BSSC CGL PYP (Held on 23rd Dec 2022 Shift 1)

Q1. Symbiotic association of algae with fungi is
(a) Cyanobacteria
(b) Mycorrhizza
(c) Lichen
(d) Mycoplasma

Q2. What is cash reserve ratio as decided by RBI on May 04, 2022?
(a) 4.5%
(b) 4%
(c) 1%
(d) 5%

Q3. Isotherms are less zig-zag in southern hemisphere mainly because of-
(a) Absence of Deserts
(b) Effect of Antarctica
(c) Huge expansion of oceans
(d) Absence of high mountains

Q4. Which of the following institutes is responsible to prepare the National Account Statistics of India?
(a) NITI Aayog
(b) National Sample Survey Office
(c) Reserve Bank of India
(d) Central Statistical Organisation

Q5. Where was Bhagat Singh born?
(a) Surajpur
(b) Salona Village
(c) Rahampur
(d) Banga Village

Q6. Who is the father of Green Revolution in India?
(a) Dr. William Gadd
(b) M.S. Swaminathan
(c) Verghese Kurien
(d) Hiralal Choudhary

Q7. Who was the Governor General of India when the first Anglo-Burmese War was started?
(a) Lord Amherst
(b) Lord Cornwallis
(c) Lord Dalhousie
(d) Lord Hastings

Q8. National Sports Day is observed on –
(a) 25th August
(b) 25th September
(c) 29th August
(d) 29th September

Q9. The term 'Isostasy' was first used by _____
(a) Airy
(b) Pratt
(c) Dutton
(d) Hutton

Q10. As per latest Economic Survey of Bihar, Bihar is a -
(a) Revenue deficit state
(b) Revenue surplus state
(c) State with negative growth rate
(d) Revenue neutral state

Q11. Which Parliamentary Committee is constituted to examine and report to the house regarding the proper execution of powers to make regulations, rules, sub-rules and bye-laws delegated by the parliament to the executive?
(a) Committee on Subordinate Legislation
(b) Ethics Committee
(c) Business Advisory Committee
(d) Committee on Government Assurances

Q12. Who is the winner of 'Subhash Bose Aapda Prabandhan Puraskar 2022"?
(a) Dr. Rajendra kumar Bhandari
(b) Dr. Akhil Goyal
(c) Dr. Rajveer Singh
(d) Vinod Sharma

Q13. The number of types of bonds between two carbon atoms in calcium carbide is
(a) One sigma, One pi
(b) One sigma, Two pi
(c) Two sigma, One pi
(d) Two sigma, Two pi

Q14. What is the main objective of Mission Indradhanush?
(a) To provide basic services to urban households
(b) Encouraging girls for higher technical education
(c) Providing same pension for same rank
(d) Immunization of all children and pregnant women

Q15. Algae used as food supplement by space travellers is:
(a) Chlorella
(b) Volvox
(c) Polysiphonia
(d) Gelidium

Q16. 'Bhasha Samman' award is given by -
(a) Language Commission of India
(b) Rajasthan Government
(c) Sahitya Academy
(d) Punjab Government

Q17. Who appoints the judges of the High Court?
(a) President
(b) Governor
(c) Chief Justice of India
(d) Chief Justice of High Court

Q18. Who can be appointed as Chairman of National Human Rights Commission?
(a) Any Supreme Court Judge
(b) Retired Chief Justice of India
(c) Retired Chief Justice of High Court
(d) Any person appointed by President

Q19. _____ is used in 'Bread making.'
(a) Mucor sativa
(b) Rhizopus indica
(c) Streptococcus staphali
(d) Saccharomyces cerevisiae

Q20. With which Amendment Act, tribunals were added in Indian Constitution?
(a) 42nd amendment
(b) 44th amendment
(c) 47th amendment
(d) 35th amendment

Q21. Photoreceptor cells i.e., rods and cones are present in:
(a) Iris
(b) Pupil
(c) Retina
(d) Lens

Q22. Which Article of the Constitution of India deals with determination of doubts and disputes relating to the election of a President or Vice-President?
(a) Article 81
(b) Article 71
(c) Article 61
(d) Article 91

Q23. Which among the following is a unit of resistivity?
(a) Ohm-meter
(b) Ohm/meter
(c) Ohm-meter^2
(d) Ohm/meter^2

Q24. 'Beti Bachao Beti Padhao' scheme was launched in which year?
(a) 2014
(b) 2016
(c) 2019
(d) 2015

Q25. Which period is known as 'Plan Holiday'?
(a) 1960-62
(b) 1966-69
(c) 2017-20
(d) 1947-51

Q26. Article 39A provides for:
(a) Organisation of Village Panchayat
(b) Equal Justice and Free Legal Aid
(c) Uniform civil code for the citizens
(d) Definition of State

Q27. Bimbisara was the king of which dynasty?
(a) Shishunaga dynasty
(b) Nanda dynasty
(c) Maurya dynasty
(d) Haryanka dynasty

Q28. On what principle does light propagate in optical fibre?
(a) Reflection
(b) Total internal reflection
(c) Photoelectric effect
(d) Refraction

Q29. In which of the following regions, rainfall occurs mainly during winters?
(a) Mediterranean Region
(b) Savanna Grassland Region
(c) Subtropical Region
(d) Monsoon Asia Region

Q30. National Education Day is celebrated on which date?
(a) 8th September
(b) 11th November
(c) 22nd November
(d) 5th September

Q31. Cottrell precipitator is used to
(a) precipitate carbon particles from smoke
(b) purify the ordinary drinking water
(c) precipitate salts in qualitative analysis
(d) precipitate mud from muddy water

Q32. The moment of inertia of a disc about one of its dimensions is:
(a) $MR^2 / 2$
(b) $MR^2 / 4$
(c) $MR^2 / 3$
(d) $MR^2 / 6$

Q33. An announcement by RBI for increase in Cash Reserve Ratio (CRR) means
(a) Commercial banks will have less money to lend
(b) Commercial banks will have more money to lend
(c) Commercial banks will have more gold deposits with RBI
(d) RBI will have less money to lend

Q34. Shinzo Abe was famous leader of _____.
(a) Japan
(b) South Korea
(c) North Korea
(d) China

Q35. Chairperson of a Panchayat at the village level:
(a) is elected indirectly by the people
(b) is elected in such manner as the state legislature determines
(c) is appointed by the Chief Minister
(d) is elected directly by the people

Q36. Rajaji National Park is the natural habitat of:
(a) Cheetal
(b) Musk deers
(c) Asian elephant
(d) Mahseer fish

Q37. Which one of the following pairs is not correctly matched?

Grassland	Continent
(A) Selvas	South America
(B) Pampas	Europe
(C) Velds	Africa
(D) Downs	Australia

(a) A
(b) B
(c) C
(d) D

Q38. Recently, the Archeological Survey of India has found new sites in Bandhavgarh Tiger Reserve of _____ state.
(a) Madhya Pradesh
(b) Maharashtra
(c) Chhattisgarh
(d) Jharkhand

Q39. Who was the leader of the revolt of 1857 in Jagdishpur (Bihar)?
(a) Kunwar Singh
(b) Nana Sahib
(c) Thakur Kushal Singh
(d) Rani Laxmi Bai

Q40. Which instrument is used to measure the potential difference?
(a) Galvanometer
(b) Ammeter
(c) Voltmeter
(d) Anemometer

Q41. Ramanujan Prize for young mathematicians 2021 has been awarded to-
(a) Narendra Karmakar
(b) Keith Devlin
(c) Ian Stewart
(d) Neena Gupta

Q42. Indian Railways has renamed the Howrah-Kalka mail by which name?
(a) Netaji Express
(b) Jawahar Express
(c) Savarkar Express
(d) Gandhi Express

Q43. Who among the following has authored his autobiography titled "On Board Trial and Triumph: My Years in BCCI"?
(a) Ramchandra Guha
(b) Pradeep Magazine
(c) Ratnakar Shetty
(d) Vinod Rai

Q44. Which Article of the Constitution provided for the Council of Ministers with the Chief Minister as its head to aid and advise the Governor?
(a) Article 163
(b) Article 164
(c) Article 165
(d) Article 162

Q45. "National Seeds Corporation (NS(C)" was established in the year:
(a) 1961
(b) 1963
(c) 1960
(d) 1965

Q46. Helsinki is the capital city of:
(a) Finland
(b) Iceland
(c) Lithuania
(d) Latvia

Q47. Lactic acid shows which type of isomerism?
(a) Tautomerism
(b) Optical isomerism
(c) Geometrical isomerism
(d) Metamerism

Q48. India's first pure green hydrogen plant commissioned in:
(a) Guwahati
(b) Jamshedpur
(c) Ranchi
(d) Jorhat

Q49. What was the script of North-West India during the early medieval period?
(a) Modi
(b) Sharda
(c) Arabic
(d) Kutil

Q50. Who built the Rajarajeswara temple of Tanjore?
(a) Rajraja First
(b) Rajraja Second
(c) Rajendra First
(d) Rajendra Second

Q51. Which of the following are the correct geometry and hybridization state of XeF4?
(a) Square planar, sp3d2
(b) Trigonal bipyramidal, sp3d
(c) Trigonal planar, sp3d3
(d) Octahedral, sp3d2

Q52. How many seats are required by the leader of the opposition party to be recognized as the leader of the opposition in the house?
(a) One eighth seats of the total strength of the house
(b) One tenth seats of the total strength of the house
(c) One sixth seats of the total strength of the house
(d) One fourth seats of the total strength of the house

Q53. β-decay is a consequence of ____
(a) Weak nuclear force
(b) Strong nuclear force
(c) Electromagnetic force
(d) Gravitational force

Q54. How many Indian languages are there in the eighth schedule of the Indian Constitution?
(a) 22
(b) 20
(c) 24
(d) 18

Q55. Which of the following countries is not a member of SAARC?
(a) Afghanistan
(b) Maldives
(c) Mauritius
(d) Sri Lanka

Q56. Shivarajpur beach of _____ state is conferred with Blue Flag Certification.
(a) Karnataka
(b) Kerala
(c) Gujarat
(d) Maharashtra

Q57. Sameer V. Kamat is holding an important post in the field of _____.
(a) Defence
(b) Banking
(c) Insurance
(d) Sports

Q58. An autoimmune disorder which affects neuromuscular junction leading to fatigue, weakening and paralysis of skeletal muscles is _____
(a) Gout
(b) Osteoporosis
(c) Tetany
(d) Myasthenia gravis

Q59. India's first mission to the moon, Chandrayaan-1 was launched from which place?
(a) Balasore
(b) Sriharikota
(c) Thiruvanthapuram
(d) Wheeler Island

Q60. Who was awarded 'UNESCO Peace Prize - 2022'?
(a) Angela Merkel
(b) Barak Obama
(c) Mateusz Morawiecki
(d) Vladimir Putin

Q61. What does Article 157 of the Constitution of India deal with?
(a) Executive Power of State
(b) Appointment of Governor
(c) Qualifications for appointment as Governor
(d) Term of office of Governor

Q62. Who was the 23rd Tirthankar of Jainism?
(a) Mahaveer Swami
(b) Parshwanath
(c) Suparshwanath
(d) Kunthunath

Q63. Which state ranks first in terms of per hectare production of Sugarcane?
(a) Uttar Pradesh
(b) Maharashtra
(c) Madhya Pradesh
(d) Tamil Nadu

Q64. What is the currency of UAE?
(a) Dirham
(b) Rupiah
(c) Dinar
(d) Rial

Q65. The 2022 Commonwealth Games were ____ Commonwealth Games.
(a) XIth
(b) XXIInd
(c) XXth
(d) Xth

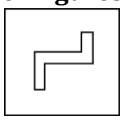
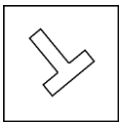
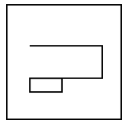
Q66. When was the treaty of Sugauli (Nepal) signed?
(a) 1816
(b) 1810
(c) 1824
(d) 1826

Q67. Which of the following is *not* a department under Ministry of Home Affairs?
(a) Department of Home
(b) Department of States
(c) Department of Internal Security
(d) Department of Law and Order

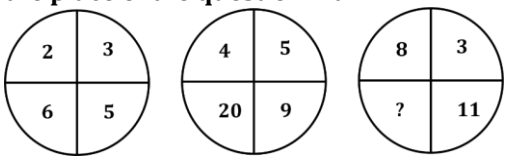
Q68. In which year was the treaty of Purandar signed between Shivaji and Jaisingh?
(a) 1665 A.D.
(b) 1675 A.D.
(c) 1775 A.D.
(d) 1660 A.D.

Q69. Ethane, with the molecular formula C2H6 has:
(a) 7 covalent bonds
(b) 6 covalent bonds
(c) 8 covalent bonds
(d) 9 covalent bonds

Q70. X can do 1/5 of a work in 10 days. Y can do 60% of the work in 60 days and Z do 1/3 of the work in 12 days. Who will complete the work first?
(a) X
(b) Y
(c) Z
(d) X and Z both

Q71. Which of the following is odd one out from the given figures?
(a) 
(b) 
(c) 
(d) 

Q72. An apple costs ₹6 each and a mango costs ₹5 each. X spends ₹42 on these fruits. The number of apples purchased is
(a) 2
(b) 3
(c) 4
(d) 5

Q73. Select the correct alternative which will come in the place of the question mark?


(a) 24
(b) 32
(c) 26
(d) 36

Q74. If the sum of two numbers is 36 and their product is 315, then find the absolute difference between the numbers.
(a) 5
(b) 7
(c) 6
(d) 4

Q75. If $(64)^2 - (36)^2 = 20Z$, then value of Z is:
(a) 120
(b) 180
(c) 140
(d) 70

Q76. Which term will come in the place of the question mark?
4, 112, 8, 56, 12, ?, 16, 14, 20, 7
(a) 24
(b) 28
(c) 72
(d) 36

Q77. Find the smallest number which when divided by 25, 40 and 56 has in each case as remainder 13.
(a) 1413
(b) 1400
(c) 1439
(d) 1426

Q78. If A and B together can complete a piece of work in 20 days and B alone in 25 days, in how many days can A alone complete the work?
(a) 100 days
(b) 110 days
(c) 120 days
(d) 90 days

Q79. The ratio of $4^{3.5}:2^5$ is same as:
(a) 2 : 1
(b) 4 : 1
(c) 7 : 5
(d) 7 : 10

Q80. Choose the odd one out.
(a) 175
(b) 63
(c) 112
(d) 56

Q81. The number of students in each section of a school is 30. After admitting new students, 4 new sections were started. Now, the total number of sections is 15 and there are 25 students in each section. The number of new students admitted is:
(a) 44
(b) 45
(c) 48
(d) 50

Q82. Average of all the natural numbers less than 150 is:
(a) 70
(b) 72
(c) 75
(d) 80

Q83. Select the correct alternative which will replace the question mark.
Freeze : Solid :: Melt : ?
(a) Water
(b) Gas
(c) Gel
(d) Liquid

Q84. Find the missing term in the given series.
15, 30, ?, 40, 8, 48
(a) 20
(b) 30
(c) 15
(d) 10

Q85. If in a certain language 'KINDLE' is coded as 'NLQAIB', then in the same language how can 'EXOTIC' be coded?
(a) HZRQFA
(b) CITOXE
(c) DJUPUF
(d) HARQFZ

Q86. When 30% of a number is added to 49, the result is itself, then the number is:
(a) 60
(b) 70
(c) 80
(d) 81

Q87. 20.02 + 200.2 + 2.002 =
(a) 10.10
(b) 10.01
(c) 12.67
(d) 222.222

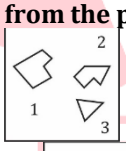
Q88. In a certain code language 'MOBILITY' is coded as "46293927", then how is 'STABLE' written in that language?
(a) 121235
(b) 1201235
(c) 131235
(d) 1021235

Q89. Which word does not belong with others?
(a) Aorta
(b) Heart
(c) Liver
(d) Stomach

Q90. Choose the correct answer figure which will complete the given question figure.

(a)
(b)
(c)
(d)

Q91. Find out which of the answer figures can be formed from the pieces given in problem figure.



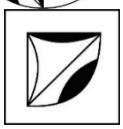
(a)
(b)
(c)
(d)

Q92. Three solutions having milk and water in the ratio (2:3), (3:1) and (4:5) respectively, which are mixed in the ratio 2:3:4. Find the ratio of milk and water in the resultant mixture.
(a) 219 : 341
(b) 531 : 622
(c) 640 : 729
(d) 869 : 751

Q93. Which one of the following numbers is the square of a natural number?
(a) 143942
(b) 1563798
(c) 320453
(d) 279841

Q94. Select the pair that has the same relationship as the given pair.
Triangle : Rectangle :: ?
(a) Pentagon : Hexagon
(b) Angle : Quadrilateral
(c) Rhombus : Octagon
(d) Cone : Sphere

Q95. Select the answer figure which will complete the question figure.

