STAFF SELECTION COMMISSION

COMBINED HIGHER SECONDARY LEVEL (TIER-I)

SOLVED PAPER

(27th May 2022: Shift-3)

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 most appropriate option to fill in the blank.
A student _____ in ragging can be expelled from the institution
1. avoding **2.** curbing
3. contrasting **4.** indulging

2. Select the option that expresses the given sentence in active voice.
Four grams of sodium chloride was added to the mixture by the research team.
1. The research team added the mixture to four grams of sodium chloride.
2. Four grams of sodium chloride added the mixture to the research team.
3. The research team added four grams of sodium chloride to the mixture.
4. The mixture added four grams of sodium chloride to the research team.

3. From among the words given in bold, select the INCORRECTLY spelt word in the following sentence.
The Imitations of Horace raise issues of political nautrality, partisanship and moral satire, and as such are key texts of the Augustan age.
1. nautrality **2.** satire
3. Augustan **4.** partisanship

4. Identify the option that arranges the given parts in the correct order to form a meaningful and coherent paragraph.
A. However, through sheer grit and determination
B. Nick was able to get admission to a high school
C. Nick Vujicic was prevented from
D. Attending mainstream middle schools.
1. d,c,a,b **2.** a,b,c,d **3.** b,c,a,d **4.** c,d,a,b

5. The following sentence has been split into four segments. Identify the segment that contains a grammatical error.
Ronaldo is / a famous / player of / the football.
1. a famous **2.** Ronaldo is
3. the football **4.** player of

6. Select the most appropriate ANTONYM of the given word.
Sceptic
1. Doubter **2.** Believer
3. Disbeliever **4.** Receiver

7. Select the most appropriate ANTONYM of the underlined word in the following sentence.
The uneducated man was <u>flummoxed</u> by the legal document.
1. happy **2.** annoyed
3. comfortable **4.** scared

8. Select the option that can be used as a one-word substitute for the given group of words.
One who gives money or help to another person or cause
1. Anarchist **2.** Agnostic
3. Benefactor **4.** Amateur

9. Select the most appropriate option to fill in the blank.
He was a _____ stranger to me.
1. settled **2.** full **3.** complete **4.** entire

10. Select the most appropriate meaning of the given idiom.
Red letter day
1. Memorable day **2.** Rose day
3. Holiday **4.** Birthday

11. Select the most appropriate ANTONYM of the highlighted word.
Two original manuscripts of this text are still extant.
1. negotiate **2.** extinct **3.** drool **4.** persist

12. The following sentence has been split into four segments. Identify the segment that contains a grammatical error.
Elina is / travelling / since / yesterday.
1. since **2.** yesterday **3.** Elina is **4.** travelling

13. Select the INCORRECTLY spelt word.
1. Discipline **2.** Conscious **3.** Previlege **4.** Believe

14. Select the option that can be used as a one-word substitute for the given group of words.
The love of man or mankind
1. Philology **2.** Philanthropy
3. Phylactery **4.** Philosophy

15. Select the sentence which has no spelling error.
1. Beethoven is known to be a prodigious musician of all times.
2. His business gives him cash in prodigious amounts.
3. Ashley caught the spectators by his prodigiuos tricks.
4. Dusty is a prodegious novelist of the present era.

16. Select the most appropriate meaning of the given idiom.
Read between the lines
1. Be afraid of doing something again
2. Harm someone who trusts you
3. Speak the truth even if it is unpleasant
4. Understand something that is not said outright

17. Select the option that will improve the underlined part of the given sentence.
Reema and Aasha <u>were frolicking in the park</u>
1. were enjoying in the garden
2. were participating in the garden
3. were playing in the garden
4. were performing in the garden

18. Select the most appropriate meaning of the given idiom.
A kick in the teeth
1. Great disappointment **2.** Extraction of a tooth
3. Toothache **4.** Alcohol consumption

19. Select the most appropriate synonym of the given word.
Pace
1. Target **2.** Corner **3.** Angle **4.** Speed

20. Select the option that expresses the given sentence in passive voice.
My father teaches students.
1. My father is teaching students.
2. Students are being taught by my father
3. Students are taught by my father.
4. A student is taught by my father.

Comprehension:
In the following passage, some words have been deleted. Read the passage carefully and select the most appropriate option to fill in each blank. In April 1945, during the Conference to set up the United Nations (UN) held in San Francisco, representatives of Brazil and China proposed that an international health organization be (1) _____ and a conference to frame its consti-tution convened. On 15 February 1946, the Economic and Social Council of the UN instructed the Secretary-General to (2) _____ such a conference. A Technical Preparatory Committee met in Paris from 18 March to 5 April 1946 and (3) _____ proposals for the Constitution which were presented to the International Health Conference in New York City (4) _____ 19 June and 22 July 1946. On the basis of these proposals, the Conference drafted and (5) _____ the Constitution of the World Health Organization, signed 22 July 1946 by representatives of 51 Members of the UN and of 10 other nations.

21. Select the most appropriate option to fill blank 1.
1. establishes **2.** established
3. establish **4.** establishing

22. Select the most appropriate option to fill blank 2.
1. sit **2.** collect **3.** convene **4.** disperse

23. Select the most appropriate option to fill blank 3.
1. drew off **2.** drew down **3.** drew up **4.** drew away

24. Select the most appropriate option to fill blank 4.
1. between **2.** from **3.** among **4.** while

25. Select the most appropriate option to fill blank 5.
1. adapted **2.** adopted **3.** maintained **4.** revoked

General Intelligence

26. Study the given pattern carefully and select the number that can replace the question mark (?) in it.
First row : 24, 9, 108
Second row : 38, 5, 95
Third row : 12, 17, ?
(NOTE: Operations should be performed on the whole numbers, without breaking down the number into its constituent digits. For example, 13 – Operations on 13 such as adding/deleting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)
1. 112 **2.** 96 **3.** 90 **4.** 102

27. Select the correct combination of mathematical signs to replace the * signs and to balance the given equation.
14*11*22*56*8
1. +, –, =, × **2.** –, ×, =, + **3.** +, +, =, – **4.** ×, ÷, =, ÷

28. Select the option that is related to the third term in the same way as the second term is related to the first term and the sixth term is related to the fifth term.
24 : 137 :: 14 : ? :: 18 : 101
1. 87 **2.** 65 **3.** 82 **4.** 77

29. Which two numbers, from amongst the given options, should be interchanged to make the given equation correct?
82 – 5 + (24÷6) + 17 + (5×8) = 127
1. 82 and 24 **2.** 6 and 8 **3.** 5 and 17 **4.** 5 and 8

30. Select the option that is related to the fifth term in the same way as the second term is related to the first term and the fourth term is related to the third term.
NEUTRAL : NAUTREL :: PACIFIC : PICIFAC :: LOYALTY : ?
1. LTYALOY **2.** LOAYLTY
3. LTAYLOY **4.** LOYLATY

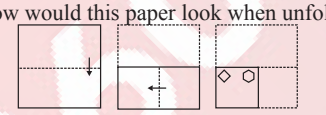
31. The second number in the given number pairs is obtained by performing certain mathematical operation(s) on the first number. The same operation(s) are followed in all the number pairs, except one. Find that odd number pair.
1. 537 : 15 **2.** 917 : 17 **3.** 459 : 19 **4.** 673 : 16

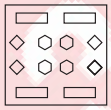
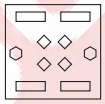
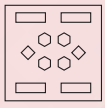
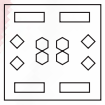
32. In a certain code language, 'MUSIC' is written as 'LNTVRTHJBD' and 'VIOLIN' is written as 'UWHJNPKMHJMO'. How will 'CHORD' be written in that language?
1. BDGPIPQSCE **2.** BDGINPQSCE
3. DBGINPQSCE **4.** BDGINPQECS

33. Which letter-cluster will replace the question mark (?) to complete the given series?
RRQZ, MADQ, ?, CSDY, XBQP
1. HJQH **2.** HLQJ **3.** GYJZ **4.** GJPQ

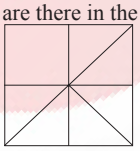
34. If 30th January 2010 was Saturday, then what was the day of the week on 01 March 2011?
1. Monday **2.** Tuesday
3. Sunday **4.** Wednesday

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



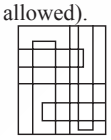
1.  **2.**  **3.**  **4.** 

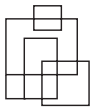
36. How many triangles are there in the given figure?



