STAFF SELECTION COMMISSION

COMBINED HIGHER SECONDARY LEVEL (TIER-I)

SOLVED PAPER

(19th April 2021: Shift-1)

Time Allotted- 1 hour **Max marks-** 200

Important Instructions:-

⇨ This paper contains 100 questions which are divided into 4 sections and each section contains 25 questions.
- ✓ English Language (Basic Knowledge)
- ✓ General Intelligence
- ✓ Quantitative Aptitude (Basic Arithmetic Skill)
- ✓ General Awareness

⇨ There will be 2 marks for each correct answer and also there will be negative marking of 0.50 marks for each wrong answer.

⇨ Each question is compulsory to attempt and there will be no negative marking for unattempted questions.

English Language

1. Select the INCORRECTLY spelt word.
1. Saspence **2.** Suppress **3.** Suspicion **4.** Secrecy

2. Sentences of a paragraph are given below in jumbled order. Arrange the sentences in the right order to form a meaningful and coherent paragraph.
A. The other aspect touches upon certain issues that have arisen in recent years, such as brain-death, mercy killing and cloning.
B. There are two major aspects relating to the medical profession and its practice the world over.
C. These issues must be discussed and debated in the public domain in terms of our cultures and value systems.
D. One of these is the ethics of medical practitioners in their day-to-day relationship with their patients and with one another.
1. BCAD **2.** DABC **3.** BDAC **4.** CDAB

3. Select the option that expresses the given sentence in the active or passive voice.
Celebrate the New Year with amazing offers.
1. The New Year should be celebrated with amazing offers.
2. The New Year will be celebrated with amazing offers.
3. Amazing offers will be celebrate in the New Year.
4. Let the New Year be celebrated with amazing offers.

4. Select the INCORRECTLY spelt word.
1. Adamant **2.** Acheivmant
3. Eligibility **4.** Relevant

5. The following sentence has been split into four segments. Identify the segment that contains a grammatical error.
Public speaking / is one of / the most feared form / of communication.
1. the most feared form **2.** is one of
3. Public speaking **4.** of communication

6. Select the option that expresses the given sentence in reported speech.
He said to his sister, "Please help me with my homework."
1. His sister told him that he should help her with her homework
2. He requested his sister to help him with his homework.
3. His sister was asked by her brother that she should help him with his homework.
4. He told his sister that she should help him with his homework.

7. Select the most appropriate synonym of the given word.
Mandatory
1. Imperative **2.** Impervious
3. Optional **4.** Unnecessary

8. Select the most appropriate synonym of the given word.
Abode
1. Habituation **2.** Aboard **3.** Dwelling **4.** Annex

9. Select the most appropriate meaning of the given idiom.
To drag one's feet
1. To walk unsteadily **2.** To walk with a limp
3. To pull someone's legs **4.** To delay taking a decision

10. Select the most appropriate option to substitute the underlined segment in the given sentence. If there is no need to substitute it, select 'No substitution required'.
Fermented vegetables can be stored for about a year <u>without going bad</u>.
1. without going worst **2.** with going bad
3. No substitution required **4.** to go bad

11. Select the most appropriate word to fill in the blank.
We admit students with _____ academic backgrounds like life sciences, physical sciences, and business and commerce.
1. diverse **2.** similar **3.** simple **4.** same

12. Select the most appropriate ANTONYM of the given word.
Malicious
1. Culpable **2.** Decent **3.** Perverted **4.** Biased

13. The following sentence has been split into four segments. Identify the segment that contains a grammatical error.
After a long gap, / we went shopping / last Sunday and bought / that we wanted.
1. we went shopping **2.** After a long gap
3. that we wanted **4.** last Sunday and bought

14. Select the most appropriate word to fill in the blank.
Please complete the short questionnaire _____ and return it to us.
1. separated **2.** attached
3. excluded **4.** concluded

15. Select the most appropriate option to substitute the underlined segment in the given sentence. If there is no need to substitute it, select 'No substitution required'.
I cannot help you <u>if you tell me</u> your problem.
1. No substitution required **2.** unless you don't tell me
3. until you don't tell me **4.** unless you tell me

16. Select the option that can be used as a one-word substitute for the given group of words.
Withdraw from a forward position in battle
1. Retreat **2.** Resort **3.** Restore **4.** Relocate

17. Select the most appropriate meaning of the given idiom.
To make both ends meet
1. To have just enough money to live
2. To try to do two different things at the same time.
3. To try to bring two parties together
4. To try to solve a problem between friends

18. Select the option that can be used as a one-word substitute for the given group of words.
Relating to the present time
1. Corollary **2.** Ancient
3. Preceding **4.** Contemporary

19. Sentences of a paragraph are given below in jumbled order. Arrange the sentences in the right order to form a meaningful and coherent paragraph.
A. But he has reached out to millions of people the world over and helped to improve their lives.
B. Born in downtown Los Angeles in 1960, Tony Robins came from very humble beginnings.
C. Now he travels by private jet and owns properties in many parts of the world.
D. His family had been fed by others when they did not have enough money for food.
1. BDCA **2.** ADBC **3.** DABC **4.** CABD

20. Select the most appropriate ANTONYM of the given word.
Resign
1. Accept **2** Reject **3.** Join **4.** Sign

Comprehension:
In the following passage, some words have been deleted. Select the most appropriate option to fill in each blank.
All of us know that the American astronaut Neil Armstrong was the first (1) _____ to set foot on the Moon in July 1969. Human footprints on the lunar (2) _____ won't disappear for millions of years. That is because there is no rain or wind to (3) _____ them. The surface area of the Moon is 25% larger than that of Africa. Astronauts have so far brought back hundreds of kilos of rock and dust from the Moon to (4) _____. It takes the Moon 27.3 days to travel around the Earth. As it does so, we see different amounts of its side (5) _____ by the Sun. That is why it appears to get larger and then smaller.

21. Select the most appropriate option to fill in blank number 1.
1. creature **2.** object **3.** human **4.** organism

22. Select the most appropriate option to fill in blank number 2.
1. surface **2.** dust **3.** eclipse **4.** rock

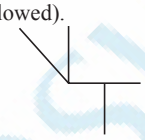
23. Select the most appropriate option to fill in blank number 3.
1. restore **2.** recreate **3.** replicate **4.** erode

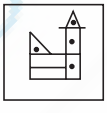
24. Select the most appropriate option to fill in blank number 4.
1. store **2.** sell **3.** study **4.** show

25. Select the most appropriate option to ll in blank number 5.
1. heated **2.** covered **3.** hidden **4.** lit

General Intelligence

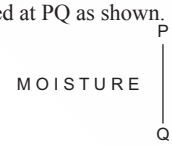
26. Select the option in which the given figure is embedded (rotation is NOT allowed).



1.  **2.**  **3.**  **4.** 

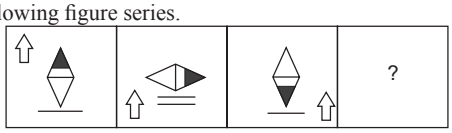
27. Four number-pairs have been given, out of which three are alike in some manner and one is different. Select the one that is different.
1. 11 : 122 **2.** 14 : 112 **3.** 21 : 168 **4.** 18 : 144

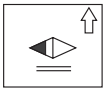
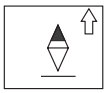
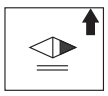
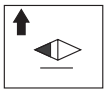
28. Select the correct mirror image of the given combination when the mirror is placed at PQ as shown.



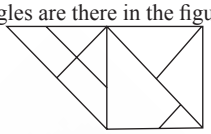
1. ƎRUIƧTOM **2.** MOTƧIURE
3. MOIƧTURE **4.** ƎRUTƧIOM

29. Select the figure that will replace the question mark (?) in the following figure series.



1.  **2.**  **3.**  **4.** 

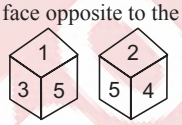
30. How many triangles are there in the figure given below?



1. 10 **2.** 13 **3.** 12 **4.** 11

31. Select the option that is related to the third word in the same way as the second word is related to the first word.
France : Euro : : Myanmar : ?
1. Ringgit **2.** Yen **3.** Euro **4.** Kyat

32. Two different positions of the same dice are shown, the six faces of which are numbered from 1 to 6. Select the number that will be on the face opposite to the one having '5'.



