RRB NTPC CBT-I Official Paper (Held On: 21 Mar 2021 Shift 2) (Previous Year Paper)

RRB NTPC • 2021 • 100 questions • 90 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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Scan the QR code or click the link to open it.

Q1. If the largest angle in a triangle is 75°, what is the least possible value of the smallest angle of the triangle?

(a) 76°
(b) 70°
(c) 30°
(d) 40°

Q2. Find the median of the given data.

20, 28, 32, 48, 20, 18, 16, 2, 30, 14

(a) 20
(b) 48
(c) 22
(d) 24

Q3. The axis of the earth is inclined to the plane of ecliptic at an angle of:

(a) 621/2
(b) 681/2
(c) 733/4
(d) 661/2

Q4. Through which of the following cities does Hudson River flow?

(a) London
(b) Bonn
(c) Bangkok
(d) New York

Q5. Vikram Samvat calendar is _____ years ahead of the Gregorian calendar.

(a) 56.7
(b) 46.7
(c) 66.7
(d) 76.7

Q6. Two poles are standing on a level ground at a distance of 24 m. The heights of the poles are 20 m and 38 m. Find the distance between their tops.

(a) 29 m
(b) 30 m
(c) 24 m
(d) 28 m

Q7. What is the real name of Babur?

(a) Khurrum
(b) Nashruddin
(c) Salim

(d) Zahir-ud-din

Q8. Where is the headquarters of International Committee of the Red Cross situated?

(a) Prague
(b) New Delhi
(c) Geneva
(d) New York

Q9. The Jim Corbett National Park was established in 1936 to save the endangered species of:

(a) Blue whale
(b) White elephant
(c) Peacock
(d) Bengal tiger

Q10. The number by which 62557 can be divided to make it a perfect cube is:

(a) 47
(b) 37
(c) 45
(d) 57

Q11. In a certain code language, ELEPHANT is written as MTMBSKCJ and LEOPARD is written as TMVBKEN. How will PANTHER be written as in that language?

(a) BKCJSEM
(b) BKJCSME
(c) BKJSCME
(d) BKCJSME

Q12. Rs. 4,800 becomes Rs. 6,000 in 4 years at a certain rate of compound interest. What will be the amount after 12 years at the same rate of compound interest?

(a) Rs. 9,600
(b) Rs. 12,000
(c) Rs. 8,400
(d) Rs. 9,375

Q13. The HCF and LCM of two numbers are 2 and 144 respectively. If one number is 16 then the other number is:

(a) 18
(b) 24
(c) 32
(d) 36

Q14. Find the value of ((0.01)^(2) + $(0.22)^2$ + $(0.333)^2$ + $(0.4444)^2$ + $(0.55555)^2$)/(($(0.001)^2$ + $(0.022)^2$ + $(0.0333)^2$ + $(0.04444)^2$ + $(0.055555)^2$);

(a) 125
(b) 50
(c) 75
(d) 100

Q15. Bengal Gazette, the first major newspaper in India, started in the year _____.

(a) 1775
(b) 1770
(c) 1857
(d) 1780

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Q16. Four words have been given, out of which three are alike in some manner and one is different. Select the odd one.

(a) Carpenter
(b) Doctor
(c) Blacksmith
(d) Goldsmith

Q17. Which of the following countries has the highest male to female population ratio in the world in 2019?

(a) Bhutan
(b) Qatar
(c) Latvia
(d) UAE

Q18. Six boxes P, Q, R, S, T and U are painted with one among different colours Black, Blue, Orange, Green, White and Grey (not necessarily in the same order). No two boxes are painted with same colour. R is painted with orange colour. S and U are neither painted with white nor grey colour. P is painted with black colour. Q is not painted with white or blue colour.

Box S is painted with which colour?

(a) Black or Green
(b) White or Green
(c) Blue or Grey
(d) Blue or Green

Q19. In a certain code language, MOTHER is written as 541203, FATHER is written as 961203 and PARTNER is written as 7631803. How will PANTHER be written as in that language?

(a) 7681023
(b) 7631203
(c) 5681023
(d) 7681203

Q20. Where is the headquarters of SAARC Development Fund (SDF) established by SAARC nations?

(a) Dhaka, Bangladesh
(b) Mumbai, India
(c) Thimphu, Bhutan
(d) Kathmandu, Nepal

Q21. Kunal was asked to find 5/6 times of a number. He multiplied it by 6/5. As a result, he got an answer which was more than the correct answer by 572. The number was:

(a) 2160
(b) 5720
(c) 1560
(d) 2860

Q22. The jelly-like substance between the nucleus and cell membrane is called _____.

(a) Pleural
(b) Amniotic
(c) Otic
(d) Cytoplasm

Q23. After deducting 10% from a certain sum, and then deducting 20% from the remainder, a sum of Rs. 3,600 is left. Find the original sum (in Rs.).

(a) 5,000
(b) 4,000
(c) 6,000
(d) 3,800

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Q24. _____ enables a user to remotely access another computer and terminals over the Internet.

(a) HTTP
(b) Telnet
(c) UseNet
(d) FTP

Q25. The circumference of a circle is 30 π cm. What is its area (in cm^2)?

(a) 15 π
(b) 225 π
(c) 900 π
(d) π

Q26. How many colours are available in a computer monitor with 16 bits per pixel depth?

(a) 16
(b) 256
(c) 16777216
(d) 65536

Q27. Read the given statements and conclusions carefully. Assuming the statements to be true, even if they seem to be at variance with commonly known facts, decide which of the conclusions logically follow(s) from the statements.

Statements:

1. Surge is a health drink.
2. No health drink is protein.
3. Some proteins are medicines.

Conclusions:

I. Some proteins are health drinks.

II. Some medicines are Surge.

III. Some health drinks are Surge.

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

Q28. Five airhostess A, B, C, D and E like one among different colours namely Green, Blue, Black, White and Pink (not necessarily in the same order). They are from one among different airlines namely Go Air, Emirates, Vistara, Spice Jet and Jet Lite (not necessarily in the same order). No two airhostess likes the same colour and they are not from same airlines. B likes White colour and is from Spice Jet airline. D is from Vistara airline and does not like Pink or Blue colour. A is not from Jet Lite and Go Air. The one who is from Go Air airline likes Black colour. C does not like Black colour and is not from Emirate airline.

Which of the following combination of airhostess, colour and airline is definitely correct?

(a) A - Blue - Emirates
(b) A - Pink - Emirates
(c) C - Blue - Jet Lite
(d) D - Green - Vistara

Q29. If $\sqrt{x} + 1/(\sqrt{x}) = 3$, then find the value of $x^2 + 1/(x^2)$.

(a) 49
(b) 51
(c) 47
(d) 53

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Q30. Select the option that is related to the third number in the same way as the second number is related to the first number.

36 : 216 :: 81 : ?

(a) 512
(b) 900
(c) 486
(d) 729

Q31. Mac is a type of personal computer made by:

(a) Dell
(b) Apple
(c) HP
(d) Acer

Q32. Which of the following is NOT a classical dance style?

(a) Mohiniattam
(b) Odissi
(c) Dhamar
(d) Bharatanatyam

Q33. Select the combination of symbols that when sequentially placed in the blanks of the given equation will complete the equation.

9 _ 3 _ 0 _ 8 _ 2 = 23

(a) • - × ÷
(b) × + - ÷
(c) ÷ + - ×
(d) • + ÷ ×

Q34. Which of the following organs secretes bile juice?

(a) Liver
(b) Heart
(c) Brain
(d) Kidney

Q35. Select the combination of letters that when sequentially placed in the blanks of the given series will complete the series.

xy_xx_yzzxx_yyy_zzxxxx

(a) zyzx
(b) zyxy
(c) zyxz
(d) xyxz

Q36. Three cubes of a metal whose edges are 3, 4 and 5 cm respectively are melted and formed into a single cube. If there is no loss of metal in the process, find the side of the new cube.

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

Q37. Who is appointed as Asian Cricket Council President in Feb, 2021?

(a) Rajiv Shukla
(b) Saurav Ganguly
(c) Anurag Thakur
(d) Jay Shah

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Q38. The Ministry of Environment and Forest launched Vahini Scheme in _____ with the basic objective of encouraging people's participation in environmental protection.

(a) June 1992
(b) July 1994
(c) June 1988
(d) July 1990

Q39. The radius of a road roller is 7 m and its length is 14 m. It takes 100 revolutions to level the ground of a field. Find the area of the field. [Use π = 22/7]

(a) 61000 m^2
(b) 61200 m2
(c) 61400 m2
(d) 61600 m2

Q40. Hema decided to donate 15% of her salary to a charitable trust. On the day of donation she changed her mind and donated Rs. 4,500 which is 125% of what she has decided earlier. Find Hema's salary.

(a) Rs. 18,000
(b) Rs. 24,000
(c) Rs. 30,000
(d) Rs. 32,000

Q41. In which year was Service Tax imposed in India?

(a) 2002
(b) 1994
(c) 1998
(d) 1995

Q42. The former Chief Justice of India, Ranjan Gogoi, was preceded by:

(a) YK Sabharwal
(b) Dipak Mishra
(c) JS Khehar
(d) TS Thakur

Q43. Which of the following country has launched "Hope Probe" mission to Mars in July 2020?

(a) UAE
(b) China
(c) India
(d) France

Q44. With which of the following does Article 72 of the Constitution of India deal?

(a) Composition and jurisdiction of Supreme Court of India
(b) Right to freedom of speech
(c) Pardoning power of the President
(d) Appointment of Prime Minister

Q45. Who is known as the 'Father of Indian Railways'?

(a) Lord Ripon
(b) Lord Irwin
(c) Lord Dalhousie
(d) Lord Minto

Q46. The length of the string between a kite and a point on the ground, without any slack, is 102 m. If the string makes an angle prop. to with the level ground such that tan prop. to = 15/8, how high is the kite?

(a) 105 m
(b) 100 m

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(c) 80 m
(d) 90 m

Q47. Who among the following artists is NOT a painter?
(a) Amrita Shergil
(b) Nandalal Bose
(c) Jamini Roy
(d) Rukmini Devi

Q48. There are five friends U, V, W, X and Y, sitting in a row facing North. U is to the left of V and W is to the right of X. X is sitting in the right of Y and he is the second from the left. Who is the first from the right?
(a) U
(b) V
(c) Y
(d) W

Q49. A group of men decided to complete a task in 10 days, but five of them remained absent. If the rest of the group completed the task in 12 days, find the original number of men in the group.
(a) 25
(b) 20
(c) 30
(d) 32

Q50. If $x + y = 1$, then find the value of $x^3 + y^3 + 3xy$.
(a) 6
(b) 0
(c) 1
(d) 2

Q51. Consider the given statement(s) and decide which of the given assumptions is/are implicit in the statement.

Statement:

"One of ways your child can do better is by getting private tuition", said the teacher.

Assumptions:

I. The child is not good in studies.

II. The child cannot do better if he is not taking private tuition.

(a) Only II is implicit.
(b) Only I is implicit.
(c) Neither I nor II is implicit.
(d) Both I and II are implicit.

Q52. Select the option that is related to the third term in the same way as the second term is related to the first term.

Laboratory : Manual :: Library : ?

(a) Book-shelf
(b) Books
(c) Librarian
(d) Catalogue

Q53. Two runners cover the same distance at the speeds of 15 km/h and 16 km/h respectively. Find the distance travelled when one takes 16 min longer than the other.
(a) 62 km
(b) 63 km
(c) 64 km
(d) 60 km

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Q54. Students of Engineering college of _____ developed a Satellite named as "SriShaktiSat" for ISRO in Jan, 2021.

(a) New Delhi
(b) Coimbtore
(c) Chennai
(d) Kolkata

Q55. The cost price of 10 articles is equal to the selling price of 9 articles. Find the percentage profit.

(a) 131/9%
(b) 101/9%
(c) 111/9%
(d) 1211/9%

Q56. What smallest positive fraction should be added to 32/3 + 67/12 + 49/36 + 5 + 71/12 to make the sum a whole number?

(a) 5/12
(b) 7/12
(c) 13/12
(d) 11/12

Q57. What is the least multiple of 7, which when divided by 2, 3, 4, 5 and 6 leaves the remainders 1, 2, 3, 4 and 5 respectively?

(a) 147
(b) 140
(c) 119
(d) 133

Q58. Who gave the term 'homo sapiens'?

(a) Miller
(b) Darwin
(c) G. J. Mendal
(d) C. Linnaeus

Q59. How many numbers between 100 and 300 are divisible by 7?

(a) 27
(b) 30
(c) 29
(d) 28

Q60. What would be the maximum value of Q in the following equation?

5P9 + 3R7 + 2Q8 = 1114

(a) 9
(b) 7
(c) 5
(d) 8

Q61. When x + y + z = 16 and xy + yz + zx = 78, find the value of x3 + y3 + z3 - 3xyz.

(a) 350
(b) 365
(c) 352
(d) 360

Q62. The greatest number of four digits which is divisible by 5, 35, 39 and 65 is:

(a) 9055
(b) 9994
(c) 9505

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(d) 9555

Q63. The side of an equilateral triangle is 10 cm. Find its altitude.

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

Q64. In a certain code language, 'Bird is animal' is written as '# mr so', 'Parrot is Bird' is written as 'so # @', 'is Parrot animal' is written as 'mr @ #'. What is the code for 'animal' in that code language?

(a) so
(b) mr
(c) @
(d) #

Q65. A person travelled 120 km by steamer, 450 km by train and 60 km by horse. It took 13 h 30 min. If the speed of the train is 3 times that of the horse and 1.5 times that of the steamer, find the speed of the train.

(a) 64 km/h
(b) 65 km/h
(c) 60 km/h
(d) 62 km/h

Q66. The total number of gold medals and silver medals won by a person in games is 75. Which of the following CANNOT be the ratio of number of silver medals won by that person?

(a) 7 : 8
(b) 2 : 3
(c) 9 : 1
(d) 12 : 13

Q67. Who founded the English newspaper 'Mahratta'?

(a) Bal Gangadhar Tilak
(b) Lala Lajpat Rai
(c) Bipin Chandra Pal
(d) Ashwini Kumar Dutt

Q68. Which of the following scheme was launched in April 2020 to enable an integrated property validation solution for rural India?

(a) SVAMITVA
(b) SAMARTH
(c) UMANG
(d) KUSUM

Q69. What is the motto of the Supreme Court of India?

(a) Equal Justice for All
(b) Yato Dharmastato Jayah
(c) Satyamev Jayate
(d) Yogakshemam Vahamyaham

Q70. Suez canal is an artificial waterway that connects which of the following seas?

(a) Mediterranean Sea and Red Sea
(b) Caspian sea and Mediterranean Sea
(c) Black sea and Mediterranean Sea
(d) Black sea and Red Sea

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Q71. What is the value of the following expression?

50 - [8{9 - (6 - 5+3)}]

(a) -38
(b) 53
(c) 47
(d) -48

Q72. How much time is taken by sunlight to reach Earth?

(a) 9 min 32 sec
(b) 8 min 20 sec
(c) 7 min 32 sec
(d) 7 min 56 sec

Q73. ISRO decided to open a Regional Academic Centre for Space at IIT _____ in December 2020.

(a) Varanasi
(b) Kharagpur
(c) New Delhi
(d) Kanpur

Q74. In a certain code language, 'VMBHL' is written as 'VQJTB'. What is the code for 'KTSPR' in that code language?

(a) BYBBQ
(b) BYAAQ
(c) BYBAR
(d) BYABR

Q75. To which of the following deities is the Dilwara Temple in Mount Abu dedicated?