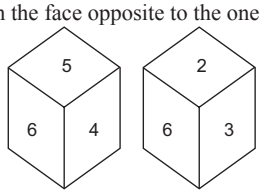
1. 8 **2.** 6 **3.** 10 **4.** 12

37. Select the option that is embedded in the given figure as its part (rotation is NOT allowed).



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

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



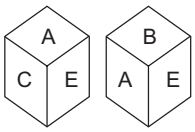
1. 1 **2.** 3 **3.** 4 **4.** 2

39. Select the correct combination of mathematical signs to replace the * signs and to balance the given equation.
41*3*53*48*3*18*5*36
1. –, ×, –, =, + , ×, – **2.** –, =, +, ×, –, ÷, +
3. ×, –, =, ÷, +, ×, – **4.** +, –, ×, +, =, ×, ÷

40. If 22nd January 2011 was a Saturday, then what was the day of the week on 23rd January 2015?
1. Saturday **2.** Friday **3.** Monday **4.** Sunday

41. Which of the following numbers will replace the question mark (?) in the given number series?
1244, 624, 314, ?, 81.5, 42.75
1. 156 **2.** 159 **3.** 155.5 **4.** 157

42. Two different positions of the same dices are shown, the six faces of which are marked as A, B, C, D, E, F. Select the letter that will be on the face opposite to the one showing 'B'.

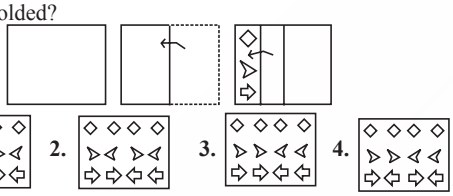


1. A **2.** D **3.** C **4.** E

43. Select the option that is related to the fifth word in the same way as the second word is related to the first word and the fourth word is related to the third word. (The words must be considered as meaningful English words and must NOT be related to each other based on the number of letters/number of consonants/vowels in the word)
Centre : Central :: Character : Characteristic : : Ambition : ?
1. Ambitious **2.** Amusing
3. Astounding **4.** Amazing

44. Which letter-cluster will replace the question mark (?) to complete the given series?
DPSQ, GTXW, ?, MBHI, PFMO
1. HWBC **2.** KXDC **3.** IJDE **4.** JXCC

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



46. Which of the following numbers will replace the question mark (?) in the given series?
7, 8, 12, 39, 55, 180, 216, ?
1. 555 **2.** 559 **3.** 595 **4.** 599

47. In a certain code language, 'THEORY' is written as 'YROEHT' and 'OPTION' is written as 'NOITPO'. How will 'EXPERT' be written in that language?
1. RTEPXE **2.** TRERTE **3.** TREPXE **4.** TREPEX

48. If 'A' denotes '+', 'B' denotes '×', 'C' denotes '–' and 'D' denotes '÷', then what will come in place of '?' in the following equation?
(48 D 12) C 71 A 14 B (96 D 6) A 3 B 12 = ?
1. 133 **2.** 193 **3.** 162 **4.** 172

49. Three statements are given, followed by three conclusions numbered I, II and III. Assuming the statements to be true, even if they seem to be at variance with commonly known facts, decide which of the conclusions logically follow(s) from the statements.
All plants are herbs.
Some herbs are trees.
All trees are shrubs.
Conclusions:
I. Some shrubs are plants.
II. Some shrubs are herbs.
III. Some trees are plants.
1. Only conclusions I and III follow
2. Only conclusion II follow
3. Only conclusions I and II follow
4. Only conclusion I follow

50. Select the option that is related to the fifth term in the same way as the second term is related to the first term and fourth term related to third term.
8 : 516 :: 6 : 219 :: 4 : ?
1. 69 **2.** 72 **3.** 66 **4.** 68

Quantitative Aptitude

51. The table below shows the number of cakes sold by six differnt bakeries in a town on five different days of particular week.

Days / Bakery	Monday	Tuesday	Thursday	Saturday	Sunday
A	222	255	215	250	266
B	205	275	314	295	260
C	245	266	305	195	235
D	221	230	185	300	280
E	312	325	298	272	254
F	175	205	255	240	308

What is difference between the highest number of the cakes sold by bakery F in a single day and the lowest number of cake sold by bakery B in a single day?
1. 139 **2.** 125 **3.** 103 **4.** 100

52. If a positive integer N is divided by 7, the remainder is 3. Which of the following numbers yields a remainder of 0 when it is divided by 7?
1. N + 5 **2.** N + 2 **3.** N + 4 **4.** N + 3

53. If $x^2 - 8x + 1 = 0$, what is the value of $x^8 - 3842x^4 + 1$?
1. –1 **2.** 0 **3.** 2 **4.** 1

54. The population of a town is increasing at the rate of 5% per annum. What will be the population of the town on this basis after two years, if the present population is 16000?
1. 17600 **2.** 17640 **3.** 17620 **4.** 17680

55. The price of a TV has been reduced by 20%. In order to restore the original price, the new price must be increased by:
1. 20% **2.** 28% **3.** 31% **4.** 25%

56. A discount of 20% on the marked price of an article is allowed and then the article is sold for ₹ 1,380. The marked price of the article is _____.
1. ₹ 1,850 **2.** ₹ 1,800 **3.** ₹ 1,725 **4.** ₹ 1,625

57. The difference between the compound and the simple interests for 3 years at the rate of 20% per annum is ₹ 432. What is the principal lent?
1. ₹ 3,378 **2.** ₹ 3,375 **3.** ₹ 3,385 **4.** ₹ 3,380

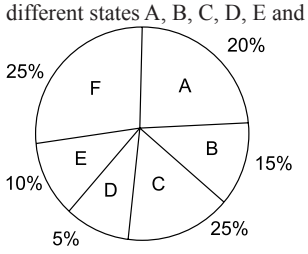
58. One candidate received 60% of the total valid votes in an election between two candidates. A total of 20% of the votes were invalid. What is the number of valid votes the other candidate received if the total votes were 16250?
1. 2990 **2.** 4760 **3.** 5200 **4.** 5800

59. In a circle with centre at O and radius 8 cm, AB is a chord of length 14 cm. If OM is perpendicular to AB, then the length of OM is:
1. $\sqrt{10}$ cm **2.** $\sqrt{5}$ cm **3.** $\sqrt{12}$ cm **4.** $\sqrt{15}$ cm

60. 56% of 4800 – $\{(9^3 \times 8) \div \sqrt{6561}\}$ – 48% of (81 ÷ 8) = ?
1. 2612.14 **2.** 2611.86 **3.** 2612.86 **4.** 2611.14

61. A car covers a certain distance travelling at a speed of 60 km/h and returns to the starting point at a speed of 40 km/h. The average speed of the car for the entire journey is:
1. 20 km/h **2.** 48 km/h **3.** 120 km/h **4.** 50 km/h

62. The given pie chart shows the percentage wise distribution of an item in 6 different states A, B, C, D, E and F.



Find the central angle for state D.
1. 40° **2.** 25° **3.** 18° **4.** 20°

63. A can complete a task in 12 days and B can complete the same task in 18 days. They start working together but A works for only 2 days. The remaining work is completed by B. If the total wage is ₹ 2,400, then what is B's share (in ₹)?
1. 1600 **2.** 1800 **3.** 1200 **4.** 2000

64. A solid right-circular cylinder, whose radius of the base is 15 cm and height is 12 cm, is melted and moulded into the solid right-circular cone, whose radius of the base is 24 cm. What will be the height of this cone?
1. 14.0625 cm **2.** 14.0675 cm
3. 14.6025 cm **4.** 14.0525 cm

65. A shopkeeper makes a profit of 12.5% after allowing a discount of 10% on the marked price of an article. Find his profit percentage if the article is sold at the marked price, allowing no discount.
1. 25% **2.** 30% **3.** 22.5% **4.** 27%

66. With an average speed of 42 km/h, a train reaches its destination in time. If it moves with an average speed of 14 km/h, it is late by 35 minutes. The length of the journey is:
1. 12.25 km **2.** 12.15 km **3.** 10.25 km **4.** 11.25 km