1. 6 **2.** 1 **3.** 3 **4.** 4

33. Select the correct option that indicates the arrangement of the following words in a logical and meaningful order.
1. Restaurant **2.** Eating
3. Cooking **4.** Order food
5. Serve food
1. 1, 2, 3, 5, 4 **2.** 1, 4, 3, 5, 2
3. 4, 5, 3, 2, 1 **4.** 1, 3, 4, 2, 5

34. In a code language, if VISION is written as 176, then how will SEEING be written in the same language?
1. 153 **2.** 118 **3.** 148 **4.** 140

35. Four words have been given, out of which three are alike in some manner and one is different. Select the word that is different.
1. Amicability **2.** Dislike **3.** Consensus **4.** Rapport

36. Select the combination of letters that when sequentially placed in the blanks of the given series will complete the series.
_ _ c f b _ c _ b d _ f
1. b c f d c **2.** b d d f c **3.** d c d f b **4.** f d c b c

37. Select the number from among the given options that can replace the question mark (?) in the following series.
33, 34, 30, 39, 23, 48, 12, ?
1. 14 **2.** 16 **3.** 41 **4.** 61

38. Select the word-pair in which the two words are related in the same way as are the two words in the following word-pair.
Litre : Millilitre
1. Luminance : Tesla **2.** Kilogram : Gram
3. Metre : Distance **4.** Inch : Height

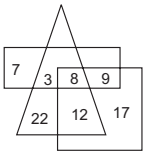
39. Pointing towards a gentleman's statue, Rashmi said, 'He is the father-in-law of my son's wife'. How is gentleman related to Rashmi?
1. Cousin **2.** Brother-in-law
3. Husband **4.** Brother

40. In a certain code language, THICK is written as FELHW. How will RAISE be written in that language?
1. XFHBJ **2.** DBLOV **3.** DLBOV **4.** XHFUV

41. Select the correct combination of mathematical signs that can sequentially replace the * signs and balance the given equation.
25 * 48 * 6 * 12 * 2 = 41
1. ÷, ×, +, − **2.** −, ÷, +, × **3.** −, ×, +, ÷ **4.** +, ÷, −, ×

42. Select the option that is related to the fourth number in the same way as the first number is related to the second number and the fifth number is related to the sixth number.
19 : 362 : : ? : 442 : : 17 : 290
1. 20 **2.** 21 **3.** 22 **4.** 18

43. In the Venn Diagram given below, if Square represents 'Doctors' 'Triangles' represents 'Tennis Players' and 'Rectangle' represents 'Indians',. Number represent the individuals in that category. How many doctors are Indians by NOT tennis players?



1. 12 **2.** 8 **3.** 7 **4.** 9

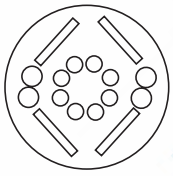
44. Select the option in which the numbers share the same relationship as that shared by the numbers in the given set.
(12, 18, 225)
1. (21, 10, 324) **2.** (25, 15, 400)
3. (13, 17, 140) **4.** (23, 13, 272)

45. Three of the following four letter-cluster pairs are alike in a certain way and one is different.
Select the odd one.
1. PORT : TROP **2.** MODE : EDOM
3. LIMB : BMIL **4.** FIST : IFTS

46. Select the option that is related to the third term in the same way as the second term is related to the first term.
SEVERAL : MZSDWDT : : HEADING : ?
1. HMICBDJ **2.** HMJCBDI
3. JDBCIMH **4.** IDBCJMH

47. A total of 1012 candies are to be distributed among Virat, Ketan and Rohan in the ratio of 6 : 9 : 8 respectively. How many candies will Rohan get?
1. 396 **2.** 352
3. 450 **4.** 264

48. A sheet of paper is folded in a particular manner and several punches are made. When unfolded the paper looks like the given figure. Select the option that follows the manner in which the paper is folded and punched.



1.  **2.**  **3.**  **4.** 

49. Read the given statements and conclusions carefully. Assuming that the information given in the statements is true, even if it appears to be at variance with commonly known facts, decide which of the given conclusions logically follow(s) from the statements.
Statement:
Some planets are stars.
All stars are satellites.
Conclusions:
I. All satellites are stars.
II. Some satellites are planets.
1. Both conclusions I and II follow.
2. Neither conclusion I nor II follows.
3. Only conclusion II follows.
4. Only conclusion I follows.

50. Study the given pattern carefully and select the number that can replace the question mark (?) in it.
14 22 5
18 42 11
22 35 ?
1. 9 **2.** 12 **3.** 7 **4.** 8

Quantitative Aptitude

51. A sum of Rs. 11,236 is divided among A, B and C such that the ratio of the share of A and B is 3 : 5 and the ratio of the shares of A and C is 4 : 7. the share of B is:
1. Rs. 3,392 **2.** Rs. 2,544 **3.** Rs. 4,452 **4.** Rs. 4,240

52. A shopkeeper earns 17% profit by selling an article at 10% discount on its marked price. If its cost price is Rs. 480, then the marked price (in Rs.) of the article is:
1. 640 **2.** 624 **3.** 636 **4.** 600

53. ΔPQR is inscribed in a circle. The bisector of ∠P cuts QR at S and the circle of T. If PR = 5 cm, PS = 6 cm and ST = 4 cm, then the length (in cm) of PQ is:
1. 13 **2.** 12 **3.** 10 **4.** 15

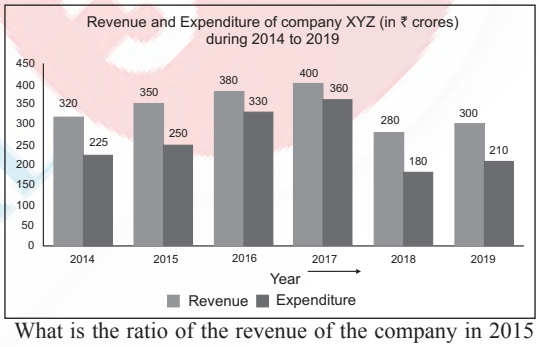
54. The average weight of some students in a group is 58 kg. If students of average weight 54 kg leave the group, and 3 students weighing 53.6 kg, 54 kg and 57.4 kg join the group, then the average weight of the remaining students in the group will increase by 575 g. The number of students, initially, in the group is:
1. 40 **2.** 45 **3.** 35 **4.** 50

55. A man buys goods for Rs. 8,000. He sells 30% of those goods at a profit of 12% and 40% of the remaining goods at a profit of 25%. At what profit percentage should he sell the remaining goods to gain 30% in the entire transaction (correct to one decimal place)?
1. 42.6% **2.** 46.2% **3.** 48.4% **4.** 31.6%

56. If $x+\frac{1}{x}=\sqrt{7}$, then what is the value of $(x^2+1)\div\left[x^4+\left(\frac{1}{x^2}\right)\right]$?
1. $2\sqrt{7}$ **2.** $3\sqrt{7}$ **3.** $\frac{1}{2}$ **4.** $\frac{1}{4}$

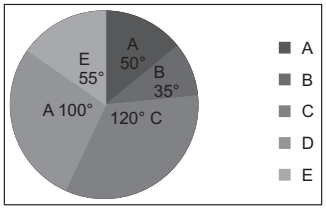
57. ABCD is a cyclic quadrilateral whose diagonals intersect at P. If ∠DBC = 72° and ∠BAC = 42°, then the measure of ∠BCD (in degrees) is:
1. 66 **2.** 65 **3.** 60 **4.** 57

58. Study the given graph and answer the question that follows.



What is the ratio of the revenue of the company in 2015 and 2018 tot he total expenditure in 2017 and 2018
1. 9 : 10 **2.** 6 : 5 **3.** 7 : 6 **4.** 5 : 4

59. Study the pie diagram showing the quantitative sales distribution of five products (A, B, C, D and E) of a company in 2019 and then answer the given question.
Quantitative sales distribution of five products (A, B, C, D and E)



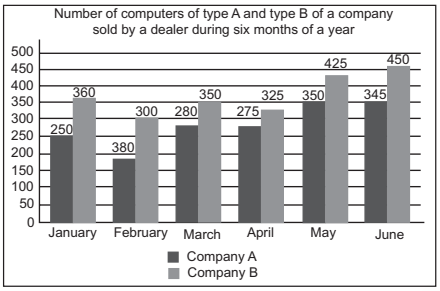
If 2100 units of product C were sold in 2019 and the total number of units sold by the company in 2020 was 28% more than the number of units sold in 2019, then how many units were sold by the company in 2020?
1. 8576 **2.** 7428 **3.** 6300 **4.** 8064

60. The price of an article increases by 5% every year. If the difference between its price at the end of the second and the third year is Rs. 52.50, then what will be its price at the end of the first year?
1. ₹ 1,000 **2.** ₹ 950 **3.** ₹ 840 **4.** ₹ 900

61. The value of $6 \times 3 \div 8$ of $6 - 6 \div 4 \times (5 - 7) + 5 - 3 \times 4 \div 6$ of 3 is:
1. $7\frac{17}{24}$ **2.** $4\frac{1}{3}$ **3.** $5\frac{5}{8}$ **4.** $5\frac{11}{24}$