(a) Badrinath
(b) Jagannath
(c) Kedarnath
(d) Adinath

Q76. Which of the following countries does NOT share its land boundary with India?

(a) Tajikistan
(b) china
(c) Bangladesh
(d) Myanmar

Q77. One Stop Centre scheme was launched on:

(a) 1^(st) April 2017
(b) 1st April 2016
(c) 1st April 2018
(d) 1st April 2015

Q78. A certain sum of money, invested with simple interest, amounts to Rs. 756 in 2 years and to Rs. 873 in 3.5 years. Find the sum (in Rs.).

(a) 600
(b) 700
(c) 500
(d) 400

Q79. In 2019, _____ became the 24^(th) Chief of the Naval Staff of India.

(a) Admiral Karambir Singh
(b) Admiral Sunil Lamba
(c) Admiral Bimal Verma
(d) S Jaishankar

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Q80. Read the information and answer the question that follows.

i. In a examination, Mayank got higher marks than Sheetal.

ii. Sheetal got higher marks than Rohit.

iii. Sheetal got higher marks than Tanya.

iv. Tanya got less marks than Praveen.

v. Arya got higher marks than Mayank.

vi. Rohit got more marks than both Tanya and Praveen.

Who has achieved the highest marks in the examination?

(a) Arya
(b) Sheetal
(c) Mayank
(d) Praveen

Q81. The United Nations adopted the 'Charter of Economic Rights and Duties of States' in _____.

(a) December 1976
(b) December 1977
(c) December 1974
(d) December 1980

Q82. World Health Organization (WHO) gave its Tobacco Control Award for the year 2019 to the health department of the Indian state of _____.

(a) Gujarat
(b) Rajasthan
(c) Punjab
(d) Kerala

Q83. Which of the following is also known as the 'tree frog'?

(a) Rana tigrina
(b) Hyla
(c) Salamandar
(d) Toad

Q84. According to the law of diminishing marginal utility, as the amount of a good consumed increases, the marginal utility of that good tends to _____.

(a) first diminish and then improve
(b) diminish
(c) remain constant
(d) improve

Q85. In 2018, _____ was appointed as UNICEF India's first youth ambassador.

(a) Mithali Raj
(b) Sakshi Malik
(c) Saina Nehwal
(d) Hima Das

Q86. The following table shows the sale of different brands of watches by a shop during 2014-2018.

Year	Brand (in thousands)			
Titan	Fastrack	Timex	Fossil	
2014	366	205	247	96
2015	398	188	285	108
2016	312	175	388	112

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2017	412	312	401	146
2018	288	202	255	126

Which brand of watches showed the highest percentage change in sales between 2014 and 2018?

(a) Timex
(b) Fastrack
(c) Titan
(d) Fossil

Q87. The following table shows the sale of different brands of watches by a shop during 2014-2018.

Year	Brand (in thousands)			
Titan	Fastrack	Timex	Fossil	
2014	366	205	247	96
2015	398	188	285	108
2016	312	175	388	112
2017	412	312	401	146
2018	288	202	255	126

Which of the given options represents the maximum percentage increase in sales over the preceding year?

(a) Timex, 2016
(b) Fossil, 2017
(c) Fastrack, 2017
(d) Titan, 2017

Q88. The following table shows the sale of different brands of watches by a shop during 2014-2018.

Year	Brand (in thousands)			
Titan	Fastrack	Timex	Fossil	
2014	366	205	247	96
2015	398	188	285	108
2016	312	175	388	112
2017	412	312	401	146
2018	288	202	255	126

Which brand of watches saw the highest decrease in sales in the year 2018 as compared to the preceding year?

(a) Titan
(b) Timex
(c) Fossil
(d) Fastrack

Q89. The following table shows the sale of different brands of watches by a shop during 2014-2018.

Year	Brand (in thousands)			
Titan	Fastrack	Timex	Fossil	
2014	366	205	247	96
2015	398	188	285	108
2016	312	175	388	112
2017	412	312	401	146

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2018	288	202	255	126

Based on the data given in the table above which of the following statements is TRUE?

(a) The total sales of Fossil brand of watches for the given period is less than 50% of the sales of every other brand for the given period.
(b) The brand with the highest sales for the given period is Timex.
(c) Only two brands showed year-on-year increase in sales during the period 2014-17.
(d) The total sales of all brands of watches was highest in 2016.

Q90. Out of the four words listed, three are alike in some manner and one is different. Select the odd one.

(a) Eden Gardens
(b) Salt Lake Stadium
(c) Wankhede Stadium
(d) MA Chidambaram Stadium

Q91. Read the given statements and conclusions carefully and decide which of the conclusions logically follow(s) from the statements.

Statements:

All flowers are blue.

Some blues are balls.

No ball is red.

Conclusions:

I: No flowers is red.

II: All flowers are balls.

III: Few balls are blue.

(a) Only III follows.
(b) Only I and III follow.
(c) I, II and III follow.
(d) Only II and III follow.

Q92. The average age of a cricket team of 11 players is 18 years. If 4 players join that team, the average age of the team will be increased by 2 years. What is the average age (in years) of 4 new players?

(a) 25.5
(b) 24
(c) 25
(d) 24.5

Q93. How will you write 5.37 hours in hours, minutes and seconds?

(a) 5 hours, 22 minutes, 12 seconds
(b) 5 hours, 22 minutes, 2 seconds
(c) 5 hours, 30 minutes, 7 seconds
(d) 5 hours, 37 minutes

Q94. In certain code language, 'He is good boy' is written as 'no po ko lo', 'good for health' is written as 'po ro fo' and 'health is good' is written as 'fo ko po'. What should stand for 'is' in that language?

(a) no
(b) lo
(c) po
(d) ko

Q95. Select the numbers that can replace the question marks (?) in the following series.

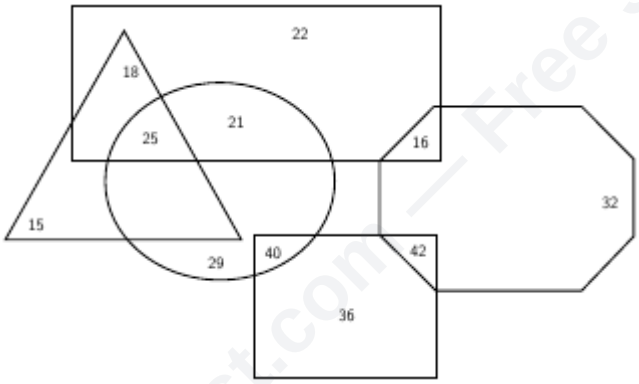
3, 54, 6, 50, 9, 46, 12, 42, ?, ?

(a) 18, 36
(b) 18, 38

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(c) 15, 38
(d) 15, 36

Q96. In the following diagram, the triangle represents the students who want to have Dosa in their lunch. The rectangle represents the students who want to have sandwich in their lunch. The circle represents the students who want to have pizza in their lunch. The square represents the students who want to have Idli in their lunch. The hexagon represents those students who want to have Puri Sabji at the time of lunch.



How many students want to have Dosa, sandwich and pizza, all three in their lunch?

(a) 18
(b) 25
(c) 29
(d) 15

Q97. Out of the four words listed, three are alike in some manner and one is different. Select the odd one.

(a) WhatsApp
(b) Facebook
(c) Twitter
(d) Social Media

Q98. Select the number that will come next in the following series.

41, 47, 59, 67, 73, 83, ?

(a) 97
(b) 87
(c) 93
(d) 89

Q99. In a cricket match, Rohit scored more than Rahul but less than Santosh. Balbeer scored more than Iqbal but less than Rahul. Mehul scored more than Balbeer but less than Santosh. Who scored the most?

(a) Rohit
(b) Balbeer
(c) Santosh
(d) Mehul

Q100. Four words have been given, out of which three are alike in some manner, while the fourth one is different. Select the odd one.

(a) Time
(b) Volt
(c) Ohm
(d) Pascal

ANSWER KEY

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

SOLUTIONS

Q1. Answer: (c) 30°

Shortcut Trick

In a triangle, to minimize the smallest angle, the other two angles must be as large as possible.

Given the largest angle is 75°, the second-largest angle can at most be 75°.

Least possible smallest angle = 180° − (Largest Angle + Max possible second angle)

Least possible smallest angle = 180° − (75° + 75°) = 180° − 150° = 30°.

Therefore The correct answer is 30°.

Alternate Method

Given: The largest angle of the triangle is 75°.

Formula Used: The sum of all interior angles of a triangle is always 180°.

Calculations:

=> Let the three angles of the triangle be x, y, and z.

=> According to the question, let the largest angle z = 75°.

=> By the Angle Sum Property: x + y + z = 180°

=> x + y + 75° = 180°

=> x + y = 180° − 75° = 105°

=> To find the least possible value of the smallest angle (x), we must maximize the second angle (y).

=> Since 75° is the maximum angle, y cannot exceed 75°. So, the maximum value of y = 75°.

=> Least value of x = 105° − 75° = 30°.

Therefore The correct answer is 30°.

Additional Information

Angle Sum Property

The sum of the three interior angles of any Euclidean triangle is always 180°.

Types of Triangles by Angles

Acute (all angles < 90°), Right (one angle = 90°), and Obtuse (one angle > 90°).

Isosceles Triangle Property

In this problem, the minimum value occurs when the triangle is isosceles with two angles equal to 75°.

Q2. Answer: (a) 20

Given:

Data: 20, 28, 32, 48, 20, 18, 16, 2, 30, 14

Formula used:

Median is the middle value of a data set ordered from least to greatest. If the data set has an even number of observations, the median is the average of the two middle numbers.

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Calculation:

Ordered data: 2, 14, 16, 18, 20, 20, 28, 30, 32, 48

Number of observations (n) = 10 (even)

Middle values: 20 (5th) and 20 (6th)

=> Median = (20 + 20) / 2

=> Median = 40 / 2

=> Median = 20

Therefore The correct answer is option (1).

Q3. Answer: (d) 661/2

The correct answer is 66(1)/(2).

Key Points

• The axis of the Earth is inclined at an angle of 66(1)/(2) degrees to the plane of the ecliptic.

• This inclination is responsible for the changing seasons on Earth.

• Because of this tilt, different parts of the Earth receive varying amounts of sunlight throughout the year.

• The tilt remains relatively constant over time, although it can undergo minor variations due to gravitational interactions with other celestial bodies.

Additional Information

• Axis of the Earth

• The Earth rotates around an imaginary line called the axis, which passes through the North and South Poles.

• The axis is tilted at an angle of approximately 23.5 degrees relative to the orbital plane of the Earth around the Sun.

• This tilt is what causes the variation in the amount of sunlight different parts of the Earth receive, leading to the phenomenon of seasons.

• Plane of the Ecliptic

• The plane of the ecliptic is the imaginary plane that contains the Earth's orbit around the Sun.

• It is used as a reference plane for the solar system, and most of the planets in the solar system orbit within a few degrees of this plane.

• The apparent path that the Sun traces out in the sky over the course of a year, as observed from Earth, is also called the ecliptic.

• Seasons

• The tilt of the Earth's axis and its orbit around the Sun cause the seasons.

• When the Northern Hemisphere is tilted towards the Sun, it experiences summer while the Southern Hemisphere experiences winter, and vice versa.

• During spring and autumn (fall), both hemispheres receive approximately equal amounts of sunlight.

• Gravitational Interactions

• The Earth's tilt can undergo minor changes due to gravitational interactions with the Moon and other planets.

• These interactions can cause the axis to wobble slightly in a phenomenon known as axial precession.

• Axial precession is a slow, continuous change in the orientation of the Earth's rotational axis, which can affect long-term climate patterns.

Q4. Answer: (d) New York

The correct answer is New York.

Key Points

• The Hudson River flows through the state of New York in the United States.

• It originates from the Adirondack Mountains and flows southward through the Hudson Valley to New York City.

• The river is named after the English explorer Henry Hudson, who navigated it in 1609.

• The Hudson River is approximately 315 miles (507 kilometers) long.

Additional Information

• Henry Hudson:

• Henry Hudson was an English sea explorer and navigator during the early 17th century.

• He is best known for his explorations of present-day Canada and parts of the northeastern United States.

• The Hudson River, Hudson Strait, and Hudson Bay are named after him.

• Adirondack Mountains:

• The Adirondack Mountains are a mountain range located in the northeastern part of New York State.

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• They are part of the larger Appalachian Mountains and cover approximately 5,000 square miles.

• The region is known for its beautiful landscapes, extensive forests, and numerous lakes and rivers.

• Hudson Valley:

• The Hudson Valley is a region in New York State that stretches along the Hudson River from the Capital District in the north to the New York City metropolitan area in the south.

• It is known for its natural beauty, historic sites, and vibrant cultural scene.

• The valley has been an important area for agriculture, industry, and transportation throughout the history of New York State.

Q5. Answer: (a) 56.7

The correct answer is 56.7.

Key Points

• The Vikram Samvat calendar is a historical Hindu calendar used in India and Nepal.

• It is approximately 56.7 years ahead of the Gregorian calendar, which is the calendar used by most of the world today.

• The Vikram Samvat calendar was started in 57 BCE by the Indian king Vikramaditya.

• This calendar is a lunisolar calendar, meaning it is based on both the phases of the moon and the solar year.

Additional Information

• Vikram Samvat Calendar

• The Vikram Samvat calendar is one of the oldest calendars still in use today and is widely used in Indian and Nepalese culture for religious festivals and traditional events.

• It is a lunisolar calendar, which means it takes into account both the moon phases and the solar year, similar to the Hebrew and Chinese calendars.

• Each month in the Vikram Samvat calendar is divided into two parts: the bright half (Shukla Paksha) and the dark half (Krishna Paksha), based on the waxing and waning phases of the moon.

• The new year in the Vikram Samvat calendar typically starts in mid-April, coinciding with the Hindu festival of Baisakhi.

• Gregorian Calendar

• The Gregorian calendar is the calendar that is most commonly used today worldwide. It was introduced by Pope Gregory XIII in 1582.

• This calendar is a solar calendar, based solely on the Earth's revolutions around the Sun.

• It replaced the Julian calendar, which was less accurate in terms of aligning with the solar year.

• The Gregorian calendar is organized into 12 months, with a leap year occurring every four years to account for the extra 0.25 days in each year.

Q6. Answer: (b) 30 m

Given:

Distance between poles (d) = 24 m

Height of the first pole (h1) = 20 m

Height of the second pole (h2) = 38 m

Formula used:

Using the Pythagorean theorem to find the distance between the tops:

Distance = $\sqrt{((h2 - h1)^2 + d^2)}$

Calculation:

Distance = $\sqrt{((38 - 20)^2 + 24^2)}$

=> Distance = $\sqrt{(18^2 + 24^2)}$

=> Distance = $\sqrt{(324 + 576)}$

=> Distance = $\sqrt{900}$

=> Distance = 30 m

Therefore The correct answer is option (2).

Q7. Answer: (d) Zahir-ud-din

The correct answer is Zahir-ud-din.

Key Points

• Zahir-ud-din Muhammad Babur was the founder and first Emperor of the Mughal dynasty in the Indian subcontinent.

• Babur was born on 14 February 1483 in the city of Andijan, in present-day Uzbekistan.

• Babur was a descendant of Timur on his father's side and Genghis Khan on his mother's side.

• He established the Mughal Empire in 1526 after his victory at the First Battle of Panipat against Ibrahim Lodi.

Additional Information

• Babur's Early Life

• Babur was born in the Fergana Valley, which is now part of Uzbekistan.

• He became a ruler at the young age of 12 after the death of his father, Umar Sheikh Mirza.