67. The first number is one-third of the second number. The second number is 1.5 times of the third number. The third number is three times the fourth number. If the average of the four numbers is 10, find the largest of the number.
1. 12 **2.** 18 **3.** 16 **4.** 15

68. $144x^2 - 36x + \frac{9}{4}$ can be expressed as the square of _____.
1. $14x - \frac{3}{2}$ **2.** $12x - \frac{9}{4}$ **3.** $12x - \frac{3}{2}$ **4.** $12x - 9$

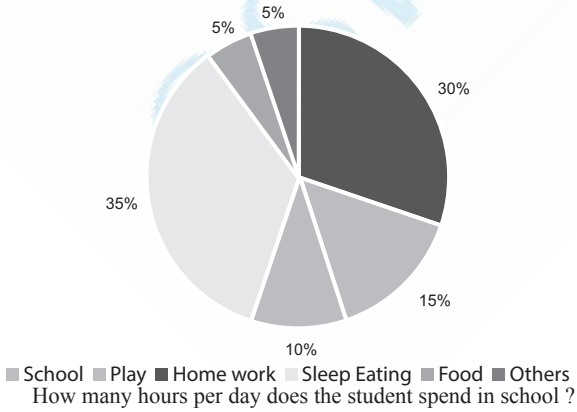
69. A solid cylinder has a radius of 9 cm and a height of 25 cm. What is the ratio of its total surface area to its curved surface area?
1. 9 : 25 **2.** 25 : 9 **3.** 25 : 34 **4.** 34 : 25

70. Find the fourth proportional to 18, 36 and 52.
1. 48 **2.** 104 **3.** 127 **4.** 81

71. Find the value of the following.
$$\frac{\sin 67^\circ \cos 37^\circ - \sin 37^\circ \cos 67^\circ}{\cos 13^\circ \cos 17^\circ - \sin 13^\circ \sin 17^\circ}$$
1. $\frac{1}{\sqrt{3}}$ **2.** $\frac{4}{\sqrt{3}}$ **3.** $\frac{2}{\sqrt{3}}$ **4.** 7

72. The pie-chart below represents the number of hours as percent of 24 hours of a day, spent on different activities by a student, Study the pie chart and answer the question that follows.

Number of hours as percent of 24 hours of a day, spent on different activities by a student



How many hours per day does the student spend in school ?
1. 7 hours 20 minutes **2.** 8 hours 15 minutes
3. 8 hours 10 minutes **4.** 7 hours 12 minutes

73. The radius of a solid metallic sphere is equal to 15 cm. It is melted and drawn into a long wire of radius 15 mm having uniform cross-section. Find the length of the wire.
1. 2100 cm **2.** 1900 cm **3.** 1800 cm **4.** 2000 cm

74. If a tradesman marks his goods 25% above the costprice and allows his customers a 12% reduction on their bill, then the percentage profit he makes is _____.
1. 30% **2.** 20% **3.** 40% **4.** 10%

75. If $b^2 - 4b - 1 = 0$, then find the value of $b^2 + \frac{1}{b^2} + 3b - \frac{3}{b}$.
1. 32 **2.** 30 **3.** 18 **4.** 24

General Awareness

76. In 2017, Deepika Reddy got the Sangeet Natak Akademi Awards 2017 for her contribution in the field of _____ dance.
1. Odissi **2.** Bharatanatyam
3. Kuchipudi **4.** Manipuri

77. Which of the following is the autobiography of Dr. Manmohan Singh, the ex-Prime Minister of India?
1. A Shot at history **2.** Ace Against Odds
3. Changing India **4.** My Country My Life

78. Which of the following is the autobiography of the first female judge of India, Anna Chandy?
1. Atmavrittanta **2.** Majya Jalmachi Chittarkatha
3. Ente Katha **4.** Atmakatha

79. In 2020,VP Dhananjayan and Shanta Dhananjayan were honoured with Sri Shanmukh ananda National Eminence Award in the field of _____.
1. Dance **2.** Carnatic vocal
3. Sarangi **4.** Tabla

80. Which of the following countries was ranked first in Paralympic 2020 medal tally?
1. England **2.** China **3.** Australia **4.** The US

81. Who was awarded the Nobel Prize in Physics in 1926,'for his work on the discontinuous structure of matter'?
1. Charles Wilson **2.** Murray Gell-Mann
3. Jean Baptiste Perrin **4.** Owen Willans Richardson

82. Which base unit, discovered in 1820, represents one coulomb of electric current per second?
1. Volt **2.** Kelvin **3.** Candela **4.** Ampere

83. 'The Wings of Fire' is an autobiography of which of the following Presidents of India?
1. Ram Nath Kovind **2.** Pranab Mukherjee
3. APJ Abdul Kalam **4.** Kocheril Raman Narayanan

84. Who among the following Khayal singers of 19th century was given the title of 'Tanras" by Bahadur Shah Jaffar, the last Mughal Emperor of India?
1. Bade Ustad Ghulam Ali Khan
2. Meer Qutub Baksh
3. Ustad Amir Khan
4. Sadarang

85. Who among the following was appointed as the Chairman of ICC Men's Cricket Committee in November 2021?
1. Kapil Dev **2.** Anil Kumble
3. Sunil Gavaskar **4.** Sourav Ganguly

86. Which structural layer surrounds the algal, fungal and plant cells and provides tensile strength and protection against mechanical and osmotic stress?
1. Cell membrane **2.** Plastids
3. Cell wall **4.** Vacuole

87. Who won the Dronacharya Award for outstanding coaches in Sports and Games 2021 (Regular Category) in Table Tennis discipline?
1. Manika Batra **2.** Sathiyan Gnanasekaran
3. Mouma Das **4.** Subramanian Raman

88. In which state of matter is the kinetic energy of molecules greater than the forces of attraction between them, such that they are so far apart and move independently of each other?
1. Liquid **2.** Plasma **3.** Gas **4.** Solid

89. In February 2021, in the Devilal vs _____ case, the Supreme Court observed that juvenile offenders under 18 years and above 16 years are to be remitted to the jurisdictional Juvenile Justice Board.
1. State of Punjab **2.** State of Madhya Pradesh
3. State of Uttar Pradesh **4.** State of Bihar

90. Which Articles of the Indian Constitution deal with the Union Executive?
1. Articles 38 to 50 **2.** Articles 52 to 78
3. Articles 80 to 86 **4.** Articles 112 to 118

91. What was India's rank in the world in 2019 for crude steel production?
1. 2nd **2.** 1st **3.** 4th **4.** 3rd

92. The Kathak dance exponent Birju Maharaj is associated with which of the following Gharana?
1. Raigarh Gharana **2.** Jaipur Gharana
3. Lucknow Gharana **4.** Banaras Gharana

93. GDP that takes into account the costs in terms of environmental pollution and exploitation of natural resources is called _____.
1. white GDP **2.** green GDP **3.** brown GDP **4.** blue GDP

94. Which of the following civilian awards was conferred to Ustad Bismillah Khan in 2001?
1. Padma Vibhushan **2.** Padma Shri
3. Bharat Ratna **4.** Padma Bhushan

95. In which track and field event is the baton used?
1. Hammer throw **2.** Relay race
3. High jump **4.** Steeple chase

96. Alarmel Velli was awarded with the 'Chevalier of Arts and Letters award' from the Government of _____ in 2004.
1. Germany **2.** England **3.** France **4.** Spain

97. Identify the structural formula for ethene.
1. $H_2C = CH_3$ **2.** $HC = CH_3$ **3.** $H_3C = CH_3$ **4.** $H_2C = CH_2$

98. Bickram Ghosh, a recipient of Global Indian Music Award, is a music composer and an Indian classical _____ player.
1. tanpura **2.** sarangi **3.** tabla **4.** bansuri

99. Which is a perennial carnivorous plant of the sundew family that attracts preys and usually traps insects and then breaks them down with digestive enzymes?
1. Phytoplankton **2.** Bladderwort
3. Venus flytrap **4.** Seaweed

100. India's last living Sadir dancer from Tamil Nadu, Muthukannammal, was honoured with which of the following highest Indian civilian awards in 2022?
1. Padma Vibhushan **2.** Padma Bhushan
3. Padma Shri **4.** Bharat Ratna

Answer Key

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

Answers with Explanations

1. Option (4) is correct.
Indulging
The sentence is about ragging and the involvement of students in ragging. Options 1, 2, and 3 are inapt in this context, and option 4 "indulging" is the right terminology that can be used to fit the context.