62. A sum of ₹ x amount to ₹ 9,246 in 4 years and to ₹ 11,298.75 in $7\frac{1}{2}$ years, at y% p.a. simple interest. The value of x and y are respectively.
1. 6900 and 8.5 **2.** 6800 and 8.5
3. 6500 and 8 **4.** 7200 and 7.5

63. Study the given graph and answer the question that follows.



The total number of computers of type A sold in January and May is what percentage less the total number of computers of type B sold from March to May? (correct to one decimal place)
1. 40.9 **2.** 54.5 **3.** 83.3 **4.** 45.5

64. $\frac{(1+\cos\theta)(\text{cosec}\theta-\cot\theta)\sec\theta}{\sin\theta(1-\sin\theta)(\sec\theta+\tan\theta)} = ?$
1. $\sec^2\theta$ **2.** $\sin^2\theta$ **3.** $\cos^2\theta$ **4.** $\text{cosec}^2\theta$

65. In ΔABC, DE||BC, where D and E are points on the sides AB and AC, respectively. If AD = 2 cm, BD = 5.2 cm, AC = 9 cm and AE = x cm, then what is the value of x?
1. 3.5 **2.** 4 **3.** 3 **4.** 2.5

66. If $\sin\theta(2\sin\theta + 3) = 2$, $0° < \theta < 90°$, then what is the value of $(\sec^2\theta + \cot^2\theta - \cos^2\theta)$?
1. $\frac{13}{3}$ **2.** $\frac{31}{12}$ **3.** $\frac{7}{2}$ **4.** $\frac{43}{12}$

67. The area of a triangle field whose sides are 65 m, 72 m, and 97 m is equal to the area of a rectangular park whose sides are in the ratio of 5 : 13. What is the perimeter (in m) of the rectangular park?
1. 108 **2.** 180 **3.** 216 **4.** 144

68. A, B and C together can complete a work in x, 30 and 45 days, respectively, B and C worked together for 6 days. The remaining work completed by A alone in 12 days. The value of x is.
1. 18 **2.** 20 **3.** 24 **4.** 15

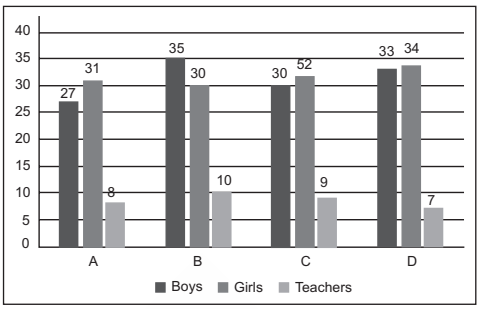
69. If $x + y + z = 3x^2 + y^2 + z^2 = 45$ and $x^3 + y^3 + z^3 = 69$, then what is the value of xyz?
1. –40 **2.** 40 **3.** –30 **4.** 30

70. In ΔABC, D and E are points on sides AB and BC, respectively, such that BD : DA = 1 : 2 and CE : EB = 1 : 4. If DC and AE intersect at F, then FD : FC is equal to:
1. 3 : 2 **2.** 5 : 2 **3.** 8 :3 **4.** 4 : 1

71. The six-digit number 537xy 5 is divisible by 125. How many such six-digit numbers are there?
1. 4 **2.** 2 **3.** 3 **4.** 5

72. If $4\sqrt{3}x^2 + 5x - 2\sqrt{3} = (Ax + 2)(Bx + C)$, then what is the value of $(A + B + C)$? $(A > 0)$
1. 4 **2.** $4 + \sqrt{3}$ **3.** $2\sqrt{3}$ **4.** $4 - \sqrt{3}$

73. The given bar-graph shows the number of boys and girls in classes A, B , C and D in a school, and the number of teachers alloted to each class.



which class has the least percentage of girls
1. B **2.** D **3.** C **4.** A

74. Two cars X and Y start running towards each other from two places 216 km apart. The ratio of the speeds of X and Y is 5 : 7 and the speed of X is 60 km/h. After how many minutes will X and Y meet each other?
1. 75 **2.** 72 **3.** 90 **4.** 80

75. If $\sin\theta = \frac{11}{15}$, then the value of $(\sec\theta - \tan\theta)$ is:
1. $\frac{2\sqrt{26}}{13}$ **2.** $\frac{\sqrt{26}}{13}$ **3.** $\frac{4}{\sqrt{26}}$ **4.** $\frac{1}{\sqrt{26}}$

General Awareness

76. In which of the following states/union territories is India's highest Meteorological Centre situated?
1. Assam **2.** Meghalaya
3. Ladakh **4.** Jammu and Kashmir

77. Who among the following is the brand ambassador of Entri, a local learning app for jobs?
1. Mary Kom **2.** Rohit Sharma
3. Robin Uthappa **4.** Sania Mirza

78. The polity of a country is designed according to its _____ and any change to the polity is possible only when an amendment is made.
1. Constitution **2.** People
3. Government **4.** Preamble

79. Which of the following is the only state in India that produces diamonds?
1. Andhra Pradesh **2.** Kolkata
3. Uttarakhand **4.** Madhya Pradesh

80. Who among the following is the Regional Ambassador for India for UNEP (United Nations Environment Programme) as of December 2020?
1. Virat Kohli **2.** Akshay Kumar
3. Khushi Chindaliya **4.** Dia Mirza

81. When was the Jal Jeewan Mission launched by the Prime Minister, with the goal of 'Har Ghar Jal'?
1. 2015 **2.** 2019 **3.** 2014 **4.** 2020

82. New Development Bank (NDB) is a multilateral development bank established in 2014. How many countries are members of NDB?
1. 25 **2.** 12 **3.** 9 **4.** 5

83. In which of the following years was the Supreme Court set up in Calcutta by the East India Company?
1. 1734 **2.** 1850 **3.** 1890 **4.** 1773

84. With which of the following banks has the Government of India signed a $500 million project to build safe and green national highway corridors in Rajasthan, Himachal Pradesh, Andhra Pradesh and Uttar Pradesh?
1. IMF **2.** ADB
3. AIIB **4.** World Bank

85. Who has been nominated as a member on the GAVI Board by the Global Alliance for Vaccines and Immunisation in December 2020?
1. Amit Shah **2.** Narendra Modi
3. Harsh Vardhan **4.** Smriti Irani

86. In which of the following cities was the International Gita Mahotsav held in November- December 2020?
1. Mumbai **2.** Amritsar
3. Kurukshetra **4.** Patna

87. In which of the following states is the Losoong festival celebrated?
1. Sikkim **2.** Andhra Pradesh
3. Karnataka **4.** Himachal Pradesh

88. BWF (Badminton World Federation) has imposed a 5-year ban on shuttler Nikita Khakimov on the charges of betting, wagering and irregular match results. He represents which of the following countries?
1. Japan **2.** Canada **3.** Portugal **4.** Russia

89. Infrared optical _____ can be used for measuring and monitoring temperatures and hot spots of jet engine rotor blades.
1. ammeter **2.** hygrometer
3. pyrometer **4.** machmeter

90. Which of the following is the full form of ASCII?
1. American Standard Code for Information Interchange
2. Asian Standard Code for Information Interchange
3. Analytical Scientific Code for Information Interchange
4. Analytical Standard Code for Intermitted Information

91. Linganamakki Dam is built across which of the following rivers?
1 Sharavathi **2.** Yamuna
3. Krishna **4.** Tunga Bhadra

92. Trachoma is a preventable disease that results from poor hygiene and sanitation. Which of the following body parts does it affect?
1. Eye **2.** Ear **3.** Stomach **4.** Heart

93. Kolhapur city is located on the banks of which of the following rivers?
1. Panchganga **2.** Sarau **3.** Chambal **4.** Misu

94. Who among the following cricketers has won the 'Sir Garfield Sobers Award' for the ICC Male Cricketer of the Decade and ICC Men's ODI Cricketer of the Decade Award in December 2020?
1. Steve Smith **2.** Joe Root
3. Virat Kohli **4.** Mahendra Singh Dhoni

95. Which of the following state's government has launched the flagship programme 'Pedalandariki Illu' (housing for the poor) scheme in December 2020?
1. Karnataka **2.** Tamil Nadu
3. Kerala **4.** Andhra Pradesh

96. In which of the following states will the 4th edition of Khelo India Youth Games be held?
1. Haryana **2.** Chhattisgarh
3. Bihar **4.** Assam

97. An/A _____ is a finite set of instructions which, when followed, accomplish a particular task.
1. array **2.** algorithm **3.** data **4.** node

98. Who among the following rulers inscribed his messages to his subjects and officials on stone surfaces?
1. Ashoka **2.** Chandragupta I
3. Bindusara **4.** Chandragupta Maurya

99. In which of the following years did the Supreme Court of India come into existence after Independence?
1. 1955 **2.** 1948 **3.** 1950 **4.** 1952

100. Who among the following has assumed the charge of Director General of the Armed Forces Medical Services on 1st January 2021?
1. JG Roach **2.** MS Batola
3. AK Hooda **4.** Rajat Datta

Answer Key

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

Answers with Explanations

1. Option (1) is correct.
All of the options, except option (1) spell 'suspense' as 'saspence'.

2. Option (3) is correct.
The correct sequence is BDAC. One of the clues is in (D), the use of pronoun 'these' in 'one of these' must have its antecedent. This takes us back to (B)- 'two major aspects relating to the medical profession'. After stating one, the next sentence says, 'the other aspect'. Therefore, BDA is the most convincing and logical link.The phrase 'these issues' refer to 'brain-death, mercy killing and cloning'.