• Initially, he faced numerous challenges including opposition from his uncles and other regional rulers.

• Despite several early setbacks, Babur managed to capture and consolidate territories over time.

• Timurid Dynasty

• The Timurid dynasty was founded by Timur (also known as Tamerlane), a Turco-Mongol conqueror who established a vast empire in Central Asia.

• Babur, being a Timurid prince, inherited a claim to the thrones of both Ferghana and Samarkand.

• The Timurids were known for their patronage of arts and architecture, which greatly influenced Babur's tastes and policies.

• Genghis Khan's Legacy

• Babur's maternal lineage traced back to Genghis Khan, the founder of the Mongol Empire.

• This gave Babur a prestigious heritage, combining the legacies of two of the most powerful conquerors in history.

• Genghis Khan's descendants, known as the Chagatai Khanate, ruled over parts of Central Asia, which had a significant impact on Babur's early life and ambitions.

• First Battle of Panipat

• Fought on 21 April 1526 between Babur and the Sultan of Delhi, Ibrahim Lodi.

• The battle marked the beginning of Mughal rule in India.

• Babur's use of field artillery and innovative tactics played a crucial role in his victory.

• This battle is often cited as one of the earliest instances of modern military strategy in the Indian subcontinent.

Q8. Answer: (c) Geneva

The correct answer is Geneva.

Key Points

• The International Committee of the Red Cross (ICRC) is headquartered in Geneva, Switzerland.

• ICRC was founded in 1863 and is one of the most respected humanitarian organizations globally.

• The ICRC plays a unique role in international humanitarian law and the protection of victims of armed conflict.

• It operates worldwide, assisting people affected by conflict and armed violence and promoting the laws that protect victims of war.

Additional Information

• International Committee of the Red Cross (ICRC)

• The ICRC is an independent, neutral organization ensuring humanitarian protection and assistance for victims of armed conflict and other situations of violence.

• It is part of the International Red Cross and Red Crescent Movement along with the International Federation of Red Cross and Red Crescent Societies (IFRC) and 192 National Societies.

• The ICRC's mandate stems from the Geneva Conventions of 1949, which are international treaties that contain the most important rules limiting the barbarity of war.

• The ICRC works to protect and assist victims of armed conflict and strives to ensure respect for international humanitarian law.

• Geneva Conventions

• The Geneva Conventions are four treaties formulated in Geneva, Switzerland, that set the standards in international law for humanitarian treatment in war.

• The Conventions were first adopted in 1864 and were significantly updated in 1949 after World War II.

• They are universally ratified and form the core of international humanitarian law.

• The conventions protect those who are not participating in hostilities, such as civilians, health workers, and aid workers, as well as those who are no longer participating, like wounded soldiers and prisoners of war.

• International Humanitarian Law (IHL)

• Also known as the laws of war or the law of armed conflict, IHL is a set of rules which seek, for humanitarian reasons, to limit the effects of armed conflict.

• IHL protects persons who are not or are no longer participating in the hostilities and restricts the means and methods of warfare.

• The core instruments of IHL are the Geneva Conventions and their Additional Protocols.

• IHL is part of international law, which is the body of rules governing relations between states.

Q9. Answer: (d) Bengal tiger

The correct answer is Bengal tiger.

Key Points

• The Jim Corbett National Park was established in 1936 as Hailey National Park to protect the endangered Bengal tiger.

• It was renamed in 1956 after the famous hunter and conservationist Jim Corbett who played a key role in its establishment.

• It is located in the Nainital district of Uttarakhand, India.

• The park is known for its rich biodiversity and is a major attraction for wildlife enthusiasts and nature lovers.

Additional Information

• Bengal Tiger (Panthera tigris tigris)

• The Bengal tiger is a tiger population native to the Indian subcontinent.

• It is the most numerous tiger subspecies, and it is listed as Endangered on the IUCN Red List.

• The Bengal tiger's coat is yellow to light orange, with stripes ranging from dark brown to black.

• It is a top predator and an apex predator in its ecosystem, playing a crucial role in maintaining the balance of the ecosystem by controlling the population of herbivores and other animals.

• Jim Corbett (1875-1955)

• Jim Corbett was a British-Indian hunter, tracker, naturalist, and author who hunted a number of man-eating tigers and leopards in India.

• He authored several books recounting his hunts and experiences, the most famous being "Man-Eaters of Kumaon".

• Corbett was an early advocate of wildlife conservation in India and played a key role in the establishment of wildlife sanctuaries.

• In recognition of his efforts, the Hailey National Park was renamed Jim Corbett National Park.

• National Parks in India

• National parks are protected areas, established by the government to conserve wildlife and natural habitats.

• India has over 100 national parks, each playing a vital role in the conservation of biodiversity.

• These parks provide a sanctuary for various endangered species and are important for scientific research and education.

• National parks also promote eco-tourism and provide opportunities for people to experience and appreciate nature.

• Wildlife Conservation

• Wildlife conservation involves the protection and management of wildlife species and their habitats to prevent extinction.

• Efforts include establishing protected areas, anti-poaching measures, habitat restoration, and breeding programs.

• Conservation is crucial for maintaining biodiversity, which is essential for ecosystem stability and human well-being.

• International cooperation and policies like the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) play a significant role in global wildlife conservation efforts.

Q10. Answer: (a) 47

Given:

The given number = 62557

Concept used:

Perfect cube: A number that is equal to the number, multiplied by itself, three times.

Prime factorization: A way of finding the prime factors of a number, such that the original number is evenly divisible by these factors

Calculation:

According to the above concept,

Prime factorization of 62557 is

=> 62557 = 11 × 11 × 11 × 47

In order to make it a perfect cube it has to be divided by 47.

Therefore The required answer is 47.

Q11. Answer: (d) BKCJSME

The logic followed here is:

ELEPHANT is written as MTMBSKCJ

LEOPARD is written as TMVBKEN

Similarly, PANTHER will be written as:

Hence, the correct answer is "BKCJSME".

Q12. Answer: (d) Rs. 9,375

Given:

Principal (P) = Rs. 4,800

Amount after 4 years (A1) = Rs. 6,000

Time (t) = 4 years

Formula used:

A = P × [1 + (r/100)]^t

Where, A = Amount, P = Principal, r = rate of interest, t = time (in years)

Calculations:

We are given that the amount after 4 years is Rs. 6,000, so we can write the equation:

6000 = 4800 × [1 + (r/100)]^4 ----(1)

Now, let's calculate the amount after 12 years using the same formula:

A = 4800 × [1 + (r/100)]^{12} ----(2)

First, we need to find the rate of interest. To do this, we divide equation (2) by equation (1):

=> (A2 / A1) = [1 + (r/100)]^{12} / [1 + (r/100)]^4

=> (A2 / A1) = [1 + (r/100)]^8

Substitute the values of A2 and A1:

=> (A2 / 6000) = [1 + (r/100)]^8

Substitute the known values from equation (1):

=> (6000 / 4800) = [1 + (r/100)]^4

=> 5/4 = [1 + (r/100)]^4

=> (5/4)^(1/4) = 1 + (r/100)

=> (1.25)^(1/4) = 1 + (r/100)

=> 1.0574 ≈ 1 + (r/100)

=> r/100 = 1.0574 - 1

=> r/100 = 0.0574

=> r ≈ 5.74%

Now that we have the rate of interest, we can calculate the amount after 12 years (A2):

Substitute r = 5.74% in equation (2):

A = 4800 × [1 + (5.74/100)]^{12}

A = 4800 × (1.0574)^{12}

A ≈ 4800 × 1.9508

A ≈ Rs. 9,375

The amount after 12 years will be Rs. 9,375.

Q13. Answer: (a) 18

Given:

HCF of two numbers = 2

LCM of two numbers = 144

One number = 16

Formula used:

HCF × LCM = Product of the two numbers

Calculations:

2 × 144 = 16 × Other number

=> 288 = 16 × Other number

=> Other number = 288 / 16

=> Other number = 18

Therefore The correct answer is option 1.

Q14. Answer: (d) 100

Given:

((0.01)^(2) + (0.22)^2 + (0.333)^2 + (0.4444)^2 + (0.55555)^2)/((0.001)^2 + (0.022)^2 + (0.0333)^2 + (0.04444)^2 + (0.055555)^2);

Formula used:

We can observe that the numerator and denominator have a similar pattern. Each term in the numerator is 100 times larger than the corresponding term in the denominator.

Calculations:

$(0.01)^2$ is 100 times smaller than $(0.001)^2$.

$(0.22)^2$ is 100 times smaller than $(0.022)^2$.

$(0.333)^2$ is 100 times smaller than $(0.0333)^2$.

$(0.4444)^2$ is 100 times smaller than $(0.04444)^2$.

$(0.55555)^2$ is 100 times smaller than $(0.055555)^2$.

Therefore, we can simplify the expression by dividing each term in the numerator by 100:

$((0.01/100)^2 + (0.22/100)^2 + (0.333/100)^2 + (0.4444/100)^2 + (0.55555/100)^2)/((0.001)^2 + (0.022)^2 + (0.0333)^2 + (0.04444)^2 + (0.055555)^2)$

Now, we can see that the numerator and denominator are identical. Hence, the expression simplifies to: 1

Therefore, the value of the expression is 1.

Q15. Answer: (d) 1780

The correct answer is 1780.

Key Points

• Bengal Gazette was the first major newspaper in India, marking the beginning of print journalism in the country.

• The paper was started by James Augustus Hicky, who is often referred to as the "father of Indian press".

• The first issue of Bengal Gazette was published on 29 January 1780.

• The newspaper was also known as Hicky's Gazette and was characterized by its open criticism of the British Government in India.

Additional Information

• James Augustus Hicky:

• James Augustus Hicky was an Irishman who launched the Bengal Gazette, the first English-language newspaper in India.

• He used the newspaper as a platform to criticize the policies and actions of the British East India Company and its officials.

• His outspoken nature and investigative journalism led to multiple legal issues with the British authorities.

• Despite his efforts to bring transparency, the newspaper was shut down by the British government in 1782.

• History of Indian Journalism:

• The Bengal Gazette paved the way for other publications in India, with newspapers becoming a significant medium for information and public discourse.

• In the early 19th century, several newspapers emerged, such as The Calcutta Journal, The Bombay Herald, and The Madras Courier.

• These publications played a crucial role in the Indian independence movement by spreading nationalist ideas and mobilizing public opinion against colonial rule.

• Print Media Evolution:

• The evolution of print media in India saw a transition from colonial-controlled press to a more diversified and free press post-independence.

• Post-independence, newspapers like The Times of India, The Hindu, and Indian Express became prominent in shaping public opinion and providing news coverage.

• Today, India's print media landscape includes a multitude of newspapers in various languages, catering to diverse audiences across the country.

Q16. Answer: (b) Doctor

The logic followed here is:

Carpenter	Person who works with wood
Doctor	Person who practices medicine
Blacksmith	Person who works with iron
Goldsmith	Person who works with gold

Carpenter, Blacksmith, Goldsmith all are professions that involve working with specific materials,

Whereas,

Doctor is a profession that does not fit into the same category of working with specific materials.

Hence, the correct answer is "Doctor".

Q17. Answer: (b) Qatar

The correct answer is Qatar.

Key Points

• Qatar has the highest male to female population ratio in the world, with significantly more males than females.

• This skewed ratio is primarily due to the high number of male expatriates in the country, many of whom are laborers working in various sectors like construction.

• The influx of male workers is driven by Qatar's rapid economic development and infrastructural projects, especially those related to the FIFA World Cup 2022 preparations.

• The male to female ratio in Qatar is approximately 3.1:1, meaning there are around three males for every female in the country.

Additional Information

• Male to Female Population Ratio

• This ratio indicates the number of males for every female in a population.

• A ratio of 1:1 indicates an equal number of males and females.

• Countries with large numbers of male labor migrants often have higher ratios of males to females.

• Expatriates

• Expatriates, or expats, are people who reside in a country other than their native country.

• In countries like Qatar, a significant portion of the workforce consists of expatriates.

• The majority of expatriates in Qatar are males who have migrated for work opportunities.

• Labor Migration

• Labor migration refers to the movement of people from one country to another for the purpose of employment.

• Countries with booming economies and large-scale infrastructure projects attract labor migrants.

• Labor migration contributes to the demographic imbalances in countries like Qatar.

• FIFA World Cup 2022

• Qatar is set to host the FIFA World Cup in 2022, which has spurred a massive influx of labor migrants for various construction projects.

• These projects include the construction of stadiums, hotels, and other infrastructure necessary for the event.

• The preparation for this event has significantly impacted the country's population demographics.

Q18. Answer: (d) Blue or Green

According to the given information:

1) R is painted with orange colour.

2) P is painted with black colour.

Boxes	Colour
R	Orange
P	Black

3) S and U are neither painted with white nor grey colour.

Boxes	Colour
R	Orange
P	Black
S	White / Grey
U	White / Grey

4) Q is not painted with white or blue colour.

Boxes	Colour
R	Orange
P	Black

S	White / Grey
U	White / Grey
Q	White / Blue
T	White

Final arrangement:

Boxes	Colour
R	Orange
P	Black
S	Blue / Green
U	Blue / Green
Q	Grey
T	White

So, Box S is painted with Blue or Green colour.

Hence, the correct answer is "Blue or Green".

Q19. Answer: (d) 7681203

The logic followed here is:

MOTHER is written as 541203,

FATHER is written as 961203

PARTNER is written as 7631803.

Similarly, PANTHER will be written as:

Hence, the correct answer is "7681203".

Q20. Answer: (c) Thimphu, Bhutan

The correct answer is Thimphu, Bhutan.

Key Points

• The headquarters of the SAARC Development Fund (SDF) is located in Thimphu, Bhutan.

• SAARC Development Fund (SDF) was established by the member nations of the South Asian Association for Regional Cooperation (SAARC).

• The SDF serves as the umbrella financial institution for SAARC projects and programs.

• The primary objective of SDF is to promote the welfare of the people of SAARC region, improve their quality of life, and accelerate economic growth, social progress, and poverty alleviation in the region.

Additional Information

• South Asian Association for Regional Cooperation (SAARC)

• SAARC is a regional intergovernmental organization and geopolitical union of states in South Asia.

• Its member states include Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka.

• SAARC was established on December 8, 1985, with the aim to promote economic and regional integration.

• The headquarters of SAARC is located in Kathmandu, Nepal.

• SAARC Development Fund (SDF)

• The SDF was officially launched during the 16th SAARC Summit held in Thimphu, Bhutan, in April 2010.

• The SDF operates through three funding windows: Social, Economic, and Infrastructure.

• The Social Window primarily focuses on poverty alleviation and social development projects.

• The Economic and Infrastructure Windows focus on projects aimed at enhancing economic integration and infrastructure development in the region.

• Thimphu, Bhutan

• Thimphu is the capital and largest city of Bhutan.

• It is situated in the western central part of Bhutan and has a population of approximately 114,551.

• The city is the political and economic center of Bhutan, home to the royal family, government offices, and the main economic institutions.

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• Thimphu is known for its rich cultural heritage, scenic beauty, and as a hub for various international organizations and institutions.

Q21. Answer: (c) 1560

Given:

Kunal was asked to find times of a number. He multiplied it by. As a result, he got an answer which was more than the correct answer by 572. The number was:

Formula used:

Let the number be x.

Correct Calculation: 5/6x

Incorrect Calculation: 6/5x

Difference: 6/5x - 5/6x = 572

Calculation:

(36x - 25x)/30 = 572

=> 11x/30 = 572

=> 11x = 572 × 30

=> 11x = 17160

=> x = 17160/11

=> x = 1560

Therefore The correct answer is option (3).

