 = 140%.

Therefore The correct answer is 140%.

Alternate Method

Given:

Initial ratio of Milk to Water = 1 : 4

Final ratio of Milk to Water = 2 : 1

Initial Mixture

M : W = 1 : 4

Total = 5 units

Final Mixture

M : W = 8 : 4

Total = 12 units

• Milk added

(Water constant)

Milk added = 8 − 1 = 7 units

% Added = 7 ÷ 5 × 100 = 140%

Calculations:

=> Let the initial amount of milk be x and water be 4x.

=> Total initial mixture = x + 4x = 5x

=> Let y amount of milk be added to the mixture.

=> New amount of milk = x + y

=> The amount of water remains the same, which is 4x.

=> The new ratio of milk to water becomes 2 : 1.

=> (x + y) ÷ 4x = 2 ÷ 1

=> x + y = 8x

=> y = 7x

=> Milk added as a percentage of initial mixture = (Amount of milk added ÷ Total initial mixture) × 100

=> Required percentage = (7x ÷ 5x) × 100

=> Required percentage = 1.4 × 100 = 140%

Therefore The correct answer is 140%.

Additional Information

Constant Component Principle

When only one component (like milk) is added or removed from a mixture, the quantity of the other component (like water) remains constant. Equating the ratio parts of the constant component provides the fastest way to solve mixture problems.

Rule of Alligation

A foundational concept used to quickly evaluate the ratio in which two mixtures or distinct ingredients must be combined to yield a required average concentration.

Relative Percentage Calculation

To express an added quantity as a percentage of the original quantity, always use the formula: % Added = (Added Value ÷ Initial Base Value) × 100.

Q64. Answer: (a) 16.67 percent

Given:

The marked price of an article is 20% more than its cost price.

Formula:

Marked price = Cost price + (20% of Cost price)

Discount = Marked price - Selling price

To avoid any loss, the selling price should be equal to or greater than the cost price.

Solution:

Let's assume:

The cost price of the article = 100

Marked price = 100 + (20/100) × 100
Marked price = 120
To avoid any loss, the selling price should be equal to or greater than the cost price:
Selling price ≥ Cost price
Now let's calculate the maximum discount percentage that can be offered by the shopkeeper:
Discount = Marked price - Selling price
Discount = 120 - 100
Discount = 20
To avoid any loss, the selling price should be equal to or greater than the cost price:
Selling price ≥ Cost price
Discount = 20
Maximum discount percentage = (Discount/Marked price) × 100
Maximum discount percentage = (20/120) × 100
Maximum discount percentage = (1/6) × 100
Maximum discount percentage = 16.67%
Therefore, the maximum discount percentage that can be offered by the shopkeeper to sell the article without any loss is 16.67%.

Q65. Answer: (a) 6

Given:
$x^2 + 1/(x^2)=38$
Calculation:
$(x - 1/x)2 = x^2 + 1/(x^2) - 2$
=> $(x - 1/x)2 = 38 - 2$
=> $(x - 1/x)2 = 36$
=> $x - 1/x = 6$
Therefore Option 1 is the correct answer.

Q66. Answer: (c) 132°

Shortcut Trick
The angle subtended by an arc at the centre of a circle is double the angle subtended by it at the circumference.
angle Centre = 2 × angle Circumference
angle Centre = 2 × 66° = 132°
Therefore The correct answer is 132°.
Alternate Method
Given:
Angle subtended by the chord at the circumference = 66°
According to the Circle Theorem, for a chord AB:
=> Angle at Centre (angle AOB) = 2 × Angle at Circumference (angle ACB)
=> angle AOB = 2 × 66°
=> angle AOB = 132°
Therefore The correct answer is 132°.
Additional Information
Angles in the Same Segment
Angles subtended by the same arc or chord at any points on the remaining part of the circumference are always equal.
Angle in a Semi-circle
The angle subtended by the diameter at any point on the circumference is always a right angle (90°).
Cyclic Quadrilateral Property
The sum of the opposite angles of a cyclic quadrilateral (a quadrilateral where all vertices lie on a circle) is 180°.

Q67. Answer: (d) 3 abc

Given:
a + b + c = 0
Formula used:

a3 + b3 + c3 – 3abc = (a + b + c)(a2 + b2 + c2 – ab – ac – bc)

And, If a + b + c = 0 then a3 + b3 + c3 = 3abc

Calculation:

Using the concept If a + b + c = 0 then a3 + b3 + c3 = 3abc.

Therefore The value a3 + b3 + c3 is 3abc.