(a) 

(b) 

(c) 

(d) 

Q96. In an examination hall five students V, W, X, Y, and Z are sitting in a row. Only Z is between V and X. Y is immediately behind X and V is the first. Who is sitting second last?
(a) X
(b) Z
(c) Y
(d) W

Q97. Find selling price when CP = Rs. 36.40 and Gain% = 15%
(a) Rs. 41.86
(b) Rs. 55
(c) Rs. 55.4
(d) Rs. 56

Q98. Find the L.C.M of 3/7, 1/7, 1/35 and 4/7
(a) 13/7
(b) 4/7
(c) 15/7
(d) 12/7

Q99. In a certain code language 'ACADEMIC' is written as 'EBDBDJNF', then how 'BOUNDARY' written in that code?
(a) PCZSBEVO
(b) OVPCEBSZ
(c) PCVOZBSE
(d) OVPCZSBE

Q100. Find the 18th term of the AP $\sqrt{2}, 3\sqrt{2}, 5\sqrt{2},...$
(a) $35\sqrt{2}$
(b) $36\sqrt{2}$
(c) $37\sqrt{2}$
(d) $34\sqrt{2}$

Q101. What is the remainder when 1421 × 1423 × 1425 is divided by 12?
(a) 3
(b) 2
(c) 4
(d) 1

Q102. The radius of a circle is increased by 3%. What is the percentage increase in its area?
(a) 6.09%
(b) 6.11%
(c) 5.09%
(d) 7.09%

Q103. The average of 5, 7, 9, x, 15 is 10 and the average of 17, 8, 19, 16, x, y, 4 is 12. What is the value of y?
(a) 5
(b) 8
(c) 6
(d) 7

Q104. If $4x^2 - 10xy + 6y^2 = 0$, then x : y is
(a) (2 : 3) only
(b) (1 : 1) only
(c) (2 : 3) and (1 : 1)
(d) (3 : 2) and (1 : 1)

Q105. Arnav ranked 8th from the top and 39th from the bottom in a class. How many students are there in the class?
(a) 46
(b) 45
(c) 47
(d) 48

Q106. In the following question, four pairs of words are given, out of which the words of three pairs bear a certain common relationship. Choose the pair in which the words are differently related.
(a) Maize : Cereal
(b) Tomato : Potato
(c) Book : Library
(d) Student : Class

Q107. There is a relation between first two terms. Find the correct option to replace the question mark, which will have the same relation with the third term.
AG : IO :: EK : ?
(a) MS
(b) PV
(c) SY
(d) LS

Q108. A seller calculated his intended selling price at 5% profit on the cost of a product. If profit is reduced by ₹120, then profit percentage is reduced to 3.5%. What is the cost price of the product?
(a) ₹7000
(b) ₹6000
(c) ₹8000
(d) ₹9000

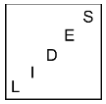
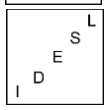
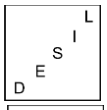
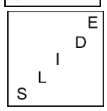
Q109. Difference of two numbers is 840. If 5% of one number is 15% of the other number, then find both numbers.
(a) 1260, 420
(b) 1840, 1000
(c) 1520, 1040
(d) 1980, 1140

Q110. For what least value of * the number 648*458 is divisible by 11?
(a) 6
(b) 5
(c) 7
(d) 9

Q111. If 2 × 3 = 49 and 3 × 4 = 916, then 9 × 7 = ?
(a) 8149
(b) 6349
(c) 4981
(d) 2728

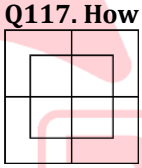
Q112. Choose the alternative which closely resembles the water image of the given word 'INTREST'.
(a) 
(b) 
(c) 
(d)

Q113. The average amount of money that 15 girls have is ₹50. When 3 more girls join the group, the average increases by ₹3. Then the average amount of 3 new girls is:
(a) ₹65
(b) ₹60
(c) ₹70
(d) ₹68

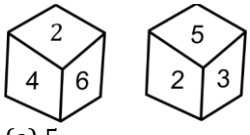
Q114. Choose the odd figure out from the given four figures.
(a) 
(b) 
(c) 
(d) 

Q115. Which one of the interchange in signs would make the given statement correct:
20 - 4 + 6 × 3 ÷ 4 = 19
(a) - and ÷
(b) - and +
(c) ÷ and ×
(d) × and ÷

Q116. Which is the largest fraction among the following?
(a) 6/7
(b) 7/8
(c) 7/7
(d) 4/5

Q117. How many squares are there in the given figure?

(a) 8
(b) 10
(c) 12
(d) 7

Q118. The sum of the squares of three numbers is 138, while the sum of their products taken two at a time is 131. Sum of numbers is:
(a) 40
(b) 50
(c) 20
(d) 30

Q119. Two different positions of the same dice are shown. Which number will be at the top if 1 is at the bottom?

(a) 5
(b) 3
(c) 2
(d) 6

Q120. In a certain code language 'BOAT' is written as 'TBAO' and 'FAIR' is written as 'RFIA'. How is 'GAIN' written in that code?
(a) ANIG
(b) NGIA
(c) IGNA
(d) NAGI

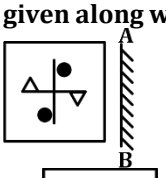
Q121. Which of the following countries had a higher ranking in the human development index in 2021 as compared to India?
(a) Pakistan
(b) Nepal
(c) Sri Lanka
(d) Myanmar

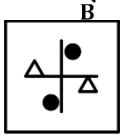
Q122. At what percent of simple interest per annum will Rs. 8000 amount to Rs. 12600 in five years?
(a) 11.5%
(b) 11%
(c) 12%
(d) 12.5%

Q123. Which term is different from the rest?
(a) GJL
(b) MPR
(c) PST
(d) ADF

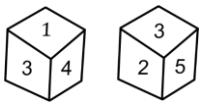
Q124. Choose the different alternative from the following.
(a) Umpire
(b) Stump
(c) Bails
(d) Bat

Q125. In the following question, choose the correct mirror image of the figure (x) from the four alternatives given along with.



(a) 
(b) 
(c) 
(d) 

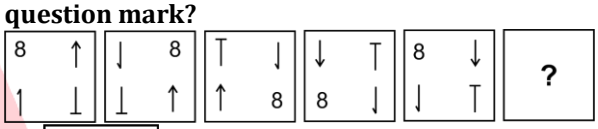
Q126. In the given cube what is the number opposite to 6?

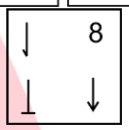
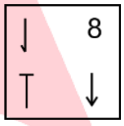
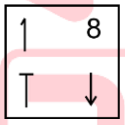
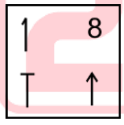


(a) 5
(b) 2
(c) 3
(d) 4

Q127. Choose the correct option to replace the question mark.
BDFH : DWDS :: TVYZ : ?
(a) VDWB
(b) VEWA
(c) VEBB
(d) UDWA

Q128. What will be the next figure to replace the question mark?



(a) 
(b) 
(c) 
(d) 

Q129. If you write down all the numbers from 1 to 100, then how many times do you write 3?
(a) 11
(b) 18
(c) 20
(d) 21

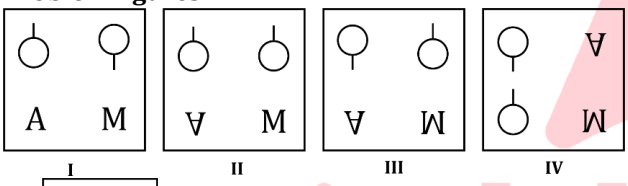
Q130. Choose the correct alternative among the given options that will continue the same pattern given in the following number series and replace the question mark:
10, 100, ?, 310, 430
(a) 200
(b) 210
(c) 205
(d) 190

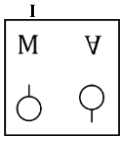
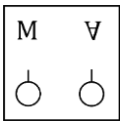
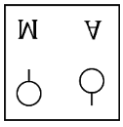
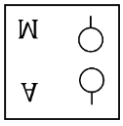
Q131. Select the different from others.
(a) Guitar
(b) Pungi
(c) Flute
(d) Trumpet

Q132. If 'CREATIVE' will be written as 'BDSBFUJS', then how will be 'TRIANGLE' written?
(a) BSSHFMKH
(b) BSHSFHKM
(c) BHSSFKHM
(d) BHSSMHHF

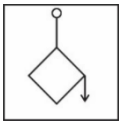
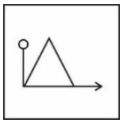
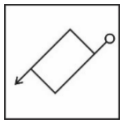
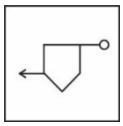
Q133. If P + Q means 'P is the father of Q', P - Q means 'P is the wife of Q', P × Q means 'P is the brother of Q', then which of the following means 'A is the maternal uncle of D'?
(a) A × B - C + D
(b) D × C - B × A
(c) A × C + B - D
(d) A - C × B + D

Q134. Select the figure from the given answer figures which would follow the given problem figure to continue the series.
Problem figures:



(a) 
(b) 
(c) 
(d) 

Q135. If A + D = C + E, B + 2D = C + 2E, D - E > E - B and 2D > A + C, then which of the following alternates is a true statement?
(a) A > B > D > C > E
(b) C > D > A > E > B
(c) D > B > E > C > A
(d) C > B > D > A > E

Q136. Choose the figure which is different from the rest.
(a) 
(b) 
(c) 
(d) 

Q137. In a certain code, 'facing problems with health' is coded as 'mlp hlt ngi snk'. 'health problems on rise' is coded as 'hlt sa rtv mlp'. 'rise with every challenge' is coded as 'snk rtv lne riy' and 'facing challenge each day' is coded as 'ngi riy nop hus'.
Which of the following is coded as 'lne'?
(a) facing
(b) every
(c) with
(d) rise

Q138. In a certain code, 'facing problems with health' is coded as 'mlp hlt ngi snk'. 'health problems on rise' is coded as 'hlt sa rtv mlp'. 'rise with every challenge' is coded as 'snk rtv lne riy' and 'facing challenge each day' is coded as 'ngi riy nop hus'.
Which of the following is the code for 'facing'?
(a) nop
(b) rtv
(c) ngi
(d) snk

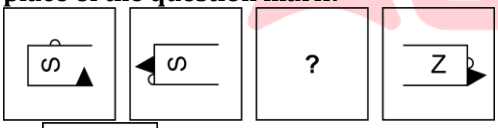
Q139. Read the following instructions carefully and answer the following question.
If 'A + B' means 'A is father of B'.
If 'A × B' means 'A' is sister of B'.
If 'A÷ B' means 'A is wife of B'.
If 'A % B' means 'A is mother of B'.
If 'A * B' means 'A is son of B'.
What should come in place of question mark to establish 'Q is grandmother of T'?
P × Q ? R + S + T
(a) %
(b) +
(c) ÷
(d) ×

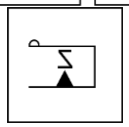
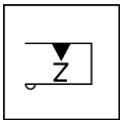
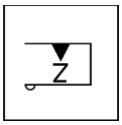
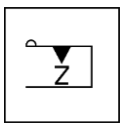
Q140. Read the following instructions carefully and answer the following question.
If 'A + B' means 'A is father of B'.
If 'A × B' means 'A' is sister of B'.
If 'A÷ B' means 'A is wife of B'.
If 'A % B' means 'A is mother of B'.
If 'A * B' means 'A is son of B'.
Which expression indicates that 'P is daughter of S'?
(a) L % R ÷ S + T × P
(b) L + R ÷ S + P × T
(c) L ÷ S * R % P ÷ T
(d) L % R % S + T ÷ P

Q141. Vassim walks a distance of 500 m towards East, turns left and moves 400 m, turns left and walks 500 m and then turns left again and moves 400 m and halts. What distance (in m) is he from the starting point?
(a) 500
(b) 400
(c) 1800
(d) 0

Q142. In a certain code language 'come and see' is written as 'na ha sa'; 'nice to see you' is written as 'da ka pa sa'; 'see and again' is written as 'ka na sa'. How is 'again' written in that code language?
(a) na
(b) sa
(c) ha
(d) ka

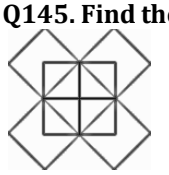
Q143. The second figure in the first unit of the problem figures bears a certain relation to the first figure. Similarly, one of the figures in the answer figures bears the same relationship to the second figure in the second unit of the problem figure. Which figure would fit in place of the question mark?



(a) 
(b) 
(c) 
(d) 

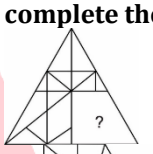
Q144. Radha walks 10m towards North, then she turns left and walks 30m. She again turns left and walks 10m. Further, she moves 10 m after turning to right. How far is she from her original position?
(a) 50 m
(b) 60 m
(c) 70 m
(d) 40 m

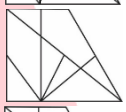
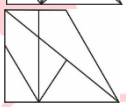
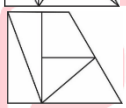
Q145. Find the number of rectangles in the given figure.



(a) 14
(b) 16
(c) 18
(d) 20

Q146. Choose the correct answer figure which will complete the question figure.



(a) 
(b) 
(c) 
(d) 

Q147. SDFG is related to YJKM in a certain way based on the English alphabetical order. In the same way, QBZE is related to WHEK. To which of the following options is ITOW related, following the same logic?
(a) OZTC
(b) HBCT
(c) RYOM
(d) MJVY

Q148. Gautam starts from Point A and drives 30 km towards South. He then takes a left turn, drives 15 km, turns left and drives 42 km. He then takes a left turn and drives 7 km. He takes a final left turn, drives 12 km and stops at Point P. How far (shortest distance) and towards which direction should he drive in order to reach Point A again? (All turns are 90 degree turns only unless otherwise specified).
(a) 5 km towards West
(b) 8 km towards West
(c) 10 km towards West
(d) 10 km towards East

Q149. "In the question below, some statements and their conclusions are given. Assume all the statements to be true, even if they seem to be at variance with commonly known facts. Read all the conclusions and then decide which of the given conclusions logically follow from the given statements.
Statements: 1. No P is X.
2. No R is P.
Conclusions: I. Some X are not P.
II. No X is R.
(a) Only Conclusion II follows.
(b) Only Conclusion I follows.
(c) Both Conclusions I and II follow.
(d) Neither Conclusion I nor II follows.

Q150. If a sailer sails 12 km distance within 5 hours against the flow of a river. If he sails 22 km distance in same time along the flow of the river. Then velocity of the river is...
(a) 1 km/hour
(b) 2 km/hour
(c) 1.5 km/ hour
(d) 2.5 km/ hour

Solutions

S1. Ans.(c)
Sol. The correct answer is (c) Lichen
Explanation:
•→Lichen is a symbiotic association between an alga (usually green algae or cyanobacteria) and a fungus.
•→The algae conduct photosynthesis to provide food, while the fungus offers structure and absorbs moisture.
•→This mutualistic relationship allows lichens to survive in extreme conditions, including barren rocks and tree bark.
Information Booster:
•→Lichens are important bioindicators of air pollution.
•→They can fix atmospheric nitrogen, enriching the environment.
•→They reproduce through fragmentation, soredia, or isidia.
Additional Knowledge:
Cyanobacteria
•→Also known as blue-green algae; some form symbiotic relations but not with fungi to form lichens.
Mycorrhiza
•→A mutualistic association between fungi and plant roots, not algae.
Mycoplasma
•→Wall-less prokaryotes; not involved in symbiotic relationships with algae.

S2. Ans.(a)
Sol. The correct answer is (a) 4.5%
Explanation:
•→On May 4, 2022, the Reserve Bank of India increased the Cash Reserve Ratio (CRR) from 4.0% to 4.5%.
•→CRR is the percentage of a bank's total deposits that must be maintained with the RBI in cash form.
•→It is used as a monetary policy tool to control liquidity in the economy.
Information Booster:
•→Increase in CRR reduces the lending capacity of banks, thus controlling inflation.
•→It is one of the quantitative tools used by RBI alongside SLR, repo rate, and reverse repo rate.
•→CRR impacts the availability of funds in the market and helps in monetary tightening.
Additional Knowledge:
•→ As of **April 9, 2025**, the RBI maintained the **Cash Reserve Ratio at 4.0%** of Net Demand and Time Liabilities
•→ On **June 6, 2025**, the RBI announced a **100 basis point (1%) reduction in CRR**, bringing it down from 4.0% to **3.0%**, to be implemented in **four equal tranches of 25 bps each**, starting from **September 6, 2025** through **November 29, 2025**
•→ During the **August 6, 2025 MPC Meeting**, RBI kept the CRR unchanged at **4.0%**, noting that the announced cut has *not yet taken effect.*

S3. Ans.(c)
Sol. The correct answer is **(c) Huge expansion of oceans**
Explanation:
•→The Southern Hemisphere is covered predominantly by oceans, which have a moderating effect on temperature.
•→Water has a high specific heat capacity, absorbing and releasing heat slowly, reducing temperature variations.
•→This results in more **uniform temperature patterns** and **smoother isotherms**.
Information Booster:
•→Oceans cover nearly **81%** of the Southern Hemisphere, compared to about **61%** in the Northern Hemisphere.
•→Isotherms over land fluctuate due to varied terrain and heat absorption; over oceans, they remain smoother due to thermal inertia.
•→The Northern Hemisphere has more landmasses, mountains, and deserts, causing zig-zag patterns in isotherms.
Additional Knowledge:
Absence of Deserts
•→Deserts cause large temperature variations, but their absence alone does not flatten isotherms.
Effect of Antarctica
•→Antarctica influences local climate but does not significantly impact the smoothness of global isotherms.

Absence of high mountains
•→Mountains do affect local temperature but are not the primary cause of smoother isotherms in the Southern Hemisphere.

S4. Ans.(d)
Sol. The correct answer is **(d) Central Statistical Organisation**
Explanation:
•→The **Central Statistical Organisation (CSO)**, now part of **NSO (National Statistical Office)**, is responsible for compiling and releasing the **National Accounts Statistics** of India.
•→These include key indicators such as GDP, GNP, NDP, and per capita income.
•→It functions under the **Ministry of Statistics and Programme Implementation (MoSPI)**.
Information Booster:
•→The CSO was merged with NSSO in 2019 to form the **NSO**, streamlining data collection and analysis.
•→CSO handles **economic data**, while the former NSSO managed **social and demographic surveys**.
•→National Account Statistics follow **SNA guidelines** (System of National Accounts) laid out by the UN.
Additional Knowledge:
(a) NITI Aayog
•→It is a policy think tank but not involved in preparing national income data.
(b) National Sample Survey Office
•→Previously handled socio-economic surveys, now part of NSO. It doesn't compute national accounts.
(c) Reserve Bank of India
•→Provides monetary data, publishes annual reports, but not national income statistics.