Q22. Answer: (d) Cytoplasm

The correct answer is Cytoplasm.

Key Points

• The cytoplasm is a jelly-like substance that fills the cell between the cell membrane and the nucleus.

• It consists of cytosol (the fluid part), organelles, and various particles.

• The cytoplasm is where most cellular activities occur, including metabolic pathways such as glycolysis and processes like cell division.

• It helps in the movement of materials around the cell and provides a medium for the organelles to remain suspended.

Additional Information

• Cell Membrane:

• The cell membrane, also known as the plasma membrane, is a biological membrane that separates the interior of all cells from the outside environment.

• It is selectively permeable to ions and organic molecules and controls the movement of substances in and out of cells.

• The cell membrane is involved in a variety of cellular processes such as cell adhesion, ion conductivity, and cell signaling.

• Nucleus:

• The nucleus is a membrane-bound organelle found in eukaryotic cells.

• It contains most of the cell's genetic material organized as multiple long linear DNA molecules in complex with a large variety of proteins to form chromosomes.

• The nucleus maintains the integrity of these genes and controls the activities of the cell by regulating gene expression.

• Organelles:

• Organelles are specialized subunits within a cell that have specific functions, and they are usually separately enclosed within their own lipid bilayers.

• Examples include the nucleus, mitochondria, endoplasmic reticulum, Golgi apparatus, lysosomes, and chloroplasts (in plants).

• Each type of organelle has its own role in the cell, such as energy production, protein synthesis, and waste removal.

Q23. Answer: (a) 5,000

Given:

After deducting 10% from a certain sum, and then deducting 20% from the remainder, a sum of Rs. 3,600 is left.

Formula used:

Let the original sum be Rs. x.

After deducting 10%, remainder = x - 0.1x = 0.9x

After deducting 20% from the remainder, remainder = 0.9x - 0.2(0.9x) = 0.9x - 0.18x = 0.72x

Calculation:

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0.72x = 3600

=> x = 3600 / 0.72

=> x = 5000

Therefore The correct answer is option (1).

Q24. Answer: (b) Telnet

The correct answer is Telnet.

Key Points

• Telnet is a network protocol used on the Internet or local area networks to provide a bidirectional interactive text-oriented communication facility using a virtual terminal connection.

• It was developed in 1969 and standardized as one of the first Internet standards by the Internet Engineering Task Force (IETF).

• Telnet clients are available for virtually all platforms, allowing users to log into remote systems using the command-line interface.

• Telnet is often used by network administrators for remote management of servers and network devices.

Additional Information

• HTTP (HyperText Transfer Protocol)

• HTTP is the protocol used by the World Wide Web, defining how messages are formatted and transmitted, and what actions web servers and browsers should take in response to various commands.

• It is the foundation of any data exchange on the Web and it is a protocol used for transmitting hypertext requests and information.

• HTTP is designed for distributed, collaborative, hypermedia information systems.

• It is an application layer protocol in the Internet protocol suite model.

• UseNet (User Network)

• UseNet is a worldwide distributed discussion system available on computers.

• It was developed from the general-purpose UUCP architecture of the same name.

• UseNet is used for posting messages (called articles or posts) to newsgroups, and these posts are then distributed to other servers.

• It was an early example of online collaboration and remains in use today.

• FTP (File Transfer Protocol)

• FTP is a standard network protocol used to transfer computer files from one host to another over a TCP-based network, such as the Internet.

• It is a client-server protocol that relies on two communications channels between client and server: a command channel for controlling the conversation and a data channel for transmitting file content.

• FTP is commonly used to upload web pages and other documents from a private development machine to a web hosting server.

• It is also used to download files from a server to a local computer.

Q25. Answer: (b) 225 π

Given:

The circumference of a circle is 30π cm.

Formula used:

Circumference of a circle = 2πr

Area of a circle = πr^2

Calculation:

2πr = 30π

=> r = 15

Area = πr^2

=> Area = $\pi \times 15^2$

=> Area = π × 225

Therefore The correct answer is option (2).

Q26. Answer: (d) 65536

The correct answer is 65536.

Key Points

• A computer monitor with 16 bits per pixel depth can display 65536 different colors.

• Each pixel in such a monitor is represented by 16 bits, allowing for a large range of color combinations.

• This bit depth provides an ample color range for most standard applications and is sufficient for many imaging tasks.

• 16-bit color depth is also known as "High Color" and is commonly used in various display settings.

Additional Information

• Bit Depth:

• Bit depth refers to the number of bits used to represent the color of a single pixel. Higher bit depths allow for more colors to be represented.

• Common bit depths include 8-bit (256 colors), 16-bit (65536 colors), and 24-bit (16.7 million colors).

• Pixels:

• Pixels are the smallest unit of a digital image or display, and each pixel represents a single point of color.

• The color of each pixel is determined by its bit depth.

• Color Representation:

• Colors in digital displays are typically represented using a combination of red, green, and blue (RGB) values.

• Each color channel (red, green, blue) can have a value ranging from 0 to 255 in an 8-bit color depth, resulting in over 16 million possible color combinations in a 24-bit depth.

• Applications of 16-bit Color Depth:

• 16-bit color depth is often used in applications where color fidelity is important but the file size must be kept manageable.

• It is commonly used in digital imaging, photography, and some types of graphic design.

Q27. Answer: (b) Only conclusion III follows.

Given Statements:

1. Surge is a health drink.

2. No health drink is protein.

3. Some proteins are medicines.

The least possible Venn diagram:

Conclusions:

I. Some proteins are health drinks. - False (Because No health drink is protein, so, Some proteins cannot be health drinks)

II. Some medicines are Surge. - False (Because there is no direct relation given between medicines and Surge, so it can be possible but not definite)

III. Some health drinks are Surge. - True (Because Surge is a health drink. So, Some health drinks are also Surge.)

So, Only conclusion III follows.

Hence, the correct answer is "Only conclusion III follows."

Q28. Answer: (d) D - Green - Vistara

According to the given information:

1) No two airhostess likes the same colour and they are not from same airlines.

2) B likes White colour and is from Spice Jet airline.

3) D is from Vistara airline and does not like Pink or Blue colour.

4) A is not from Jet Lite and Go Air.

Airhostess	Colour	Airline
A		Jet Lite and Go Air
B	White	Spice Jet
C		
D	Pink or Blue	Vistara airline
E		

5) C does not like Black colour and is not from Emirate airline.

6) The one who is from Go Air airline likes Black colour.

Airhostess	Colour	Airline
A		Emirate
B	White	Spice Jet

C		Emirate
D	Pink or Blue	Vistara airline
E	Black	Go Air

Final arrangement:

Airhostess	Colour	Airline
A	Pink/Blue	Emirate
B	White	Spice Jet
C	Pink/Blue	Jet Lite
D	Green	Vistara airline
E	Black	Go Air

Thus, combination of airhostess, colour and airline is D - Green - Vistara which is definitely correct.

Hence, the correct answer is "D - Green - Vistara".

Q29. Answer: (c) 47

Given:

$\sqrt{x} + 1/(\sqrt{x}) = 3$

Formula used:

We need to find the value of $x^2 + 1/(x^2)$.

Calculations:

Let $\sqrt{x} = y$

=> $y + 1/y = 3$

=> Multiply both sides by y: $y^2 + 1 = 3y$

=> $y^2 - 3y + 1 = 0$

Now, square both sides of the original equation:

=> $(\sqrt{x} + 1/\sqrt{x})^2 = 3^2$

=> $x + 2 + 1/x = 9$

=> $x + 1/x = 7$

Now, square both sides of the above equation:

=> $(x + 1/x)^2 = 7^2$

=> $x^2 + 2 + 1/x^2 = 49$

=> $x^2 + 1/x^2 = 49 - 2$

=> $x^2 + 1/x^2 = 47$

The value of $x^2 + 1/x^2$ is 47.

Q30. Answer: (d) 729

Give solution in the given format and use HTML code only and use the logic: (1st number × 2) + 4 = 2nd number:

The logic followed here is:

Logic: √1st number × 1st number = 2nd number.

Now,

For, 36 : 216

=> √36 × 36 = 6 + 36 = 216.

Similarly, for 81 : ?

=> √81 × 81 = 9 + 81 = 729.

Hence, the correct answer is "Option 4".

Q31. Answer: (b) Apple

The correct answer is Apple.

Key Points

• Apple Inc. is an American multinational technology company headquartered in Cupertino, California.

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• Apple is known for its innovative technology products, including the Mac, iPhone, iPad, and Apple Watch.
• The first Macintosh computer, commonly known as Mac, was introduced by Apple in 1984.
• Apple's Mac computers are known for their sleek design, robust operating system (macOS), and high performance.

Additional Information

• Personal Computer (PC)
• A personal computer is a general-purpose computer designed for individual use.
• PCs are intended for use by one person at a time, and they are characterized by their size, capabilities, and relatively low cost.
• They are commonly used for tasks such as word processing, internet browsing, gaming, and multimedia playback.
• PCs can run a variety of operating systems, including Microsoft Windows, macOS, and Linux.
• macOS
• macOS is a series of proprietary graphical operating systems developed and marketed by Apple Inc. since 2001.
• It is the primary operating system for Apple's Mac family of computers.
• macOS is known for its intuitive user interface, stability, and security features.
• The latest version of macOS as of 2023 is macOS Ventura.
• Apple Inc.
• Apple Inc. was founded by Steve Jobs, Steve Wozniak, and Ronald Wayne in April 1976.
• Apple designs, manufactures, and markets a range of personal computers, mobile communication devices, and portable digital music players.
• Some of Apple's most popular products include the iPhone, iPad, Mac computers, Apple Watch, and Apple TV.
• Apple is also known for its software products, including the iOS operating system, iTunes media player, Safari web browser, and iWork suite of productivity software.
• Innovations by Apple
• Apple is credited with revolutionizing the personal computer industry with the introduction of the Macintosh in 1984.
• The iPhone, introduced in 2007, transformed the smartphone industry with its multi-touch interface and App Store.
• Apple's iPad, launched in 2010, created a new category of tablet computing devices.
• Apple continues to innovate with products like the Apple Watch, AirPods, and services like Apple Music and Apple TV+.

Q32. Answer: (c) Dhamar

The correct answer is Dhamar.

Key Points

• Dhamar is not a classical dance style; it is a type of Hindustani classical music composition.
• Mohiniattam is a classical dance form from Kerala, known for its graceful movements.
• Odissi is one of the oldest surviving classical dance forms of India, originating from the state of Odisha.
• Bharatanatyam is a major form of Indian classical dance that originated in Tamil Nadu.

Additional Information

• Mohiniattam
• Mohiniattam is a classical dance form from Kerala, characterized by graceful, swaying body movements and subtle facial expressions.
• The term "Mohiniattam" comes from "Mohini," the enchantress avatar of the Hindu god Vishnu.
• This dance form is known for its feminine grace and is traditionally performed by women.
• Odissi
• Odissi is a classical dance form from the state of Odisha in eastern India.
• It is known for its fluid movements and the use of "tribhangi" (three bends of the body) and "chauka" (square-like stance).
• Odissi dance is deeply rooted in the devotional practices of the Jagannath Temple in Puri.
• Bharatanatyam
• Bharatanatyam is a classical dance form that originated in the temples of Tamil Nadu.
• It is known for its fixed upper torso, bent legs, and intricate footwork, along with expressive hand gestures and facial expressions.
• Bharatanatyam is often performed as a solo dance by women and is accompanied by Carnatic music.
• Dhamar
• Dhamar is a type of Hindustani classical music composition, typically performed in a 14-beat cycle (tala).
• It is usually associated with the festival of Holi and often features themes of love and devotion.

• Unlike classical dance forms, Dhamar is purely a musical form and is performed by vocalists and instrumentalists.

Q33. Answer: (b) × + - ÷

Given equation: 9 _ 3 _ 0 _ 8 _ 2 = 23

Option 1) + - × ÷

By putting the signs in the equation:

=> 9 + 3 - 0 × 8 ÷ 2 = 23

=> 9 + 3 - 0 × 4 = 23

=> 9 + 3 - 0 = 23

=> 12 = 23

Option 2) × + - ÷

By putting the signs in the equation:

=> 9 × 3 + 0 - 8 ÷ 2 = 23

=> 9 × 3 + 0 - 4 = 23

=> 27 + 0 - 4 = 23

=> 23 = 23

Option 3) ÷ + - ×

By putting the signs in the equation:

=> 9 ÷ 3 + 0 - 8 × 2 = 23

=> 3 + 0 - 8 × 2 = 23

=> 3 - 4 = 23

=> -1 = 23

Option 4) - + ÷ ×

By putting the signs in the equation:

=> 9 - 3 + 0 ÷ 8 × 2 = 23

=> 9 - 3 + 0 × 2 = 23

=> 9 - 3 + 0 = 23

=> 6 = 23

Hence, the correct answer is "× + - ÷".

Q34. Answer: (a) Liver

The correct answer is Liver.

Key Points

• The liver is a vital organ in the human body that plays a major role in metabolism and has several functions in the body, including detoxification, protein synthesis, and the production of biochemicals necessary for digestion.

• Bile juice is produced by the liver and stored in the gallbladder. It helps in the digestion of fats in the small intestine.

• The liver is the largest internal organ and gland in the human body, weighing about 1.5 kg in adults.

• The liver has the unique ability to regenerate, allowing it to regain full size even after surgical removal or injury.

Additional Information

• Bile Juice:

• Bile juice is a digestive fluid produced by the liver and stored in the gallbladder.

• It contains bile acids, which are critical for digestion and absorption of fats and fat-soluble vitamins in the small intestine.

• Bile also contains cholesterol, bilirubin (a breakdown product of red blood cells), and other substances that are eventually excreted from the body.

• When food enters the small intestine, bile is released from the gallbladder into the small intestine to aid in digestion.

• Liver Functions:

• The liver is responsible for producing bile, which helps carry away waste and break down fats in the small intestine during digestion.

• It produces certain proteins for blood plasma, stores and releases glucose as needed, and processes hemoglobin for use of its iron content.

• The liver also converts harmful ammonia to urea, which is then excreted in urine, and metabolizes drugs and detoxifies chemicals.

• It helps in the regulation of blood clotting and removes bacteria from the bloodstream.

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Q35. Answer: (c) zyxz

The logic followed here is:

Given Sequence: xy_xx_yzzxx_yyy_zzxxxx

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

Option 1) zyzx → xyz / xxyyzz / xxzyyyxzz / xxxx

Option 2) zyxy → xyz / xxyyzz / xxxyyyyzz / xxxx

Option 3) zyxz → xyz / xxyyzz / xxxyyyzzz / xxxx

Option 4) xyxz → xyx / xxyyzz / xxxyyyzzz / xxxx

Hence, the correct answer is "zyxz".

Q36. Answer: (b) 6 cm

Given:

Three cubes with edges 3 cm, 4 cm, and 5 cm are melted to form a single cube.

Formula used:

Volume of a cube = side^3

Calculation:

Volume of first cube = 3^3 = 27 cm^3

Volume of second cube = 4^3 = 64 cm^3

Volume of third cube = 5^3 = 125 cm^3

Total volume = 27 + 64 + 125 = 216 cm^3

Let the side of the new cube be x cm.

Volume of new cube = x^3

=> x^3 = 216

=> x = 6

Therefore The correct answer is option (2).

Q37. Answer: (d) Jay Shah

The correct answer is Jay Shah.

Key Points

• Jay Shah was appointed as the President of the Asian Cricket Council (ACC) in February 2021.

• Jay Shah is the son of Amit Shah, the Home Minister of India.