Q68. Answer: (c) 11/24

Shortcut Trick

Given: sin θ = √3 cos θ => tan θ = √3.

For tan θ = √3, the value of θ = 60°.

Substitute θ = 60° in the expression: (3 sin² 60° + cos 60°) ÷ (2 cos 60° + 5).

=> [3 × (3/4) + 1/2] ÷ [2 × (1/2) + 5] = (9/4 + 2/4) ÷ (1 + 5) = (11/4) ÷ 6 = 11/24.

Therefore The correct answer is 11/24.

Alternate Method

Given: sin θ = √3 cos θ => sin θ / cos θ = √3 => tan θ = √3 / 1

Formula Used: tan θ = p/b | h = √(p² + b²) | sin θ = p/h | cos θ = b/h

=> p = √3, b = 1 Therefore h = √((√3)² + 1²) = √(3 + 1) = 2

=> sin θ = √3 / 2 and cos θ = 1 / 2

=> Value = [3 × (√3/2)² + (1/2)] ÷ [2 × (1/2) + 5]

=> Value = [3 × (3/4) + 1/2] ÷ [1 + 5]

=> Value = [9/4 + 2/4] ÷ 6 = (11/4) ÷ 6 = 11/24

Therefore The correct answer is 11/24.

Additional Information

Trigonometric Identities

Fundamental relations: sin²θ + cos²θ = 1, 1 + tan²θ = sec²θ, and 1 + cot²θ = cosec²θ.

Specific Angles

Standard values: sin 60° = √3/2, cos 60° = 1/2, tan 60° = √3.

Right Angled Triangle Properties

Pythagoras theorem states that Hypotenuse² = Perpendicular² + Base².

Q69. Answer: (a) 45 degree and 15 degree

Given:

sin (C + D) = √3/2

sec (C - D) = 2/√3

Calculations:

If sin (C + D) = √3/2 and sec (C - D) = 2/√3

Then,

=> C + D = 60°.....(1)

=> C - D = 30°.....(2)

Solving 1 & 2.

C = 45°

D = 15°

Therefore Option 1 is the correct answer.

Q70. Answer: (d) 35 : 74

Calculation:

Income = Saving + Expenditure

Total income = 600 + 400 + 1100 + 700 + 900 + 600 + 600 + 500 + 1300 + 700 = 7400

Total expenditure = 400 + 700 + 600 + 500 + 1300 = 3500

The ratio of total expenditure to the total incomes of all the companies

3500 : 7400

35 : 74

Therefore Option 4 is the correct answer.

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Q71. Answer: (d) Rs. 225

Given:

The app offered Rs. 10,000 at 15 Percent per annum compounded annually for 2 years.

Formula used:

D = PR2/1002

Where P is Principle, R is Rate and D is the Difference.

Calculation:

D = PR2/1002

$D = 10000 \times 15^2/100^2$

D = 225

Therefore Option 4 is the correct answer.

Q72. Answer: (a) 160

Calculation:

K1 = The total number of male teachers in all 5 schools.

K1 = 120 + 160 + 140 + 100 + 60 = 580

K2 = The total number of female teachers in all 5 schools.

K2 = 160 + 140 + 40 + 20 + 60 = 420

According to the question:

=> (K1 - K2)

=> 580 - 420

=> 160

Therefore Option 1 is the correct answer.

Q73. Answer: (a) 26 cm

Given:

The radius of the bigger circle, r1 = 7 cm

The radius of the smaller circle, r2 = 1 cm

The direct common tangent is 24 cm

Formula used:

Length of the direct tangent, $l = \sqrt{(d^2-(r1-r2)^2)}$

Calculation:

Using the Length of the direct tangent, $l = \sqrt{(d^2-(r1-r2)^2)}$

$24 = \sqrt{(d^2-(16-6)^2)}$

$576 = d^2 - 100$

d2 = 576 + 100

d = 26

Hence, the distance between their centers is 26 cm.

Q74. Answer: (b) 18 cm

Given:

The radius of a circle is 18 cm. The angle made by chord AB at the center of this circle is 60 degrees.

Concept used:

1. In an Isosceles triangle, the two angles opposite to the equal sides are equal to each other.

2. In an equilateral triangle, since the three sides are equal therefore the three angles, opposite to the equal sides, are equal in measure.

Calculation:

OA = OB = 18 cm

ΔOAB is an isosceles triangle.

So, angle OAB = angle OBA = ((180 - 60)°)/2 = 60°

Since angle OAB = angle OBA = angle OAB = 60°, ΔOAB is an equilateral triangle.