S5. Ans.(d)
Sol. The correct answer is **(d) Banga Village**
Explanation:
•→**Bhagat Singh** was born on **September 28, 1907**, in **Banga Village**, located in **Lyallpur district** of the **Punjab Province** in **British India** (now in Pakistan).
•→His family was actively involved in the freedom struggle, which deeply influenced his revolutionary ideals.
Information Booster:
•→Bhagat Singh was a key figure in India's independence movement and a member of **Hindustan Socialist Republican Association (HSRA)**.
•→He became a symbol of youth revolution with his involvement in the **Lahore Conspiracy Case** and the **Central Assembly Bombing**.
•→He was executed on **March 23, 1931**, along with Rajguru and Sukhdev.

S6. Ans.(b)
Sol. The correct answer is **(b) M.S. Swaminathan**
Explanation:
•→**Dr. M.S. Swaminathan** is known as the **Father of the Green Revolution in India** for his pioneering role in introducing **high-yielding varieties (HYVs)** of seeds, especially wheat and rice.
•→His efforts helped India achieve **self-sufficiency in food production** during the 1960s and 70s.
Information Booster:
•→The Green Revolution was initiated during **1966–67**, primarily in Punjab, Haryana, and Western UP.
•→It was supported by the Indian government under **PM Lal Bahadur Shastri** and later **Indira Gandhi**.
•→This revolution significantly reduced India's dependence on food imports.
Additional Knowledge:
Verghese Kurien
•→Known as the **Father of White Revolution** (Milk Revolution), not Green Revolution.

S7. Ans.(a)
Sol. The correct answer is **(a) Lord Amherst**
Explanation:
•→The **First Anglo-Burmese War** began in **1824** during the tenure of **Lord Amherst**, who served as **Governor-General of India from 1823 to 1828**.
•→The war was caused by disputes over the northeastern frontiers of British India and Burmese expansion into Assam and Manipur.
Information Booster:
•→The war ended in **1826** with the **Treaty of Yandabo**, through which the British annexed Assam, Manipur, Arakan, and Tenasserim.
•→It was the **longest and costliest war** fought by the East India Company at that time.
•→The British incurred heavy financial losses despite gaining territory.
Additional Knowledge:
Lord Cornwallis
•→Governor-General during the late 18th century (1786–1793); not associated with Anglo-Burmese wars.
Lord Dalhousie
•→Mid-19th century Governor-General (1848–1856); known for Doctrine of Lapse and railway reforms.
Lord Hastings
•→Preceded Amherst (1813–1823); known for expanding British territory through wars and diplomacy.

S8. Ans.(c)
Sol. The correct answer is **(c) 29th August**
Explanation:
•→**National Sports Day** in India is celebrated annually on **29th August** to commemorate the **birth anniversary of Major Dhyan Chand**, one of the greatest hockey players in history.
•→It honors his legacy and promotes awareness about the importance of sports and physical activities in life.
Information Booster:
•→Major Dhyan Chand was born on **29 August 1905**.
•→He led India to **three Olympic gold medals** in field hockey (1928, 1932, and 1936).
•→On this day, the **Rajiv Gandhi Khel Ratna Award**, **Arjuna Award**, **Dronacharya Award**, and **Dhyan Chand Award** are conferred by the President of India.

Additional Knowledge:
25th September
•→Observed as Pharmacist Day in some contexts, not related to sports.
29th September
•→Celebrated as World Heart Day, not related to sports in India.

S9. Ans.(c)
Sol. The correct answer is **(c) Dutton**
Explanation:
•→The term **'Isostasy'** was **first introduced by Clarence Dutton** in **1889** to describe the **gravitational equilibrium** of Earth's crust floating on the denser, underlying mantle.
•→The concept helps explain how landmasses maintain vertical balance depending on their thickness and density.
Information Booster:
•→Dutton proposed that Earth's crust adjusts to maintain balance much like blocks floating in water.
•→Later, **Airy** and **Pratt** gave **different models** of isostasy to explain mountain and plateau elevations.
•→The principle is used to study **plate tectonics**, **mountain formation**, and **crustal rebound**.
Additional Knowledge:
(a) Airy
•→Proposed the **uniform density** model; crustal blocks float at varying depths depending on thickness.
(b) Pratt
•→Proposed the **varying density** model; elevation differences arise from differences in density.
(d) Hutton
•→Known for the **theory of uniformitarianism**, not for introducing isostasy.

S10. Ans.(a)
Sol. The correct answer is **(a) Revenue deficit state**
Explanation:
•→According to **Bihar Economic Survey 2021–22 (Revised Estimates)**, Bihar recorded a **revenue deficit of 5.48% of GSDP**, contrary to the earlier **budget estimate of a 1.21% surplus**.
•→This indicates that **revenue expenditure exceeded revenue receipts**, classifying Bihar as a **revenue deficit state** in that fiscal year.
Information Booster:
•→Fiscal deficit for **2021–22 (RE)** was **11.31% of GSDP**, significantly above the estimated 2.97%.
•→Revenue surplus indicates prudent fiscal management; a deficit shows reliance on borrowings to meet day-to-day expenses.
•→Such fluctuations reflect the impact of **COVID-19**, reduced revenues, and increased public spending.
Additional Knowledge:
(b) Revenue surplus state – Applicable in **earlier years** or projected future budgets, but not for 2021–22.
(c) State with negative growth rate – Not Bihar; states like **Nagaland** reported negative growth.
(d) Revenue neutral state – Refers to GST context, not Bihar's fiscal position.
Key Point:
•→ According to the Bihar Budget and Economic Survey documents, Bihar is estimated to achieve a revenue surplus of ₹1,121 crore, equivalent to about 0.1% of its GSDP, for the year 2024-25 (Budget Estimates)
. The previous year (2023-24 revised estimates) recorded a revenue deficit of ₹35,530 crore (about 4.1% of GSDP), indicating a substantial improvement in fiscal balance.

S11. Ans.(a)
Sol. The correct answer is **(a) Committee on Subordinate Legislation**
Explanation:
•→The **Committee on Subordinate Legislation** is tasked with scrutinizing whether the powers delegated by Parliament to the executive are being exercised properly through rules, regulations, bye-laws, etc.
•→It ensures that these powers are not used to **override the authority of the legislature** and are exercised within the defined scope.
Information Booster:
•→The committee exists in both the **Lok Sabha and Rajya Sabha**, consisting of **15 members (LS)** and **10 members (RS)** respectively.
•→It checks whether the delegated legislation conforms to the **Constitution and the enabling Act**.
•→The committee does **not examine policy matters**, only the legality and procedural aspects of delegated legislation.
Additional Knowledge:
(b) Ethics Committee
•→Deals with the **moral and ethical conduct** of members of Parliament.
(c) Business Advisory Committee
•→Schedules the **agenda and business** of the House, not legal oversight.
(d) Committee on Government Assurances
•→Monitors whether **promises made by ministers** on the floor of the House are fulfilled.

S12. Ans.(d)
Sol. The correct answer is **(D) Vinod Sharma**
Explanation:
•→In **2022**, the **Subhash Chandra Bose Aapda Prabandhan Puraskar** was awarded to **Professor Vinod Sharma** in the **individual category**, and to the **Gujarat Institute of Disaster Management (GIDM)** in the **institutional category** .
Information Booster:
•→Prof. Vinod Sharma is a pioneer in **Disaster Risk Reduction (DRR)** in India, founder-coordinator of the erstwhile **National Centre for Disaster Management** (now NIDM), and serves as Vice Chairman of Sikkim State Disaster Management Authority.

•→The prestigious award carries a **cash prize of ₹5 lakh** for individuals and a certificate, alongside ₹51 lakh for institutions .

Additional Knowledge:

- **Dr. Rajendra Kumar Bhandari** received the individual award for **2021**, not 2022.
- **Dr. Akhil Goyal** and **Dr. Rajveer Singh** are not listed among official awardees for these years.

S13. Ans.(b)

Sol. The correct answer is (b) One sigma, Two pi

Explanation:

- In calcium carbide, the two carbon atoms are bonded through a triple bond.
- A triple bond consists of one sigma bond and two pi bonds.
- This bonding pattern exists in the acetylide ion present in calcium carbide.

Information Booster:

- Sigma bonds result from end-to-end overlap of orbitals.
- Pi bonds result from side-to-side overlap of orbitals.
- A triple bond is stronger and shorter than a double or single bond.

Additional Knowledge:

(a) One sigma, One pi – Represents a double bond.

(c) Two sigma, One pi – Not possible between two atoms.

(d) Two sigma, Two pi – Chemically incorrect for a triple bond.

S14. Ans.(d)

Sol. The correct answer is (d) Immunization of all children and pregnant women

Explanation:

- Mission Indradhanush was launched by the Ministry of Health and Family Welfare in December 2014.
- Its main goal is to ensure full immunization for children under two years of age and all pregnant women against seven vaccine-preventable diseases.
- The mission targets unvaccinated and partially vaccinated children in high-focus districts.

Information Booster:

- Diseases covered include tuberculosis, diphtheria, whooping cough, tetanus, polio, hepatitis B, and measles.
- Intensified Mission Indradhanush (IMI) was launched in 2017 to further accelerate the progress.
- The mission is aligned with India's goal to achieve ninety percent full immunization coverage.

Additional Knowledge:

(a) To provide basic services to urban households – Objective of the AMRUT scheme.

(b) Encouraging girls for higher technical education – Linked to schemes like UDAAN.

(c) Providing same pension for same rank – Refers to the One Rank One Pension (OROP) scheme.

S15. Ans.(a)

Sol. The correct answer is (a) Chlorella

Explanation:

- Chlorella is a single-celled green alga rich in protein, vitamins, and essential minerals.
- It is used as a food supplement due to its high nutritional content and ability to grow rapidly in controlled conditions.
- Space agencies have considered Chlorella for long-term space missions due to its oxygen-producing and carbon-dioxide absorbing capabilities.

Information Booster:

- Chlorella can double its biomass every twenty hours under ideal conditions.
- It contains high levels of chlorophyll, amino acids, iron, and beta-carotene.
- It also supports closed-loop life support systems in space modules.

Additional Knowledge:

(b) Volvox – Colonial green algae, not used as a food supplement.

(c) Polysiphonia – A red alga, mainly studied for its reproductive structures, not consumed.

(d) Gelidium – Red algae used for commercial production of agar, not typically consumed as food.

S16. Ans.(c)

Sol. The correct answer is (c) Sahitya Academy

Explanation:

- The 'Bhasha Samman' is an award presented by the **Sahitya Akademi**, India's national academy of letters.
- It was instituted in **1996** to honor scholars and writers for their contribution to classical and less-recognized Indian languages.
- The award aims to promote and preserve the linguistic diversity of India.

Information Booster:

- The award covers languages not formally included in the 24 recognized by the Sahitya Akademi.
- It includes a plaque, shawl, and cash prize.
- It is a part of the Akademi's mission to promote Indian literature in all languages.

S17. Ans.(a)

Sol. The correct answer is (a) President

Explanation:

- As per **Article 217 of the Constitution of India**, **the President** appoints the **Chief Justice and other Judges of a High Court**.
- The President must consult the **Chief Justice of India**, the **Governor of the state**, and in case of appointment of a judge other than the Chief Justice, the **Chief Justice of the High Court**.
- This ensures a system of **checks and balances** among the executive and judiciary.

Information Booster:

- The **collegium system** plays a vital role in the appointment process. It comprises the **Chief Justice of India and senior judges of the Supreme Court**.

- High Court judges hold office until the age of **62 years**.
- The process aims to ensure **judicial independence**, free from political or executive influence.

Additional Knowledge:
(b) Governor – Only consulted; does not have appointing authority.
(c) Chief Justice of India – Plays a crucial advisory role but does not formally appoint.
(d) Chief Justice of High Court – Consulted for appointments, but cannot appoint judges.

S18. Ans.(b)
Sol. The correct answer is (b) Retired Chief Justice of India
Explanation :
- The **Chairperson of NHRC** must be a person who **has been the Chief Justice of India**.
- This is mandated by **Section 3 of the Protection of Human Rights Act, 1993**.
- The appointment is done by the **President of India**, following the **recommendation of a high-level committee**.
- The selection committee includes the **Prime Minister**, **Home Minister**, **Speaker of Lok Sabha**, **Deputy Chairman of Rajya Sabha**, and **Leaders of Opposition**.
- This provision ensures that the NHRC is led by a highly qualified and independent authority.

Information Booster:
- NHRC is a **statutory body** established on **12 October 1993**.
- It safeguards fundamental rights and investigates human rights violations.
- NHRC has powers similar to those of a **civil court** during inquiries.
- It can act **suo motu** or on petitions received from victims.

Additional Knowledge:
- (a) **Any Supreme Court Judge**: Can be a **member**, not the Chairperson.
- (c) **Retired Chief Justice of High Court**: Eligible for **member**, not for Chairperson role.
- (d) **Any person appointed by President**: Appointment must strictly follow criteria under the Act.

S19. Ans.(d)
Sol. The correct answer is :(d) Saccharomyces cerevisiae
Saccharomyces cerevisiae is widely used in the process of bread making due to its ability to ferment sugars and release carbon dioxide.
•→The CO_2 produced by the yeast causes the dough to rise, giving bread its soft and airy texture.
•→It is a species of yeast known commonly as baker's yeast.
•→This microorganism metabolizes sugar present in the dough and converts it into alcohol and carbon dioxide, a process known as fermentation.

Information Booster:
1. Saccharomyces cerevisiae is also used in the production of alcoholic beverages like beer and wine.
2. It is a unicellular fungus and reproduces asexually through budding.
3. In baking, the ethanol produced during fermentation evaporates during baking, while CO_2 causes leavening.
4. It is one of the most researched eukaryotic model organisms in molecular and cell biology.

Additional Knowledge:
- **Mucor sativa**

•→No such recognized species; likely a misnomer or incorrect naming.
•→Mucor species are generally involved in food spoilage and some are pathogenic.
- **Rhizopus indica**

•→Rhizopus is a genus of common saprophytic fungi but not commonly used in bread making.
•→Rhizopus stolonifer (black bread mold) is more known, but it spoils bread rather than aids in its making.
- **Streptococcus staphali**

•→This name is biologically inaccurate or fictitious.
•→Streptococcus is a genus of bacteria, not involved in fermentation or bread making.

S20. Ans.(a)
Sol. The correct answer is (a):42nd amendment
•→The 42nd Constitutional Amendment Act, 1976, is known for introducing major changes to the Indian Constitution, including the addition of **Part XIV-A**, titled **"Tribunals"**.
•→This amendment inserted **Articles 323A and 323B**, enabling the establishment of **administrative and other tribunals** for adjudicating disputes related to service matters and other specified areas.
•→The primary aim was to reduce the burden on regular courts and provide specialized adjudication.
Information Booster:
1. **Article 323A** deals with Administrative Tribunals for service matters of public servants.
2. **Article 323B** allows for the creation of tribunals for other matters such as taxation, land reforms, industrial and labour disputes, etc.
3. These provisions paved the way for institutions like **Central Administrative Tribunal (CAT)**.
4. The 42nd Amendment is often referred to as the "Mini Constitution" due to the breadth of changes it introduced.

Additional Knowledge:
- **44th Amendment Act (1978)**

•→Reversed some excesses of the 42nd Amendment, especially regarding Fundamental Rights and Emergency provisions.
•→Did not deal with tribunals.
- **47th Amendment Act (1984)**

•→Related to inclusion of more land reform laws in the Ninth Schedule.

•→Not related to the establishment of tribunals.

- **35th Amendment Act (1974)**

•→Pertains to the termination of Sikkim's status as an associate state and its incorporation as a full state.
•→No relevance to tribunals.

S21. Ans.(c)
Sol. The Correct Option: (c): Retina
Explanation
•→Rods and cones, the photoreceptor cells responsible for detecting light and color, are located in the **retina**, the innermost layer of the eye.
•→**Rods** are sensitive to low light and provide black-and-white vision, whereas **cones** are responsible for color vision and function best in bright light.
•→These cells convert light into electrical signals, which are then transmitted to the brain via the optic nerve for image processing.
Information Booster:
1. The human retina contains approximately **120 million rods** and **6 million cones**.
2. Rods are more numerous around the periphery of the retina, enhancing peripheral and night vision.
3. Cones are densely concentrated in the **fovea centralis**, the region responsible for sharp central vision.
4. Damage to these cells can lead to visual impairments like night blindness or color blindness.

Additional Knowledge:

- **Iris**

•→The colored part of the eye that regulates the diameter of the pupil.
•→Does not contain photoreceptors.

- **Pupil**

•→A central opening within the iris that controls the amount of light entering the eye.
•→It is not a structure but a space, and it lacks any cells.

- **Lens**

•→A transparent, biconvex structure behind the iris that focuses light onto the retina.
•→Contains no photoreceptor cells.

S22. Ans.(b)
Sol. The Correct Option: (b) : Article 71
Explanation
•→**Article 71** of the Indian Constitution deals with the **matters relating to doubts and disputes in connection with the election of the President and Vice-President**.
•→It states that all such disputes shall be **inquired into and decided by the Supreme Court**, and its decision shall be final.
•→This article ensures a **judicial mechanism** to resolve electoral disputes for the highest constitutional offices.
Information Booster:
1. The Supreme Court has **exclusive jurisdiction** over disputes regarding Presidential and Vice-Presidential elections.
2. An election can be **challenged only through an election petition** filed directly in the Supreme Court.
3. If the election of a President or Vice-President is declared void, acts done by them before such declaration remain valid (as per constitutional safeguards).

Additional Knowledge:

- **Article 81**

•→Deals with the **composition of the House of the People (Lok Sabha)**.
•→Not related to Presidential or Vice-Presidential elections.

- **Article 61**

•→Pertains to the **procedure for the impeachment of the President**.
•→Not concerned with election disputes.

- **Article 91**

•→No such Article deals with election matters; irrelevant in this context.