• He is also the Secretary of the Board of Control for Cricket in India (BCCI).

• His appointment as the ACC President is seen as a significant development in the cricketing world, given his influential position in Indian cricket.

Additional Information

• Asian Cricket Council (ACC)

• The ACC is a cricket organization which was established in 1983 to promote and develop the game of cricket in Asia.

• It is responsible for organizing cricket tournaments and events within Asia, including the Asia Cup.

• The ACC works in conjunction with the International Cricket Council (ICC) to enhance the standard of cricket in its member countries.

• The headquarters of the ACC is located in Colombo, Sri Lanka.

• Board of Control for Cricket in India (BCCI)

• The BCCI is the national governing body for cricket in India, founded in December 1928.

• It is responsible for the organization and governance of cricket activities in India, including domestic tournaments like the Ranji Trophy and the Indian Premier League (IPL).

• The BCCI is one of the richest and most powerful cricket boards in the world.

• It operates under the jurisdiction of the Ministry of Youth Affairs and Sports, Government of India.

• Asia Cup

• The Asia Cup is a men's One Day International (ODI) and Twenty20 International (T20I) cricket tournament.

• It was established in 1983 when the ACC was founded, with the aim of promoting goodwill and cricket within Asia.

• India has been the most successful team in the tournament, winning it multiple times.

• The tournament format alternates between ODI and T20I formats every two years, aligning with the respective ICC World Cup formats.

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Q38. Answer: (a) June 1992

The correct answer is Mon Jun 01 1992 00:00:00 GMT+0530 (India Standard Time).

Key Points

• The Ministry of Environment and Forest launched the Vahini Scheme on 1st June 1992.

• The primary objective of the Vahini Scheme is to encourage people's participation in environmental protection.

• The initiative emphasizes community involvement to foster a sense of responsibility towards the environment among the citizens.

• It aims to promote sustainable development by involving local communities in environmental conservation activities.

Additional Information

• Ministry of Environment, Forest and Climate Change (MoEFCC)

• The MoEFCC is the nodal agency in the administrative structure of the Central Government for planning, promotion, co-ordination, and overseeing the implementation of India's environmental and forestry policies and programmes.

• Its primary activities include conservation and survey of flora, fauna, forests, and wildlife; prevention and control of pollution; afforestation and regeneration of degraded areas; and protection of the environment, all within the framework of legislations.

• The Ministry also serves as a regulatory body for the implementation of various environmental laws and regulations in India.

• Sustainable Development

• Sustainable development is a development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

• It is based on three pillars: economic growth, environmental stewardship, and social inclusion.

• The concept aims to achieve a balance between economic development, environmental health, and social well-being.

• People's Participation in Environmental Protection

• People's participation involves the inclusion of local communities and stakeholders in the decision-making process concerning environmental conservation and protection.

• It ensures that the voices of those most affected by environmental issues are heard and considered in policy and project planning.

• Such participation can lead to more effective and sustainable environmental management practices.

• Environmental Conservation Activities

• These activities include actions taken to preserve, protect, and restore the natural environment.

• Examples include afforestation, wildlife conservation, pollution control, waste management, and the protection of natural habitats.

• Environmental conservation aims to ensure the sustainable use of natural resources and the protection of biodiversity.

Q39. Answer: (d) 61600 m2

Given:

The radius of a road roller (r) = 7 m

The length of the road roller (h) = 14 m

Number of revolutions = 100

Formula used:

Curved Surface Area (CSA) of a cylinder = $2\pi rh$

Area of the field = CSA of road roller × Number of revolutions

Calculation:

CSA of road roller = $2\pi rh$

=> CSA = $2 \times (22/7) \times 7 \times 14$

=> CSA = $2 \times 22 \times 14$

=> CSA = 616 m^2

Area of the field = CSA × Number of revolutions

=> Area = 616×100

=> Area = 61600 m^2

Therefore The correct answer is option 4.

Q40. Answer: (b) Rs. 24,000

Given:

Hema decided to donate 15% of her salary.

She donated Rs. 4,500 which is 125% of the decided amount.

Formula used:

Decided amount = 15% of Salary

Donated amount = 125% of Decided amount

Calculation:

Let Salary = x

Decided amount = 15% of x = 0.15x

Donated amount = Rs. 4,500

125% of Decided amount = 1.25 × 0.15x

=> 1.25 × 0.15x = 4500

=> 0.1875x = 4500

=> x = 4500 / 0.1875

=> x = 24,000

Therefore The correct answer is option 2.

Q41. Answer: (b) 1994

The correct answer is 1994.

Key Points

• Service Tax was first introduced in India in the year 1994.

• The tax was introduced by the then Finance Minister Dr. Manmohan Singh.

• The Service Tax was initially levied at a rate of 5% on three services: telecommunications, stockbrokers, and general insurance.

• Over the years, the scope of Service Tax has been expanded to cover a wide range of services, and the rate has also undergone several changes.

Additional Information

• Service Tax:

• Service Tax is a tax levied by the government on service providers for certain service transactions, but is actually borne by the customers.

• It was introduced under the Finance Act, 1994.

• The Service Tax was administered by the Central Board of Excise and Customs (CBEC).

• Service Tax was replaced by the Goods and Services Tax (GST) on July 1, 2017.

• Goods and Services Tax (GST):

• GST is an indirect tax that has replaced many indirect taxes in India such as the excise duty, VAT, services tax, etc.

• GST is a single domestic indirect tax law for the entire country.

• The tax came into effect on July 1, 2017, through the implementation of the One Hundred and First Amendment of the Constitution of India by the Indian government.

• It is a comprehensive, multi-stage, destination-based tax that is levied on every value addition.

• Central Board of Excise and Customs (CBEC):

• CBEC was a part of the Department of Revenue under the Ministry of Finance, Government of India.

• It dealt with the tasks of formulation of policy concerning levy and collection of customs and central excise duties, prevention of smuggling, and administration of matters relating to customs, central excise, service tax and narcotics to the extent under CBEC's purview.

• Post-GST, CBEC was renamed as the Central Board of Indirect Taxes and Customs (CBIC).

Q42. Answer: (b) Dipak Mishra

The correct answer is Dipak Misra.

Key Points

• Justice Dipak Misra served as the 45th Chief Justice of India (CJI).

• He was appointed as the Chief Justice of India on 28th August 2017.

• Justice Dipak Misra succeeded Justice J. S. Khehar.

• He retired on 2nd October 2018 and was succeeded by Justice Ranjan Gogoi.

Additional Information

• Chief Justice of India (CJI)

• The Chief Justice of India (CJI) is the head of the judiciary system in India and the Supreme Court of India.

• The CJI is appointed by the President of India based on seniority.

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• The CJI is responsible for the allocation of cases and appointment of constitutional benches which deal with important matters of law.

• The first Chief Justice of India was Justice Harilal J. Kania.

• Supreme Court of India

• The Supreme Court is the highest judicial court in India.

• It was established on 28th January 1950 and is located in New Delhi.

• The Supreme Court functions primarily as an appellate court, dealing with appeals against judgments from lower courts.

• It also has original jurisdiction over certain cases such as disputes between states or between the union and states, and issues related to the enforcement of fundamental rights.

• Judicial Appointments

• Judicial appointments in India are governed by a collegium system, where the CJI and a forum of four senior-most judges of the Supreme Court recommend appointments and transfers of judges.

• The President of India appoints judges based on these recommendations.

• This system aims to maintain the independence of the judiciary.

Q43. Answer: (a) UAE

The correct answer is UAE.

Key Points

• The "Hope Probe" mission is the first interplanetary mission undertaken by the United Arab Emirates (UAE).

• The mission was launched on July 20, 2020 from the Tanegashima Space Center in Japan.

• The Hope Probe was designed to study the Martian atmosphere and its climate dynamics, aiming to provide a complete picture of the planet’s weather.

• The mission is part of the UAE's ambitious space program and represents a significant milestone for the country's scientific and technological advancement.

Additional Information

• Hope Probe

• The Hope Probe, also known as Al-Amal in Arabic, is a space probe developed by the UAE Space Agency to explore Mars.

• The spacecraft was built by the Mohammed bin Rashid Space Centre (MBRSC), in collaboration with the University of Colorado Boulder, Arizona State University, and the University of California, Berkeley.

• The main scientific goal of the mission is to study the Martian atmosphere and understand the climate and weather patterns on Mars.

• The probe is equipped with three scientific instruments: an Emirates eXploration Imager (EXI), an Emirates Mars Ultraviolet Spectrometer (EMUS), and an Emirates Mars Infrared Spectrometer (EMIRS) to observe the Martian atmosphere in visible, ultraviolet, and infrared wavelengths respectively.

• UAE Space Program

• The UAE’s space program has been rapidly developing with the goal of positioning the country as a significant player in space exploration.

• In addition to the Hope Probe, the UAE has launched satellites such as KhalifaSat and DubaiSat, focusing on Earth observation and remote sensing.

• The UAE has also announced plans to establish a human settlement on Mars by 2117, showcasing their long-term vision for space exploration.

• The UAE space program is aimed at advancing scientific research, fostering international collaboration, and inspiring future generations of scientists and engineers in the country and the region.

Q44. Answer: (c) Pardoning power of the President

The correct answer is Pardoning power of the President.

Key Points

• Article 72 of the Constitution of India deals with the pardoning power of the President.

• The President of India has the power to grant pardons, reprieves, respites, or remissions of punishment or to suspend, remit or commute the sentence of any person convicted of any offense.

• This power is exercised in cases where the punishment or sentence is by a court-martial, the punishment or sentence is for an offense against any law relating to a matter to which the executive power of the Union extends, or in all cases where the sentence is a sentence of death.

• This power is a part of the sovereign power of the President and is independent of the judiciary.

Additional Information

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• Composition and jurisdiction of Supreme Court of India
• The Supreme Court of India is the highest judicial forum and final court of appeal under the Constitution of India.
• It comprises the Chief Justice of India and a number of other judges as determined by Parliament.
• The Supreme Court has extensive jurisdiction over civil and criminal cases as well as constitutional matters.
• Right to freedom of speech
• The right to freedom of speech is guaranteed by Article 19(1)(a) of the Constitution of India.
• It allows citizens to express their thoughts and opinions freely, subject to reasonable restrictions.
• Appointment of Prime Minister
• The Prime Minister of India is appointed by the President of India.
• The leader of the majority party in the Lok Sabha (House of the People) is usually appointed as the Prime Minister.

Q45. Answer: (c) Lord Dalhousie

The correct answer is Lord Dalhousie.

Key Points

• Lord Dalhousie is often referred to as the 'Father of Indian Railways' because he was instrumental in introducing railways in India.
• During his tenure as the Governor-General of India, the first railway line from Mumbai to Thane was inaugurated in 1853.
• Lord Dalhousie believed that the railways would help in the economic development of India by facilitating the movement of goods and people.
• He laid down a comprehensive plan for the construction of railway lines across India, which became the foundation for the railway network that exists today.

Additional Information

• Lord Ripon
• Lord Ripon served as the Viceroy of India from 1880 to 1884.
• He is known for his liberal policies and for repealing the Vernacular Press Act.
• He introduced local self-government in India, which was a significant step towards decentralization.
• He is also remembered for the Ilbert Bill controversy, which sought to allow Indian judges to try British offenders.
• Lord Irwin
• Lord Irwin served as the Viceroy of India from 1926 to 1931.
• He is known for the Irwin Declaration of 1929, which promised dominion status for India.
• During his tenure, the Gandhi-Irwin Pact was signed in 1931, which marked a truce between Mahatma Gandhi and the British government.
• He also faced the Civil Disobedience Movement led by the Indian National Congress.
• Lord Minto
• Lord Minto served as the Viceroy of India from 1905 to 1910.
• He is known for the Morley-Minto Reforms of 1909, which introduced separate electorates for Muslims in India.
• These reforms were a significant step towards constitutional reforms in British India.
• He also dealt with the rise of revolutionary activities during his tenure.

Q46. Answer: (d) 90 m

Given:

The length of the string (hypotenuse), L = 102 m

tan prop. to = 15/8

Formula used:

tan prop. to = Perpendicular/Base

We need to find the height (opposite side) of the kite.

Calculations:

Let the height of the kite be h and the distance on the ground be d.

tan prop. to = h/d = 15/8

Using Pythagorean theorem:

$(L)^2 = (h)^2 + (d)^2$

$\Rightarrow (102)^2 = (h)^2 + (d)^2$

$\Rightarrow (102)^2 = (h)^2 + (8h/15)^2$

=> $(102)^2 = (h)^2 + ((64h^2)/225)$

=> $(102)^2 = h^2 ((225 + 64)/225)$

=> $(102)^2 = h^2 (289/225)$

=> $(102)^2 \times 225/289 = h^2$

=> $(102 \times 102 \times 225)/289 = h^2$

=> $(10404 \times 225)/289 = h^2$

=> $2340900/289 = h^2$

=> $8100 = h^2$

=> $h = \sqrt{8100}$

=> h = 90 m

Therefore The correct answer is option (4).

Q47. Answer: (d) Rukmini Devi

The correct answer is Rukmini Devi.

Key Points

• Rukmini Devi Arundale was a renowned Indian classical dancer and choreographer of the Bharatanatyam dance form.

• She was a key figure in the revival of Bharatanatyam from its original form of Sadir, which was considered a vulgar art form.

• Rukmini Devi founded the Kalakshetra Foundation in 1936, which is an arts and cultural academy dedicated to the preservation of traditional values in Indian dance and music.

• She was also a distinguished theosophist and was involved in animal welfare and the vegetarian movement.

Additional Information

• Amrita Shergil

• Amrita Shergil was an eminent Indian painter, sometimes known as India's Frida Kahlo, whose legacy stands as a significant figure in modern Indian art.

• She is celebrated for her paintings that depict the everyday lives of Indian people, particularly women.

• Her notable works include "Three Girls" and "Bride's Toilet".

• Nandalal Bose

• Nandalal Bose was a pioneer of modern Indian art and a key figure in the Bengal School of Art.

• He is known for his works that capture rural life and Indian mythology, including famous paintings like "Sati" and "Haldar Pukur Ghat".

• Bose was also responsible for the artistic decoration of the original manuscript of the Indian Constitution.

• Jamini Roy

• Jamini Roy was an Indian painter, known for his unique style that reflected Bengali folk art traditions.

• He is celebrated for his works that feature simple lines, bold colors, and depictions of rural life and folk motifs.

• Some of his notable works include "Mother and Child" and "Ramayana".

Q48. Answer: (b) V

According to the given information:

1) U is to the left of V and W is to the right of X.

2) X is sitting in the right of Y and he is the second from the left.

So, V is the first from the right.

Hence, the correct answer is "V".

Q49. Answer: (c) 30

Given:

A group of men decided to complete a task in 10 days, but five of them remained absent. If the rest of the group completed the task in 12 days, find the original number of men in the group.

Formula used:

Work = Number of men × Number of days

Calculation:

Let the original number of men be x.

Work = x men × 10 days

When 5 men are absent, the remaining men are x - 5.

Work = (x - 5) men × 12 days

Since the amount of work is the same:

x × 10 = (x - 5) × 12

=> 10x = 12(x - 5)

=> 10x = 12x - 60

=> 60 = 2x

=> x = 30

Therefore The correct answer is option 3.

Q50. Answer: (c) 1

Given:

x + y = 1

Formula used:

$x^3 + y^3 + 3xy$

Calculations:

We know $(x + y)^3 = x^3 + y^3 + 3xy(x + y)$

Given x + y = 1

So, $(x + y)^3 = 1^3$

=> $1 = x^3 + y^3 + 3xy(1)$

=> $1 = x^3 + y^3 + 3xy$

Therefore The correct answer is option (3).