So, OA = OB = AB = 18 cm

Therefore The length of this chord is 18 cm.

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Q75. Answer: (d) Only I

Calculation:

Let's first calculate the distance Vivek covers from 8:00 am to 12:00 pm (4 hours):

Distance covered by Vivek = Speed × Time

= 70 km/hr × 4 hr

= 280 km

Now, let's calculate the time taken by Neeraj to catch up with Vivek:

Relative speed of Neeraj with respect to Vivek = 120 km/hr - 70 km/hr = 50 km/hr

Time taken by Neeraj to catch up with Vivek = Distance between them / Relative speed

= 280 km/50 km/hr

= 5.6 hours

Since Neeraj started 4 hours after Vivek, the time on the clock when they meet would be:

Time = 8:00 am + 4 hr + 5.6 hr

= 05 : 36 pm

Therefore, statement I is correct. Neeraj and Vivek would meet at 0:36 pm

Now, let's calculate the total distance covered by both Neeraj and Vivek till 4 pm:

Distance covered by Vivek = 70 km/hr × 8 hr = 560 km

Distance covered by Neeraj = 120 km/hr × 4 hr = 480 km

Total distance covered by both = 560 km + 480 km = 1040 km

Therefore, statement I is correct.

Q76. Answer: (b) A major advantage that one keeps hidden until an ideal time.

The correct answer is: A major advantage that one keeps hidden until an ideal time.

Key Points

• "Ace in the hole" is an idiomatic expression that originated from poker, specifically stud poker. In stud poker, each player receives some cards face-up and others face-down. The face-down cards are called "hole cards." The "ace" is the highest-ranking card in many card games.

• The idiom "Ace in the hole" figuratively refers to a hidden advantage or resource that a person keeps secret until the right moment.

• It represents a powerful tool or strategy that can be revealed when needed to gain a significant advantage over others. This advantage is typically withheld or kept in reserve until an opportune time arises, maximizing its impact and effectiveness.

Therefore, the correct meaning of the idiom "Ace in the hole" is: A major advantage that one keeps hidden until an ideal time.

Q77. Answer: (c) Gauge

The solution is in Hindi. Read it online.

Q78. Answer: (b) worker

The solution is in Hindi. Read it online.

Q79. Answer: (c) told many a times to

The erroneous part is: told many a times to.

Key Points

• The correct phrase is "many times" without the indefinite article "a".

• The phrase "many a" is used to emphasize singularity or uniqueness, as in "many a man" or "many a time."

• However, when discussing repetition or frequency, the correct phrase is simply "many times."

The corrected sentence would be: He has been told many times to mind his manners.

Q80. Answer: (b) impaired

The solution is in Hindi. Read it online.

Q81. Answer: (c) The conflicting range of human emotions is explored by the story.

The correct answer is: The conflicting range of human emotions is explored by the story.

Key Points

• The subject of the Active Voice is changed into the object of the Passive Voice. Also, the object of the Active Voice is changed into the subject of the Passive Voice.

• The usage of a helping verb is necessary while changing the voice of the sentence from Active to Passive.
• The preposition “by” is used before the object made in Passive Voice. However, it is optional in some cases.
• The Active voice in this question is in Present Indefinite. Thus, the Passive voice will also be in Present Indefinite.
• The format of Active voice is: Subject + V1/ V5 + Object.
• Thus, in Passive voice, the format will be: Object of the active voice (Subjective case) + am/is/are + V3 + by + Subject of the active voice (Objective case).
• For example:
• She likes you. (Active Voice)
• You are liked by her. (Passive Voice)
• The options except (3) don’t follow the correct grammatical format of the Passive Voice.

Therefore, the correct answer is: The conflicting range of human emotions is explored by the story.

Q82. Answer: (c) BCAD

The correct answer is: BCAD.

Key Points

• Let's see the arranged sentence:
• At Paris, just after dark
• one gusty evening in the autumn
• of 18, I was enjoying the twofold luxury
• of meditation and a meerschaum, in company
• with my friend Auguste Dupin, in his little back library.
• We can easily identify that the sentence throws light on the fact that in his small back library in Paris, on a windy autumn evening in 18, the author had the pleasure of enjoying both meditation and smoking a meerschaum pipe while keeping company with his friend Auguste Dupin, just after it got dark.

Hence, the correct answer is: BCAD.

Q83. Answer: (d) todays music.

The solution is in Hindi. Read it online.

Q84. Answer: (a) Effeminate

The solution is in Hindi. Read it online.

Q85. Answer: (b) QPRS

The correct answer is: QPRS.