S23. Ans.(a)
Sol. The Correct Option: (a)
Explanation
•→**Resistivity** is an intrinsic property of a material that quantifies how strongly it opposes the flow of electric current.
•→Its SI unit is **Ohm-meter (Ω·m)**.
•→Mathematically, resistivity (ρ) is given by the formula: where R is resistance, A is cross-sectional area, and L is length.
•→This formula implies that the unit of resistivity is derived by multiplying resistance (Ohm) by length (meter).
Information Booster:
p= R(A/L)
1. Resistivity is a **scalar quantity** and depends only on the material and temperature, not on the shape or size.
2. Good conductors like copper and silver have **low resistivity**, while insulators like rubber have **high resistivity**.
3. Resistivity increases with **temperature** in conductors but may decrease in semiconductors.
4. It is denoted by the Greek letter **ρ (rho)**.

Additional Knowledge:

- **Ohm/meter (Ω/m)**

•→Represents **resistance per unit length**, not resistivity.
•→Used in contexts like line resistance in cables.

- **Ohm-meter^2 (Ω·m^2)**

•→Has no physical relevance in the context of electrical resistivity.

- **Ohm/meter^2 (Ω/m^2)**

•→Not a standard unit in electrical properties; physically incorrect for resistivity.

S24. Ans.(d)
Sol. The Correct Option: (d) 2015
Explanation
•→The **'Beti Bachao Beti Padhao' (BBBP)** scheme was launched on **22nd January 2015** by the Government of India.

•→It is a **tri-ministerial initiative** involving the Ministry of Women and Child Development, Ministry of Health and Family Welfare, and Ministry of Education.
•→The scheme primarily aims to **address the declining Child Sex Ratio (CSR)** and promote **education and empowerment of the girl child**.
•→It began as a pilot project in **100 districts** with low CSR and later expanded across the nation.
Information Booster:
1. The campaign's slogan is **"Beti Bachao, Beti Padhao"**—Save the Daughter, Educate the Daughter.
2. It was launched by **Prime Minister Narendra Modi** in **Panipat, Haryana**.
3. Focus areas: **Prevention of gender-biased sex-selective elimination**, **ensuring survival and protection**, and **education and participation** of the girl child.
4. Encourages societal change through **awareness campaigns and local community involvement**.

Additional Knowledge:
- **2014**

•→Preceded the formal launch; planning and conceptual groundwork may have begun, but the scheme was not officially launched.
- **2016**

•→The scheme was in its **early implementation phase**; not the launch year.
- **2019**

•→Several expansions and evaluations occurred, but this is not the year of launch.

S25. Ans.(b)
Sol. The correct answer is (b) **1966–69**
Explanation:
- The **Plan Holiday** refers to the period between **1966 and 1969** during which **no Five-Year Plan was implemented** in India.
- It occurred after the **Third Five-Year Plan (1961–66)** failed to meet its objectives due to **economic instability**, wars (1962 with China and 1965 with Pakistan), and severe **droughts**.
- Instead of launching a new Five-Year Plan, the government introduced **Annual Plans** during this period.

Information Booster:
- The Plan Holiday helped the government **restructure the planning process** and focus on **agriculture and price stabilization**.
- The **Fourth Five-Year Plan** began in **1969** under Indira Gandhi's government after the Plan Holiday ended.
- This period allowed India to reassess and **reformulate economic strategies** to meet changing national needs.

Additional Knowledge:
(Option a) **1960–62**
- This period was during the **Second Five-Year Plan**, not a plan holiday.

(Option c) **2017–20**
- India had **already abolished Five-Year Plans** by 2017 and adopted the **NITI Aayog model**, which focuses on long-term strategic planning.

(Option d) **1947–51**
- This was the **pre-planning period** before the **First Five-Year Plan** began in 1951, not a Plan Holiday.

S26. Ans.(b)
Sol. The correct answer is (b) **Equal Justice and Free Legal Aid**
Explanation:
- **Article 39A** was added to the Constitution of India by the **42nd Amendment Act, 1976**.
- It directs the **State to ensure equal justice and provide free legal aid** to citizens, especially the poor and weaker sections, to ensure justice is not denied due to economic or other disabilities.
- It forms part of the **Directive Principles of State Policy (Part IV)**, which are not enforceable by courts but are fundamental in governance.

Information Booster:
- The **Legal Services Authorities Act, 1987** was enacted to implement Article 39A, leading to the establishment of **NALSA** (National Legal Services Authority).
- Free legal aid is also a **fundamental right under Article 21** (Right to Life) as interpreted by the Supreme Court.
- This provision emphasizes the **welfare and socialist objectives** of the Constitution.

Additional Knowledge:
(Option a) **Organisation of Village Panchayat**
- Covered under **Article 40**, not Article 39A.

(Option c) **Uniform civil code for the citizens**
- Mentioned in **Article 44**, a separate directive principle.

(Option d) **Definition of State**
- Provided under **Article 12**, which defines "State" for the purposes of Part III (Fundamental Rights), not Article 39A.

S27. Ans.(d)
Sol. The correct answer is (d) **Haryanka dynasty**
Explanation:
- **Bimbisara** was the most prominent ruler of the **Haryanka dynasty**, which was the **first ruling dynasty of Magadha**.
- He ruled during **544–492 BCE** and laid the foundation for the rise of Magadha as a powerful kingdom in ancient India.
- He followed a policy of **conquest and matrimonial alliances**, expanding his territory significantly.

Information Booster:
- Bimbisara strengthened his kingdom by marrying **princesses of Kosala, Vaishali, and Madra**, forging powerful political alliances.
- He was a **contemporary of Lord Buddha** and became a supporter of Buddhism.
- He founded **Rajagriha (modern Rajgir in Bihar)** as his capital.

Additional Knowledge:
(Option a) **Shishunaga dynasty**
- Came **after the Haryanka dynasty**, founded by Shishunaga around 413 BCE.

(Option b) **Nanda dynasty**
- Succeeded the Shishunaga dynasty and was overthrown by Chandragupta Maurya.

(Option c) **Maurya dynasty**
- Founded by Chandragupta Maurya, came **after the Nanda dynasty**, not associated with Bimbisara.

S28. Ans.(b)
Sol. The correct answer is (b) **Total internal reflection**
Explanation:
- Light in an optical fibre propagates based on the principle of **Total Internal Reflection (TIR)**.
- When light traveling in a **denser medium** hits the interface with a **rarer medium** at an angle **greater than the critical angle**, it reflects entirely back into the denser medium.
- Optical fibres have a **core** (high refractive index) and **cladding** (lower refractive index) to facilitate this condition.

Information Booster:
- TIR allows light to **travel long distances with minimal loss**, making optical fibres highly efficient for communication.
- Optical fibres are widely used in **telecommunication**, **internet data transfer**, **medical imaging (endoscopy)**, and **networking**.
- The angle of incidence must be **greater than the critical angle** for TIR to occur.

Additional Knowledge:
(Option a) **Reflection**
- Reflection involves bouncing back of light from a surface but is not the reason for light propagation in optical fibres.

(Option c) **Photoelectric effect**
- Involves emission of electrons when light hits a metal surface, unrelated to optical fibre function.

(Option d) **Refraction**
- Refraction is bending of light when it passes from one medium to another, while **TIR is a special case of refraction**.

S29. Ans.(a)
Sol. The correct answer is (a) **Mediterranean Region**
Explanation:
- The **Mediterranean region** experiences **rainfall primarily during the winter months**, due to the influence of **westerly winds and temperate cyclones**.
- In summer, this region remains **dry due to the dominance of subtropical high-pressure belts**.

Information Booster:
- Mediterranean climate is found between **30°–40° latitudes** on the western margins of continents (e.g., Southern Europe, California, parts of South Australia).
- Characterized by **mild, wet winters** and **hot, dry summers**.
- The unique pattern makes it favorable for **vine cultivation, olive farming**, and tourism.

Additional Knowledge:
(Option b) **Savanna Grassland Region**
- Receives **rainfall in summer**, mainly due to **intertropical convergence zone (ITCZ)** movement.

(Option c) **Subtropical Region**
- Rainfall patterns vary; **not specific to winter rainfall**.

(Option d) **Monsoon Asia Region**
- Dominated by **summer monsoon**, hence rainfall mainly occurs in **summer months**.

S30. Ans.(b)
Sol. The correct answer is (b) **11th November**
Explanation:
- **National Education Day** is celebrated every year on **11th November** to commemorate the **birth anniversary of Maulana Abul Kalam Azad**, India's first Education Minister.
- He was a key architect of modern Indian education and promoted **free and compulsory primary education**, **scientific research**, and **higher learning**.

Information Booster:
- The Ministry of Human Resource Development (now MoE) declared **11th November as National Education Day in 2008**.
- Celebrations include **seminars, symposia, essay-writing, and elocution competitions** across schools and colleges.
- Maulana Azad was a prominent freedom fighter and **co-founder of Jamia Millia Islamia**.

Additional Knowledge:
(Option a) **8th September**
- Celebrated as **International Literacy Day**, not National Education Day.

(Option c) **22nd November**
- No recognized educational observance on this date in India.

(Option d) **5th September**
- Celebrated as **Teachers' Day** in India, marking the birth of Dr. S. Radhakrishnan.

S31. Ans.(a)
Sol. The correct answer is (a) **precipitate carbon particles from smoke**

Explanation:

- The **Cottrell precipitator** is a device used in factories and power plants to **remove fine particles like carbon and dust from smoke** before it is released into the atmosphere.
- It works on the principle of **electrostatic precipitation**, where **charged particles** are attracted to oppositely charged plates and removed from the gas stream.

Information Booster:

- Invented by **Dr. Frederick Gardner Cottrell** in 1907.
- Helps control **air pollution** by significantly reducing **particulate emissions**.
- Commonly used in **thermal power plants**, **cement industries**, and **steel plants**.

Additional Knowledge:

(Option b) **purify the ordinary drinking water**

- This is done using **water filters, UV, RO, or boiling**, not Cottrell precipitators.

(Option c) **precipitate salts in qualitative analysis**

- Done using **chemical reagents** in labs, not Cottrell precipitators.

(Option d) **precipitate mud from muddy water**

- Achieved through **sedimentation and filtration**, not by using a Cottrell precipitator.

S32. Ans.(b)

Sol. The correct answer is (b) **MR^2 / 4**

Explanation:

- The moment of inertia (I) of a **uniform solid disc** of mass M and radius R about one of its **diameters** is:

$I = MR^2 / 4$

- This result is derived by integrating mass elements about the diameter and using symmetry principles.

Information Booster:

- Moment of inertia varies with the axis of rotation.
- For a disc:
  - About the center and perpendicular to the plane: $MR^2 / 2$
  - About a diameter (lying in the plane): $MR^2 / 4$
- It represents how much an object resists rotational acceleration.

Additional Knowledge:

(Option a) $MR^2 / 2$

- This is correct for rotation about the axis **perpendicular to the plane** and passing through the center.

(Option c) $MR^2 / 3$

- Applies to thin rods rotating about one end, not for discs.

(Option d) $MR^2 / 6$

- Not applicable to any standard axis for a disc.

S33. Ans.(a)

Sol. The correct answer is (a) **Commercial banks will have less money to lend**

Explanation:

- **Cash Reserve Ratio (CRR)** is the **percentage of a commercial bank's total deposits** that must be **maintained as reserves with the RBI** in cash.
- When the **RBI increases the CRR**, banks are required to **keep more money with the RBI**, which **reduces the amount of funds available** for lending to customers.

Information Booster:

- CRR is a **monetary policy tool** used by the **RBI to control liquidity** and inflation in the economy.
- **Higher CRR → Less money with banks → Reduced credit availability**.
- **Lower CRR → More money with banks → Increased credit flow**.

Additional Knowledge:

(Option b) Commercial banks will have more money to lend

- Incorrect, as higher CRR reduces lending capacity.

(Option c) Commercial banks will have more gold deposits with RBI

- Incorrect, CRR involves **cash reserves**, not gold.

(Option d) RBI will have less money to lend

- Incorrect, RBI does not lend commercial funds for general lending purposes; CRR is a **regulatory reserve** held by the central bank.

S34. Ans.(a)

Sol. The correct answer is (a) **Japan**

Explanation:

- **Shinzo Abe** was a prominent political leader of **Japan**, serving as the **Prime Minister** for the longest tenure in the country's history.
- He held office from **2006–2007** and then again from **2012–2020**, representing the **Liberal Democratic Party (LDP)**.

Information Booster:

- He is known for his economic policies called "**Abenomics**" which aimed to revive the Japanese economy through monetary easing, fiscal stimulus, and structural reforms.
- He also focused on strengthening Japan's **defense and foreign policy**, making Japan more assertive on the global stage.
- Shinzo Abe was **assassinated in July 2022**, during a public speech in Nara.

Additional Knowledge:

(Option b) South Korea

- Current and past notable leaders include **Yoon Suk-yeol** and **Moon Jae-in**, not Shinzo Abe.

(Option c) North Korea

- **Kim Jong-un** is the Supreme Leader of North Korea, unrelated to Shinzo Abe.

(Option d) China

- **Xi Jinping** is the President of China; Shinzo Abe had no leadership role there.

S35. Ans.(b)
Sol. The correct answer is (b) **is elected in such manner as the state legislature determines**
Explanation:
- According to **Article 243C(5)** of the Constitution, the **Chairperson of a Panchayat at the village level** is elected **as per the law made by the state legislature**.
- This means **each state can adopt its own method**, and it may differ across India.
- Some states opt for **direct election** by the people, while others prefer **indirect elections** by the elected members of the Panchayat.

Information Booster:
- The **73rd Constitutional Amendment Act, 1992** gave constitutional status to the Panchayati Raj Institutions.
- It provides for **three-tier governance**: Gram Panchayat (village), Panchayat Samiti (block), and Zila Parishad (district).
- The structure, composition, and election of panchayat bodies are governed by **state laws under Part IX** of the Constitution.

Additional Knowledge:
(Option a) is elected indirectly by the people
- True in **some states**, but **not universally applicable**, hence incorrect as a general statement.

(Option c) is appointed by the Chief Minister
- Incorrect; Panchayat elections are **not under executive appointment**, but **democratic processes**.

(Option d) is elected directly by the people
- Correct in **certain states**, but not a **constitutional mandate** for all; thus, not universally true.

S36. Ans.(c)
Sol. The correct answer is (c) **Asian elephant**
Explanation:
- **Rajaji National Park**, located in **Uttarakhand**, is famous for being a major habitat of the **Asian elephant**.
- Spread across the Shivalik ranges, the park forms part of the **Elephant Reserve 11** and plays a critical role in elephant conservation in northern India.

Information Booster:
- Rajaji was declared a **Tiger Reserve in 2015**, becoming the second tiger reserve in Uttarakhand after Corbett.
- It covers an area of over **820 sq. km**, including parts of Dehradun, Haridwar, and Pauri Garhwal districts.
- Apart from elephants, it is home to tigers, leopards, deer species, and over **300 species of birds**.

Additional Knowledge:
(Option a) **Cheetal**
- Common in many Indian parks, including Rajaji, but not the **most distinctive species**.

(Option b) **Musk deers**
- Typically found in **higher altitudes** like Kedarnath Wildlife Sanctuary, not Rajaji.

(Option d) **Mahseer fish**
- Found in Indian rivers; **not a land-based species** dominant in Rajaji's ecosystem.

S37. Ans.(b)
Sol. The correct answer is (b) **Pampas – Europe**
Explanation:
- **Pampas** are **temperate grasslands located in South America**, primarily in **Argentina, Uruguay**, and parts of Brazil.
- Hence, matching Pampas with **Europe** is incorrect.

Information Booster:
- **Selvas** refer to **dense tropical rainforests** found in the **Amazon Basin** in **South America**.
- **Velds** are temperate grasslands located in the **interior plateaus of South Africa**.
- **Downs** are grasslands found in **Australia**, used primarily for sheep grazing and wheat cultivation.

Additional Knowledge:
(Option a) **Selvas – South America**
- Correct; the term is used for Amazonian equatorial forests.

(Option c) **Velds – Africa**
- Correct; found in countries like South Africa and Lesotho.

(Option d) **Downs – Australia**
- Correct; prominent in New South Wales and used for agriculture.

S38. Ans.(a)
Sol. The correct answer is (a) **Madhya Pradesh**
Explanation:
- The **Archaeological Survey of India (ASI)** recently conducted a major exploration in the **Bandhavgarh Tiger Reserve**, located in **Umaria district, Madhya Pradesh**.
- The survey revealed **26 ancient temples of the Kalachuri period, 26 Buddhist caves from the 2nd–5th century CE, 2 monasteries, 2 stupas, 24 Brahmi inscriptions, 46 sculptures, and 19 water structures**, among other relics **Information Booster:**
- The Bandhavgarh exploration was carried out over an area of approximately **170 sq km**, marking the first comprehensive ASI survey in the reserve since 1938
- These discoveries span multiple eras—from **2nd century BCE to the 15th century CE**—indicating the long-standing **cultural and religious significance** of the region

Additional Knowledge:
(Option b) Maharashtra
- Bandhavgarh Reserve is **not located in Maharashtra**. Maharashtra has other tiger reserves like Tadoba–Andhari, not Bandhavgarh.

(Option c) Chhattisgarh

- Not relevant; Bandhavgarh lies fully within **Madhya Pradesh**.

(Option d) Jharkhand

- Jharkhand does not include Bandhavgarh; this tiger reserve is wholly in **Madhya Pradesh**.

S39. Ans.(a)

Sol. The correct answer is (a) **Kunwar Singh**

Explanation:

- **Kunwar Singh**, the **Zamindar of Jagdishpur in Bihar**, was one of the most notable leaders of the **Revolt of 1857**.
- Despite being **80 years old**, he played a courageous and strategic role in fighting against the British forces in eastern India.