3. Option (4) is correct.
In imperative sentences, the format in passive voice is : Let + object + be + participle. Accordingly, 'Let the New Year be celebrated with amazing offers' is correct. Other options have incorrect usages of verbs.

4. Option (2) is correct.
The word 'achievement' is spelt wrongly in option (2), as 'acheivmant'.

5. Option (1) is correct.
The error is the part containing 'the most feared form'. Here 'form' will change to 'forms' because the noun after 'one of' is always in plural. The correct sentence is: Public speaking is one of the most feared forms of communication. So 'forms', being a plural noun is appropriate.

6. Option (2) is correct.
In indirect speech, said to changes its form respectively. since 'please' is used, 'said to' will change to 'requested'. In

imperative sentences, 'to' is added before opening the inverted comma. So, the correct sentence is: He requested his sister to help him with his homework.

7. **Option (1) is correct.**
'Mandatory' means compulsory. So, options (3) and (4) are ruled out. 'Impervious' means resistant. While 'imperative' connotes 'an essential or urgent thing.'

8. **Option (3) is correct.**
'Abode' means 'a house or home'. So 'dwelling' fits the bill perfectly.

9. **Option (4) is correct.**
'To drag one's feet' is an idiomatic expression that means 'be deliberately slow or reluctant to act.' Example: He is much aware of how crucial his exam is for choosing his career , but still he seems to drag his feet. So, the correct meaning of the idiom is : 'to delay taking a decision'.

10. **Option (3) is correct.**
The sentence 'fermented vegetables can be stored for about a year without going bad' is grammatically correct. Therefore, no substitution is required.

11. **Option (1) is correct.**
The correct sentence is: We admit students with diverse academic backgrounds like life sciences, physical sciences, and business and commerce. The word 'diverse' means showing a great deal of variety, like sciences, physical sciences, and business and commerce.

12. **Option (2) is correct.**
The word 'malicious' means ' having or showing a desire to cause harm to someone'. If someone or their conduct is culpable, they are responsible for something wrong or bad that has happened.Biased implies prejudiced. Therefore, the antonym of malicious is decent.

13. **Option (3) is correct.**
The sentence commits an error in pronoun. It is a fact that ''that' is used for introducing a subordinate clause expressing a statement; whereas 'what' means whatever. The correct sentence is : After a long gap, we went shopping last Sunday and bought what we wanted.

14. **Option (2) is correct.**
The correct sentence is : Please complete the short questionnaire attached and return it to us. It is easy to understand because if the questionnaire is separated/excluded, how will the person return?

15. **Option (4) is correct.**
The correct sentence is: I cannot help you unless you tell me your problem. The sentence states that the speaker cannot help the man if he does not know the problem. Therefore, a negative conjunction is required like 'unless', meaning 'if not'. Since 'if' fails to convey the sense of negativity, it will be replaced by 'unless'.

16. **Option (1) is correct.**
Retreat means to withdraw from a forward position in battle. Restore means give back, return.

17. **Option (1) is correct.**
To make both ends meet is an idiom meaning earn just enough money to live on. Example: He barely makes both ends meet with the meagre salary that he gets from the company.

18. **Option (4) is correct.**
Corollary means forming a proposition that follows from one already proved. Preceding means occurring immediately before in time or place. While contemporary is occurring at the same time.

19. **Option (1) is correct.**
B introduces the subject of the passage- Tony Robins. BD will pair up because both the sentences highlight the early life of Tony Robins- first how he came from very humble beginningsand how his family used to be fed by others when they did not have enough money for food. Similarly CA will be an important sequence, they emphasize on another aspect of Tony Robins' life- how his life has transformed. Now he travels by private jet and owns properties in many parts of the world and how he has Robins reached out to millions of people the world over and helped to improve theirlives. Therefore, the correct sequence is BDCA.

20. **Option (3) is correct.**
Resign means to give up; so opposite is join.

21. **Option (3) is correct.**
Since American astronaut Neil Armstrong is a person, 'human' is the appropriate word for the blank.

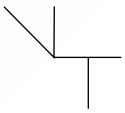
22. **Option (1) is correct.**
The 'footprints' will only be laid on the surface of a lunar body. Other options do not have any rationale to be pertinent to the blank.

23. **Option (4) is correct.**
The reason behind human footprints on the lunar surface not disappearing for millions of years is the absence of rain or wind, and that takes away the possibility of these natural agents eroding the footprints.

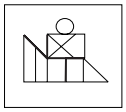
24. **Option (3) is correct.**
Astronauts (a person whose profession is to travel beyond the earth's atmosphere.) have so far brought back hundreds of kilos of rock and dust from the Moon , their main objective is to study them.

25. **Option (4) is correct.**
The Moon appears to get larger and then smaller because when the Moon travels around the Earth, one can notice different amounts of its side lit by the Sun. If the Sun covers or hides the sides, then the notion of the Moon appearing to get larger and then smaller is invalid. 'Heated' is too extreme and contextually implausible.

26. **Option (2) is correct.**
Explanation:



Logic: The above image is embedded in the option figure 2 as highlighted below.



27. **Option (1) is correct.**
Explanation: The pattern followed here is:
Option 1 – 11 : 122
$11 \times 11 + 1 = 122$
Option 2 – 14 : 112
$14 \times 8 = 112$
Option 3 – 21 : 168
$21 \times 8 = 168$
Option 4 – 18 : 144
$18 \times 8 = 144$
Hence, 14 : 112 is the odd one out.

28. Option (4) is correct.

Explanation: MOISTURE $\begin{matrix}P\\|\\Q\end{matrix}$

Logic: In the mirror image, left becomes right and the right becomes left.

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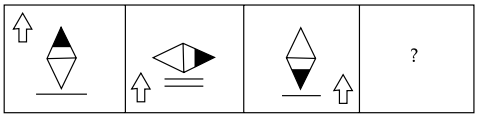
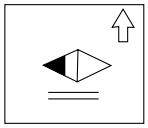
29. Option (1) is correct.

Explanation:

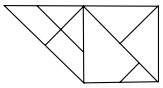


Logic: The small figure at the top left corner of the large box is moving 1 step in an anticlockwise direction and the middle image is rotating one step in clockwise direction. Hence,

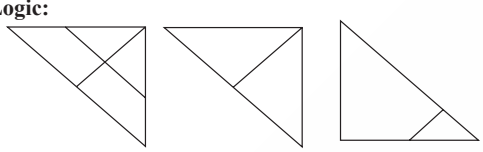


30. Option (4) is correct.

Explanation:



Logic:



6 triangles 3 triangles 2 triangles = Total 11 triangles

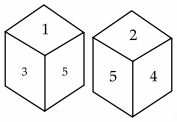
31. Option (4) is correct.

Explanation: Given that: France : Euro : : Myanmar : ?

Logic: Euro is the currency of France, similarly, Kyat is the currency of Myanmar.

32. Option (1) is correct.

Explanation:



Logic: From both the dice, we can see that 1,3,2,4 are adjacent to 5. Hence, 6 will be opposite to 5.

33. Option (2) is correct.

Explanation:

Restaurant	Order food	Cooking	Serve food	Eating

34. Option (2) is correct.

Explanation:

V	I	S	I	O	N
22	9	19	9	15	14
22 + 9 + 19 + 9 + 15 + 14 = 88 × 2 = 176					

Similarly,

S	E	E	I	N	G
19	5	5	9	14	7
19 + 5 + 5 + 9 + 14 + 7 = 59 × 2 = 118					

35. Option (2) is correct.

Explanation: Consensus means agreement among a group of people.

Rapport means a friendly relationship in which people understand each other very well.

Amicability means characterized by or showing goodwill, and being friendly.

Hence, dislike is different from others.

36. Option (2) is correct.

Explanation: Given that: _ _ c f b _ c _ b d _ f

Upon inserting alphabets from option 2 sequentially from left to right, we get

b d c f / b d c f / b d c f

37. Option (4) is correct.

Explanation:

Given series: 33, 34, 30, 39, 23, 48, 12,?