2. Option (3) is correct.
The research team added four grams of sodium chloride to the mixture.
The sentence that is given for conversion is: Four grams of sodium chloride was added to the mixture by the research team. This sentence is in the passive form. It must be converted into active voice. 'Research team' is the object or the agent of the action that is mentioned in the passive construction. It must become the subject or doer of the action in the active voice. The tense used is in the simple past form. So, the second form of the verb must be added next to the subject. Then we have to add the object 'four grams of sodium chloride' next to the verb.

3. Option (1) is correct.
Nautrality
All the words are correctly spelt except for the word that is given in option 1, and hence option 1 is the correct answer: The correct spelling is naturality.

4. Option (4) is correct.
CDAB
Option C introduces the subject of the sentence. So, C is the first part of the sentence. Option D helps us understand prevented from what, and hence D is the second part of the sentence. A shows details about his admission to school and the way he got admission, and so A is the third part of the sentence and B completes the sentence.

5. Option (3) is correct.
The football
The error is found in the fourth segment of the sentence. We will not say 'player of the football.' It is a player of football.

6. Option (2) is correct.
Believer
A sceptic is a person who does not believe in certain things. The antonym is 'believer.' A doubter is a person who doubts everything. A disbeliever is a sceptic. A receiver is a person who receives something.

7. Option (3) is correct.
Comfortable
The synonym of flummoxed is baffled or confused. Happy is not the antonym of flummoxed. Annoyed is irritated, and scared is afraid; hence, these words cannot be the antonym of flummoxed.

8. Option (3) is correct.
Benefactor
An anarchist is a person who rebels against any authority, established order, or ruling power. An agnostic a person who believes that nothing is known or can be known of the existence or nature of God. An amateur is one who engages in a pursuit, study, science, or sport as a pastime rather than as a profession. A benefactor is a person who helps others.

9. Option (3) is correct.
Complete
The words that are given in option 1, 2, and 4 will be inappropriate for the context. We will say someone is a complete stranger.

10. Option (1) is correct.
Memorable day
The phrase 'Red-Letter Day' can be used to signify a special or memorable day, a day of importance. Options 2, 3, and 4 are not the correct meaning of the idiom.

11. Option (2) is correct.
Extinct
The highlighted word is extant, which means existing. Negotiating is talking to somebody in order to decide or agree on something. Drool is to let liquid (saliva) come out from the mouth, usually at the sight or smell of something good to eat. Persist is continuing something. So, options 1, 3, and 4 cannot be the antonym of extant.

12. Option (3) is correct.
Elina is
The error lies in segment 1. The sentence is about the continuity of an action for a long time where the starting period is indicated. When we denote the continuity of an action denoting the starting point of time, we must use present perfect continuous tense. Here present continuous tense is used in the sentence instead of 'has been.'

13. Option (3) is correct.
Previlege
The words that are given in options 1, 2, and 4 are correctly spelt. The wrongly spelt word is given in option 3. It must be spelt Privilege instead of previlege.

14. Option (2) is correct.
Philanthropy
Philology is the branch of knowledge that deals with the structure, historical development, and relationships of a language or languages. Phylactery is a small leather box containing Hebrew texts on vellum, worn by Jewish men at morning prayer as a reminder to keep the law. Philosophy is the study of ideas and beliefs about the meaning of life. Love for mankind is called philanthropy.

15. Option (1) is correct.
Beethoven is known to be a prodigious musician of all times.
The word prodigious is wrongly spelt in the sentences given in options 2, 3, and 4.

16. Option (4) is correct.
Understand something that is not said outright
If you read between the lines, you understand what someone really means, or what is really happening in a situation, even though it is not said openly. Options 1,2, and 3 are not the meanings of the idiom.

17. Option (3) is correct.
Were playing in the garden
The meaning of the word frolicking is behaving in a playful way. Options 1,2, and 4 are inappropriate and meaningless. The meaningful option is 'were playing in the garden.'

18. Option (1) is correct.
Great disappointment
If you get a kick in the teeth, something bad happens to you or you feel that you've been treated poorly. The meanings that are given in options 2, 3, and 4 are not related to the idiom and hence are considered wrong.

19. Option (4) is correct.
Speed
The synonym of target is goal. The synonym of corner is angle. The synonym of angle is corner or viewpoint. The synonym of speed is pace. So, options 1, 2, and 3 are not the answers.

20. Option (3) is correct.
Students are taught by my father.
The sentence to be converted is: My father teaches students. This sentence is in active voice. When we convert the sentence into passive form, the object of the active sentence 'students' becomes the subject in the passive. The tense used in the sentence is simple present. Since the subject 'students' is plural, we use the be verb 'are'.The third form of the verb 'teach' is used in the passive construction. The third form of the verb is 'taught'. Then we use the connector 'by' and then the subject of active voice is turned as the object of passive voice.

21. Option (2) is correct.
Established
As the sentence is in passive structure, we must use the third form of the verb along with 'be'. Options 1, 2, and 3 will not fit into the blank.

22. Option (3) is correct.
Convene
The sentence highlights about a conference and about organizing the conference. The words that are given in options 1, 2, and 4 do not fit in the context.

23. Option (3) is correct.
drew up
The sentence talks about proposals that were being prepared and written. The answers that are given in options 1, 2, and 4 are inapt to the context.

24. Option (1) is correct.
Between
The given sentence talks about two days 19 June and 22 July 1946. Options 2, 3, and 4 are wrong in the context. The preposition 'between' denotes the space in the middle of the two dates mentioned.

25. Option (2) is correct.
Adopted
The sentence speaks about the drafting of the constitution of the World Health Organization. After drafting it will be adopted.

26. Option (4) is correct.
Explanation: First row: 24, 9, 108
Second row: 38, 5, 95
Third row: 12, 17, ?
Logic: $(24 \times 9) \div 2 = 108$
$(38 \times 5) \div 2 = 95$
$(12 \times 17) \div 2 = 102$

27. Option (4) is correct.
Explanation:
Given that: 14*11*22*56*8
×, ÷, =, ÷
Upon checking option 4 and after putting sign,
$14 \times 11 \div 22 = 56 \div 8$

Using BODMAS, we get

$14 \times 0.5 = 7$

$7 = 7$

28. Option (4) is correct.

Explanation: 24 : 137 :: 14 : ? :: 18 : 101

$24 \times 6 - 7 = 137$

$18 \times 6 - 7 = 101$

Similarly, $14 \times 6 - 7 = 77$

29. Option (2) is correct.

Explanation:

$82 - 5 + (24 \div 6) + 17 + (5 \times 8) = 127$

After interchanging 6 and 8, we get

$82 - 5 + (24 \div 8) + 17 + (5 \times 6) = 127$

Using BODMAS, we get

$82 - 5 + 3 + 17 + 30 = 127$

$132 - 5 = 127$

$127 = 127$

30. Option (1) is correct.

Explanation:

Given that: NEUTRAL : NAUTREL :: PACIFIC : PICIFAC :: LOYALTY : ?