Information Booster:

- He led the rebel forces in Bihar and is considered a **hero of Bihar's freedom struggle**.
- He managed to **defeat British forces in multiple battles**, including in Arrah and Azamgarh.
- Even after sustaining serious injuries, he continued to lead his troops till his last breath in 1858.

Additional Knowledge:

(Option b) **Nana Sahib**

- Led the revolt in **Kanpur (Uttar Pradesh)**, not in Bihar.

(Option c) **Thakur Kushal Singh**

- Leader of the revolt in **Marwar region of Rajasthan**, not Jagdishpur.

(Option d) **Rani Laxmi Bai**

- Led the revolt in **Jhansi (Uttar Pradesh)**; one of the iconic figures of 1857 but not associated with Bihar.

S40. Ans.(c)

Sol. The correct answer is (c) **Voltmeter**

Explanation:

- A **voltmeter** is an electrical instrument used to **measure the potential difference (voltage)** between two points in an electric circuit.
- It is always **connected in parallel** across the points between which voltage is to be measured.

Information Booster:

- The potential difference is measured in **volts (V)**.
- The **voltmeter has a very high resistance** to prevent the current from passing through it, ensuring accurate voltage measurement.
- Digital and analog voltmeters are commonly used in laboratories and electrical applications.

Additional Knowledge:

(Option a) **Galvanometer**

- Measures **small currents** and detects the presence and direction of current in a circuit.

(Option b) **Ammeter**

- Measures **electric current**, connected in **series** in a circuit.

(Option d) **Anemometer**

- Used for measuring **wind speed and direction**, not electrical properties.

S41. Ans.(d)

Sol. The correct answer is (d) **Neena Gupta**

Explanation:

- The **DST-ICTP-IMU Ramanujan Prize for Young Mathematicians** (also popularly referred to as the Ramanujan Prize) for the year **2021** was awarded to **Professor Neena Gupta** of the **Indian Statistical Institute, Kolkata**
- The award recognized her outstanding contributions in **affine algebraic geometry and commutative algebra**, especially her solution to the **Zariski cancellation problem**

Information Booster:

- The Ramanujan Prize is an **international honor awarded annually** to a mathematician **under 45** from a **developing country**, and is jointly administered by **ICTP, DST (Government of India)**, and the **International Mathematical Union (IMU)** .
- Neena Gupta is the **fourth Indian** and the **third Indian woman** to receive this prestigious award, which carries a cash prize and international recognition .

Additional Knowledge:

- (Option a) **Narendra Karmakar** – No records indicate him receiving the Ramanujan Prize.
- (Option b) **Keith Devlin** – A well-known populariser of mathematics, but **not a recipient** of this particular prize.
- (Option c) **Ian Stewart** – Renowned British mathematician and author, **not associated** with the Ramanujan Prize.

S42. Ans.(a)

Sol. The correct answer is (a) **Netaji Express**

Explanation:

- In **January 2021**, Indian Railways officially **renamed** the **Howrah-Kalka Mail** as the **Netaji Express**, in honour of **Netaji Subhas Chandra Bose**, on the occasion of his 125th birth anniversary.
- This renaming pays tribute to Netaji's historic escape journey aboard this train in 1941, when he traveled from Gomoh (Bihar) toward Peshawar to lead India's freedom struggle.

Information Booster:

- The **Netaji Express** (train numbers 12311/12312) is among the **oldest continuously running trains** in India, originally launched in **1866** as the Kalka Mail .
- It runs daily between **Howrah (West Bengal)** and **Kalka (Haryana)**, traversing through states like Jharkhand, Bihar, Uttar Pradesh, Delhi, and Punjab before reaching Kalka

S43. Ans.(c)

Sol. The correct answer is (c) **Ratnakar Shetty**

Explanation:

- **Ratnakar Shetty**, former Chief Administrative Officer of the BCCI, wrote the autobiography titled *"On Board: Trial and Triumph – My Years in BCCI"* .

- The book provides an insider's account of the evolution of the BCCI and its internal workings over decades .

Information Booster:

- Prof. Shetty's memoir was released in **2022** and includes recollections of significant events within Indian cricket administration, including the 1983 World Cup and the complexities of the 2013 IPL scandal .
- The book is published by **Rupa Publications** and is considered one of the most comprehensive insider narratives of the BCCI's journey to becoming a cricketing powerhouse .

Additional Knowledge:

- (Option a) **Ramchandra Guha** — Esteemed historian and author, wrote cricket books and essays but **not this autobiography**.
- (Option b) **Pradeep Magazine** — A journalist and cricket commentator, but **did not author this book**.
- (Option d) **Vinod Rai** — Former Comptroller and Auditor General (CAG) of India, **not connected to BCCI or cricket autobiographies**.

S44. Ans.(a)

Sol. The correct answer is (a) **Article 163**

Explanation:

- **Article 163** of the Constitution of India states that **there shall be a Council of Ministers with the Chief Minister at the head to aid and advise the Governor** in the exercise of his functions.
- The Governor is bound to act on the **advice of the Council of Ministers**, except in situations where the Constitution permits discretionary power.

Information Booster:

- The structure of the State Executive includes the **Governor**, **Chief Minister**, **Council of Ministers**, and **Advocate General**.
- This provision mirrors **Article 74**, which provides for the Union Council of Ministers to aid the President.

Additional Knowledge:

(Option b) **Article 164**

- Deals with the **appointment of the Chief Minister and other ministers** by the Governor.

(Option c) **Article 165**

- Refers to the **Advocate General** for the state.

(Option d) **Article 162**

- Defines the **extent of executive power of the State**.

S45. Ans.(b)

Sol. The correct answer is (b) **1963**

Explanation:

- **National Seeds Corporation (NSC)** was established in **March 1963** by the **Government of India**.
- It operates as a **Miniratna Category-I CPSE** under the **Ministry of Agriculture and Farmers' Welfare**.
- NSC was founded to promote the **development of seed industry** in India and to ensure the **availability of quality seeds** to farmers.
- The corporation produces and distributes **foundation and certified seeds** of various crops.
- It played a crucial role in supporting the **Green Revolution** by enhancing seed quality and availability.

Information Booster:

- NSC was a part of India's broader strategy to **increase food production** and improve agricultural self-sufficiency in the **post-independence era**.
- It functions through a **network of farms and seed production units** across different states.
- NSC also undertakes **seed certification, training, and extension services**.
- It collaborates with **ICAR institutes, State Agricultural Universities (SAUs), and Krishi Vigyan Kendras**.
- As of today, NSC supplies seeds of more than **600 varieties of 60 crops** to Indian farmers.

S46. Ans.(a)

Sol. The correct answer is (a) **Finland**

Explanation:

- **Helsinki** is the **capital of Finland** and its **largest city**, situated on the **Gulf of Finland** along the Baltic Sea.
- It is the administrative, economic, and cultural center of the country.
- The official **currency of Finland** is the **Euro (EUR)**.

Information Booster:

- Finland is a **Nordic country** bordered by **Sweden, Norway, and Russia**.
- Helsinki was made the capital in **1812** during the Russian Empire period.
- The city is known for its **design, technology, and education** sectors.
- Finland consistently ranks high on the **World Happiness Report** and **Human Development Index**.

Additional Knowledge:

Country	Capital	Currency
Finland	Helsinki	Euro (EUR)
Iceland	Reykjavík	Icelandic Krona (ISK)
Lithuania	Vilnius	Euro (EUR)
Latvia	Riga	Euro (EUR)

S47. Ans.(a)

Sol. The correct answer is (A) Tautomerism

Explanation:

- Lactic acid shows **tautomerism**, specifically **keto-enol tautomerism**.
- In this process, lactic acid can exist in two forms:
  - One form with a **hydroxyl group (-OH)** attached to the alpha carbon (enol form).
  - The other form with a **carbonyl group (C=O)**, which is a keto form.

Information Booster:

- Tautomerism is the interconversion between two isomers, typically involving the shift of a hydrogen atom and a change in the position of a double bond.
- Lactic acid plays an important role in biological processes, and the tautomeric forms can affect the molecule's behavior in these systems.

Additional Information:

- **Optical Isomerism**: Lactic acid also shows optical isomerism because it has a chiral center, but tautomerism is the most relevant type of isomerism here.
- **Geometrical Isomerism**: This does not apply to lactic acid, as it doesn't have the necessary structural elements to show cis-trans isomerism.
- **Metamerism**: This form of isomerism, which involves different alkyl groups on either side of a functional group, is not applicable to lactic acid.

S48. Ans.(d)
Sol. The correct answer is (D) Jorhat
Explanation:

- India's first **pure green hydrogen plant** was commissioned in **Jorhat**, Assam.
- The plant was developed to produce hydrogen using renewable energy sources like wind and solar power, making it environmentally friendly.

Information Booster:

- Green hydrogen is produced through the electrolysis of water powered by renewable energy sources, making it a clean alternative to traditional hydrogen production methods.
- The commissioning of this plant is part of India's efforts to boost its renewable energy capacity and reduce carbon emissions.

Additional Information:

- Green hydrogen is considered crucial for India's energy transition towards a low-carbon economy, especially in sectors like transportation and industry.

S49. Ans.(b)
Sol. The correct answer is (B) Sharda
Explanation:

- The **Sharda script** was used in **North-West India** during the early medieval period.
- It was primarily used in the regions of Kashmir, Punjab, and parts of North India and was the precursor to several modern scripts, including Devanagari.

Information Booster:

- The Sharda script was used for writing Sanskrit and Prakrit, and it played an important role in the cultural and literary history of the region.
- Over time, the script evolved and influenced other regional scripts.

Additional Information:

- **Modi**: Used primarily in Maharashtra and the Deccan region.
- **Arabic**: While Arabic was prominent in the Delhi Sultanate and Mughal period, it was not used in North-West India during the early medieval period.
- **Kutil**: An ancient script used in some inscriptions, but it was not the primary script of North-West India during this period.

S50. Ans.(a)
Sol. The correct answer is (A) Rajraja First
Explanation:

- The **Rajarajeswara Temple** at **Tanjore** (also known as **Brihadeeswarar Temple**) was built by **Rajraja I** (also known as **Rajaraja Chola I**).
- The temple was completed in **1010 CE** and is a prominent example of Chola architecture, showcasing the dynasty's grandeur and architectural mastery.

Information Booster:

- The temple is dedicated to **Shiva** and is part of the UNESCO World Heritage Sites under the group of **Great Living Chola Temples**.
- It is famous for its grand dome, which is one of the largest in the world, and its intricate carvings.

Additional Information:

- **Rajraja II**: Ruled after Rajraja I, but he did not build the Rajarajeswara Temple.
- **Rajendra I**: Rajraja I's son, who expanded the empire, but he is not credited with building this temple.

S51. Ans.(a)
Sol. The correct answer is (A) Square planar, sp^3d^2
Explanation:

- **XeF_4** (Xenon tetrafluoride) has a **square planar** geometry.
- It has a central Xenon (Xe) atom bonded to four Fluorine (F) atoms.
- **XeF_4** follows the **octahedral electron pair geometry** but with two lone pairs of electrons on the Xenon atom, leading to a **square planar** molecular shape.
- The **hybridization state** of Xenon in **XeF_4** is **sp^3d^2**:
  - Xenon has six electron pairs around it: four bonding pairs (from the Fluorine atoms) and two lone pairs.
  - This corresponds to **sp^3d^2** hybridization, which is typical for **octahedral geometry**.

Information Booster:

- **Square planar** geometry occurs when there are two lone pairs in an octahedral arrangement, leaving four positions for bonding atoms in a square planar shape.
- **XeF_4** is an example of a noble gas compound where Xenon forms bonds, which is unusual because noble gases typically do not form bonds.

Additional Information:

- **Trigonal bipyramidal (sp^3d)**: This would apply to molecules with five bonding pairs of electrons, such as **PCl_5**, not **XeF_4**.
- **Octahedral (sp^3d^2)**: While the electron pair geometry of **XeF_4** is octahedral, its molecular geometry is square planar due to the two lone pairs.

S52. Ans.(b)
Sol. The correct answer is (B) One tenth seats of the total strength of the house
Explanation:
- In the **Indian Parliament**, the **Leader of the Opposition (LOP)** in both the **Lok Sabha** (House of the People) and **Rajya Sabha** (Council of States) is recognized if the party or coalition has at least **one-tenth (1/10)** of the total number of seats in the respective house.

Detailed Breakdown:
- **Lok Sabha**:
  - Total Seats: **545** (including both elected and nominated members).
  - To be recognized as **Leader of the Opposition**, the party must have at least **1/10th of 545** seats, which is **55 seats**.
  - If the opposition party or coalition has fewer than **55 seats**, the position of Leader of the Opposition is **not** recognized.
- **Rajya Sabha**:
  - Total Seats: **245** (including both elected and nominated members).
  - To be recognized as **Leader of the Opposition**, the party must have at least **1/10th of 245** seats, which is **25 seats**.
  - If the opposition party or coalition has fewer than **25 seats**, the position of Leader of the Opposition is **not** recognized.

Information Booster:
- The **Leader of the Opposition (LOP)** plays a key role in the functioning of Parliament, especially in a **parliamentary democracy**. The LOP is often tasked with questioning government policies, leading debates, and providing an alternative viewpoint to the ruling party's stance.
- Recognition as LOP is based on the party's **seats in the house**, not merely the size of the party or its influence in the political landscape. This ensures that there is a **substantial opposition** to the government in Parliament.

Additional Information:
- **No Opposition Leader**: If no party has **1/10th of the seats**, no **Leader of the Opposition** can be recognized. This has happened in past scenarios, especially when the ruling party has a **majority** in the house with little to no opposition.
- **Historical Example**:
  - After the **2019 Lok Sabha elections**, the **Congress Party** did not have enough seats (fewer than 55), and thus, the **Leader of the Opposition** was not officially recognized in the Lok Sabha .

S53. Ans.(a)
Sol. The correct answer is (A) Weak nuclear force
Explanation:
- **β-decay** (Beta decay) is a type of radioactive decay in which a **neutron** decays into a **proton**, releasing an **electron** (β^-) and an **antineutrino**.
- This process is driven by the **weak nuclear force**, one of the four fundamental forces in nature.

Information Booster:
- **Weak nuclear force** is responsible for processes that involve the transformation of one type of elementary particle into another, such as the transformation of a neutron into a proton during **β-decay**.
- The weak nuclear force has a very short range and is much weaker than the **strong nuclear force** and **electromagnetic force**, but it plays a crucial role in radioactive decay and the fusion processes that power stars.

Additional Information:
- **Strong nuclear force**: Governs the interaction between nucleons (protons and neutrons) inside an atomic nucleus, but it is not responsible for **β-decay**.
- **Electromagnetic force**: Involves the interaction of charged particles (such as electrons and protons), but is not involved in **β-decay**.
- **Gravitational force**: The weakest of the four fundamental forces, it governs large-scale phenomena (like planetary motion), but it does not influence **β-decay**.

S54. Ans.(a)
Sol. The correct answer is (A) 22
Explanation:
- The **Eighth Schedule** of the **Indian Constitution** lists the official languages recognized by the Constitution of India. As of now, there are **22 languages** in the Eighth Schedule.
- These languages are recognized for official purposes and can be used in the Union and State governments, as well as in courts, within the respective regions.

List of 22 languages in the Eighth Schedule:

1.	Assamese	12.	Nepali
2.	Bengali	13.	Odia
3.	Gujarati	14.	Punjabi
4.	Hindi	15.	Sanskrit
5.	Kannada	16.	Santali
6.	Kashmiri	17.	Sindhi
7.	Konkani	18.	Tamil
8.	Maithili	19.	Telugu
9.	Malayalam	20.	Urdu
10.	Manipuri	21.	Bodo
11.	Marathi	22.	Sanskrit

Information Booster:
- The Constitution initially recognized **14 languages** in the Eighth Schedule, but this number was gradually expanded over the years.
- **Sanskrit** was added to the list in 2003, and **Bodo, Santali, Maithili, and Dogri** were added in 2004.

Additional Information:
- The inclusion of languages in the Eighth Schedule reflects India's commitment to preserving linguistic diversity and promoting regional languages.

S55. Ans.(c)
Sol. The correct answer is (C) Mauritius
Explanation:

- **SAARC** (South Asian Association for Regional Cooperation) is a regional intergovernmental organization and geopolitical union in South Asia. It includes **8** member countries:

1. Afghanistan 2. Bangladesh
3. Bhutan 4. India
5. Maldives 6. Nepal
7. Pakistan 8. Sri Lanka

- **Mauritius** is not a member of SAARC. While it is an important country in the Indian Ocean region, it is not included in the SAARC grouping.

Information Booster:

- **SAARC** was established in 1985 to promote regional cooperation and development among its member states in South Asia.
- The organization focuses on economic, social, cultural, and regional integration to improve the quality of life for people in the region.

Additional Information:

- **Mauritius**, while not a member of SAARC, is a member of other international organizations such as the **Commonwealth of Nations** and the **African, Caribbean, and Pacific Group of States (ACP)**.

S56. Ans.(c)
Sol. The correct answer is (C) Gujarat
Explanation:

- **Shivrajpur Beach**, located in **Gujarat**, was one of the beaches conferred with the **Blue Flag Certification**. It is one of the cleanest beaches in India, recognized for its environmental standards and sustainability.
- The **Blue Flag Certification** is an international eco-label awarded to beaches that meet 33 strict environmental criteria related to water quality, environmental education, safety, and management.

Information Booster:

- The **Blue Flag** is awarded by an international jury that includes organizations such as the **United Nations Environment Programme (UNEP)**, **United Nations World Tourism Organization (UNWTO)**, **Foundation for Environmental Education (FEE)**, and **International Union for Conservation of Nature (IUCN)**.
- In addition to **Shivrajpur Beach**, **Kasarkod** and **Padubidri beaches** in **Karnataka** also received this certification, contributing to India's growing number of Blue Flag beaches.