Logic is as follows:

33	34	30	39	23	48	12	61
+1 →	–4 →	+9 →	–16 →	+25 →	–36 →	+49 →	

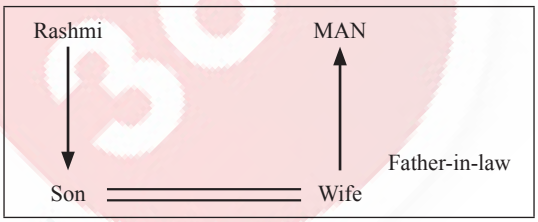
38. Option (2) is correct.

Explanation: Given that: Litre: Millilitre

Millilitre is the smaller unit of litre, similarly, Gram is the smaller unit of kilogram.

39. Option (3) is correct.

Explanation:



Hence, the man is the husband of Rashmi.

40. Option (2) is correct.

Explanation: Given that: THICK is written as FELHW.

Logic: First, arrange the given letters in alphabetical order and then solve.

3	8	9	11	20
C	H	I	K	T
+3 ↓	–3 ↓	+3 ↓	–3 ↓	+3 ↓
F	E	L	H	W
6	5	12	8	23

Similarly,

1	5	9	18	19
A	E	I	R	S
+3 ↓	–3 ↓	+3 ↓	–3 ↓	+3 ↓
D	B	L	O	V
4	2	12	15	22

41. Option (2) is correct.

Explanation: Given that: 25 * 48 * 6 * 12 * 2 = 41

Upon checking option 2, −, ÷, +, ×

After putting sign, we get

Using BODMAS

25 – 48 ÷ 6 + 12 × 2 = 41

25 – 8 + 12 × 2 = 41

25 – 8 + 24 = 41

49 – 8 = 41

41 = 41

42. Option (2) is correct.

Explanation:

Given that: 19: 362: : ? : 442 : : 17 : 290

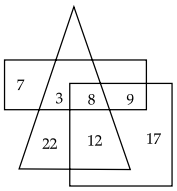
$19 \times 19 + 1 = 362$

$17 \times 17 + 1 = 290$

$21 \times 21 + 1 = 442$

43. Option (4) is correct.

Explanation:



9 doctors are Indians but not a tennis player.

44. Option (2) is correct.

Explanation:

Given that: (12, 18, 225)

Now,

$12 + 18 = 30$

Hence,

$225 = \left(\frac{30}{2}\right)^2 = (15)^2$

Similarly,

(25, 15, 400)

Now,

$25 + 15 = 40$

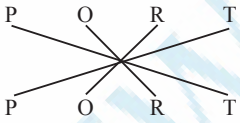
Hence,

$400 = \left(\frac{40}{2}\right)^2 = (20)^2$

45. Option (4) is correct.

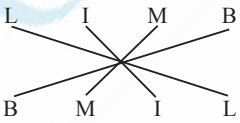
Explanation:

PORT : TROP

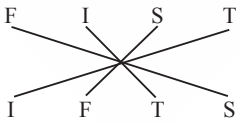


MODE : EDOM

LIMB : BMIL



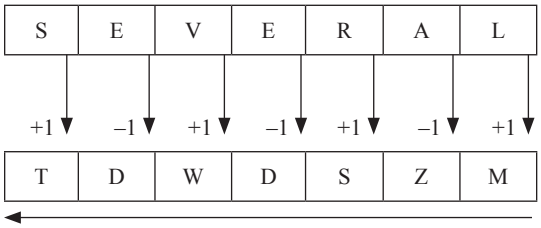
FIST : IFTS



46. Option (2) is correct.

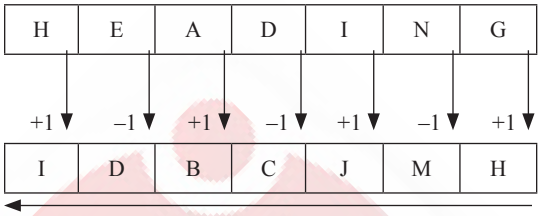
Explanation:

Given that: SEVERAL : MZSDWDT : : HEADING : ?



Code in reverse order i.e., MZSDWDT

Similarly,



Code in reverse order i.e., HMJCBDI

47. Option (2) is correct.

Explanation:

Let the candies following will get:

Virat = $6x$

Ketan = $9x$

Rohan = $8x$

Hence, according to the question

$6x + 9x + 8x = 1012$

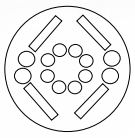
$23x = 1012$

$x = \frac{1012}{23} = 44$

Hence, Rohan will get = $8 \times 44 = 352$.

48. Option (2) is correct.

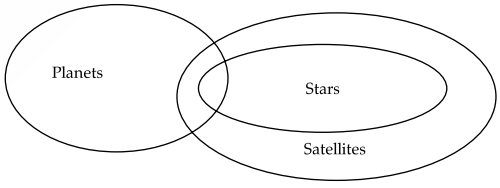
Explanation:



Logic: Logic of similarity will be followed here.

49. Option (3) is correct.

Explanation:



From the figure, some satellites are planets. Hence, only conclusion II follows.

50. Option (4) is correct.

Explanation:

Given that: 14 22 5
18 42 11
22 35 ?

Logic: [2nd number – (1st number ÷ 2)] ÷ 3
= 3rd number

Now,
[35 – (22/2)] ÷ 3
[35 – 11] ÷ 3
24 ÷ 3 = 8

51. Option (4) is correct.

Given amount = ₹ 11236

Ratio of the shares of A and B = 3 : 5

Ratio of the shares of A and C = 4 : 7

So, Ratio of the shares of A, B and C = 3×4 : 5×4 : 3×7 = 12 : 20 : 21

So, the share of B = $\frac{20}{12+20+21}\times 11236 = ₹ 4240$

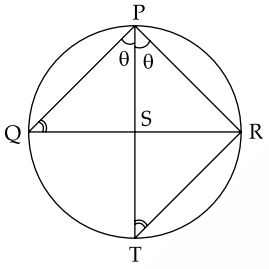
52. Option (2) is correct.

Cost price of article = ₹ 480

For 17% profit, the selling price = $\frac{117}{100}\times 480 = \text{Rs. } 561.6$

So, marked price of article = $561.6 \times \frac{100}{90} = ₹ 624$

53. Option (2) is correct.



According to the equation:

PT = PS + ST = 6 + 4

∴ PT = 10 cm

Now in Δ PQS and Δ PTR

∠P = ∠P

∠PTR = ∠PQR [angle made by same chord]

So, Δ PQS ~ Δ PTR

$\Rightarrow \frac{PS}{PR} = \frac{PQ}{PT}$

$\Rightarrow \frac{6}{5} = \frac{PQ}{10}$

⇒ PQ = 12 cm

So, value of PQ is 12 cm.

54. Option (2) is correct.

Let the number of students = x kg

Total weight of x students = $58x$ kg

8 students' total weight who left the group

= 54 × 8 = 432 kg

Total weight of 3 students who joined the group

= 53.6 + 54 + 57.4 = 165 kg

According to the question,

$\Rightarrow \frac{58x+165-432}{x+3-8} = 58 + .575$

$\Rightarrow \frac{58x-267}{x-5} = 58.575$

$\Rightarrow 58x - 267 = 58.575x - 292.875$

$\Rightarrow 0.575x = 25.875$

$\Rightarrow x = 45$

So, the number of students = 45

55. Option (2) is correct.

Total cost price = ₹ 8000

Let the man buys 100 articles.

So, cost price of each article = 8000/100 = ₹ 80

According to the question,

Selling price of 30% article = $(80\times 30)\times \frac{112}{100} = ₹ 2688$

Selling price of 40% of remaining goods

$= (28 \times 80) \times \frac{125}{100} = ₹ 2800$

Now remaining articles = 100 – (30 + 28) = 42

Total selling price for a profit of 30% on entire transaction

$= 8000 \times \frac{130}{100} = ₹ 10400$

So, selling price of 42 articles

= 10400 – (2688 + 2800) = ₹ 4912

And cost price of these 42 articles = 42 × 80 = ₹ 3360

So, required profit percentage

$= \frac{4912-3360}{3360}\times 100 = 46.2\%$

56. Option (4) is correct.

Given:

$x + \frac{1}{x} = \sqrt{7}$

value of $(x^2 + 1) \div [x^4 + \frac{1}{x^2}]$

$= (x^2 + 1)/x \div [x^4 + \frac{1}{x^2}]/x$ [dividing by x]

$= (x + \frac{1}{x}) \div [x^3 + \frac{1}{x^3}]$ …(1)

If $x + \frac{1}{x} = \sqrt{7}$

Then, $x^3 + \frac{1}{x^3} = [(\sqrt{7})^3 - 3\sqrt{7}]$

putting the values in equation (1),

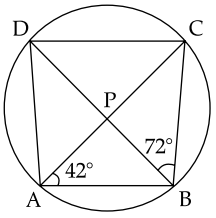
$= \sqrt{7} \div [(\sqrt{7})^3 - 3\sqrt{7}]$