Q51. Answer: (c) Neither I nor II is implicit.

Given Statement: "One of the ways your child can do better is by getting private tuition," said the teacher. Now,

Assumptions: 1. The teacher is suggesting private tuition as a way for improvement. However, it does not necessarily mean that the child is poor in studies. The statement is generic and could apply to a child who is already good but wants to excel further.

Assumptions: 2. The statement mentions private tuition as one of the ways to improve. It does not imply that private tuition is the only way for the child to do better. Other methods of improvement are not ruled out.

Here, Neither I nor II is implicit.

Hence, the correct answer is "Option 3".

Q52. Answer: (d) Catalogue

The logic followed here is:

Logic: Reference materials associated with specific places.

Here,

Laboratory : Manual → Manual is a reference material used in a Laboratory.

Similarly,

Library : Catalogue → Catalogue is a reference material used in a Library.

Hence, the correct answer is "Option 4".

Q53. Answer: (c) 64 km

Given:

Speed of first runner = 15 km/h

Speed of second runner = 16 km/h

Time difference = 16 minutes = 16/60 hours = 4/15 hours

Formula used:

Distance = Speed × Time

Calculation:

Let the distance be D km.

Time taken by the first runner = D/15 hours

Time taken by the second runner = D/16 hours

Given that the first runner takes 16 minutes longer than the second runner:

=> (D/15) - (D/16) = 4/15

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To solve for D, find a common denominator for the left side:

=> (16D - 15D) / (15×16) = 4/15

=> D / 240 = 4/15

Multiply both sides by 240:

=> D = 4/15 × 240

=> D = 64 km

Therefore The correct answer is option (3).

Q54. Answer: (b) Coimbtore

The correct answer is Coimbatore.

Key Points

• The students of Sri Shakthi Institute of Engineering and Technology in Coimbatore developed the satellite named "SriShaktiSat".

• It was developed as part of a collaborative project with the Indian Space Research Organisation (ISRO).

• The satellite aims to help with communication and other space-related research.

• This project marks a significant achievement for the students and the institution, showcasing their technical skills and innovation.

Additional Information

• Indian Space Research Organisation (ISRO)

• ISRO is the space agency of the Government of India, headquartered in Bengaluru.

• It was founded in 1969 and has achieved numerous milestones in space research and development.

• ISRO's missions include launching satellites for communication, weather forecasting, and navigation, as well as planetary exploration missions like Mangalyaan (Mars Orbiter Mission).

• ISRO has also launched various educational satellite programs to involve students in space research and innovation.

• Satellite Communication

• Satellite communication involves the use of artificial satellites to relay and amplify radio telecommunications signals via transponders.

• It provides communication capabilities across long distances and is used for television, radio broadcasting, internet services, and military applications.

• Satellites play a crucial role in global communication networks, enabling services in remote and rural areas where terrestrial infrastructure is limited.

• Educational Satellite Programs

• Educational satellite programs are initiatives by educational institutions and space agencies to involve students in space technology and research.

• These programs provide hands-on experience in satellite design, development, and operations.

• They aim to inspire and educate the next generation of scientists, engineers, and space enthusiasts.

• Examples include CubeSats, small satellites developed by universities, and collaborative projects with space agencies like ISRO and NASA.

Q55. Answer: (c) 111/9%

Given:

The cost price of 10 articles is equal to the selling price of 9 articles.

Formula used:

Profit Percentage = (Selling Price - Cost Price)/(Cost Price) × 100

Calculation:

Let the cost price of 1 article be Rs. 1.

Cost Price of 10 articles = Rs. 10

Selling Price of 9 articles = Rs. 10

=> Selling Price of 1 article = 10/9

Profit = Selling Price - Cost Price

=> Profit = 10/9 - 1

=> Profit = (10 - 9)/9

=> Profit = 1/9

Profit Percentage = 1/9 × 100

=> Profit Percentage = 111/9%

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Therefore The correct answer is option (3).

Q56. Answer: (a) 5/12

Given:

3 2/3 + 6 7/12 + 4 9/36 + 5 + 7 1/12 + ? = whole number

Calculation:

According to the question,

3 2/3 + 6 7/12 + 4 9/36 + 5 + 7 1/12

=> 11/3 + 79/12 + 153/36 + 5 + 85/12

=> 11/3 + 79/12 + 85/12 + 153/36 + 5

=> 11/3 + 41/3 + 153/36 + 5

=> 52/3 + 153/36 + 5

=> (624 + 153 + 180)/36

=> 957/36 = 319/12 or 26 7/12

Now to make it a whole no. the next whole no. is 27 then

=> 26 7/12 + x = 27

=> x = 27 - 26 7/12 = 5/12

Therefore To make the sum a whole number we have to add 5/12.

Q57. Answer: (c) 119

Given:

We need to find the least multiple of 7 which when divided by 2, 3, 4, 5, and 6 leaves the remainders 1, 2, 3, 4, and 5 respectively.

Formula used:

Number = LCM(2, 3, 4, 5, 6) - 1

Calculation:

LCM of 2, 3, 4, 5, 6 is 60

Number = 60k - 1 (where k is a positive integer)

We need the number to be a multiple of 7.

=> 60k - 1 ≡ 0 (mod 7)

=> 60k ≡ 1 (mod 7)

=> 60 ≡ 4 (mod 7)

=> 4k ≡ 1 (mod 7)

To solve 4k ≡ 1 (mod 7), we find the multiplicative inverse of 4 mod 7.

4 × 2 = 8 ≡ 1 (mod 7)

=> k = 2

Number = 60 × 2 - 1 = 119

Therefore The correct answer is option 3.

Q58. Answer: (d) C. Linnaeus

The correct answer is C. Linnaeus.

Key Points

• Carl Linnaeus (also known as Carl von Linné) was a Swedish botanist, zoologist, and physician who formalized the modern system of naming organisms called binomial nomenclature.

• Linnaeus is often referred to as the "father of modern taxonomy".

• He introduced the term "Homo sapiens" in his work Systema Naturae in 1758, which is used to classify human beings.

• Linnaeus's classification system laid the foundation for the Linnaean taxonomy, which is still in use today with modifications and advancements.

Additional Information

• Taxonomy

• Taxonomy is the science of naming, defining, and classifying organisms into groups based on shared characteristics.

• It involves a hierarchical system of classification, starting from broader categories like Domain and Kingdom down to specific categories like Genus and Species.

• Carl Linnaeus's system of binomial nomenclature assigns each organism a two-part Latin name: the genus name and the

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species name (e.g., Homo sapiens).

• This system helps in accurately identifying and communicating about different species across the world.

• Binomial Nomenclature

• Binomial nomenclature is a formal system of naming species of living things by giving each a name composed of two parts.

• The first part of the name indicates the genus to which the species belongs, and the second part identifies the species within the genus.

• This method of naming organisms ensures that each has a unique and universally accepted name.

• Linnaeus standardized this system, making it easier to catalog and study the vast diversity of life on Earth.

• Systema Naturae

• Systema Naturae is one of the major works of Carl Linnaeus, first published in 1735.

• In this work, Linnaeus introduced his method for classifying and naming organisms.

• The 10th edition of Systema Naturae, published in 1758, is considered the starting point of zoological nomenclature.

• This publication marked a significant advancement in the field of biology and laid the groundwork for modern biological classification.

Q59. Answer: (d) 28

Given:

Numbers between 100 and 300

Formula used:

Number of terms divisible by 7 = floor(300/7) - floor(100/7)

Calculation:

First multiple of 7 ≥ 100: 105

Last multiple of 7 ≤ 300: 294

Number of terms = (294 - 105)/7 + 1

=> Number of terms = 189/7 + 1

=> Number of terms = 27 + 1

=> Number of terms = 28

Therefore The correct answer is option 4.

Q60. Answer: (a) 9

Given:

5P9 + 3R7 + 2Q8 = 1114

Calculations:

We can see that, the sum of last digits i.e. (5 + 3 + 2) = 10 and 1 is added as carry

And 2 is added as carry in the sum of middle digits of the numbers (P + Q + R)

=> (P + Q + R + 2) will be 11 only.

=> P + Q + R = 9

For maximum value of Q, values of P and R should be minimum

If P = R = 0 then Q = 9

Therefore Maximum value of Q = 9

Q61. Answer: (c) 352

Given:

x + y + z = 16

xy + yz + zx = 78

Formula used:

$x^3 + y^3 + z^3 - 3xyz = (x + y + z)(x^2 + y^2 + z^2 - xy - yz - zx)$

Calculations:

$x^3 + y^3 + z^3 - 3xyz = (x + y + z)(x^2 + y^2 + z^2 - xy - yz - zx)$

=> (x + y + z) = 16

=> $x^2 + y^2 + z^2 = (x + y + z)^2 - 2(xy + yz + zx)$

=> $x^2 + y^2 + z^2 = 16^2 - 2 \times 78$

=> $x^2 + y^2 + z^2 = 256 - 156$

=> $x^2 + y^2 + z^2 = 100$

=> $x^3 + y^3 + z^3 - 3xyz = (16)(100 - 78)$

=> $x^3 + y^3 + z^3 - 3xyz = 16 \times 22$

=> $x^3 + y^3 + z^3 - 3xyz = 352$

Therefore The correct answer is option (3).

Q62. Answer: (d) 9555

Given:

The greatest number of four digits which is divisible by 5, 35, 39 and 65.

Formula used:

To find the greatest number of four digits divisible by multiple numbers, we need to find the Least Common Multiple (LCM) of the given numbers and then find the highest four-digit number divisible by that LCM.

Calculation:

Given numbers: 5, 35, 39, 65

LCM of 5, 35, 39, 65:

Prime factorization:

5 = 5

35 = 5 × 7

39 = 3 × 13

65 = 5 × 13

LCM = 5 × 7 × 3 × 13

=> LCM = 1365

Now, find the greatest four-digit number divisible by 1365:

The greatest four-digit number is 9999.

=> Greatest number of four digits divisible by 1365:

=> 9999 ÷ 1365 = Remainder = 444

=> Hence, greatest number of four digits which is divisible by 5, 35, 39 and 65 = 9999 - 444

= 9999 - 444 = 9555

Therefore The correct answer is option 4 (9555).

Q63. Answer: (d) 5√3 cm

Given:

The side of an equilateral triangle is 10 cm.

Formula used:

Altitude of an equilateral triangle = √3/2 × side

Calculation:

Altitude = √3/2 × 10

=> Altitude = (√3 × 10)/2

=> Altitude = 5√3 cm

Therefore The correct answer is option (4).

Q64. Answer: (b) mr

According to the given information:

Thus, the code for 'animal' = 'mr'.

Hence, the correct answer is "mr".

Q65. Answer: (c) 60 km/h

Given:

A person travelled 120 km by steamer, 450 km by train and 60 km by horse.

It took 13 h 30 min.

The speed of the train is 3 times that of the horse and 1.5 times that of the steamer.

Formula used:

Time = Distance / Speed

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Calculation:
Let the speed of the horse be x km/h.
Therefore, speed of the train = 3x km/h
Speed of the steamer = 3x / 1.5 = 2x km/h
Total time taken = 13.5 hours
Time taken by steamer = 120 / 2x hours
Time taken by train = 450 / 3x hours
Time taken by horse = 60 / x hours
Total time taken = (120 / 2x) + (450 / 3x) + (60 / x)
=> 13.5 = (120 / 2x) + (450 / 3x) + (60 / x)
=> 13.5 = 60 / x + 150 / x + 60 / x
=> 13.5 = (60 + 150 + 60) / x
=> 13.5 = 270 / x
=> x = 270 / 13.5
=> x = 20 km/h
Speed of the train = 3x = 3 × 20 = 60 km/h
Therefore The correct answer is option 3.

Q66. Answer: (c) 9 : 1

Given:
The total number of gold medals and silver medals won by a person in games is 75.
Formula used:
Let the number of silver medals be S and the number of gold medals be G.
S + G = 75
We need to check which of the given ratios cannot be the ratio of the number of silver medals to the number of gold medals.
Calculation:
1) For the ratio 7:8, let S = 7x and G = 8x
=> 7x + 8x = 75
=> 15x = 75
=> x = 5
=> S = 7×5 = 35, G = 8×5 = 40
Ratio 7:8 is possible.
2) For the ratio 2:3, let S = 2x and G = 3x
=> 2x + 3x = 75
=> 5x = 75
=> x = 15
=> S = 2×15 = 30, G = 3×15 = 45
Ratio 2:3 is possible.
3) For the ratio 9:1, let S = 9x and G = 1x
=> 9x + 1x = 75
=> 10x = 75
=> x = 7.5
=> S = 9×7.5 = 67.5, G = 1×7.5 = 7.5
Since the number of medals cannot be in fractions, ratio 9:1 is not possible.
4) For the ratio 12:13, let S = 12x and G = 13x
=> 12x + 13x = 75
=> 25x = 75
=> x = 3
=> S = 12×3 = 36, G = 13×3 = 39
Ratio 12:13 is possible.
Therefore The correct answer is option (3).

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Q67. Answer: (a) Bal Gangadhar Tilak

The correct answer is Bal Gangadhar Tilak.

Key Points

• Bal Gangadhar Tilak, often referred to as the "Father of Indian Unrest," was a prominent freedom fighter in the Indian independence movement.

• He founded the English newspaper 'Mahratta' along with the Marathi newspaper 'Kesari' to awaken political consciousness among Indians.

• Tilak was one of the first leaders to advocate for Swaraj (self-rule) and was a key member of the Indian National Congress.

• His famous slogan "Swaraj is my birthright, and I shall have it" inspired many Indians to join the freedom struggle.

Additional Information

• Bal Gangadhar Tilak

• Born on July 23, 1856, in Ratnagiri, Maharashtra, Tilak was a scholar, mathematician, philosopher, and ardent nationalist.

• He played a significant role in the Home Rule Movement and was a vocal advocate of radical nationalism in India.

• Tilak's works such as 'The Arctic Home in the Vedas' and 'Gita Rahasya' reflect his deep understanding of Indian culture and philosophy.

• He was imprisoned several times by the British for his revolutionary activities, and his efforts greatly contributed to the independence movement.

• Mahratta and Kesari

• 'Mahratta' was an English weekly newspaper, and 'Kesari' was a Marathi newspaper started by Tilak in 1881.

• Both newspapers aimed at educating the Indian public about political issues and mobilizing them against British rule.

• They were instrumental in spreading Tilak's revolutionary ideas and garnering support for the freedom struggle.

• These publications faced censorship and suppression by the British government, but they continued to play a pivotal role in the nationalist movement.

Q68. Answer: (a) SVAMITVA

The correct answer is SVAMITVA.

Key Points

• The SVAMITVA scheme stands for Survey of Villages and Mapping with Improvised Technology in Village Areas.

• It was launched by Prime Minister Narendra Modi on National Panchayati Raj Day, April 24, 2020.

• The scheme aims to provide an integrated property validation solution for rural India through drone technology and the latest survey methods.

• Under this scheme, property cards are issued to the property owners, enabling them to use their property as a financial asset for loans and other financial benefits.

Additional Information

• SAMARTH

• SAMARTH (Scheme for Capacity Building in Textile Sector) was launched by the Ministry of Textiles to address the skill gap in the textile sector.

• It aims to provide skill development and training to workers to enhance their employability in the textile industry.

• UMANG

• UMANG (Unified Mobile Application for New-age Governance) is a mobile app developed by the Ministry of Electronics and Information Technology (MeitY) and the National e-Governance Division (NeGD).