Additional Information:

- **India** has introduced its own eco-label **BEAMS** (Beach Environment & Aesthetics Management Services) in line with the **Blue Flag Certification** to further promote beach cleanliness and sustainable tourism.

S57. Ans.(a)
Sol. The correct answer is (A) Defence
Explanation:

- **Sameer V. Kamat** is a prominent figure in the **defence** sector. He currently holds the position of **Director General** of the **Defence Research and Development Organisation (DRDO)**, a key agency under India's Ministry of Defence.
- DRDO is responsible for the development of defense technologies, including **missiles**, **aircraft**, **radars**, and other military technologies.

Information Booster :

- Sameer V. Kamat has contributed significantly to India's defence research, focusing on the development of **advanced defence systems** and **aerospace technologies**.
- He has also played an essential role in enhancing **India's self-reliance** in defense technology and has been involved in various high-profile defense projects.

S58. Ans.(d)
Sol. The correct answer is (D) Myasthenia gravis
Explanation:

- **Myasthenia gravis** is an **autoimmune disorder** that affects the **neuromuscular junction**. It leads to **muscle weakness** and **fatigue**, which may worsen with activity and improve with rest.
- In this condition, the body's immune system produces antibodies that block or destroy the receptors for **acetylcholine**, a neurotransmitter that helps transmit signals from nerves to muscles. As a result, the **communication between nerve and muscle is disrupted**, leading to weakness, paralysis, and fatigue of **skeletal muscles**.

Information Booster:

- **Common Symptoms of Myasthenia Gravis:**
  - **Muscle weakness** (especially in the eye muscles, face, and throat)
  - **Fatigue** that worsens after activity
  - Difficulty in **swallowing** and **speaking**
  - Drooping eyelids
  - In severe cases, it can cause difficulty in **breathing** due to respiratory muscle weakness.

Additional Information:

- **Gout**: A condition caused by the deposition of **uric acid crystals** in the joints, leading to inflammation and pain, not affecting the neuromuscular junction.
- **Osteoporosis**: A bone disease characterized by **loss of bone density**, leading to fragile bones, but not related to muscle weakness or paralysis.
- **Tetany**: A condition caused by **low calcium levels** in the blood, leading to muscle cramps and spasms, but it does not involve the autoimmune system like myasthenia gravis.

Myasthenia gravis is primarily treated with medications, immunosuppressants, and sometimes surgical options like thymectomy (removal of the thymus gland).

S59. Ans.(b)
Sol. The correct answer is (B) Sriharikota
Explanation:
- **Chandrayaan-1**, India's first mission to the moon, was launched from **Sriharikota**, which is located in the southeastern part of India, in the state of **Andhra Pradesh**.
- The launch took place on **October 22, 2008**, from the **Satish Dhawan Space Centre** (SDSC) SHAR, located in Sriharikota.

Information Booster:
- **Sriharikota** is the primary spaceport for India's space missions and is operated by the **Indian Space Research Organisation (ISRO)**.
- The **Chandrayaan-1 mission** was a major milestone for India in space exploration, marking the country's first successful lunar mission. It made significant contributions to lunar science, including the discovery of water molecules on the moon.

Additional Information:
- **Balasore**: Located in Odisha, is associated with India's missile testing range, not space launches.
- **Thiruvanthapuram**: Known for the **Vikram Sarabhai Space Centre**, it is a center for satellite development, but not for space launches.
- **Wheeler Island**: Located off the coast of Odisha, it is used for missile testing, not for launching lunar missions.

S60. Ans.(a)
Sol. The correct answer is (A) Angela Merkel
Explanation:
- **Angela Merkel**, the former Chancellor of Germany, was awarded the **UNESCO Peace Prize - 2022** for her efforts in promoting peace, democracy, and human rights during her tenure as the leader of Germany.
- Merkel was recognized particularly for her role in handling various international crises, her support for refugees, and her leadership within the European Union, which contributed to global stability and peace.

Information Booster:
- **UNESCO Peace Prize** is awarded annually to individuals or organizations that have made significant contributions to peace and sustainable development.
- Merkel's leadership in fostering **European unity** and her approach to international diplomacy and humanitarian causes were key factors in her receiving the prestigious honor.

Additional Information:
- **Barack Obama** had previously been awarded the **Nobel Peace Prize** in 2009 for his efforts in strengthening international diplomacy and cooperation between peoples.
- **Mateusz Morawiecki** and **Vladimir Putin** have not been awarded the UNESCO Peace Prize.

S61. Ans.(c)
Sol. The correct answer is (C) Qualifications for appointment as Governor
Explanation:
- **Article 157** of the **Constitution of India** deals with the **qualifications for appointment as the Governor** of a state.
- It specifies the conditions that a person must meet to be eligible for the post of Governor:

1. **Citizen of India**
2. **At least 35 years old**

Information Booster:
- The **Governor** is appointed by the **President of India** for each state. However, the person must meet the criteria mentioned in Article 157.
- The Governor is the constitutional head of the state, representing the President at the state level.

Additional Information:
- **Article 158**: Deals with the **Term of office of the Governor**.
- **Article 160**: Deals with the **discretionary powers of the Governor**.
- **Article 153**: Specifies that there shall be a **Governor** for each state.

Article 157 is important because it ensures that only qualified individuals can hold the office of Governor in India.

S62. Ans.(b)
Sol. The correct answer is (B) Parshwanath
Explanation:
- **Parshwanath** is the **23rd Tirthankara** of Jainism.
- He is revered for his teachings on the **four vows of Jainism**: **Ahimsa (non-violence)**, **Satya (truth)**, **Asteya (non-stealing)**, and **Brahmacharya (celibacy)**.
- Parshwanath is believed to have lived around the **9th century BCE** and is considered one of the most important Tirthankaras in Jain history.

Information Booster:
- **Tirthankaras** are enlightened spiritual leaders in Jainism who have attained liberation and guide others on the path to moksha (freedom from the cycle of birth and death).
- **Parshwanath's teachings** laid a strong foundation for Jain principles of **non-violence** and **self-discipline**, which have had a lasting influence on the Jain community.
- **Jainism** has **24 Tirthankaras**, with **Mahaveer Swami** being the most recent and well-known Tirthankara.
- **Jain scriptures** emphasize the lives and teachings of these 24 spiritual teachers, and their lives are marked by their **compassion**, **discipline**, and **spiritual insight**.

Additional Information:
- **Mahaveer Swami**: He is the **24th and last Tirthankara** of Jainism, not the 23rd.
- **Suparshwanath**: He is the **7th Tirthankara**, not the 23rd.
- **Kunthunath**: He is the **17th Tirthankara**, not the 23rd.

S63. Ans.(a)
Sol. The correct answer is (A) Uttar Pradesh
Explanation:
- **Uttar Pradesh** ranked **first in terms of per hectare production of sugarcane** in **2021-22**.
- Although **Maharashtra** is the largest producer of sugarcane in India by overall production, **Uttar Pradesh** leads in per hectare yield.

Information Booster:
- **Sugarcane Yield**: In the 2021-22 period, **Uttar Pradesh** had higher productivity per hectare compared to other major sugarcane-producing states like Maharashtra, largely due to efficient farming practices, irrigation systems, and the use of better varieties of sugarcane.

Additional Information:
- **Uttar Pradesh** has the highest overall production of sugarcane in India, and its improved farming techniques have led to higher yields.
- **Maharashtra** ranks second in terms of per hectare production but has a higher total production area under sugarcane.

S64. Ans.(a)
Sol. The correct answer is (A) Dirham
Explanation:
- The **currency of the United Arab Emirates (UAE)** is the **Dirham** (symbol: **AED**, code: **AED**).
- The **UAE Dirham** is subdivided into 100 **fils**.

Information Booster:
- The **Dirham** is issued by the **Central Bank of the UAE** and is one of the most widely used currencies in the Middle East.
- The **Dirham** is used for most financial transactions within the UAE, including trade, business, and tourism.

Additional Information:
- **Rupiah** is the currency of **Indonesia**.
- **Dinar** is the currency used in several countries such as **Kuwait**, **Bahrain**, and **Jordan**.
- **Rial** is the currency of countries like **Oman** and **Iran**, not the UAE.

S65. Ans.(b)
Sol. The correct answer is (B) XXIInd
Explanation:
- The **2022 Commonwealth Games** were the **22nd edition** of the event, held in **Birmingham, England** from **July 28 to August 8, 2022**.

Information Booster:
- The **Commonwealth Games** are held every four years and feature athletes from the **Commonwealth of Nations**.
- The **22nd Commonwealth Games** in 2022 saw the participation of **over 5,000 athletes** from **72 nations** and territories.

Additional Information:
- The **first Commonwealth Games** (then called the **British Empire Games**) were held in **1930** in Hamilton, Canada.

S66. Ans.(a)
Sol. The correct answer is (A) 1816
Explanation:
- The **Treaty of Sugauli** was signed in **1815** between the **British East India Company** and the **Kingdom of Nepal** after the **Anglo-Nepalese War** (1814-1816). However, the **final version of the treaty** was formally signed on **March 4, 1816** at **Sugauli**, a village in Bihar, India.
- The treaty resulted in Nepal ceding a significant portion of its territory to the British, including areas such as **Sikkim**, **Kumal**, **Ladakh**, and parts of **Terai**.

Information Booster:
- The treaty marked the end of the Anglo-Nepalese War and reshaped Nepal's territorial boundaries.
- The British gained substantial control over Nepal's foreign policy, although Nepal retained its sovereignty.

Additional Information:
- The Treaty of Sugauli also established the **British Resident in Kathmandu** to oversee Nepal's dealings with the British.

S67. Ans.(d)
Sol. The correct answer is (D) Department of Law and Order
Explanation:
- The **Ministry of Home Affairs (MHA)** is a crucial department in the **Government of India**, responsible for internal security, law and order, and various administrative functions at the state and union level.

Departments under Ministry of Home Affairs:
1. **Department of Home**: Responsible for overall administration and management of internal affairs.
2. **Department of States**: Deals with the relationship between the central government and states, the governance of Union Territories, and state reorganization.
3. **Department of Internal Security**: Focuses on managing internal security issues, including terrorism, insurgency, and other security concerns within the country.

Information Booster:
- The Ministry of Home Affairs also oversees other critical bodies such as **National Disaster Management Authority (NDMA)**, **Central Bureau of Investigation (CBI)**, **National Investigation Agency (NIA)**, and various intelligence agencies.

- **Department of Law and Order** does not exist as a separate department under the Ministry of Home Affairs. **Law and Order** is managed under different departments, particularly the **Department of Internal Security** and various law enforcement agencies like the **Police** and **Central Armed Police Forces (CAPFs)**.

S68. Ans.(a)
Sol. The correct answer is (A) 1665 A.D.
Explanation:
- The **Treaty of Purandar** was signed in **1665 A.D.** between **Shivaji Maharaj** and **Maharaja Jai Singh I** of Amber (Jaipur), who was representing the Mughal Empire.
- The treaty was signed after the **Siege of Purandar**, where Shivaji was forced to surrender several forts to the Mughals, including **Purandar Fort** and **Kondana Fort**.
- In return, Shivaji was recognized as the ruler of the territories he retained, and the Mughals agreed to grant him a jagir (land grant) in exchange for the forts and territories he gave up.

Information Booster:
- The **Treaty of Purandar** marked a temporary truce between Shivaji and the Mughal Empire, but Shivaji later regained control of these territories through military strategies and diplomacy.
- The treaty was part of Shivaji's broader efforts to expand his kingdom while dealing with the powerful Mughal Empire.

Additional Information:
- After the treaty, Shivaji's relations with the Mughals remained complex, with further confrontations and negotiations leading to his eventual coronation as **Chhatrapati** in 1674.

S69. Ans.(a)
Sol. The correct answer is (A) 7 covalent bonds
Explanation:
- **Ethane (C_2H_6)** consists of **2 carbon atoms** and **6 hydrogen atoms**.
- The bonding in **ethane** is as follows:
  - The **two carbon atoms** are bonded to each other by a **single covalent bond** (C-C), which contributes **1 bond**.
  - Each **carbon atom** is bonded to **3 hydrogen atoms**, with each **C-H bond** being a **single covalent bond**, contributing a total of **6 bonds**.

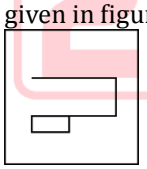
Total Covalent Bonds:
- **1 C-C bond** (between the two carbon atoms).
- **6 C-H bonds** (between the carbon atoms and hydrogen atoms).

Therefore, the total number of covalent bonds in ethane = 1 (C-C) + 6 (C-H) = 7 covalent bonds.

Information Booster:
- Ethane is a **saturated hydrocarbon**, meaning all its carbon-carbon bonds are **single covalent bonds**.
- **Covalent bonds** are formed when atoms share electrons, and in ethane, all bonds are **single covalent bonds**.

S70. Ans.(d)
Sol. Given:
X can do 1/5 of the work in 10 days. X can complete total work in = 5 × 10 = 50 days
Y can do 60% of the work in 60 days. Y can complete total work in = (60/60) × 100 = 100 days
Z do 1/3 of the work in 12 days. Z can complete total work in = 3 × 12 = 36 days
Formula used:
Work done = time × efficiency
Solution:
Total work = LCM of (X, Y and Z)
Total work = LCM of (50, 100 and 36) = 900 units
Now,
Efficiency of X = 900/50 = 18 units
Efficiency of Y = 900/100 = 9 units
Efficiency of Z = 900/36 = 25 units
Now,
Time taken by X = 50 days
Time taken by Y = 100 days
Time taken by Z = 36 days
Time taken by (X + Z) = 900/(18 + 25) = 20.93 days
When (X and Z) work together, they will complete the work first.
∴ Option 4 is the correct answer.

S71. Ans.(d)
Sol. Logic: In option (a), (b) and (c) are double lines are given in figure.

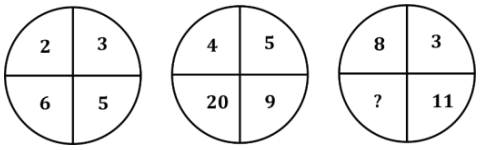


In **option (d)** single line is given in the figure.
So, **option (d)** is odd one out.
Thus, correct option is (d).

S72. Ans.(a)
Sol. Solution:
Given the cost of one apple = ₹6
The cost of one mango = ₹5
Then the cost of x apple and y mango:
6x + 5y = 42
6x = 42 - 5y
x = (42 - 5y)/6
Clearly, x is a whole number, only when (42 −5y) is divisible by 6.
Let, y = 0
x = (42 - 5 × 0)/6 = 42/6 = 7

But it is not in the given options
Let, y = 6
x = (42 - 5 × 6)/6 = (42 - 30)/6
x = 12/6 = 2
∴ The minimum number of Apple X can buy is 2.

S73. Ans.(a)
Sol. Given:



Logic: (Upper right number + Upper left number = Lower right number)and (Upper right number× Upper left number = Lower left number)
For, 1st figure
2 + 3 = 5
2× 2 = 6
For, 2nd figure
4 + 5 = 9
4× 5 = 20
Similarly,
For, 3rd figure
8 + 3 = 11
8× 3 = **24**
So, the missing term is **24**.
Thus, correct option is (a).

S74. Ans.(c)
Sol. Given:
Sum of two numbers = 36
Product of numbers = 315
Concept used:
$(x + y)^2 = x^2 + y^2 + 2xy$
$(x - y)^2 = x^2 + y^2 - 2xy$
Solution:
Let the numbers be x and y
=> x + y = 36
=> xy = 315
=> $(36)^2 = x^2 + y^2 + 2 \times 315$
=> $x^2 + y^2 = 666$
=> $(x - y)^2 = x^2 + y^2 - 2xy$
=> (x - y)2 = 666 - 2 × 315
=> $(x - y)^2 = 666 - 630$
=> $(x - y)^2 = 36$
=> x - y = 6
∴ The correct answer is 6.

S75. Ans.(c)
Sol. Solution:
=> $(64)^2 - (36)^2 = 20Z$
=> 4096 - 1296 = 20Z
=> 20Z = 2800
=> Z = 140
∴ The correct answer is 140.

S76. Ans.(b)
Sol. Given: 4, 112, 8, 56, 12, ?, 16, 14, 20, 7
Logic: 1st number increasing multiple of 4 and 2nd is divided by 2 alternatley.
4× 2 = 8
112÷ 2 = 56
4× 3 = 12
56÷ 2 = **28**
4× 4 = 16
28÷ 2 = 14
4× 5 = 20
14÷ 2 = 7
So, the missing term is **28**.
Thus, correct option is (b).

S77. Ans.(a)
Sol. Solution:
To find the smallest number which will leave the remainder '13' when divided by 25, 40 and 56,
L.C.M of 25, 40 and 56 = 1400
Smallest number = 1400 + 13
= 1413
Hence, "1413" is the correct answer.

S78. Ans.(a)
Sol. Given:
A and B can complete a work in 20 days.
B can complete a work in 25 days.
Formula used:
Work done = time × efficiency
Solution:
LCM of (A + B) and B = 100
Efficiency of A + B = 5
Efficiency of B = 4
Efficiency of A = 1
Time taken by A = 100/1 = 100 days
∴ The correct answer is 100 days.

S79. Ans.(b)
Sol. Solution:
According to Question $4^{3.5} : 2^5$
$=> (2)^{2\times3.5} : 2^5$
$=> (2)^7 : (2)^5$
$=> (2)^2 : 1$
$=> 4 : 1$
∴ The correct answer is 4 : 1.

S80. Ans.(d)
Sol. Logic: Number is divided by 7 then, the result is perfect square.
Now, we check each options.
Option (a): 175
175÷ 7 = 25 = 5^2- perfect square
Option (b): 63
63÷ 7 = 9 = 3^2- perfect square

Option (c): 112
112÷ 7 = 16 = 4^2- perfect square
Option (d): 56
56÷ 7 = 8 = 2^3- perfect cube
So, **56** is odd one out.
Thus, correct option is (d).