$= \sqrt{7} \div [7\sqrt{7} - 3\sqrt{7}] = \frac{1}{4}$

57. Option (1) is correct.

Given: ∠DBC = 72°

∠BAC = 42°



From chord CD,

∠CBD = ∠CAD [Angle in same segment]

$\therefore$ $\angle CAD = 72°$

$\angle BAD = \angle BAC + \angle CAD$

$= 42° + 72° = 114°$

Now $\angle BCD + \angle BAD = 180°$

$\therefore \angle BCD = 180° - 114° = 66°$

$\therefore$ Required angle of $\angle BCD = 66°$

58. Option (3) is correct.

Total revenue of the company in 2015 and 2018

$= 350 + 280 = 630$ cr

Total expenditure of the company in 2017 and 2018

$= 360 + 180 = 540$cr

Required ratio = 630 : 540 = 7 : 6

59. Option (4) is correct.

In 2019, total number of units sold of product C = 2100

According to the pi chart,

120° angle = 2100 units

So, 360° angle = $2100 \times \frac{360}{120} = 6300$ units

So, total number of units sold by the company in 2019 = 6300 units

Now, number of units sold in 2020

$= 6300 \times \frac{128}{100} = 8064$ units

60. Option (1) is correct.

Let the price of article at the end of 1st year = ₹ x

Then the price of article at the end of 2nd year = ₹ $1.05x$

And the price of article at the end of 3rd year = ₹ $1.1025x$

According to the question,

$1.1025x - 1.05x = 52.50$

$\Rightarrow 0.0525x = 52.50$

$\Rightarrow x = 1000$

So, the price of article at the end of 1st year = ₹ 1000

61. Option (1) is correct.

Given expression: $6 \times 3 \div 8$ of $6 - 6 \div 4 \times (5 - 7) + 5 - 3 \times 4 \div 6$ of 3

$= 6 \times 3 \div 8$ of $6 - 6 \div 4 \times (-2) + 5 - 3 \times 4 \div 6$ of 3

$= 6 \times 3 \div 48 - 6 \div 4 \times (-2) + 5 - 3 \times 4 \div 18$

$= \frac{6 \times 3}{48} + \frac{6 \times 2}{4} + 5 - \frac{3 \times 4}{18}$

$= \frac{3}{8} + 3 + 5 - \frac{2}{3} = 8 - \frac{7}{24} = 7\frac{17}{24}$

62. Option (1) is correct.

Given:

A sum of ₹ x becomes ₹ 9246 in 4 years and ₹ 11298.75 in 7.5 years at y% per annum simple rate.

SI earned in these 3.5 years = 11298.75 – 9246 = ₹ 2052.75

So, SI earned in 1 year = $\frac{2025.75}{3.5} = \text{Rs. } 586.5$

SI earned in 4 years = $586.5 \times 4 = \text{Rs. } 2346$

So, principal amount = 9246 – 2346 = ₹ 6900

And rate of interest = $\frac{586.5}{6900} \times 100 = 8.5\%$

63. Option (4) is correct.

Total number of computers of type A sold in jan and may = 250 + 350 = 600

Total number of computers of type B sold from march to may = 350 + 325 + 425 = 1100

Required percentage = $\frac{[1100 - 600]}{1100} \times 100 = 45.5\%$

64. Option (1) is correct.

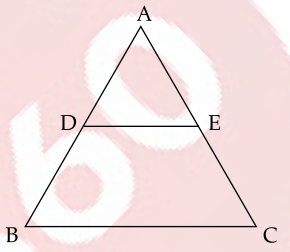
Given expression: $\frac{(1+\cos\theta)(\text{cosec}\,\theta - \cot\theta)\sec\theta}{\sin\theta(1-\sin\theta)(\sec\theta + \tan\theta)}$

$= \frac{(1+\cos\theta)\left(\frac{1}{\sin\theta} - \frac{\cos\theta}{\sin\theta}\right)\frac{1}{\cos\theta}}{\sin\theta(1-\sin\theta)\left(\frac{1}{\cos\theta} + \frac{\sin\theta}{\cos\theta}\right)}$

$= \frac{(1+\cos\theta)\left(\frac{1-\cos\theta}{\sin\theta}\right)\frac{1}{\cos\theta}}{\sin\theta(1-\sin\theta)\left(\frac{1+\sin\theta}{\cos\theta}\right)} = \frac{(1-\cos^2\theta)}{\sin^2\theta(1-\sin^2\theta)}$

$= \frac{(\sin^2\theta)}{\sin^2\theta(\cos^2\theta)} = \sec^2\theta$

65. Option (4) is correct.



Given: AD = 2 cm, BD = 5.2 cm, AC = 9 cm

$\therefore$ AB = AD + BD = 2 + 5.2 = 7.2 cm

AE = x cm

As, DE || BC in Δ ABC. By using triangular property

$\frac{AD}{AB} = \frac{AE}{AC}$

$\Rightarrow \frac{2}{7.2} = \frac{x}{9}$

$\Rightarrow x = 2.5$ cm

66. Option (4) is correct.

Given: $\sin\theta(2\sin\theta + 3) = 2$

$\Rightarrow 2\sin^2\theta + 3\sin\theta - 2 = 0$

$\Rightarrow (\sin\theta + 2)(2\sin\theta - 1) = 0$

So, $\sin\theta = \frac{1}{2}$ [as $0° < \theta < 90°$]

So, $\cos\theta = \sqrt{\left(1 - \frac{1}{4}\right)} = \frac{\sqrt{3}}{2}$

Then $\sec\theta = \frac{2}{\sqrt{3}}$ And $\cot\theta = \frac{\cos\theta}{\sin\theta} = \frac{\frac{\sqrt{3}}{2}}{\frac{1}{2}} = \sqrt{3}$

So, value of $\sec^2\theta + \cot^2\theta - \cos^2\theta = \frac{4}{3} + 3 - \frac{3}{4} = 43/12$

67. Option (3) is correct.

Given: Sides of triangular field are 65 m, 72 m and 97 m.

We have semi perimeter of triangles = $\frac{65 + 72 + 97}{2} = 117$ m

Area of triangle

$$= \sqrt{(s(s-a)(s-b)(s-c))}$$

$$= \sqrt{(117(117-65)(117-72)(117-97))}$$

$$= \sqrt{(117(52)(45)(20))} = 2340 \text{ m}^2$$

Let length and breadth of rectangular park are $5x$ and $13x$.

According to the question,

$\Rightarrow$ $5x \times 13x = 2340$

$\Rightarrow$ $x^2 = 36$

$\Rightarrow$ $x = 6$

So, perimeter of rectangular park

$= 2(5x + 13x) = 36 \times 6 = 216$ m

68. Option (1) is correct.

A can complete the work in = x days

B can complete the work in = 30 days

C can complete the work in = 45 days

Let total work = LCM (x, 30, 45) = $90x$ unit

So, A's per day work = 90 unit/day

B's per day work = $3x$ unit/day

C's per day work = $2x$ unit/day

Work done by B and C in 6 days = $6(3x + 2x) = 30x$

So, remaining work = $90x - 30x = 60x$

According to the question, $60x = 12 \times 90$

$x = 18$

69. Option (1) is correct.

Given:

$$x + y + z = 3 \quad \ldots(1)$$

$$x^2 + y^2 + z^2 = 45$$

$$x^3 + y^3 + z^3 = 69$$

squaring both sides of equation (1)

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

$\Rightarrow$ $9 = (45 + 2(xy + yz + zx))$

$\Rightarrow$ $xy + yz + zx = -18$

we have,

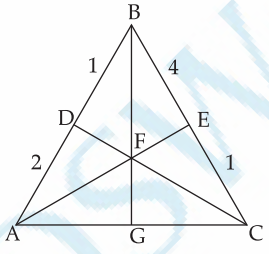
$x^3 + y^3 + z^3 - 3xyz = (x + y + z)(x^2 + y^2 + z^2 - xy - yz - zx)$

$\Rightarrow$ $69 - 3xyz = 3(45 + 18)$

$\Rightarrow$ $3xyz = 69 - 189 = -120$

$\Rightarrow$ $xyz = -40$

70. Option (3) is correct.



By triangle property

$$\frac{BD}{DA} \times \frac{AG}{GC} \times \frac{CE}{BE} = 1$$

$\Rightarrow$ $\frac{1}{2} \times \frac{AG}{GC} \times \frac{1}{4} = 1$

$\Rightarrow$ $\frac{AG}{GC} = 8 : 1$

Now again in Δ ABC,

$$\frac{CF}{FD} = \frac{GC}{AG} + \frac{CE}{BE}$$

$\Rightarrow$ $\frac{CF}{FD} = \frac{1}{8} + \frac{1}{4} = \frac{3}{8}$

$\therefore$ $\frac{FD}{FC} = \frac{8}{3}$

71. Option (1) is correct.

Given number = 537xy5

Divisibility rule of 125: last 3 digit must be divisible by 125

So, the possible values of xy = 12, 37, 62, 87

Hence, only four such six digit numbers are there.