N	E	U	T	R	A	L
N	A	U	T	R	E	L

P	A	C	I	F	I	C
P	I	C	I	F	A	C

L	O	Y	A	L	T	Y
L	T	Y	A	L	O	Y

31. Option (3) is correct.

Explanation:

Logic: 2nd number = sum of digits of 1st number

$5 + 3 + 7 = 15$

$9 + 1 + 7 = 17$

$4 + 5 + 9 = 18 \neq 19$

$6 + 7 + 3 = 16$

32. Option (2) is correct.

Explanation:

Given that: 'MUSIC' is written as 'LNTVRTHJBD'

M	U	S	I	C
–1 +1	–1 +1	–1 +1	–1 +1	–1 +1
L N	T V	R T	H J	B D

Similarly,

'VIOLIN' is written as 'UWHJNPKMHJMO'

V	I	O	L	I	N
–1 +1	–1 +1	–1 +1	–1 +1	–1 +1	–1 +1
U W	H J	N P	K M	H J	M O

Similarly, 'CHORD' can be written as

C	H	O	R	D
–1 +1	–1 +1	–1 +1	–1 +1	–1 +1
B D	G I	N P	Q S	C E

33. Option (1) is correct.

Explanation:

Given that: RRQZ, MADQ, ?, CSDY, XBQP

R	R	Q	Z
–5	–17	–13	–9
M	A	D	Q
–5	–17	–13	–9
H	J	Q	H
–5	–17	–13	–9
C	S	D	Y
–5	–17	–13	–9
X	B	Q	P

34. Option (2) is correct.

Explanation:

Number of odd days from 30th January 2010 to 30th January 2011 = 1

Odd days in January = 1

Odd days in February = 0

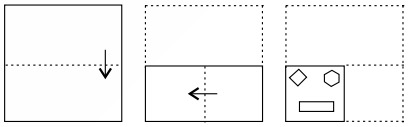
Odd days in 1st March 2011 = 1

Hence, total odd days = 1 + 1 + 0 + 1 = 3

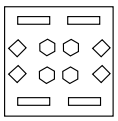
Saturday + 3 days = Tuesday

35. Option (1) is correct.

Explanation:

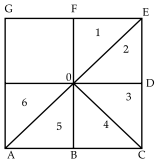


Logic of symmetry will be followed here. Hence,



36. Option (3) is correct.

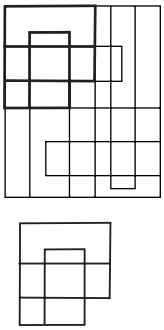
Explanation:



Number of triangles = 6 + Δ COE + Δ COA + Δ AEC + Δ AEG = 10

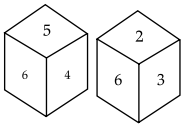
37. Option (4) is correct.

Explanation:



38. Option (1) is correct.

Explanation:



Logic: 5, 4, 2, 3 is adjacent to 6. Hence, they cannot be opposite to 6. Therefore, 1 will be opposite to 6.

39. Option (3) is correct.

Explanation:

41*3*53*48*3*18*5*36

Upon checking option 3,

×, −, =, ÷, +, ×, −

Using BODMAS, we get

$41 \times 3 - 53 = 48 \div 3 + 18 \times 5 - 36$

$123 - 53 = 16 + 18 \times 5 - 36$

$70 = 16 + 90 - 36$

$70 = 106 - 36$

$70 = 70$

40. Option (2) is correct.

Explanation:

22nd January 2011 = Saturday

Number of odd days from 22nd January 2011 to 22nd January 2015 = 1 + 2 + 1 + 1 = 5

22nd January 2011 (Saturday) + 5 = 22nd January 2015 (Thursday)

Hence, 23rd January 2015 = Friday

41. Option (2) is correct.

Explanation:

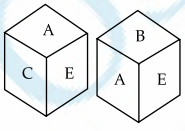
Given that: 1244, 624, 314, ?, 81.5, 42.75

1244		624		314		159		81.5		42.75
	÷ 2 + 2		÷ 2 + 2		÷ 2 + 2		÷ 2 + 2		÷ 2 + 2	

Hence, C will face opposite to B.

42. Option (3) is correct.

Explanation:



Logic: When two faces are common in a two dice position, the third face will be opposite each other.

Hence, C will face opposite to B.

43. Option (1) is correct.

Explanation: Given that: Centre : Central :: Character : Characteristic : : Ambition : ?

Logic: As characteristic is an adjective of character, Similarly, ambitious is an adjective of ambition.

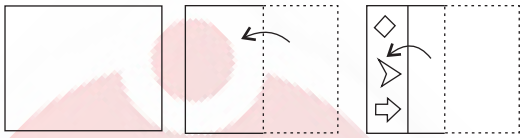
44. Option (4) is correct.

Explanation: Given that: DPSQ, GTXW, ?, MBHI, PFMO

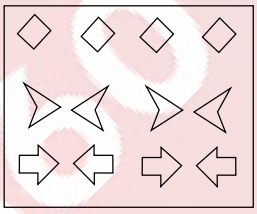
D +3 →	G +3 →	J +3 →	M +3 →	P
P +4 →	T +4 →	X +4 →	B +4 →	F
S +5 →	X +5 →	C +5 →	H +5 →	M
Q +6 →	W +6 →	C +6 →	I +6 →	O

45. Option (4) is correct.

Explanation:



Logic of symmetry will be followed here. Hence,



46. Option (2) is correct.

Explanation:

7	8	12	39	55	180	216	559	
	$+(1)^3$	$+(2)^2$	$+(3)^3$	$+(4)^2$	$+(5)^3$	$+(6)^3$	$+(7)^3$	

47. Option (3) is correct.

Explanation:

'THEORY' is written as 'YROEHT'

T	H	E	O	R	Y →
Y	R	O	E	H	T

and 'OPTION' is written as 'NOITPO'.

O	P	T	I	O	N
N	O	I	T	P ←	O

Similarly, 'EXPERT' can be written as

E	X	P	E	R	T →
T	R	E	P	X	E

48. Option (2) is correct.

Explanation:

(48 D 12) C 71 A 14 B (96 D 6) A 3 B 12 = ?

Using BODMAS, we get

$\Rightarrow (48 \div 12) - 71 + 14 \times (96 \div 6) + 3 \times 12$

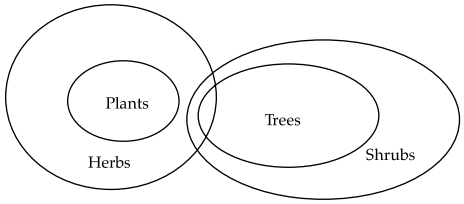
$\Rightarrow 4 - 71 + 14 \times 16 + 3 \times 12$

$\Rightarrow 4 - 71 + 224 + 36$

$\Rightarrow 264 - 71 = 193$

49. Option (2) is correct.

Explanation:



(1) From the diagram, we cannot say definitely if some shrubs are plants.

(2) From the diagram, some shrubs are herbs.

(3) From the diagram, we cannot say definitely if some trees are plants.

50. Option (3) is correct.

Explanation: 8 : 516 :: 6 : 219 :: 4 : ?

$8 \times 8 \times 8 + 4 = 516$

$6 \times 6 \times 6 + 3 = 219$

$4 \times 4 \times 4 + 2 = 66$

51. Option (3) is correct.

Given,

Highest number of cakes sold by bakery F in a single day = 308

Lowest number of cakes sold by bakery B in a single day = 205

Required difference = 308 – 205 = 103

52. Option (3) is correct.

Given, when positive integer N is divided by 7, the remainder is 3.

Let $N = 7x + 3$

So, from given options, let number = N + 4

$= 7x + 3 + 4 = 7(x + 1)$

So, the now the number is divisible by 7.

53. Option (2) is correct.

Given equation, $x^2 - 8x + 1 = 0$

Divide the equation by x,

$$\Rightarrow \quad x + \frac{1}{x} = 8$$

Squaring both the sides,

$$\Rightarrow \quad x^2 + \frac{1}{x^2} = 64 - 2 = 62$$

Again, squaring both the sides,

$$\Rightarrow \quad x^4 + \frac{1}{x^4} = 3842$$

$$\Rightarrow \quad x^8 + 1 = 3842x^4$$

$$\Rightarrow \quad x^8 - 3842x^4 + 1 = 0$$

54. Option (2) is correct.

Given,

The present population of town = 16000

According to the question,

The population after two years

$$= 16000 \times \frac{105}{100} \times \frac{105}{100} = 17640$$

55. Option (4) is correct.

Let the price of T.V = ₹ 100

After decreasing price by 20%, new price = ₹ 80

Required percentage increase in price

$$= \frac{100 - 80}{80} \times 100 = 25\%$$

56. Option (3) is correct.

Given,

Selling price of article = ₹ 1380

Discount percentage = 20%

Let marked price = ₹ x

According to the question,

$$\Rightarrow \quad x \times \frac{80}{100} = 1380$$

$$\Rightarrow \quad x = 1725$$

So, marked price = ₹ 1725

57. Option (2) is correct.

Given,

The difference between compound and simple interest = ₹ 432

Rate of interest = 20% per annum

Time = 3 years

Let the principal amount = ₹ P

Using, difference = $P\left(\frac{r}{100}\right)^2\left(3 + \frac{r}{100}\right)$