S81. Ans.(b)
Sol. Given:
Number of students in each section of a school is 30.
After admitting new students 4 new sections were started.
Now, the total number of sections is 15 and there are 25 students in each section.
Solution:
According to question,
After 4 new sections total no of sections = 15
Number of sections before = 15 - 4 = 11
Number of students in 11 section = 11 × 30 = 330
Number of students in 15 section = 15 × 25 = 375
Number of new students admitted = 375 - 330
=> 45
∴ The correct answer is 45.

S82. Ans.(c)
Sol. Concept used:
Sum of first n natural numbers = n(n + 1)/2
Solution:
Sum of n natural numbers = 149 × (150)/2
=> 149 × 75
=> 11175
Average = 11175/149 = 75
∴ The correct answer is 75.=

S83. Ans.(d)
Sol. Given: Freeze : Solid :: Melt : ?
Freeze is the process by which a liquid becomes a **solid**.
Similarly,
Melt : ?
Melt is the process by which a solid becomes a **liquid**.
Thus, correct option is (d).

S84. Ans.(d)
Sol. Given: 15, 30, ?, 40, 8, 48
Logic: Numbers are multiplied by even numbers, and numbers are divided by odd numbers alternately, starting from 2.
15× 2 = 30
30÷ 3 = **10**
10× 4 = 40
40÷ 5 = 8
8× 6 = 48
So, the missing term is **10.**
Thus, the correct option is (d).

S85. Ans.(d)
Sol. Given:
If in a certain language 'KINDLE' is coded as 'NLQAIB'.

1	2	3	4	5	6	7	8	9	10	11	12	13
A	B	C	D	E	F	G	H	I	J	K	L	M
Z	Y	X	W	V	U	T	S	R	Q	P	O	N
26	25	24	23	22	21	20	19	18	17	16	15	14

Logic: 1st three letter + 3 and 2nd three - 3 place.
For, KINDLE - NLQAIB
K + 3 = N, I + 3 = L, N + 3 = Q, D - 3 = A, L - 3 = I, E - 3 = B
Similarly,
EXOTIC - ?
E + 3 = **H**, X + 3 = **A**, O + 3 = **R**, T - 3 = **Q**, I - 3 = **F**, C - 3 = **Z**
So, **EXOTIC** is coded as **HARQFZ**.
Thus, correct option is (d).

S86. Ans.(b)
Sol. Solution:
Let the number be x,
=> 30/100 × x + 49 = x
=> 30x/100 - x = -49
=> -70x/100 = -49
=> 7x = 490
=> x = 70
∴ The correct answer is 70.

S87. Ans.(a)
Sol. Given:
20.02 + 200.2 + 2.002
Solution:
20.02 + 200.2 + 2.002
= 222.222--

S88. Ans.(d)
Sol. Given: In a certain code language 'MOBILITY' is coded as "46293927".

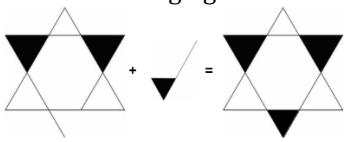
1	2	3	4	5	6	7	8	9	10	11	12	13
A	B	C	D	E	F	G	H	I	J	K	L	M
Z	Y	X	W	V	U	T	S	R	Q	P	O	N
26	25	24	23	22	21	20	19	18	17	16	15	14

Logic: The sum of place value of letters of the word.
For, MOBILITY - 46293927
M → 13 = 1 + 3 = 4
O → 15 = 1 + 5 = 6
B → 2 = 2
I → 9 = 9
L → 12 = 1 + 2 = 3
I → 9 = 9
T → 20 = 2 + 0 = 2
Y → 25 = 2 + 5 = 27
Similarly,
STABLE - ?

S → 19 = 1 + 9 = 10
T → 20 = 2 + 0 = 2
A → 1 = 1
B → 2 = 2
L → 12 = 1 + 2 = 3
E → 5 = 5
So, **STABLE** is coded as **1021235**.
Thus, correct option is (d).

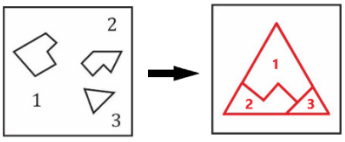
S89. Ans.(a)
Sol. Heart, **liver** and **stomach** are organs.
While the **aorta** is a blood vessel, not an organ.
So, **Aorta** is odd one out.
Thus, correct option is (a).

S90. Ans.(d)
Sol. The missing figure that will complete the figure is:



Given figure + **Option (d)** = Complete figure
Thus, correct option is (d).

S91. Ans.(c)
Sol. The correct embedded figure is shown below.



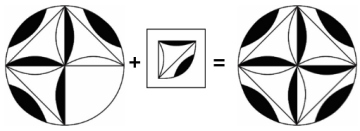
Thus, correct option is (c).

S92. Ans.(d)
Sol. Given:
Solutions with the ratio of Milk and Water as (2 : 3), (3 : 1) and (4 : 5)
And are mixed in the ratio 2 : 3 : 4.
Solution:
Since these, all are mixed in the ratio of 2 : 3 : 4
∴ 2 × 2/5 : 3 × 2/5
3 × 3/4 : 1 × 3/4
4 × 4/9 : 5 × 4/9
=> 4/5 : 9/4 : 16/9 : 6/5 : 3/4 : 20/9
On calculation, we will get,
=> (144 + 405 + 320)/180 : (216 + 135 + 400)/180
=> 869 : 751
∴ The correct answer is 869 : 751.

S93. Ans.(d)
Sol. Solution:
By going through the options we can see that only 279841 is the only number which is the square of natural number.
=> √279841 = 529
∴ The correct answer is 279841.

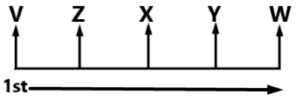
S94. Ans.(a)
Sol. Given: Triangle : Rectangle :: ?
A **triangle** is a 2D shape with 3 sides. A **rectangle** is a 2D shape with 4 sides.
So the relationship is: Both are polygons, the second has one more side than the first.
Now check options:
Option (a): Pentagon (5 sides) : Hexagon (6 sides) → matches the rule.
Option (b): Angle (not a polygon) : Quadrilateral (polygon) → does **not** match.
Option (c): Rhombus (4 sides) : Octagon (8 sides) → **not** just one side more.
Option (d): Cone (3D) : Sphere (3D) → does **not** match different category.
Thus, correct option is (a).

S95. Ans.(a)
Sol. The missing figure that will complete the figure is.



Given figure + **Option (a)** = Complete figure
Thus, correct option is (a).

S96. Ans.(c)
Sol. Given:
In an examination hall five students V, W, X, Y, and Z are sitting in a row.
Only Z is between V and X.
Y is immediately behind X and V is the first.
From the given information seating arrangement will be.



Y is sitting second last.
Thus, correct option is (c).

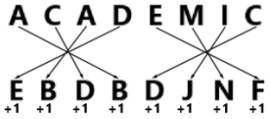
S97. Ans.(a)
Sol. Given:
CP = Rs. 36.40 and Gain%= 15%
Concept used:
Profit = (SP - CP)/CP × 100
Solution:
Here CP = Rs.36.40
Gain% = 15/100 = 3/20
SP = 3 + 20 = 23
CP = 20
=> 20 = 36.40
=> 1 = 1.82
SP = 23 × 1.82
SP = 41.86
∴ The correct answer is Rs.41.86.

S98. Ans.(d)
Sol. Concept:
L.C.M of fraction = L.C.M of numerator/H.C.F of denominator
Calculation:
LCM of given fractions = L.C.M of (3, 1, 1 and 4)/H.C.F of (7, 7, 35 and 7)
=> 12/7.
∴ The required LCM of given fractions is 12/7.

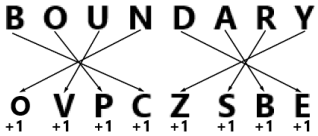
S99. Ans.(d)
Sol. Given:
In a certain code language 'ACADEMIC' is written as 'EBDBDJNF'.

1	2	3	4	5	6	7	8	9	10	11	12	13
A	B	C	D	E	F	G	H	I	J	K	L	M
Z	Y	X	W	V	U	T	S	R	Q	P	O	N
26	25	24	23	22	21	20	19	18	17	16	15	14

For, ACADEMIC - EBDBDJNF



Similarly,
BOUNDARY - ?



So, **BOUNDARY** is written as **OVPCZSBE**.
Thus, correct option is (d).

S100. Ans.(a)
Sol. Formula used:
A n = a + (n - 1)d
Where a = first term, n = no of terms and d = common difference
Solution:
Here,
a = √2
d = 3√2 - √2 = 2√2
A 18 = √2 + (18 - 1)2√2
A 18 = √2 + 17 × 2√2
A 18 = 35√2
∴ The correct answer is 35√2.

S101. Ans.(a)
Sol. Solution:
=> (1421 × 1423 × 1425)/12
1421 divided by 12 gives the remainder 5.
1423 divided by 12 gives the remainder 7.
1425 divided by 12 gives the remainder 9.
So, the remainder will be: 5 × 7 × 9 = 315
Now, when we divide 315 by 12, we get 3 as a remainder
Hence, the required remainder = 3
∴ The correct answer is 3.

S102. Ans.(a)
Sol. Formula used:
Area of circle = πr^2
Solution:
Old Area = π × 100 × 100
New Area = π × 103 × 103
Change in Area = π (10609 - 10000)
=> 609 × π

$$\text{Percentage increase} = \left[\frac{609\pi}{\pi \times 100 \times 100}\right] \times 100$$

=> 6.09%
∴ The correct answer is 6.09%

S103. Ans.(c)
Sol. Formula used:
Average = Sum of all terms/Number of terms
Solution:

$$\Rightarrow \frac{(5+7+9+x+15)}{5} = 10$$

=> 50 = 5 + 7 + 9 + x + 15
=> x = 14
Now,
=> 12 × 7 = 17 + 8 + 19 + 16 + x + y + 4
=> 84 = 17 + 8 + 19 + 16 + x + y + 4
=> x + y = 20
=> y = 20 - 14 = 6
∴ The correct answer is 6.

S104. Ans.(c)
Sol. Solution:
By going through the option we can see that,
Here,
(3 : 2) and (1 : 1) are the only possible ratios for which $4x^2-10xy+6y^2=0$
=> 4 × 9 - 10 × 3 × 2 + 6 × 4 = 24 - 24 = 0
=> 4 - 10 + 6 = -6 + 6 = 0
∴ The correct answer is (3 : 2) and (1 : 1).
Another Method:

$$4x^2 - 10xy + 6y^2 = 0, \text{then} x:y$$

$$\Rightarrow 4x^2 - 6xy - 4xy + 6y^2 = 0$$

=> 2x(2x - 3y) - 2y(2x - 3y) = 0
=> (2x - 2y)(2x - 3y) = 0
So, 2x = 2y
x/y = 1/1
And 2x = 3y
x/y = 3/2
∴ The correct answer is (3 : 2) and (1 : 1).

S105. Ans.(a)
Sol. Given:
Arnav ranked 8th from the top and 39th from the bottom in a class.
Formula Used:
Total students = Rank from top + Rank from bottom - 1
= 8 + 39 - 1
= 47 - 1
= **46**
So, **46** students are there in the class.
Thus, correct option is (a).

S106. Ans.(b)
Sol. Let's check each pair:
Option (a): Maize : Cereal
Maize is a type of cereal.
Option (b): Tomato : Potato
Both are vegetables, but they **don't** have any special relationship like type-category or part-whole.
This pair is just two similar things.
Option (c): Book : Library
A library is a place where books are kept.
Option (d): Student : Class
A class is made up of students.
So, **Tomato : Potato** because this pair is not strongly related like the others.
Thus, correct option is (b).

S107. Ans.(a)
Sol. Given: AG : IO :: EK : ?

1	2	3	4	5	6	7	8	9	10	11	12	13
A	B	C	D	E	F	G	H	I	J	K	L	M
Z	Y	X	W	V	U	T	S	R	Q	P	O	N
26	25	24	23	22	21	20	19	18	17	16	15	14

Logic: 1st letter + 8 = 3rd letter and 2nd letter + 8 = 4th letter
For, AG : IO
A + 8 = I, G + 8 = O
Similarly,
EK : ?
E + 8 = **M**, K + 8 = **S**
So, EK : **MS**
Thus, correct option is (a).

S108. Ans.(c)
Sol. Given:
Estimated profit = 5%
Reduction in profit = Rs.120
Percentage reduction in profit = 3.5%
Calculation:
By going through the ratio method,
=> CP SP
20 21
200 210
Here, CP must be same
∴ CP SP
=> 200 210
200 207
Change in profit = 10 - 7 = 3
=> 3 = 120
=> 1 = 40
CP will be 200 × 40 = 8000
∴ The correct answer is Rs.8000.

S109. Ans.(a)
Sol. Solution:
Let the numbers be x and y
=> x - y = 840
According to question,
=> 5% of x = 15% of y
=> x/y = 3/1
=> 3 - 1 = 840
=> 2 = 840
=> 1 = 420
1st Number = 3 × 420 = 1260
2nd Number = 1 × 420 = 420
∴ The correct answer is 1260,420.

S110. Ans.(a)
Sol. Concept used:
A number is divisible by 11 if the difference between the sum of digits at its odd places and that of digits at the even places is either 0 or divisible by 11.
Solution:
=> (6 + 8 + 4 + 8) - (4 + * + 5)
=> (26) - (9 + *)
=> 17 - *
And the above number must be multiple of 11,
∴ 17 - * = 11
=> * = 6
∴ The correct answer is 6.

S111. Ans.(a)
Sol. Given: If 2 × 3 = 49 and 3 × 4 = 916
Logic: Square of both numbers, then combine the squares as a single number.
For, 2 × 3 = 49
2^2= 4, 3^2= 9
= 49
For, 3 × 4 = 916
3^2= 9, 4^2= 16
= 916
Similarly,
9 × 7 = ?
9^2= **81**, 7^2= **49**
= **8149**
Thus, correct option is (a).

S112. Ans.(d)
Sol. The water image of the given words shown below.

INTREST
INTRƎST

Water Images of Small Letters

Letters	a	b	c	d	e	f	g	h	i
Water-Images	ɐ	q	ɔ	p	ǝ	ɟ	ƃ	ɥ	ı
Letters	j	k	l	m	n	o	p	q	r
Water-Images	ɾ	ʞ	l	ɯ	u	o	d	b	ɹ
Letters	s	t	u	v	w	x	y	z	-
Water-Images	s	ʇ	n	ʌ	ʍ	x	ʎ	z	-

Water Images of Capital Letters

Letters	A	B	C	D	E	F	G	H	I
Water-Images	∀	B	Ɔ	D	Ǝ	Ⅎ	⅁	H	I
Letters	J	K	L	M	N	O	P	Q	R
Water-Images	ſ	ʞ	⅂	W	N	O	d	Ò	ʁ
Letters	S	T	U	V	W	X	Y	Z	-
Water-Images	S	⊥	∩	Λ	M	X	⅄	Z	-

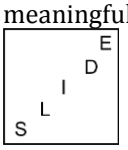
Water Images of Numbers

Letters	0	1	2	3	4	5	6	7	8	9
Water Images	0	⇂	ᄅ	ε	ㄣ	ƨ	9	ㄥ	8	∂

Thus, correct option is (d).

S113. Ans.(d)
Sol. Formula used:
Average = Sum of all observations/Number of observations
Calculation:
According to the question,
Average = 15 × 50 = 750
New Average = 18 × 53 = 954
Sum of Amount of 3 girls = 954 - 750 = 204
Average of Amount = 204/3
=> 68
∴ The correct answer is Rs.68.

S114. Ans.(d)
Sol. Logic: In option (a), (b) and (c) arrange the words from the down to up side it makes are word, that are not meaningful words.



In **option (d)** arrange the words from the down to the upside makes words that are meaningful words.
(Increasing alphabetical order up to down)
So, **option (d)** is odd one out.
Thus, correct option is (d).

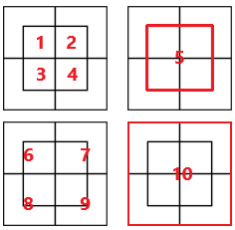
S115. Ans.(a)
Sol. Given: 20 - 4 + 6 × 3 ÷ 4 = 19
Using **BODMAS** rule.

Operation preference wise	Symbol
Brackets	[], , ()
Orders, of	(power), √(root), of
Division	÷
Multiplication	×
Addition	+
Subtraction	−

Now, we check each options.
Option (a): - and ÷
New equation: 20 ÷ 4 + 6 × 3 - 4 = 19
5 + 6 × 3 - 4 = 19
5 + 18 - 4 = 19
23 - 4 = 19
19 = 19
Option (b): - and +
New equation: 20 + 4 - 6 × 3 ÷ 4 = 19
20 + 4 - 6 × 0.75 = 19
20 + 4 - 4.5 = 19
19.5≠ = 19
Option (c): ÷ and ×
New equation: 20 - 4 + 6 ÷ 3 × 4 = 19
20 - 4 + 2 × 4 = 19
20 - 4 + 8 = 19
28 - 4 = 19
24≠ = 19
Option (d): × and ÷
New equation: 20 - 4 + 6 ÷ 3 × 4 = 19
20 - 4 + 2 × 4 = 19
20 - 4 + 8 = 19
28 - 4 = 19
24≠ = 19
Thus, correct option is (a).

S116. Ans.(c)
Sol. 6/7 = 0.857
7/8 = 0.875
7/7 = 1
4/5 = 0.80
Hence, 7/7 is the largest fraction.

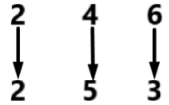
S117. Ans.(b)
Sol. There are **10** square given below.



Thus, correct option is (b).