• It provides access to a wide range of government services from various departments and states on a single platform.

• KUSUM

• KUSUM (Kisan Urja Suraksha evam Utthaan Mahabhiyan) is a scheme launched by the Ministry of New and Renewable Energy (MNRE) to promote the use of solar energy among farmers.

• The scheme aims to provide financial and technical assistance to farmers for the installation of solar pumps and grid-connected solar power plants.

Q69. Answer: (b) Yato Dharmastato Jayah

The correct answer is Yato Dharmastato Jayah.

Key Points

• "Yato Dharmastato Jayah" translates to "Where there is Dharma, there is Victory".

• This phrase is derived from the ancient Indian epic, the Mahabharata.

• The motto symbolizes the moral and ethical duty that the judiciary holds in delivering justice.

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• It is inscribed on the emblem of the Supreme Court of India, representing the guiding principle for the institution.

Additional Information

• Supreme Court of India

• The Supreme Court of India is the highest judicial court and the final court of appeal under the Constitution of India.

• It is located in New Delhi and was established on January 28, 1950.

• The Supreme Court consists of the Chief Justice of India and a maximum of 33 other judges.

• It has extensive powers in terms of judicial review, meaning it can invalidate laws and executive orders that it finds unconstitutional.

• Other Mottos and Their Significance

• Equal Justice for All: This is a general legal principle emphasizing that every individual should receive fair treatment under the law.

• Satyamev Jayate: Translates to "Truth Alone Triumphs" and is the national motto of India, taken from the Mundaka Upanishad.

• Yogakshemam Vahamyaham: A Sanskrit shloka from the Bhagavad Gita, meaning "I take care of the welfare of those who are devoted to me". It is also the motto of the Life Insurance Corporation (LIC) of India.

Q70. Answer: (a) Mediterranean Sea and Red Sea

The correct answer is Mediterranean Sea and Red Sea.

Key Points

• The Suez Canal is an artificial sea-level waterway in Egypt, connecting the Mediterranean Sea to the Red Sea through the Isthmus of Suez.

• It was opened for navigation on November 17, 1869, and has since become one of the world's most important waterways, facilitating maritime trade between Europe and Asia.

• The canal allows ships to travel between Europe and South Asia without navigating around Africa, significantly reducing the sea voyage distance.

• The Suez Canal is approximately 193 kilometers (120 miles) long, and it has no locks because it is at sea level.

Additional Information

• Artificial Waterway:

• An artificial waterway or canal is a man-made channel constructed to allow the passage of boats or ships inland or to convey water for irrigation.

• Canals are used for transportation, irrigation, water supply, or drainage.

• Isthmus of Suez:

• The Isthmus of Suez is the narrow land bridge that connects Africa and Asia.

• The Suez Canal cuts through this isthmus, allowing direct maritime travel between the Mediterranean and the Red Sea.

• Maritime Trade:

• Maritime trade involves the transport of goods and services across seas and oceans.

• It is a critical component of global trade, with a significant portion of international trade being carried out by sea.

• Locks:

• Locks are devices used for raising and lowering boats between stretches of water of different levels on rivers and canal waterways.

• They are essential in canals that have significant elevation changes; however, the Suez Canal does not require locks because it is at sea level.

Q71. Answer: (a) -38

Given:

50 - [8{9 - (6 - 5+3)}]

Formula used:

Standard order of operations (PEMDAS/BODMAS):

P/B: Parentheses/Brackets

E/O: Exponents/Orders

MD: Multiplication and Division (left to right)

AS: Addition and Subtraction (left to right)

Calculation:

50 - [8{9 - (6 - 5+3)}]

=> 50 - [8{9 - (6 - 8)}]

=> 50 - [8{9 - (-2)}]

=> 50 - [8{9 + 2)}]

=> 50 - [8 × 11]

=> 50 - 88

=> -38

Therefore The correct answer is option 1.

Q72. Answer: (b) 8 min 20 sec

The correct answer is 8 min 20 sec.

Key Points

• The average distance from the Sun to Earth is approximately 93 million miles (150 million kilometers).

• Light travels at a speed of about 299,792 kilometers per second (186,282 miles per second).

• It takes light approximately 499.0 seconds to travel from the Sun to the Earth.

• This translates to about 8 minutes and 20 seconds.

Additional Information

• Speed of Light:

• Light travels at a constant speed of 299,792 kilometers per second (186,282 miles per second) in a vacuum.

• This speed is a fundamental constant of nature and is denoted by the letter 'c' in equations.

• Astronomical Unit (AU):

• An Astronomical Unit is a unit of length roughly equal to the distance from Earth to the Sun.

• 1 AU is approximately 149.6 million kilometers (93 million miles).

• Light-Year:

• A light-year is the distance that light travels in one year.

• It is roughly 9.46 trillion kilometers (5.88 trillion miles).

• Light-years are often used to measure distances between stars and galaxies.

• Solar Radiation:

• Solar radiation is the energy emitted by the Sun, including visible light, ultraviolet light, and infrared radiation.

• This radiation is crucial for life on Earth as it provides the energy needed for photosynthesis in plants.

Q73. Answer: (a) Varanasi

The correct answer is Varanasi.

Key Points

• ISRO decided to open a Regional Academic Centre for Space at IIT Varanasi in December 2020.

• This initiative is aimed at creating an ecosystem to foster space technology research and innovation in collaboration with academic institutions.

• IIT Varanasi, also known as IIT BHU, has a rich history of academic excellence and research capabilities.

• The collaboration will focus on advanced research areas like satellite development, space exploration, and other cutting-edge space technologies.

Additional Information

• ISRO (Indian Space Research Organisation)

• ISRO is the space agency of the Government of India, headquartered in Bengaluru.

• It was founded on August 15, 1969, and is responsible for the planning and execution of space missions.

• ISRO has achieved significant milestones, including the Mars Orbiter Mission (Mangalyaan) and the Chandrayaan missions.

• It aims to harness space technology for national development while pursuing space science research and planetary exploration.

• IIT (Indian Institutes of Technology)

• IITs are autonomous public technical universities located across India.

• They are governed by the Institutes of Technology Act, 1961, which has declared them as institutions of national importance.

• IIT Varanasi, also known as IIT BHU, is one of the oldest engineering institutions in India, established in 1919 as Banaras Engineering College.

• IITs are renowned for their high academic standards, rigorous selection process, and contributions to research and development in various engineering and technology fields.

• Regional Academic Centre for Space (RAC-S)

• RAC-S is a collaborative initiative by ISRO to promote space technology research and innovation through academic institutions.

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• These centers aim to strengthen the research capabilities of academic institutions by providing access to ISRO's resources and expertise.

• They focus on advanced research areas, including satellite development, space exploration, and space applications.

• The establishment of RAC-S at IIT Varanasi is part of ISRO's efforts to expand its collaboration with academic institutions across India.

Q74. Answer: (b) BYAAQ

The logic followed here is:

'VMBHL' is written as 'VQJTB'

Similarly, the code for 'KTSPR:

Hence, the correct answer is "BYAAQ".

Q75. Answer: (d) Adinath

The correct answer is Adinath.

Key Points

• The Dilwara Temples are a group of remarkable Jain temples located in Mount Abu, Rajasthan.

• The temples are primarily dedicated to the Jain Tirthankaras. The Vimal Vasahi temple, one of the five temples, is specifically dedicated to Adinath, the first Tirthankara.

• Constructed in the 11th century by Vimal Shah, a minister of the Chalukya King Bhima I, the temples are renowned for their stunning use of marble and intricate architectural details.

• The Dilwara Temples are considered one of the most beautiful Jain pilgrimage sites in the world, attracting devotees and tourists alike for their exquisite craftsmanship and serene environment.

Additional Information

• Adinath

• Adinath, also known as Rishabhanatha, is the first Tirthankara of Jainism.

• He is believed to have lived millions of years ago, and his teachings form the foundation of Jain philosophy and practice.

• Adinath is often depicted in a meditative posture, symbolizing inner peace and spiritual attainment.

• His life and teachings emphasize the importance of non-violence, truthfulness, and asceticism.

• Dilwara Temples

• The Dilwara Temples are a group of five Jain temples situated in Mount Abu, Rajasthan.

• They were built between the 11th and 13th centuries AD, showcasing the rich architectural heritage of the region.

• The temples are renowned for their detailed marble carvings, which are considered some of the most intricate and beautiful in the world.

• Each of the five temples is unique, with the most famous being the Vimal Vasahi and Luna Vasahi temples, dedicated to Adinath and Neminath respectively.

• Mount Abu

• Mount Abu is a popular hill station located in the Aravalli Range in Rajasthan, India.

• It is the only hill station in the state and is known for its cool climate and scenic beauty.

• In addition to the Dilwara Temples, Mount Abu is home to several other attractions, including Nakki Lake, Guru Shikhar, and the Achalgarh Fort.

• Mount Abu serves as an important pilgrimage site for both Jains and Hindus, attracting visitors from all over the country.

Q76. Answer: (a) Tajikistan

The correct answer is Tajikistan.

Key Points

• Tajikistan does NOT share a land boundary with India.

• India shares its land boundaries with 7 countries: Afghanistan, Pakistan, China, Nepal, Bhutan, Bangladesh, and Myanmar.

• Although Tajikistan is in close proximity to India, the two countries do not have a direct land border.

• The narrow Wakhan Corridor in Afghanistan separates India from Tajikistan.

Additional Information

• India's Borders:

• India shares its longest border with Bangladesh, which is approximately 4,096 kilometers long.

• The India-China border is around 3,488 kilometers long and is known as the Line of Actual Control (LAC).

• India's border with Pakistan is around 3,323 kilometers long and includes the Line of Control (LoC) in Jammu & Kashmir.

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• India shares a 1,751 kilometers long border with Nepal.
• The India-Bhutan border is about 699 kilometers long.
• The India-Myanmar border is approximately 1,643 kilometers long.
• India shares a relatively short border with Afghanistan, about 106 kilometers long, in the region of Jammu & Kashmir.
• Wakhan Corridor:
• The Wakhan Corridor is a narrow strip of territory in Afghanistan, extending to China and separating Tajikistan from Pakistan.
• It is approximately 350 kilometers long and is historically significant as a trade route.
• The corridor acts as a buffer zone between India and Tajikistan.
• It is sparsely populated and has limited infrastructure.

Q77. Answer: (d) 1st April 2015

The correct answer is 1st April 2015.

Key Points

• The One Stop Centre (OSC) scheme was launched on 1st April 2015 by the Government of India.
• The scheme aims to provide integrated support and assistance to women affected by violence, in both private and public spaces under one roof.
• OSC is a sub-scheme of the National Mission for Empowerment of Women (NMEW) and also known as Sakhi.
• The centres offer a range of services including medical aid, police assistance, legal aid/counselling, psycho-social counselling, and temporary shelter to women.

Additional Information

• National Mission for Empowerment of Women (NMEW)
• Launched by the Government of India in 2010, NMEW aims at strengthening the overall processes that promote all-round development of women.
• The mission focuses on inter-sectoral issues affecting women, particularly those related to health, education, and economic empowerment.
• NMEW works towards creating an enabling environment for women through convergence of schemes/programs of different ministries/departments.
• Integrated Child Protection Scheme (ICPS)
• ICPS is a centrally sponsored scheme aimed at building a protective environment for children in difficult circumstances, as well as other vulnerable children, through government-civil society partnership.
• The scheme is implemented by the Ministry of Women and Child Development and focuses on the needs and rights of children, ensuring their safety and protection.
• ICPS provides for care, support, and rehabilitation services to children in need, including those who are victims of abuse, exploitation, and neglect.
• Beti Bachao Beti Padhao (BBBP)
• Launched on 22nd January 2015 by the Government of India, BBBP aims to address the declining child sex ratio (CSR) and related issues of women empowerment over a life-cycle continuum.
• The scheme is a tri-ministerial effort of the Ministries of Women and Child Development, Health & Family Welfare, and Human Resource Development.
• BBBP focuses on changing the mindset towards the girl child and ensuring education and participation of girls in all aspects of life.

Q78. Answer: (a) 600

Given

A sum of money amounts to Rs.756 in 2 years and Rs.873 in 3.5 years.

Concept used

Principal + interest = Amount

Calculation

Let the principal be P

In 2 years it amounts to Rs.756

In 1.5 years it amounts to Rs.873

Interest = 873 - 756

Interest = 117

1.5 yrs → 117

1 yr → 78

2 yr → 156

Principal + interest = Amount

P + 156 = 756

P = 756 - 156

P = Rs.600

The sum (principal) is Rs. 600.

Q79. Answer: (a) Admiral Karambir Singh

The correct answer is Admiral Karambir Singh.

Key Points

• Admiral Karambir Singh became the 24th Chief of the Naval Staff of India on 31 May 2019.

• He succeeded Admiral Sunil Lanba, who served as the 23rd Chief of the Naval Staff.

• Admiral Karambir Singh is a helicopter pilot and has extensive experience in various command, staff, and instructional appointments.

• Before becoming the Chief of the Naval Staff, he served as the Flag Officer Commanding-in-Chief of the Eastern Naval Command.

Additional Information

• Chief of the Naval Staff (CNS)

• The Chief of the Naval Staff is the highest-ranking officer of the Indian Navy and the principal naval advisor to the President of India and the Government of India.

• The position is a four-star Admiral and the CNS is responsible for the command, control, and administration of the Indian Navy.

• The CNS is appointed by the President of India and typically serves a tenure of three years or until the age of 62, whichever is earlier.

• The CNS plays a crucial role in shaping the strategic direction, operational readiness, and modernization of the Navy.

• Indian Navy

• The Indian Navy is the naval branch of the Indian Armed Forces, tasked with safeguarding India's maritime borders and interests.

• It operates under the Ministry of Defence, Government of India.

• The Indian Navy is a blue-water navy, capable of operating in deep waters and projecting power across the seas.

• It plays a significant role in ensuring the security of India's maritime trade routes, conducting humanitarian missions, and participating in international maritime cooperation.

• Eastern Naval Command

• The Eastern Naval Command is one of the three major commands of the Indian Navy, headquartered in Visakhapatnam.

• It is responsible for the naval defense and operations in the eastern seaboard of India, including the Bay of Bengal and parts of the Indian Ocean.

• It plays a crucial role in maintaining maritime security, conducting naval exercises, and supporting national and international maritime operations.

• The command is headed by the Flag Officer Commanding-in-Chief (FOC-in-C) of the Eastern Naval Command.

Q80. Answer: (a) Arya

According to the given information:

i. In a examination, Mayank got higher marks than Sheetal.

Mayank > Sheetal

ii. Sheetal got higher marks than Rohit.

Sheetal > Rohit

iii. Sheetal got higher marks than Tanya.

Sheetal > Tanya

iv. Tanya got less marks than Praveen.

Praveen > Tanya

v. Arya got higher marks than Mayank.

Arya > Mayank

vi. Rohit got more marks than both Tanya and Praveen.

Rohit > Tanya and Praveen

Final arrangement:

Arya > Mayank > Sheetal > Rohit > Praveen > Tanya

Thus, Arya has achieved the highest marks in the examination.

Hence, the correct answer is "Arya".

Q81. Answer: (c) December 1974

The correct answer is Sun Dec 01 1974 00:00:00 GMT+0530 (India Standard Time).

Key Points

• The 'Charter of Economic Rights and Duties of States' was adopted by the United Nations General Assembly on 12 December 1974.

• This charter outlines the economic rights and duties of states and emphasizes the principles of sovereign equality, non-interference, and mutual benefit among nations.

• The charter was adopted through the resolution 3281 (XXIX) of the United Nations General Assembly.