$$\Rightarrow \quad 432 = P \times \frac{1}{25} \times \frac{16}{5}$$

$$\Rightarrow \quad P = 3375$$

So, the principal amount = ₹ 3375

58. Option (3) is correct.

Given that the total number of votes = 16250

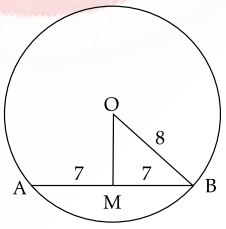
So, total number of valid votes

$$= 16250 \times \frac{80}{100} = 13000$$

So, the number of valid votes that other person got

$$= 13000 \times \frac{40}{100} = 5200$$

59. Option (4) is correct.



$$OM = \sqrt{OB^2 - MB^2} = \sqrt{8^2 - 7^2}$$

$$= \sqrt{1 \times 15} = \sqrt{15} \text{ cm}$$

60. Option (4) is correct.

Value of expression,

$$56\% \text{ of } 4800 - \left\{\left(9^3 \times 8\right) \div \sqrt{6561}\right\} - 48\% \text{ of } \left(81 \div 8\right)$$

$$= \frac{56}{100} \times 4800 - \left\{\left(5832\right) \div 81\right\} - \frac{48}{100} \times \frac{81}{8}$$

$= 2688 - 72 - 4.86$

$= 2611.14$

61. Option (2) is correct.

Using, average speed = $\frac{2.S_1.S_2}{S_1 + S_2}$

Where, S_1 and S_2 are speeds for to and fro journey respectively.

So, average speed = $\frac{2 \times 60 \times 40}{60 + 40} = 48$ km/h

62. Option (3) is correct.
According to the given pi chart,
Central angle for state D = $\frac{5}{100}\times 360 = 18°$

63. Option (4) is correct.
Given,
Time taken by A to finish the task = 12 days
Time taken by B to finish the task = 18 days
Let the total work = LCM (12, 18) = 36 units
So, A's per day work = $\frac{36}{12} = 3$ unit/day
B's per day work = $\frac{36}{18} = 2$ unit/day
Work done by A in two days = $3\times 2 = 6$ units
So, remaining work done by B = 36 – 6 = 30 units
So, ratio of the amounts they received = 6 : 30 = 1 : 5
So, B's share = $\frac{5}{6}\times 2400 =$ ₹ 2000

64. Option (1) is correct.
Given,
The radius of the base of cylinder = 15 cm
And height of the cylinder = 12 cm
So, volume of cylinder = $\pi r^2 h = \frac{22}{7}\times 15\times 15\times 12$ cm^3
Also given that the radius of cone = 24 cm
Let the height of the cone = h cm
According to the question,
Volume of cone = Volume of cylinder
$\Rightarrow \frac{1}{3}\times\pi\times r^2\times h = \frac{22}{7}\times 15\times 15\times 12$
$\Rightarrow \frac{1}{3}\times\frac{22}{7}\times 24\times 24\times h = \frac{22}{7}\times 15\times 15\times 12$
$\Rightarrow h = 14.0625$ cm
So, the height of the cone = 14.0625 cm

65. Option (1) is correct.
Let the marked price of article = ₹ 100
According to the question,
C.P. $\times\frac{112.5}{100} = 100\times\frac{90}{100}$
$\Rightarrow$ C.P. = ₹ 80
So, profit percentage when the article sold at marked price
$= \frac{100-80}{80}\times 100 = 25\%$

66. Option (1) is correct.
Let the length of the journey = d km
We have, $\text{time} = \frac{\text{distance}}{\text{speed}}$
According to the question,
$\Rightarrow \frac{d}{14} - \frac{d}{42} = \frac{35}{60}$
$\Rightarrow \frac{3d-d}{42} = \frac{35}{60}$
$\Rightarrow d = 12.25$
So, the length of the journey = 12.25 km

67. Option (2) is correct.
Let the fourth number = $2x$
Then third number = $6x$
And second number = $9x$
And first number = $3x$
According to the question,
$\Rightarrow \frac{2x+6x+9x+3x}{4} = 10$
$\Rightarrow 20x = 40$
$\Rightarrow x = 2$
So, the largest number = $9x = 18$

68. Option (3) is correct.
Given equation = $144x^2 - 36x + \frac{9}{4}$
$= (12x)^2 - 2\times 12\times\frac{3}{2}\times x + \left(\frac{3}{2}\right)^2$
$= \left(12x - \frac{3}{2}\right)^2$ [Using, $(a-b)^2 = a^2 + b^2 - 2ab$]

69. Option (4) is correct.
Given,
The radius of solid cylinder = 9 cm
And height = 25 cm
Using total surface area of cylinder = $2\pi rh + 2\pi r^2$
And curved surface area = $2\pi rh$
Required ratio = $\frac{2\pi rh + 2\pi r^2}{2\pi rh} = \frac{h+r}{h} = \frac{25+9}{25} = \frac{34}{25}$

70. Option (2) is correct.
Given numbers are 18, 36 and 52.
Let the fourth proportion = x
According to the question,
$\Rightarrow \frac{18}{36} = \frac{52}{x}$
$\Rightarrow x = 104$
So, the fourth proportion = 104

71. Option (1) is correct.
Value of
$\frac{\sin 67°.\cos 37° - \sin 37°.\cos 67°}{\cos 13°.\cos 17° - \sin 13°\sin 17°} = \frac{\sin(67°-37°)}{\cos(13°+17°)}$
$= \frac{\sin(30°)}{\cos(30°)} = \tan 30° = \frac{1}{\sqrt{3}}$

72. Option (4) is correct.
According to the pie chart,
Time spent by the student in the school
$= \frac{30}{100}\times 24 = \frac{72}{10}$ hr = 7 hr 12 min

73. Option (4) is correct.
Given,
The radius of sphere = 15 cm
So, volume = $\frac{4}{3}\pi r^3 = \frac{4}{3}\pi\times 15\times 15\times 15 = 4500\pi$
Also given that the radius of wire
= 15 mm = 1.5 cm
Let the length of wire = l
According to the question,
$\Rightarrow \pi r^2 l = 4500\pi$
$\Rightarrow 1.5\times 1.5\times l = 4500$
$\Rightarrow l = 2000$
So, the length of wire = 2000 cm

74. Option (4) is correct.

Let the cost price of article = ₹ 100

So, marked price = ₹ 125

Now selling price = $125 \times \frac{100-12}{100} = \text{Rs. } 110$

So, profit percentage = $\frac{110-100}{100} \times 100 = 10\%$

75. Option (2) is correct.

Given,

$b^2 - 4b - 1 = 0$

dividing the equation by b,

$\Rightarrow \quad b - \frac{1}{b} = 4 \quad \ldots(1)$

Squaring both sides,

$\Rightarrow \quad b^2 + \frac{1}{b^2} = 18 \quad \ldots(2)$

So, the value of $b^2 + \frac{1}{b^2} + 3b - \frac{3}{b} = 18 + 3(4) = 30$

76. Option (3) is correct.

In 2017, Deepika Reddy got the Sangeet Natak Akademi Awards 2017 for her contribution in the field of Kuchipudi dance. Deepika Reddy is an accomplished Kuchipudi dancer who was trained under legendary Guru Dr Vempati Chinna Satyam, a Padma Bhushan awardee. She is the Chairperson of Telangana Sangeetha Nataka Akademi. She is also a recipient of 'Kala Ratna', 'Nritya Choodamani'.

Sangeet Natak Akademi Award is also known as Akademi Puraskar and is the highest recognition given to the people in performing arts.

Kuchipudi is one of the eight major Indian classical dances and originates from Kuchipudi village in Andhra Pradesh. The roots of this dance form are in Natya Shastra. It is believed that Tirtha Narayana Yati and his disciple Siddhendra Yogi founded the systemised and modern version of Kuchipudi in the 17th century.