72. Option (1) is correct.

Given equation: $4\sqrt{3}x^2 + 5x - 2\sqrt{3} = (Ax + 2)(Bx + C)$

$\Rightarrow 4\sqrt{3}x^2 + 8x - 3x - 2\sqrt{3} = (Ax + 2)(Bx + C)$

$\Rightarrow 4x(\sqrt{3}x + 2) - \sqrt{3}(\sqrt{3}x + 2) = (Ax + 2)(Bx + C)$

$\Rightarrow (\sqrt{3}x + 2)(4x - \sqrt{3}) = (Ax + 2)(Bx + C)$

By comparing both sides,

$A = \sqrt{3}$, $B = 4$, $C = -\sqrt{3}$

So, $A + B + C = \sqrt{3} + 4 - \sqrt{3} = 4$

73. Option (1) is correct.

Percentage of girls in class A = $\frac{31}{27 + 31} \times 100 = 53.4\%$

Percentage of girls in class B = $\frac{30}{35 + 30} \times 100 = 46.15\%$

Percentage of girls in class C = $\frac{32}{30 + 32} \times 100 = 51.61\%$

Percentage of girls in class D = $\frac{34}{33 + 34} \times 100 = 50.74\%$

So, class B has the least percentage of girls.

74. Option (3) is correct.

Distance between the cars X and Y = 216km

The ratio of the speeds of X and Y = 5 : 7

Speed of car X = 60 km/h

So, speed of car Y = $7 \times \frac{60}{5} = 84$ km/h

Both trains moving towards each other. So, their relative speed = 84 + 60 = 144 km/h

We have, time = $\frac{\text{distance}}{\text{speed}}$

$\Rightarrow$ time = $\frac{216}{144} = \frac{3}{2}$ h = $\frac{3}{2} \times 60$ m = 90 m

75. Option (2) is correct.

Given: $\sin\theta = \frac{11}{15}$

So, $\cos\theta = \sqrt{(1 - \sin^2\theta)} = \sqrt{1 - \frac{121}{225}} = \frac{2\sqrt{26}}{15}$

$\sec\theta = \frac{1}{\cos\theta} = \frac{15}{2\sqrt{26}}$

and $\tan\theta = \frac{\sin\theta}{\cos\theta} = \frac{\frac{11}{15}}{\frac{2\sqrt{26}}{15}} = \frac{11}{2\sqrt{26}}$

so, $\sec\theta - \tan\theta = \frac{15}{2\sqrt{26}} - \frac{11}{2\sqrt{26}}$

$= \frac{4}{2\sqrt{26}} = \frac{2 \times \sqrt{26}}{\sqrt{26} \times \sqrt{26}} = \frac{\sqrt{26}}{13}$

76. Option (3) is correct.

India's highest Meteorological Centre is situated in Ladakh and is located at a height of 3500 meters above sea level. It is the second metrological centre after Itanagar in Arunachal Pradesh. This centre would send out weather predictions and early warnings for Leh and Kargil. The weather forecasts will be done for 3 days, 12 days, and 1 month period.

India Meteorological Department (IMD) is an agency of the Ministry of Earth Sciences of the Government of India. It is headquartered in New Delhi and its current Director General is Dr. Mrutyunjay Mohapatra.

77. Option (3) is correct.

Robin Uthappa is the brand ambassador of Entri, a local learning app for jobs. Entry is a local learning mobile application for jobs. Mohammad Hisamuddin is the founder and CEO (Chief Executive Officer) of Entri app.

78. Option (1) is correct.

The polity of a country is designed according to its constitution and any change to the polity is possible only when an amendment is made. Article 368 of Part XX of the Indian constitution explains about the two types of amendments that can be done to the Indian Constitution. The first is done by a special majority of Parliament and the second is by the special majority of parliament along with the ratification of half of the states legislatures by a simple majority.

However, certain amendments that are not deemed under Article 368 of the Indian constitution can be done by simple majority of the Parliament. Some of these include Formation of new states, administration of scheduled areas, scheduled tribes, and tribal areas, use of official language, citizenship, and elections to Parliament and state legislatures.

79. Option (4) is correct.

Madhya Pradesh is the only state in India that produces diamond. Panna diamond mines located in Madhya Pradesh produce 90% of the total diamond resource for our country. It is the only mechanised diamond mine in the country.Panna is also known as the City of Diamonds.

National Mineral Development Corporation Ltd. (NMDC) manages the Panna diamond mine which has a production capacity of 84,000 carats per year. NMDC is a Central Public Sector Enterprise (CPSE) under the ownership of the Ministry of Steel, Government of India. It is headquartered in Hyderabad, Telangana.

80. Option (3) is correct.

Khushi Chindaliyais the Regional Ambassador for India for UNEP (United Nations Environment Programme) as of December 2020. As the regional ambassador she will raise awareness about climate change and the importance of environmental conservation and the need to safeguard environmental treasures. She belongs from Surat, Gujarat.

UNEP was formed in 1972 and is headquartered in Nairobi, Kenya. UNEP is responsible for the coordinating the environment related issues, developing International environmental agreements, and help respective countries to achieve their national environment targets. UNEP is also known as UN Environment.

81. Option (2) is correct.

The Jal Jeewan Mission was launched by the Prime Minister Narendra Modi with the goal of 'Har Ghar Jal' in 2019. It aims to provide tap water connection to every rural home by 2024. This mission was launched in the year 2019 and envisages supply of 55 litres of water per day per person through Functional Household Tap Connections (FHTC). This mission is covered under the ambit of Jal Shakti ministry. The focus of this mission is to meet the integrated demand and supply-side management of water at the local level. Recently, a mobile application for the Jal Jeevan Mission was also launched. This mobile application will provide details of water infrastructure, an Aadhaar-verified data set of beneficiaries, and water quality and contamination-related information for each village.

82. Option (4) is correct.

New Development Bank (NDB) is a multilateral development bank established in 2014. There are 5 founding members of this bank. It was formally known as BRICS development bank as it was established by the five BRICS states namely- Brazil, Russia, India, China, and South Africa. However, in 2021 new member states were added- Bangladesh, the United Arab Emirates and Uruguay, and Egypt. The current President is Marcos Prado Troyjo and it is headquartered in Shanghai, China. In this bank, every member will have one vote and that no member would have any veto powers. It was established with the purpose of mobilising resources for infrastructure and sustainable development projects in Emerging Markets and Developing Countries (EMDCs).

83. Option (4) is correct.

The Supreme Court was set up in Calcutta by the East India Company by 1773. It was done by the by the promulgation of Regulating Act of 1773 by the King of England. The Supreme Court was set up as a Court of Record. It had full power & authority to hear and determine all complaints for any crimes and also to entertain, hear and determine any suits or actions against any of King's subjects in Bengal, Bihar and Orissa.

The Supreme Courts at Madras and Bombay was established by King George – III on 26 December 1800 and on 8th December 1823 respectively. The India High Courts Act 1861 was enacted to create High Courts for various provinces and abolished Supreme Courts at Calcutta, Madras and Bombay and also the Sadar Adalats in Presidency towns.

Post-Independence, the Supreme Court of India came into existence and its first sitting was held on 28th January 1950. It was established under the Article 124 of the Indian Constitution.

84. Option (4) is correct.

World Bank and Government of India signed a $500 million project to build safe and green national highway corridors in Rajasthan, Himachal Pradesh, Andhra Pradesh and Uttar Pradesh. The first stretch of green highway is being built in Rajasthan under the Green National Highways Corridor Project (GNHCP). The GNHCP is a stretch of 781 km and will pass through four states- Rajasthan, Himachal Pradesh, Andhra Pradesh and Uttar Pradesh. In this green highway, safe and green technology designs such as industrial byproducts, local and marginal materials, and other bioengineering solutions will be used for construction.

The total cost of the project was estimated to be around ₹ 7,662 crores, of which the World Bank is contributing ₹ 3,500 crore.

85. Option (3) is correct.

Dr. Harsh Vardhan has been nominated as a member on the GAVI Board by the Global Alliance for Vaccines and Immunisation in December 2020. He was the Union Minister of Health and Family Welfare. He represented the South East Area Regional Office (SEARO)/Western Pacific Regional Office (WPRO) constituency on the GAVI Board.

GAVI is a vaccine alliance that is a public private global health partnership which aims to provide access of vaccines

to the poor countries. It is situated in Geneva, Switzerland.

The current Union Health Minister is Dr. Mansukh Mandaviya.

IMF is International Monetary Fund and is headquartered in Washington DC, US. It is an international financial institution as well as an agency of the United Nations.