Key Points

• Let's look at the correct sequence of the parts of the sentence:
• East Asian governments (except for Japan) implemented
• more stringent mobility control and physical distancing policies
• as well as more comprehensive testing, tracing
• and isolation policies since the early stages.
• The sentence throws light on the fact that since the beginning, East Asian governments (excluding Japan) have put in place stricter rules to control people's movements and maintain physical distance. They have also implemented more thorough policies for testing, tracing, and isolating individuals to effectively manage the situation.

Therefore, the correct answer is: QPRS.

Q86. Answer: (c) In addition to

The correct answer is: In addition to.

Key Points

• The idiom "Over and above" is used to indicate something that is in addition to what has already been mentioned or expected.
• It suggests an extra or additional element that goes beyond what is required or anticipated. It implies going the extra mile or exceeding expectations.
• For example, if someone is given a task to complete within a specific timeframe, and they complete it ahead of schedule and also provide additional supplementary information, it can be said that they have gone "over and above" the initial requirements. It highlights the idea of going beyond what is necessary or expected, adding an extra level of effort, quality, or contribution.

Therefore, the correct meaning of the idiom "Over and above" is: In addition to.

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Q87. Answer: (a) tunnel

The solution is in Hindi. Read it online.

Q88. Answer: (b) Encyclopedia

The solution is in Hindi. Read it online.

Q89. Answer: (d) Funny

The solution is in Hindi. Read it online.

Q90. Answer: (c) Raise

The solution is in Hindi. Read it online.

Q91. Answer: (b) Competent

The solution is in Hindi. Read it online.

Q92. Answer: (d) Frighter

The incorrect spelling is: Frighter.

Key Points

• The correct spelling should be: Freighter.

• Meaning: a ship or an aircraft that carries only goods and not passengers.

Therefore, the incorrect spelling is: Frighter.

Additional Information

• The meanings of the other options are:

• Practical: Relating to or concerned with the actual application or use of something rather than theory or speculation. It refers to something that is useful, functional, or based on practicality.

• Glowing: Emitting a steady, radiant light or warmth. It can also refer to a highly positive or enthusiastic opinion or review of something.

• Released: Freed or let go from confinement, imprisonment, or restraint. It can also refer to making something available to the public, such as a movie, book, or music release.

Q93. Answer: (a) The joy definitely lies in cooking for others.

The sentence with no spelling error is: The joy definitely lies in cooking for others.

Key Points

• Errors in the other options:

• The joy definitely lyes in cooking for others.

• Error: The word "lyes" is incorrect. The correct spelling is "lies." The verb "lies" is the third-person singular form of the verb "lie," which means to exist or be situated.

• The joy defintely lies in cooking for others.

• Error: The word "defintely" is misspelled. The correct spelling is "definitely." The correct form emphasizes certainty or conviction.

• The joy definitely lies in cokking for others.

• Error: The word "cokking" is misspelled. The correct spelling is "cooking." The correct form refers to the process of preparing food.

Hence, the correct answer is: Option 1.

Q94. Answer: (d) Egoist

The solution is in Hindi. Read it online.

Q95. Answer: (c) Gloria said that his relatives were landing the next day.

The correct answer is: Gloria said that his relatives were landing the next day.

Key Points

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

• Present Continuous (Subject + is/am/are + V1 +ing + Object) should be converted into Past Continuous (Subject + was/were + V1 + ing + Object).

• For example:

• He said, “I am checking the assignment.” (Direct Speech)

• He said that he was checking the assignment. (Indirect Speech)

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

• 'said' is changed into 'said that'.

• 'tomorrow' is changed into 'the next day'.

Therefore, the correct answer is: Gloria said that his relatives were landing the next day.

Q96. Answer: (d) who

The correct answer is: who.

Key Points

• The correct option is "who" because it is the appropriate relative pronoun to refer to the subject of a clause, which in this case is "people."

• Grammatically, "who" is used as the subjective pronoun to refer to people.

• In the given sentence, it connects the idea that people may seek fashion as part of who they are and who they want to be.

Therefore, the correct word that must fit the blank: who.

Additional Information

• Let's examine the other options and why they are incorrect:

• which: "Which" is used to refer to objects or animals, not people. It is not suitable in this context where the reference is to human identity.

• whom: "Whom" is an object pronoun used to refer to the object of a verb or preposition. In this sentence, "whom" does not fit because it does not refer to the subject "people."

• whose: While "whose" can be used to indicate possession or association, it is typically used for inanimate objects or people and does not appropriately convey the meaning of personal identity in this sentence.

Q97. Answer: (b) seeking

The correct answer is: seeking.