77. Option (3) is correct.

Changing India is the autobiography of Dr. Manmohan Singh, the ex-Prime Minister of India. The book talks about his journey from being an economist to a politician. Mr Manmohan Singh is an Indian academician, economist, politician, and bureaucrat. He served as the 13th Prime Minister of India from 2004-14. He has earlier worked as the Chief Economic Adviser (CEA), governor of RBI, and head of the Planning Commission. He is also credited with bringing out the LPG (Liberalisation, Privatisation, and Globalisation) policy of India as the Finance Minister of the country.

A Shot at history: My Obsessive Journey to Olympic Gold is an autobiography of Abhinav Bindra. He co-authored the book with sportswriter Rohit Brijnath. He is a retired sports shooter and the first Indian to become an Olympic gold medalist.

Ace Against Odds is the biography of Sania Mirza. It is co-authored by Imran Mirza, Sania Mirza, and Shivani Gupta. Sania Mirza is a former Indian professional tennis player. She was ranked World's No 1 in singles, former doubles world No. 1, and won six major titles.

My Country My Life is an autobiography of LK Advani. LK Advani served as the seventh Deputy Prime Minister of India. He is a senior leader and one of the co-founders of Bhartiya Janta Party (BJP).

78. Option (4) is correct.

Atmakatha is the autobiography of the first female judge of India, Anna Chandy. She served as the first female judge of High Court as well in 1959. She was born in Kerala in the year 1905. She was also credited to be the first woman judge in the Commonwealth countries. She is commonly referred to as the 'first generation feminist.' She was the founder and editor of Shreemati. It was a journal in which she supported the women's rights. She passed away in 1996.

Atmavrittanta is an autobiography by Manilal Nabhubhai Dwivedi, a Gujarati writer. It was formally published as Manilal Nabhubhai Dwivedinu.

Majya Jalmachi Chittarkatha is an autobiography of Shantabai Kamble. It is the first autobiography written by a Dalit woman writer. It was translated as The Kaleidoscope Story of My Life. Shantabai Kamble was a Marathi writer and Dalit activist.

Ente Kadha (My Story) is an autobiography written by Kamala Surayya. Kamala Surayya was an Indian poet who wrote in English and Malayalam. His one-time pen name was Madhavikutty.

79. Option (1) is correct.

In 2020, VP Dhananjayan and Shanta Dhananjayan were honoured with Sri Shanmukh Ananda National Eminence Award in the field of dance. They are a popular dancing couple and are known as Dhananjayans. They were honoured with Padma Bhushan and Kerala Sangeetha Nataka Akademi Fellowship, 1994.

80. Option (2) is correct.

China was ranked first in Paralympic 2020 medal tally. It won 96 gold and 207 total medals. Great Britain was the second one and the United States ranked third. The 2020 Paralympics were held in Tokyo, Japan and are known as 2020 Summer Paralympics. These were the 16th Summer Paralympic Games organised by the International Paralympic Committee (IPC).

The 2024 Summer Paralympics will be held in Paris, France and will be commonly known as the Games of the XVII Paralympiad.

81. Option (3) is correct.

Jean Baptiste Perrin was awarded the Nobel Prize in Physics in 1926, for his work on the discontinuous structure of matter. He was a French Physicist known for his studies on Brownian motion.

Murray Gell-Mann was an American physicist who was given Nobel Prize in Physics on the theory of elementary particles in the year 1969.

Owen Willans Richardson was a British physicist. He was awarded Nobel Prize in Physics for his work on thermionic emission, which led to Richardson's law.

82. Option (4) is correct.

Ampere discovered in 1820, represents one coulomb of electric current per second. Ampere is the SI unit of electric current. It is named after French Physicist and Mathematician Andre-Marie Ampere. It is the amount of current produced by the force of one volt acting through a resistance of one ohm.

Alessandro Volta was an Italian Physicist and Chemist who is known for the invention of electric battery and discovery of methane. The SI unit of electric potential is named in his honour as the volt.

Kelvin is the SI unit of temperature. It is named after William Thomson, 1st Baron Kelvin. It is an absolute thermodynamic temperature scale.

83. Option (3) is correct.

'The Wings of Fire' is an autobiography of APJ Abdul Kalam. It is authored by Dr. Kalam and Arun Tiwari. He is fondly called as the Missile Man of India and was the 11th President of India. He was the first Principal Scientific Adviser to the Government of India. He is a Padma Bhushan, Vibhushan and Bharat Ratna awardee.

Pranab Mukherjee was the 13th President of India. He was a former politician and a senior leader of Indian National Congress. He had worked in the capacity of Union Defence, Finance, and External Affairs Minister. He was awarded with Padma Vibhushan and Bharat Ratna.

KR Narayanan was the tenth president and ninth vice-president of India.

Ram Nath Kovind was the 14th President of India. He is a lawyer by profession who practices in the High court and Supreme Court of India.

84. Option (2) is correct.

Meer Qutub Baksh is Khayal singers of 19th century were given the title of 'Tanras" by Bahadur Shah Jaffar, the last Mughal Emperor of India. He was a Hindustani classical musician belonging to Delhi Gharana. Also, he was a court musician of the last Mughal emperor Bahadur Shah Zafar II.

Ustad Bade Ghulam Ali Khan is also known as Tansen of the 20th century. He was an Indian Asian classical vocalist from Patiala Gharana. He was honoured with Padma Bhushan and Sangeet Natak Akdemi Award. His pen name was 'Sabrang.'

Ustad Amir Khan is one of the most famous vocalists in the Hindustani classical music and is also the founder of Indore Gahrana.

Sadarang was the pen name of Naimat Khan, a Hindustani musical composer and artist.

85. Option (4) is correct.

Sourav Ganguly was appointed as the Chairman of ICC Men's Cricket Committee in November 2021. He was a former Indian cricketer, commentator and served as the 35th President of the Board of Control for Cricket in India (BCCI). He is fondly referred to as 'dada' or 'Maharaja.'

Kapil Dev is a former Indian cricketer. He was a fast-medium bowler and a middle-order batsman. He was the captain of Indian team that won the 1983 world cup. He has been honoured with Padma Shri and Bhushan by the Government of India.

Anil Kumble is a former Indian cricketer, coach, and commentator. He was a test player and One Day International (ODI) and had an international al career of 18 years. He is considered as one of the best leg spin bowlers in test cricket. He is fondly called as 'Apple' and ' Jumbo.'

Sunil Gavaskar is former Indian cricketer and cricket commentator. He was awarded with Arjuna award, Padma Bhushan for his contributions.

86. Option (3) is correct.

Cell Wall surrounds the algal, fungal and plant cells and provides tensile strength and protection against mechanical and osmotic stress. Cell wall gives cell a definite shape and structure while providing it structural support and protection against any sorts of infections.

Plastids are double membrane organelle responsible for manufacturing and storing of food. They contain pigments that can change the colour of the cell. The different types of plastids are chloroplasts, chromoplasts, and leucoplasts. Chloroplasts are the site of photosynthesis.

Vacuole is a single membrane bound organelle in cells. Vacuoles have no basic size and shape and the membrane that surrounds vacuole is known as tonoplast. It assumes the shape according to the requirement of cell. It stores salts, minerals, pigments and proteins within the cell and also provides the adequate turgor pressure to provide a shape to the cell.

A cell membrane is the lipid bilayer that separates interior of all cells from the external environment. It is also known as the plasma membrane and is the outermost covering in the animal cell. It plays an important role in regulating cell growth through the balance of endocytosis and exocytosis.

87. Option (4) is correct.

Subramanian Raman won the Dronacharya Award for outstanding coaches in Sports and Games 2021 (Regular Category) in Table Tennis discipline.

Manika Batra is an Indian table tennis player from Delhi. She was awarded with Major Dhyan Chand Khel Ratna award in the year 2020.

Sathiyan Gnanasekaran is an Indian table tennis player. He was a member of the Indian team that won back to back Gold medals in 2018 & 2022 Commonwealth Games.

Mouma Das is an Indian table tennis player from Kolkata. She was awarded Arjuna Award for her contributions to sports.

88. Option (3) is correct.

In gaseous state the kinetic energy of molecules greater than the forces of attraction between them, such that they are so far apart and move independently of each other. In fact, the molecules are the farthest in the gaseous state. The particles are moving in continual straight line motion.