• It reflects the collective efforts and aspirations of the developing countries to establish a new international economic order.

Additional Information

• United Nations General Assembly (UNGA)

• The UNGA is one of the six principal organs of the United Nations, serving as its main deliberative, policymaking, and representative organ.

• It is composed of all 193 member states of the UN, each with one vote.

• The General Assembly meets once a year in a regular session, but special and emergency sessions can also be convened.

• New International Economic Order (NIEO)

• The NIEO was a set of proposals put forward during the 1970s by developing countries through the United Nations Conference on Trade and Development (UNCTAD) to promote their interests by improving their terms of trade, increasing development assistance, developed-country tariff reductions, and other means.

• The NIEO aimed to address the economic disparities between the developed and developing countries.

• Resolution 3281 (XXIX)

• This resolution, also known as the 'Charter of Economic Rights and Duties of States', was adopted by the General Assembly on 12 December 1974.

• It consists of various articles outlining the economic rights and duties of states, focusing on sovereignty over natural resources, economic cooperation, and the right to development.

Q82. Answer: (b) Rajasthan

The correct answer is Rajasthan.

Key Points

• The World Health Organization (WHO) awarded the Tobacco Control Award for 2019 to the health department of Rajasthan.

• This award is given in recognition of the state's efforts to implement strong tobacco control measures.

• Rajasthan's health department has been proactive in promoting public health and reducing tobacco consumption through various initiatives and programs.

• The award highlights the state's commitment to creating a healthier environment by combating the tobacco epidemic.

Additional Information

• World Health Organization (WHO)

• The WHO is a specialized agency of the United Nations responsible for international public health.

• It was established on 7 April 1948 and is headquartered in Geneva, Switzerland.

• The WHO's primary role is to direct and coordinate international health within the United Nations system.

• Their main areas of work include health systems, promoting health through the life-course, noncommunicable and communicable diseases, and corporate services.

• Tobacco Control Measures

• Tobacco control measures are public health policies and initiatives aimed at reducing the prevalence of tobacco use and its health consequences.

• These measures include the implementation of smoking bans, increasing taxes on tobacco products, running public awareness campaigns, and providing support for smoking cessation.

• Effective tobacco control policies can significantly reduce the health burden caused by tobacco use, including diseases such as cancer, heart disease, and respiratory illnesses.

• Countries and states that implement strong tobacco control measures often see a decrease in tobacco consumption and related health issues.

• Health Department Initiatives in Rajasthan

• The health department of Rajasthan has implemented various programs to control tobacco use and promote public health.

• These initiatives include public awareness campaigns, school education programs, and strict enforcement of tobacco control laws.

• Rajasthan has also established tobacco cessation centers to help individuals quit smoking and other forms of tobacco use.

• The state's efforts in tobacco control are part of a broader strategy to improve overall health outcomes and reduce the incidence of tobacco-related diseases.

Q83. Answer: (b) Hyla

The correct answer is Hyla.

Key Points

• Hyla is a genus of frogs in the Hylidae family, commonly referred to as tree frogs.

• These frogs are known for their ability to climb trees and other vertical surfaces using their adhesive toe pads.

• Tree frogs (Hyla) are often small in size and are found in a variety of habitats including forests, marshes, and swamps.

• They are known for their distinctive calls, which are often used to attract mates during the breeding season.

Additional Information

• Rana tigrina

• Commonly known as the Indian Bullfrog.

• It is a large species of frog found in India, Bangladesh, Pakistan, Nepal, Myanmar, Afghanistan, and Sri Lanka.

• They are not tree frogs and usually found near water bodies.

• Salamandar

• Salamanders are amphibians, typically characterized by their slender bodies, short noses, and long tails.

• They are not frogs and belong to a different order of amphibians called Caudata.

• Salamanders are found in a variety of habitats including aquatic, terrestrial, and arboreal environments.

• Toad

• Toads are amphibians of the order Anura, typically characterized by dry, warty skin.

• They are closely related to frogs but usually have shorter legs and are more adapted to drier environments.

• Unlike tree frogs, toads do not have the ability to climb trees.

Q84. Answer: (b) diminish

The correct answer is diminish.

Key Points

• According to the law of diminishing marginal utility, the additional satisfaction (utility) gained from consuming additional units of a good decreases as more of the good is consumed.

• This principle is fundamental in understanding consumer choice and behavior in economics.

• The law of diminishing marginal utility implies that each subsequent unit of a good consumed adds less to total utility than the previous unit.

• This concept helps explain why demand curves typically slope downward, as consumers are willing to buy more of a good only at lower prices.

Additional Information

• Marginal Utility (MU):

• Marginal utility is the additional satisfaction or benefit (utility) that a consumer derives from consuming an additional unit of a good or service.

• It is calculated as the change in total utility divided by the change in the quantity of the good consumed.

• Total Utility (TU):

• Total utility is the overall satisfaction or benefit that a consumer receives from consuming a certain quantity of goods or services.

• It is the sum of the marginal utilities of all units consumed.

• Law of Diminishing Marginal Utility:

• This law states that as a person consumes more units of a good, the additional satisfaction (marginal utility) from each additional unit decreases.

• For example, the first slice of pizza may provide a lot of satisfaction, but by the fourth or fifth slice, the additional satisfaction gained decreases.

• Implications for Consumer Behavior:

• The law of diminishing marginal utility explains why consumers are willing to pay less for additional units of a good.

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• It is a key reason behind the downward-sloping demand curve in economics.

Q85. Answer: (d) Hima Das

The correct answer is Hima Das.

Key Points

• Hima Das is a prominent Indian sprinter known for her achievements in track and field events.

• In 2018, she made history by becoming the first Indian athlete to win a gold medal in a track event at the IAAF World U20 Championships.

• Hima Das was appointed as UNICEF India's first youth ambassador in 2018, recognizing her influence and inspiring journey.

• She has been an advocate for child rights and has worked to promote education, health, and sports among children in India.

Additional Information

• UNICEF (United Nations International Children's Emergency Fund)

• UNICEF is a United Nations agency responsible for providing humanitarian and developmental aid to children worldwide.

• It was established on December 11, 1946, to provide emergency food and healthcare to children in countries that had been devastated by World War II.

• UNICEF works in over 190 countries and territories to save children's lives, defend their rights, and help them fulfill their potential from early childhood through adolescence.

• Its programs focus on areas such as child protection, education, immunization, emergency relief, and maternal health.

• IAAF World U20 Championships

• The IAAF World U20 Championships, previously known as the World Junior Championships in Athletics, is a biennial world championships for the sport of athletics organized by the International Association of Athletics Federations (IAAF).

• It is a competition for junior athletes (under 20 years of age) and serves as an opportunity to showcase emerging talent on an international stage.

• The first edition of the championships was held in Athens, Greece, in 1986.

• It includes a wide range of track and field events, including sprints, distance running, jumping, and throwing events.

• Role of Youth Ambassadors

• Youth ambassadors are young leaders who represent and advocate for specific causes, often related to social issues, health, education, and child rights.

• They use their influence and platforms to raise awareness, mobilize support, and inspire action among their peers and communities.

• As youth ambassadors, individuals like Hima Das work with organizations such as UNICEF to promote positive change and development.

• Their involvement helps to bridge the gap between young people and decision-makers, ensuring that the voices of the youth are heard and considered in policy-making processes.

Q86. Answer: (d) Fossil

Given:

Sales in 2014 and 2018 for each brand:

Titan 2014 = 366, Titan 2018 = 288

Fastrack 2014 = 205, Fastrack 2018 = 202

Timex 2014 = 247, Timex 2018 = 255

Fossil 2014 = 96, Fossil 2018 = 126

Formula used:

Percentage Change = (Final Value - Initial Value)/(Initial Value) × 100

Calculation:

Titan:

=> Percentage Change = (288 - 366)/366 × 100

=> = (-78)/366 × 100

=> ≈ -21.31%

Fastrack:

=> Percentage Change = (202 - 205)/205 × 100

=> = (-3)/205 × 100

=> ≈ -1.46%

Timex:

=> Percentage Change = (255 - 247)/247 × 100
=> = 8/247 × 100
=> ≈ 3.24%
Fossil:
=> Percentage Change = (126 - 96)/96 × 100
=> = 30/96 × 100
=> ≈ 31.25%
Therefore The brand with the highest percentage change in sales between 2014 and 2018 is Fossil, with an increase of 31.25%.

Q87. Answer: (c) Fastrack, 2017

Given:
Sales data for each options:
Formula used:
Percentage Increase = (Current Year Sales - Previous Year Sales)/(Previous Year Sales) × 100
Calculation:
Titan:
2017 => Percentage Increase = (412 - 312)/312 × 100 ≈ 32.05%
Fastrack:
2017 => Percentage Increase = (312 - 175)/175 × 100 ≈ 78.29%
Timex:
2016 => Percentage Increase = (388 - 285)/285 × 100 ≈ 36.14%
Fossil:
2017 => Percentage Increase = (146 - 112)/112 × 100 ≈ 30.36%
Therefore The maximum percentage increase over the preceding year is for Fastrack in 2017, with an increase of 78.29%.

Q88. Answer: (b) Timex

Given:
Sales data for each brand in 2017 and 2018:
Titan 2017 = 412, Titan 2018 = 288
Fastrack 2017 = 312, Fastrack 2018 = 202
Timex 2017 = 401, Timex 2018 = 255
Fossil 2017 = 146, Fossil 2018 = 126
Formula used:
Percentage Decrease = (Previous Year Sales - Current Year Sales)/(Previous Year Sales) × 100
Calculation:
Titan:
=> Percentage Decrease = (412 - 288)/412 × 100
=> = 124/412 × 100
=> ≈ 30.10%
Fastrack:
=> Percentage Decrease = (312 - 202)/312 × 100
=> = 110/312 × 100
=> ≈ 35.26%
Timex:
=> Percentage Decrease = (401 - 255)/401 × 100
=> = 146/401 × 100
=> ≈ 36.41%
Fossil:
=> Percentage Decrease = (146 - 126)/146 × 100
=> = 20/146 × 100
=> ≈ 13.70%
Therefore The correct answer is option (2) Timex, with the highest percentage decrease of approximately 36.41% in 2018

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compared to the preceding year.

Q89. Answer: (c) Only two brands showed year-on-year increase in sales during the period 2014-17.

Given Sales Data (2014-2018):

Titan: 366, 398, 312, 412, 288

Fastrack: 205, 188, 175, 312, 202

Timex: 247, 285, 388, 401, 255

Fossil: 96, 108, 112, 146, 126

Analysis of Statements:

1) The total sales of Fossil brand of watches for the given period is less than 50% of the sales of every other brand for the given period:

The total sales for Fossil brand are 96 + 108 + 112 + 146 + 126 = 588. All other brands have higher total sales, so this statement is false.

2) The brand with the highest sales for the given period is Timex:

The total sales for each brand are as follows:

Timex: 1576, Titan: 1776, Fastrack: 1082, Fossil: 588

Titan has the highest sales, not Timex, so this statement is false.

3) Only two brands showed year-on-year increase in sales during the period 2014-17:

Both Timex and Fossil showed year-on-year increases in sales from 2014 to 2017, so this statement is true.

4) The total sales of all brands of watches was highest in 2016:

The total sales for each year are as follows:

2016: Titan = 312, Fastrack = 175, Timex = 388, Fossil = 112 (Total = 987)

2017: Titan = 412, Fastrack = 312, Timex = 401, Fossil = 146 (Total = 1271)

The highest sales were in 2017, not 2016, so this statement is false.

Conclusion:

The correct answer is: Statement 3: "Only two brands showed year-on-year increase in sales during the period 2014-17."

Q90. Answer: (b) Salt Lake Stadium

The logic followed here is:

Eden Gardens	Cricket Stadiu
Salt Lake Stadium	Football Stadium
Wankhede Stadium	Cricket Stadium
MA Chidambaram Stadium	Cricket Stadium

Eden Gardens, Wankhede Stadium, MA Chidambaram Stadium all are Cricket Stadiums,

Whereas,

Salt Lake Stadium is a Football Stadium.

Hence, the correct answer is "Salt Lake Stadium".

Q91. Answer: (a) Only III follows.

Given Statements:

All flowers are blue.

Some blues are balls.

No ball is red.

The least possible Venn diagram:

Conclusions:

I: No flowers is red. - False (Because there is no direct relation between flowers and red, so it can be possible but not definite)

II: All flowers are balls. - False (Because there is no direct relation between flowers and balls, so it can be possible but not definite)

III: Few balls are blue. - True (Because Some blues are balls given. So, Few balls are also blue)

So, Only III follows.

Hence, the correct answer is "Only III follows".

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Q92. Answer: (a) 25.5

Given:

The average age of a cricket team of 11 players is 18 years.

4 players join the team, increasing the average age by 2 years.

Calculation:

Sum of age of 11 players = 11 × 18 = 198

Since 4 players join the team, increasing the average age by 2 years.

Total players = 11 + 4 = 15

New average = 18 + 2 = 20

So, Sum of age of all players = 15 × 20 = 300

Now,

Sum of age of 4 players = 300 - 198 = 102

So, average of age of 4 players = 102/4 = 25.5 years

Therefore The correct answer is option (1).

Q93. Answer: (a) 5 hours, 22 minutes, 12 seconds

In 5.37 hours

Here, 5 shows hours and

0.37 covert for minutes multiplied by 60

=> 0.37 × 60 = 22.2

here 22 shows minutes then

0.2 covert for second multiplied by 60

=> 0.2 × 60 = 12

Here, 12 shows second.

So, 5.37 hours in hours, minutes and seconds is 5 hours, 22 minutes, 12 seconds.

Hence, the correct answer is "Option (1)".

Q94. Answer: (d) ko

The logic followed here is:

Thus, "ko" stand for 'is'.

Hence, the correct answer is "ko".

Q95. Answer: (c) 15, 38

The logic followed here is:

Hence, the correct answer is "15, 38".

Q96. Answer: (b) 25

According to the given information:

The shaded part represents "students want to have Dosa, sandwich and pizza, all three in their lunch".

Thus students want to have Dosa, sandwich and pizza, all three in their lunch = 25.

Hence, the correct answer is "25".

Q97. Answer: (d) Social Media

The logic followed here is:

WhatsApp	Social Media Platform
Facebook	Social Media Platform
Twitter	Social Media Platform
Social Media	Category

WhatsApp, Facebook, Twitter all are Social Media Platforms,

Whereas,

Social Media is a Category.

Hence, the correct answer is "Social Media".

Q98. Answer: (a) 97

The logic followed here is:

The prime numbers between 41 and 100 are:

41, 43, 47, 53, 59, 61, 67, 71, 73, 79, 83, 89, 97.

Hence, the correct answer is "97".

Q99. Answer: (c) Santosh

According to the given information:

1) Rohit scored more than Rahul but less than Santosh.

Santosh > Rohit > Rahul

2) Balbeer scored more than Iqbal but less than Rahul.

Rahul > Balbeer > Iqbal

3) Mehul scored more than Balbeer but less than Santosh.

Santosh> Mehul > Balbeer

Final arrangement:

Santosh > Rohit > Rahul > Mehul > Balbeer > Iqbal

So, Santosh scored the most.

Hence, the correct answer is "Santosh".

Q100. Answer: (a) Time

The logic followed here is:

Time	Fundamental quantity
Volt	Unit of electrical potential
Ohm	Unit of electrical resistance
Pascal	Unit of pressure

Volt, Ohm, Pascal are all units of measurement for different physical quantities,

Whereas,

Time is not a unit of measurement but a fundamental quantity itself..

Hence, the correct answer is "Time".

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