ADB stands for Asian Development Bank. It is headquartered in Mandaluyong, Philippines and currently there are 68 member countries of this bank.

AIIB stands for Asian Infrastructure Investment Bank. It is headquartered in Beijing, China and is a multilateral development bank that intends to improve social and economic outcomes in Asia.

86. Option (3) is correct.

The International Gita Mahotsav was held in November-December 2020 in Kurukshetra. This event is celebrated celebrated on the Shukla Ekadashi, the 11th day of the waxing moon of the Margashirsha (Agrahayan) month of the Hindu calendar.President Draupadi Murmu also attended the event.

Bhagwad Gita is one of the most revered holy scriptures of Hinduism. It is a part of the epic Mahabharata, and is attributed to be written by Rishi Vyasa. Bhagwad Gita talks about the conversation between Pandava warrior Arjuna and Lord Krishna.

87. Option (1) is correct.

Losoong festival is celebrated in Sikkim. It is an annual festival that marks the beginning of the Sikkimese New Year is celebrated on first day of the10th month of Tibetan Lunar Calendar. During this festival farmers rejoice and celebrate their harvest. It is called Namsoong by the Lepchas. The Black hat dance is performed during this festival which signifies the victory of good over evil. It is celebrated with traditional gaiety and colour both by the Lepchas and Bhutias. During the celebration, noodle Guthuk, and the local liquor Chhaang, brewed from rice or barley is consumed.

88. Option (4) is correct.

BWF (Badminton World Federation) has imposed a 5-year ban on shuttler Nikita Khakimov on the charges of betting, wagering and irregular match results. He represents Russia.

BWF is an international governing body for badminton and was founded in 1934 as the International Badminton Federation (IBF) with nine member nations. It is headquartered in Kuala Lumpur, Malaysia. It is recognised by the International Olympic Committee (IOC).

89. Option (3) is correct.

Infrared optical pyrometer can be used for measuring and monitoring temperatures and hot spots of jet engine rotor blades. It is no-contact device used for measuring temperature and evaluates the electromagnetic radiations that are radiated from the object. Ammeter is an instrument used to measure the alternating or direct current in the circuit. It is generally a low resistance device. Hygrometer is an instrument used to measure water vapour or humidity in air, soil, or restricted places.

Machmeter is a flight instrument used in aircraft's pilot static system. This instrument provides a dimensionless quantity called as Mach number, which is the ratio of true air speed to the speed of sound.

90. Option (1) is correct.

ASCII stands for American Standard Code for Information Interchange. It is a standard code for representing characters. The code has 128 characters that includes letters, numbers, punctuation and symbols where each character is assigned a unique binary string. This is the most common coding format for text data in computers and on the internet.

91. Option (1) is correct.

Linganamakki Dam is built across Sharavathi River. The dam is 2.74 kilometres in length and has a storage capacity of 4.29 cubic kms or 151.52 tmc ft of water. It is located in Sagara taluk,Kargal village, Karnataka.

Yamuna River is the longest tributary of Ganges River in India. It originates fromthe Yamunotri Glacier in Uttarakhand. It flows through states of Uttarakhand, Himachal Pradesh, Delhi, Uttar Pradesh, and Haryana. It merges with River Ganges at the Triveni Sangam point in Allahabad. The Sangam point is the site of Kumbh Mela held every 12 years.

Tunga Bhadra river originates in Karnataka and flows majorly in the state. It flows along the border between Telangana and Andhra Pradesh before joining Krishna River.

Krishna River is the third longest River in India after Ganges and Godavari. Its origin is near Mahabaleshwar, Western Ghats. The River is an important source of irrigation in Telangana, Maharashtra, Karnataka, and Andhra Pradesh. It has 13 major tributaries.

92. Option (1) is correct.

Trachoma is a preventable disease that results from poor hygiene and sanitation and it affects eyes. It is caused by bacterium Chlamydia trachomatis and the infection spreads through personal contact and by flies that have been in contact with discharge from the eyes or nose of an infected person. Personal contact is touch via hands, clothes, bedding or hard surfaces. The disease may lead to the eyelashes being drawn inside the eye in a way that they rub the eye. This causes pain and may permanently damage the cornea.

93. Option (1) is correct.

Kolhapur city is located on the banks of Panchganga River. The city is surrounded by Sahyadri mountain ranges and is known for its historical forts, temples and royal places of erstwhile royals. The city is also known as 'Dakshin Kashi' or 'Kashi of South'. The Panchganga River is a tributary of River Krishna. Sarayu River or Sarju originates in Nanda Kot mountain. It is a River in Uttarakhand and finds its mention in Ramayana several times. It is the largest tributary of Shrada river.

Chambal river is a tributary of river Yamuna. It flows through Rajasthan, Madhya Pradesh, and Uttar Pradesh. It originates in Bhadakla Falls in rewa enterprise and mouths into Yamuna river. Musi river is a tributary of River Krishna in the Deccan Plateau. It originates in Ananthagiri Hills, Vikarabad in Telangana.

94. Option (3) is correct.

Virat Kohli has won the 'Sir Garfield Sobers Award' for the ICC Male Cricketer of the Decade and ICC Men's ODI Cricketer of the Decade Award in December 2020. He was also named ICC Cricketer of the Year in both 2017 and 2018.

The ICC Awards of The Decade recognises the best players across Cricket over the past 10 years. It was for the first time that the fans were invited to vote by selecting the winners across categories including the Sir Garfield Sobers and Rachael Heyhoe Flint Awards. Both these categories celebrate the best overall player from the men's and women's game over the past decade.

95. Option (4) is correct.

Andhra Pradesh has launched the flagship programme 'Pedalandariki Illu' (housing for the poor) scheme in December 2020. Under this scheme, the houses will be distributed to the EWS section for free. This scheme is a part of the existing YSR Housing Scheme. Under this scheme, the government will take up the construction of 28.30 lakh houses

at a total cost of ₹50,940 crore. In the first phase 15.60 lakh houses will be taken up at a cost of ₹28,000 crore and the work on the remaining 12.70 lakh house will commence after that.

96. Option (1) is correct.

Haryana hosted the 4th edition of Khelo India Youth Games at the Tau Devi Lal Stadium in Panchkula, Haryana. The event was organised by the Sports Authority of India and Haryana State government. SBI was the title sponsor of KIYG 2021.

The headquarters of Khelo India Youth Games is in New Delhi. These are annual national games that are held in mainly two categories- under-17 years school students and under-21 college students. The best 1000 kids are provided with a scholarship of 5 lakhs annually for 8 years to prepare them for the international sporting events. The aim of the KIYG is to hunt and recognise the grassroots talent. The first inaugural event was held in 2018.

97. Option (2) is correct.

An algorithm is a finite set of instructions which, when followed, accomplish a particular task. It can be considered as a step by step procedure to solve any problem.

An array is a collection of variables that have the same name and data type but can be referenced individually by using an index along with the name. Data is a basically a collection of factual information that is stored in a manner that it can be used for reasoning, discussion, or calculation. Node is a physical electronic device within the network that has the ability to send, store, and receive information.

98. Option (1) is correct.

Ashoka inscribed his messages tohis subjects and officials on stone surfaces. His inscriptions were in Prakrit and written in Brahmi script. They are the first tangible evidence of Buddhism. The Ashokan inscriptions or rock edicts are the first tangible evidence of Buddhism. There are 33 inscriptions in all which can be classified as

I. Major rock edicts
II. Minor rock edicts
III. Separate rock edicts
IV. Major Pillar edicts
V. Minor pillar edicts

Ashoka was the third emperor of Mauryan Empire during the period of 268 to 232 BCE. He was the son of Bindusara, He is known for renouncing the war and promoting Buddhism.

99. Option (3) is correct.

Supreme Court of India comes into existence after Independence in 1950. The court came into being on 28th of January, 1950, two days after India became a Sovereign Democratic Republic.

It is the highest judicial authority and court of India. It is headed by the Chief Justice and comprises not more than 33 other Judges appointed by the President of India. The Seat of Supreme Court is in New Delhi. Harilal Jekisundas Kania was the first Chief Justice of India.

The emblem of the Supreme Court represents the Lion capital of Ashoka at Sarnath, with a topmost wheel featuring 32 spokes.

The Indian constitution provides for a provision of Supreme Court under Part V (The Union) and Chapter 6 (The Union Judiciary).

Articles 124 to 147 in Part V of the Constitution deal with the organisation, independence, jurisdiction, powers and procedures of the Supreme Court.

100. Option (4) is correct.

Rajat Datta has assumed the charge of Director General of the Armed Forces Medical Services on 1st January 2021. He is the senior most doctor in the Indian army. He will also be the honorary surgeon to the President of India. The AFMS consists of Army Medical Corps (AMC) including AMC (NT), Army Dental Corps (AD Corps) and Military Nursing Service (MNS).

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