In the liquid state, the particles are not very tightly or very loosely packed. They have enough space among them so that they can glide over each other. However, they stay towards the bottom of the container. The attractive forces are strong enough to hold them but not enough to prevent their sliding over each other.

In solids, particles are tightly packed with each other and they have a very little space among them. The particles stay at they place and keep on vibrating because of their kinetic energy.

Plasma is known as the fourth state of matter and is considered a very rare phenomenon on Earth. Sun is in the plasma state.

89. Option (2) is correct.

In February 2021, in the Devilal vs State of Madhya Pradesh case, the Supreme Court observed that juvenile offenders under 18 years and above 16 years are to be remitted to the jurisdictional Juvenile Justice Board. Juvenile is a child who has not attained 18 years of age. The Section 2 of Juvenile Justice (Care and Protection of Children) Act, 2000 provides that 'Juvenile in conflict with law' means a 'juvenile' who is alleged to have committed an offence and not completed the eighteenth year of age as on the date of commission of such an offence.

90. Option (2) is correct.

Articles 52 to 78 of Chapter- I of Part V of the Indian Constitution deal with the Union Executive. The union executive of India consists of the President, the head of the State, Vice-president and Prime Minister, and Council of Ministers who governs the Union and Attorney General.

The PART IV: Directive Principles of State Policy covers Article 38 to 50. The Directive Principles are basically guidelines for the central and state governments while making new laws and they have been borrowed from the Constitution of Ireland.

Articles 80 to 86 fall under Part V Chapter II: Parliament.

Articles 112 to 118 fall under Part V Chapter II: Parliament. It deals with the legislative procedure Article 112 is about The 'Annual Financial Statement' or the 'The Union Budget.'

91. Option (1) is correct.

India ranked second in the world in 2019 for crude steel production. The data was provided by World Steel Association data and India had replaced Japan to achieve the second position. The leading producer was China. India's crude steel production in 2018 was at 109.3 MT and in 2019 was 111.2 MT

The Government of India launched The Mission Purvodaya that aims at an accelerated development of eastern India through the establishment of an integrated steel hub.

92. Option (3) is correct.

The Kathak dance exponent Birju Maharaj is associated with Lucknow Gharana. He was an Indian singer, dancer,

composer, and exponent of Lucknow 'Kalka-Bindadin' Gharana of Kathak. He practiced Hindustani classical music. He was honoured with Padma Vibhushan.

Lucknow gharana is also known as Poorab or Khulla baaj gharana. It was established by Ustad Bakshu Khan and Modu Khan. It is also named as Thapiya Baaj gharana because of use of palms and fingers while playing the musical instruments. It is known for its tabla legacy and kathak.

93. Option (2) is correct.

GDP that takes into account the costs in terms of environmental pollution and exploitation of natural resources is called green GDP. The factors to measure green GDP could be physical factors like 'carbon dioxide per year' or 'waste per capita' may be aggregated to indices like the 'Sustainable Development Index'. It can be calculated by subtracting net natural capital consumption from the standard GDP.

94. Option (3) is correct.

Bharat Ratna was conferred to Ustad Bismillah Khan in 2001. Bismillah Khan introduced shehnai to the concert stage and was selected to perform for the ceremony at Delhi's historic Red Fort on the occasion of India's Independence Day on 15th August 1947. Bismillah Khan was an Indian shehnai player and a leading Hindustani classical music artist. He is also known as Shehnai Maestro. He was honoured with Bharat Ratna, India's highest civilian honour.

Padma awards were instituted in 1954 and are announced every year on the Republic Day. These awards are given in art, social work, public affairs, science and engineering, trade and industry, medicine, literature and education, sports, civil service, etc.These Awards are conferred by the President of India at ceremonial functions which are held at Rashtrapati Bhawan usually around March/April every year. The three categories of Padma awards are:

I. **Padma Vibhushan:** These are awarded for exceptional and distinguished service.
II. **Padma Bhushan:** These are awarded for distinguished service of a high order.
III. **Padma Shri:** These are awarded for distinguished service.

95. Option (2) is correct.

In relay race track and field event is the baton used. It is a racing competition where members of team run one by one completing the track or racecourse. In this each runner has to hand over the baton to the next one in the designated zone. After the first runner has handed over the baton the second one, the second one has to start running till he arrives at the next point of exchange of batons. This type of race can be a part of running, swimming, cross-country skiing, biathlon, or ice skating.

Hammer throw is one of the four throwing events along with discus throw, shot put and javelin that happen in regular track and field competitions. In this game, a metal ball is attached to a steel wire by the grip. The size of ball varies for men and women's event. The winner is decided by the degree to which the implement is thrown.

Steeplechase is an obstacle race and is a part of youth athletics. This sport event derives its name from the steeplechase in horse racing.

High Jump is a track and field event in which the player has to jump over a horizontal bar. This bar should not be moved from its place and is kept at a measured height.

96. Option (3) is correct.

Alarmel Velli was awarded with the 'Chevalier of Arts and Letters award' from the Government of France in 2004. She is an Indian classical dancer and choreographer who is a maestro of Pandanallur style of Bharatnatyam. She is the founder of The Dipasikha Dance Foundation in Chennai. She has been honoured with Padma Shri, Padma Vibhushan, and Sangeet Natak Akademi Award.

'Chevalier of Arts and Letters award' is given in terms of recognition of significant contributions to the arts, literature, or the propagation of these fields by the Government of France.

97. Option (4) is correct.

The structural formula of ethene is $H_2C = CH_2$. It is a colourless and flammable hydrocarbon with a faint sweet and musky odour. It is the simplest alkene. Alkene is the hydrocarbons with double bonds between carbon and carbon. Ethene is also known as Ethylene. It is an important natural plant hormone required for ripening of fruit.

98. Option (3) is correct.

Bickram Ghosh, a recipient of Global Indian Music Award, is a music composer and an Indian classical tabla player. He started learning tabla from his father, Pandit Shankar Ghosh. He had won Global India Music Award in in Best Pop/Rock single category in 2012 for his composition of Vande Mataram.

Tabla falls in the category of Avanaddha Vadya. It consists of a set of two vertical Oordhwaka drums in which right side is known as Tabla and left is known as the Bayan or Dagga. In the Vadya category of instruments, sound is produced by striking the animal skin that has been stretched across a metal or earthen pot. Some of notable tabla payers are - Ustad Alia Rakha Khan and his son Zakir Hussain, Shafat Ahmed and Samata Prasad.

99. Option (3) is correct.

Venus flytrap is a perennial carnivorous plant of the sundew family that attracts preys and usually traps insects and then breaks them down with digestive enzymes. Its scientific name is Dionaea muscipula. It forms a trapping structure by the terminal portion of each of its leaves. This structure is triggered to capture insects when they sit on the tiny hair on the inner surface of plant's leaves. As soon as the insect sits on these hairs, the structure closes to trap the insect.

Phytoplankton are autotrophic self-feeding microscopic marine algae . These are buoyant and float in the upper part of the ocean. This is where sunlight can reach them directly and help them live and grow.

Bladderwort is commonly called as Utricularia. It is a genus of carnivores plants that lack a root system. They are found in fresh water and wet soil as terrestrial or aquatic species. They have a horizontal floating stem that has simple or divided leaves.

Seaweed is also known as macroalgae. These are Rhodophyta (red), Chlorophyta (green), or brown (Phaeophyta) coloured macro algae. These provide essential nursery habitat for fisheries and other marine species and thus protect food sources.

100. Option (3) is correct.

India's last living Sadir dancer from Tamil Nadu, Muthukannammal, was honoured with Padma Shri. R Muthukannammal was a seventh generation veteran Sadir dancer. She is the only surviving Devdasi who served the deity at the Viralimalai Murugan temple. Also, she is the last woman to have the ceremony pottukkattutal of dedicating oneself to God performed at the Viralimalai temple.

Sadir Natyam is a dance form of India which is performed by Devdasis. It is considered to be originated by Dravidians and is a form of solo dance in temple and royal courts. This dance was considered integral to the ritual of worship. As the Devdas system was wiped out by passing of law in the year 1947 this dance form also ceased to exist. However, Bharatanatyam was reinvented, modified and rechristened from the ancient dance of Sadir Attam.

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