S118. Ans.(c)
Sol. Given:
The sum of squares of three numbers is 138, while sum of their products taken two at a time is 131.
Concept used:
$(x + y + z)^2 = x^2 + y^2 + z^2 + 2(xy + yz + zx)$
Calculation:
Let three numbers be x, y, z.
The sum of squares of three numbers is 138
=> $x^2 + y^2 + z^2 = 138$
Sum of their products taken two at a time is 131
=> xy + yz + zx = 131
Applying the formulae
=> $(x + y + z)^2 = 138 + 2(131)$
=> $(x + y + z)^2 = 138 + 262$
=> $(x + y + z)^2 = 400$
=> $x + y + z = \sqrt{400}$
=> x + y + z = 20
∴ The sum of three numbers is 20.

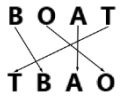
S119. Ans.(c)
Sol. Logic: If two dice have the same face value in the given image then their clockwise or anticlockwise wise number are known as opposite numbers in dice.



So, **2** is top of at 1.
Thus, correct option is (c).

S120. Ans.(b)
Sol. Given:
In a certain code language 'BOAT' is written as 'TBAO' and 'FAIR' is written as 'RFIA'.
Logic: Position of letters are interchanged.

For, BOAT - TBAO



For, FAIR - RFIA

Similarly,
GAIN - ?

So, **GAIN** is written as **NGIA**.
Thus, correct option is (b).

S121. Ans.(c)
Sol. The correct answer is (C) Sri Lanka
Explanation:

- In the **Human Development Index (HDI) 2021**, **Sri Lanka** ranked higher than **India**.
- India was ranked **131st**, while Sri Lanka was ranked **73rd**, according to the HDI report of 2021.

Information Booster:

- HDI is a composite index that measures a country's average achievements in three basic dimensions: life expectancy (health), education (mean years of schooling and expected years of schooling), and per capita income (standard of living).
- Sri Lanka's higher ranking can be attributed to its better performance in health and education indicators.

Additional Information:

- **Pakistan** ranked 161st, **Nepal** ranked 145th, and **Myanmar** ranked 147th, all of which are lower than India's ranking of 131st in 2021.

S122. Ans.(a)
Sol. Given:
Principal = Rs. 8000
Amount = Rs. 12600
Formula used :
A = P + SI
SI = (P × R × T)/100
Solution:
According to the question,
SI = Rs.4600
=> 4600 = (8000 × R × 5)/100
=> 400R = 4600
=> R = 11.5%
∴ The correct answer is 11.5%.

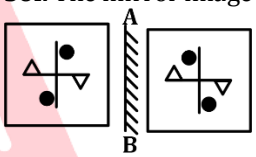
S123. Ans.(c)
Sol.

1	2	3	4	5	6	7	8	9	10	11	12	13
A	B	C	D	E	F	G	H	I	J	K	L	M
Z	Y	X	W	V	U	T	S	R	Q	P	O	N
26	25	24	23	22	21	20	19	18	17	16	15	14

Logic: 1st letter + 3 = 2nd letter and 2nd letter + 2 = 3rd letter
Now, we check each options.
Option (a): GJL **(Follow)**
G + 3 = J, J + 2 = L
Option (b): MPR **(Follow)**
M + 3 = P, P + 2 = R
Option (c): PST **(Not Follow)**
P + 3 = S, S + 2≠? = T
Option (d): ADF **(Follow)**
A + 3 = D, D + 2 = F
Thus, correct option is (c).

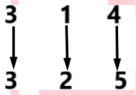
S124. Ans.(a)
Sol. Now, we analyze each options.
Stump, **Bails** and **Bat** are cricket equipment — they are used in playing the game.
Umpire is a person — he officiates or judges the game, but is not equipment.
So, **Umpire** is different from the rest.
Thus, correct option is (a).

S125. Ans.(b)
Sol. The mirror image of the given figure as shown below.



Thus, correct option is (b).

S126. Ans.(c)
Sol. Logic: If two dice have the same face value in the given image then their clockwise or anticlockwise wise number are known as opposite numbers in dice.

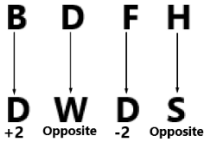


So, **3** is opposite of 6.
Thus, correct option is (c).

S127. Ans.(b)
Sol. Given:
BDFH : DWDS :: TVYZ : ?
Logic: 1st + 2, 2nd and 4th opposite , 3rd - 2

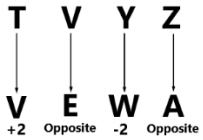
1	2	3	4	5	6	7	8	9	10	11	12	13
A	B	C	D	E	F	G	H	I	J	K	L	M
Z	Y	X	W	V	U	T	S	R	Q	P	O	N
26	25	24	23	22	21	20	19	18	17	16	15	14

For, BDFH : DWDS



Similarly,

TVYZ : ?

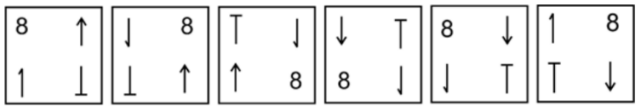


Thus, correct option is (b).

S128. Ans.(c)

Sol. Logic: 1. Number, letter and symbol are rotating at corner in clockwise direction.

2. Letter and symbol gets up and down after 3 place.



Thus, correct option is (c).

S129. Ans.(a)

Sol. If you write down all the numbers from 1 to 100, then the number of times we write 3 is **20**.

3, 13, 23, 30, 31, 32, 33, 34, 35, 36, 37, 38. 39, 43, 53, 63, 73, 83, 93

Hence, '**20**' is the correct answer.

S130. Ans.(a)

Sol. Given: 10, 100, ?, 310, 430

Logic: Numbers are increasing +90, +100, +110 and +120.

10 + 90 = 100

100 + 100 = **200**

200 + 110 = 310

310 + 120 = 430

So, the missing term is **200**.

Thus, correct option is (a).

S131. Ans.(a)

Sol. Now, we analyze each options.

Pungi, **Flute** and **Trumpet** are all wind instruments — you have to blow air into them to play.

Guitar is a string instrument — you pluck or strum the strings to play it.

So, **Guitar** is different from the others.

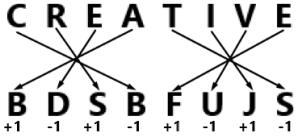
Thus, correct option is (a).

S132. Ans.(c)

Sol. Given: If 'CREATIVE' will be written as 'BDSBFUJS'.

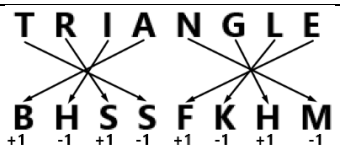
1	2	3	4	5	6	7	8	9	10	11	12	13
A	B	C	D	E	F	G	H	I	J	K	L	M
Z	Y	X	W	V	U	T	S	R	Q	P	O	N
26	25	24	23	22	21	20	19	18	17	16	15	14

For, CREATIVE - BDSBFUJS



Similarly,

TRIANGLE - ?



So, **TRIANGLE** is written as **BHSSFKHM**.

Thus, correct option is (c).

S133. Ans.(a)

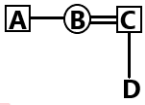
Sol. Given: If P + Q means 'P is the father of Q', then which of the following means 'A is the maternal uncle of D'?

Symbols	+	-	×
Relation	Father	Wife	Brother

Symbol in Diagram	Meaning
-/O	Female
+/□	Male
=	Married Couple
—	Siblings
|	Difference Of Generation

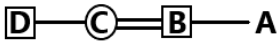
Now, we check each options.

Option (a): A × B - C + D



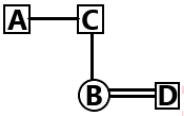
A is the maternal uncle of D.

Option (b): D × C - B × A



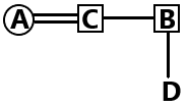
A is Sister's husband's brother of D.

Option (c): A × C + B - D



A is Wife's father's brother of D.

Option (d): A - C × B + D

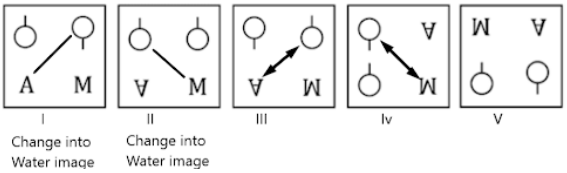


A is father's brother's wife's of D.

Thus, correct option is (a).

S134. Ans.(c)

Sol.



Thus, correct option is (c).

S135. Ans.(d)

Sol. Given

(a) A + D = C + E

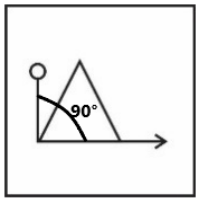
(b) B + 2D = C + 2E

(c) D − E > E − B

(4) 2D > A + C

From (a):
D = C + E − A — (5)
Substituting (5) into (b):
B + 2(C + E − A) = C + 2E
B + 2C + 2E − 2A = C + 2E
B = C + 2A — (6)
Substituting (5) into (c):
2C + 2E − 2A > 2E − B
2C − 2A > −B
B > 2A − 2C — (7)
Substituting (5) into (4):
2(C + E − A) > A + C
2E > A − C + 2A
2E > 3A − C — (8)
From (6): B = C + 2A => B > A and B > C.
Using (7): B > 2A − 2C => B > 2A − 2C > A > C => so B > A > C.
From (5), rewrite (a):
A + (C + E − A) = C + E => A = E.
From (c): D − E > E − B. With A = E => D − A > A − B => D > B.
Putting together: B > A > C = E < D
order: **C > B > D > A > E**
Thus, correct option is (d).

S136. Ans.(b)
Sol. only in option (b), the angle between both symbols is 90°.



Thus, correct option is (b).

S137. Ans.(b)
Sol. Given:
'facing problems with health' → mlp hlt ngi snk
'health problems on rise' → hlt sa rtv mlp
'rise with every challenge' → snk rtv lne riy
'facing challenge each day' → ngi riy nop hus
'facing problems with health' → mlp hlt ngi snk

'health problems on rise' → hlt sa rtv mlp

'rise with every challenge' → snk rtv lne riy

'facing challenge each day' → ngi riy nop hus
'lne' is the code of '**every**'
Thus, correct option is (b).

S138. Ans.(c)
Sol. Given:
'facing problems with health' → mlp hlt ngi snk
'health problems on rise' → hlt sa rtv mlp
'rise with every challenge' → snk rtv lne riy
'facing challenge each day' → ngi riy nop hus
'facing problems with health' → mlp hlt ngi snk

'health problems on rise' → hlt sa rtv mlp

'rise with every challenge' → snk rtv lne riy

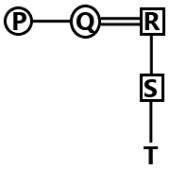
'facing challenge each day' → ngi riy nop hus
'**facing**' is the code of '**ngi**'
Thus, correct option is (c).

S139. Ans.(c)
Sol. Given: If 'A + B' means 'A is father of B'.

Symbols	+	×	÷	%	*
Relation	Father	Sister	Wife	Mother	Son

Symbol in Diagram	Meaning
- / O	Female
+/ □	Male
=	Married Couple
—	Siblings
|	Difference Of Generation

Option (c):÷



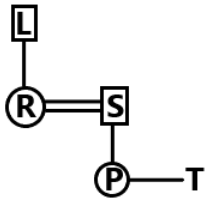
So, **P × Q÷ R + S + T**, Q is grandmother of T'.
Thus, correct option is (c).

S140. Ans.(b)
Sol. Given: If 'A + B' means 'A is father of B'.

Symbols	+	×	÷	%	*
Relation	Father	Sister	Wife	Mother	Son

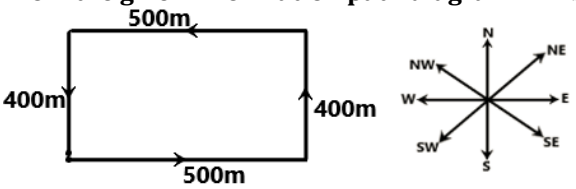
Symbol in Diagram	Meaning
- / O	Female
+/ □	Male
=	Married Couple
—	Siblings
|	Difference Of Generation

From the given information blood relation diagram will be.
Option (b): L + R ÷ S + P × T



P is daughter of S.
Thus, correct option is (b).

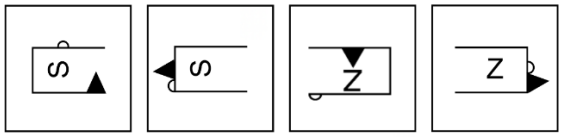
S141. Ans.(d)
Sol. Given:
Vassim walks a distance of 500 m towards East, turns left and moves 400 m, turns left and walks 500 m and then turns left again and moves 400 m and halts.
From the given information path diagram will be.



0 (in m) distance is he from the starting point.
Thus, correct option is (d).

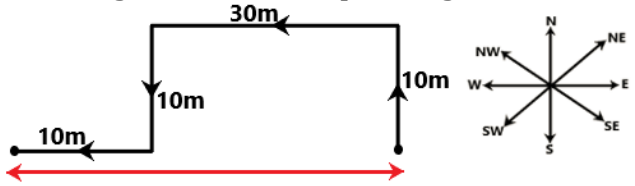
S142. Ans.(d)
Sol. Given:
'come and see' is written as 'na ha sa'
'nice to see you' is written as 'da ka pa sa'
'see and again' is written as 'ka na sa'
'come and see' na ha sa
'nice to see you' 'da ka pa sa'
see and again 'ka na sa'
So 'again' written in that code language as '**ka**'.
Thus, correct option is (d).

S143. Ans.(b)
Sol.



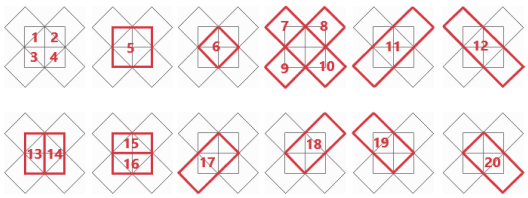
The shaded triangle and semicircle are shifted to the vertical line and the 'S' and 'Z' will change as the mirror image.
Thus, the correct option is (b).

S144. Ans.(d)
Sol. Given:
Radha walks 10m towards North, then she turns left and walks 30m.
She again turns left and walks 10m.
Further, she moves 10 m after turning to right.
From the given information path diagram will be.



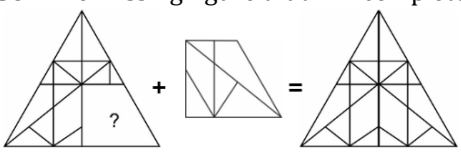
30 + 10 = 40m
40m far is she from her original position.
Thus, correct option is (d).

S145. Ans.(d)
Sol. There are **20** rectangles given below.



Thus, correct option is (d).

S146. Ans.(c)
Sol. The missing figure that will complete the figure is:



Given figure + **Option (c)** = Complete figure
Thus, correct option is (c).

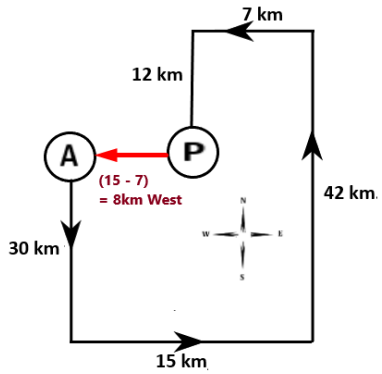
S147. Ans.(a)
Sol. Given:
SDFG → YJKM, QBZE → WHEK
ITOW → ?

1	2	3	4	5	6	7	8	9	10	11	12	13
A	B	C	D	E	F	G	H	I	J	K	L	M
Z	Y	X	W	V	U	T	S	R	Q	P	O	N
26	25	24	23	22	21	20	19	18	17	16	15	14

Logic: Each letter in the pair is shifted by **+6, +6, +5, +6** positions in the alphabet.
SDFG → YJKM
S + 6 → Y
D + 6 → J
F + 5 → K
G + 6 → M
QBZE → WHEK
Q + 6 → W
B + 6 → H
Z + 5 → E
E + 6 → K
Similarly,
ITOW → ?
I + 6 → **O**
T + 6 → **Z**
O + 5 → **T**
W + 6 → **C**
So, ITOW → OZTC
Thus, the correct option is: (a)

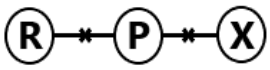
S148. Ans.(b)
Sol. Given:
Gautam starts from Point A and drives 30 km towards South.
He then takes a left turn, drives 15 km, turns left and drives 42 km.
He then takes a left turn and drives 7 km.
He takes a final left turn, drives 12 km and stops at Point P.

From the given information Direct will be shown bellow:



So, he should drive **8 km towards West** to reach Point A from P.
Thus, the correct option is: **(b)**

S149. Ans.(b)
Sol. Statements:
1. No P is X.
2. No R is P.
From the given statements possible Venn diagram will be.



Conclusions:
I. Some X are not P. (**True**, no P is X, so that means some X are not P).
II. No X is R. (**False**, there is no direct or indirect relation between X and R).
So, **Neither Conclusion I nor II follows.**
Thus, correct option is (d).

S150. Ans.(a)
Sol. Given:
Distance against the flow = 12 km, Time = 5 hours
Distance along the flow = 22 km, Time = 5 hours
Formula Used:
Downstream = v + s
Upstream = v - s
Where;
v is speed of boat
s is speed of river
Solution:
Let the speed of the boat in still water be v km/h, and speed of the river be s km/h.

$$\text{Downstream} = v + s = \frac{22}{5} \quad \ldots. (1)$$

$$\text{Upstream} = v - s = \frac{12}{5} \quad \ldots\ldots (2)$$

Add both equation (1) and (2),

$$v + s + v - s = \frac{22}{5} + \frac{12}{5}$$

$$2v = \frac{34}{5}$$

$$v = \frac{17}{5}$$

Now v value put in equation (1);

$$\frac{17}{5} + s = \frac{22}{5}$$

$$s = \frac{22}{5} - \frac{17}{5} = \frac{5}{5} = 1$$

So, Velocity of the river (s) = 1km/hour
Thus, the correct answer is (a).