Key Points

• The word "seeking" is the correct choice to fill the blank in the given sentence.

• Let's analyze the reasons for this choice:

• freaking: This option is not suitable because the word "freaking" is an informal term that expresses emphasis or frustration. It does not fit the context of the sentence, which discusses people's behavior regarding fashion.

• seeking: This is the correct option as it conveys the intended meaning. "Seeking" means actively looking for or searching for something. In this context, it indicates that people may spend more time actively searching for the latest fashion trends.

• doing: While "doing" is a valid word, it does not convey the specific meaning required in this context. "Doing" is a general term that can refer to various activities, but it does not specifically imply actively searching for fashion trends.

• making: "Making" is not the appropriate choice for the blank. While it can be related to fashion (such as making clothes), it does not fit the context of spending time and money on fashion products. "Making" implies creating or producing something rather than actively seeking or searching for trends or products.

• In summary, the correct option is "seeking" because it accurately conveys the idea that people may spend more time actively searching for the latest fashion trends and investing more money in fashion products.

Therefore, the correct answer is: seeking.

Q98. Answer: (d) along with

The correct answer is: along with.

Key Points

• The phrase "along with" is the most appropriate choice to fill the blank in the given sentence. Let's analyze the grammatical reasons for this choice:

• "off in": This option does not fit the context of the sentence. The phrase "off in" implies movement away or separation from a specific location, which does not align with the intended meaning of the sentence.

• "within": This option is not suitable because it implies being inside or contained within something. It does not convey the sense of walking out of a store or ordering online, as indicated in the sentence.

• "up in": This option is not the correct choice as it does not convey the intended meaning. The phrase "up in" typically implies a location or position higher or above something, which does not fit the context of walking out of a store or ordering online.

• "along with": This is the correct option as it conveys the meaning of accompanying or together with something. In the given sentence, it effectively communicates the idea that the good feeling is experienced when walking out of a store or ordering online, along with the new shade of lipstick or killer pair of boots.

• In summary, "along with" is the most appropriate choice grammatically and contextually because it accurately conveys the notion of accompanying or being together with the new shade of lipstick or killer pair of boots while experiencing the good feeling

mentioned in the sentence.

Therefore, the correct answer is: along with.

Q99. Answer: (c) backed up

The correct answer is: backed up.

Key Points

• The phrase "backed up" is the correct choice to fill the blank in the given sentence.

• Let's examine the grammatical reasons for this choice:

• "held back": This option does not fit the context of the sentence. "Held back" typically means to restrain or keep something from advancing or progressing, which does not convey the intended meaning of scientific studies confirming the effectiveness of retail therapy.

• "summed up": While "summed up" is a valid phrase, it does not accurately convey the intended meaning in the context of the sentence. "Summed up" means to provide a concise summary or conclusion, which is not the same as scientific studies confirming the effectiveness of retail therapy.

• "backed up": This is the correct option as it accurately conveys the meaning that more than one scientific study has provided support or evidence for the effectiveness of retail therapy. "Backed up" means to substantiate or support a claim or statement with evidence.

• "sold on": "Sold on" means to persuade or convince someone to accept or believe something. It does not fit the context of scientific studies confirming the effectiveness of retail therapy.

• In summary, the correct option is "backed up" because it conveys the meaning that more than one scientific study has provided support or evidence for the effectiveness of retail therapy.

Therefore, the correct answer is: backed up.

Q100. Answer: (c) or

The correct answer is: or.

Key Points

• The conjunction "or" is the appropriate choice to fill the blank in the given sentence. Let's analyze the grammatical reasons for this choice:

• "if": The conjunction "if" introduces a conditional clause, suggesting a condition or possibility. However, in this sentence, there is no conditional relationship being expressed.

• "and": The conjunction "and" is used to join two or more elements together. However, in this sentence, using "and" would imply that shopping takes both time and concentration in both scenarios: online and in a favorite store. This doesn't accurately reflect the intended meaning that shopping takes time and concentration in either scenario.

• "or": This is the correct option as it indicates a choice or alternative between two options. In this sentence, it appropriately conveys that shopping takes time and concentration whether it is being done online or in a favorite store. It presents two possibilities without implying that both are occurring simultaneously.

• "so": The conjunction "so" is used to indicate a consequence or result. However, in this sentence, there is no cause-and-effect relationship being expressed.

• In summary, the correct option is "or" because it accurately conveys the choice or alternative between shopping online or in a favorite store, indicating that shopping takes time and concentration in either scenario.

Therefore, the correct answer is: or.

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