

STAFF SELECTION COMMISSION

COMBINED HIGHER SECONDARY LEVEL (TIER-I)

SOLVED PAPER

(10th August 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. In the given sentence, identify the segment which contains a grammatical error.
We are yet living in the same house.
 1. We are
 2. yet living
 3. same house
 4. in the
2. 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'.
How long have you being seating on this bench?
 1. being sat
 2. been sitting
 3. No substitution
 4. been seating
3. Select the most appropriate meaning of the given idiom.
Rank and file
 1. The manager of a personnel department
 2. A very well-organised company
 3. Financial activities in a firm
 4. Ordinary workers in a company
4. Select the most appropriate antonym of the given word.
Expunge
 1. Deplete
 2. Insert
 3. Exhaust
 4. Remove
5. Select the INCORRECTLY spelt word.
 1. Plump
 2. Rinckle
 3. Muscle
 4. Gnaw
6. Given below are four sentences in jumbled order. Select the option that gives their correct order.
 - A. His school was closed as it was the height of summer.
 - B. It was on one such day that Ranji discovered a pool in the forest.
 - C. As he had no friends yet, he wandered alone in the hills and forests.
 - D. Ranji had been less than a month in Rajpur.
 1. ACBD
 2. BADC
 3. CBDA
 4. DACB
7. Select the most appropriate one-word substitution for the given words.
Leather straps put around a horse's head to control it
 1. saddle
 2. bridle
 3. stirrup
 4. bridal
8. Select the most appropriate synonym of the given word.
Profuse
 1. Abundant
 2. Meagre
 3. Limited
 4. Consistent
9. Select the most appropriate meaning of the underlined idiom in the given sentence.
My brother has decided to settle in London for good.
 1. forever
 2. for a promotion
 3. for a better income
 4. briefly
10. Select the misspelt word.
 1. mature
 2. misrable
 3. moisture
 4. mischief
11. 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 word Jama means 'a robe or shawl' and War means 'Yard (the measuring unit)'.
 - B. Jamawar (also spelled as Jamavar) is a fabric that has its roots in Kashmir.
 - C. People in the earlier times used to buy a yard of the shawl to protect themselves from the chilly winter.
 - D. The Jamawar is an adulterated form of Pashmina silk since it contains a blend of cotton and wool.
 1. DCAB
 2. BCAD
 3. BACD
 4. DCBA
12. The following sentence has been divided into parts. One of them may contain an error. Select the part that contains the error from the given options. If you don't find any error, mark 'No error' as your answer.
The Prime Minister chair a high-level meeting / with senior officials / to review the Covid situation.
 1. with senior officials
 2. to review the Covid situation
 3. No error
 4. The Prime Minister chair a high-level meeting
13. Select the most appropriate synonym of the given word.
FORSAKE
 1. desert
 2. claim
 3. help
 4. hold
14. Select the option that expresses the given sentence in passive voice.
The clouds hid the sun.
 1. The sun is hidden by the clouds.
 2. The sun was hidden by the clouds.
 3. The sun was hide by the clouds.
 4. The clouds are hid by the sun.
15. Select the most appropriate ANTONYM of the given word.
Uphold
 1. Endorse
 2. Maintain
 3. Oppose
 4. Support
16. Select the option that can be used as a one-word substitute for the given group of words.
A large cage, building or enclosure to keep birds
 1. Aviary
 2. Apiary
 3. Aquarium
 4. Zoo
17. Select the correct indirect form of the given sentence.
Mother said, "All the guests will arrive tonight."
 1. Mother told that all the guests would arrive tonight.
 2. Mother said that all the guests would arrive that night.
 3. Mother said that all the guests will arrive tonight.
 4. Mother said that all the guests will arrive that night.

18. 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'.
Unless someone makes a complaint, they will not clear the garbage from the street.
 1. Without someone makes a complaint
 2. Despite someone makes a complaint
 3. No substitution required
 4. Except someone makes a complaint
19. Fill in the blank with most appropriate word.
 The air _____ has gone up significantly.
 1. charge 2. fare 3. cost 4. rent
20. Select the most appropriate word to fill in the blank.
 In the past month, the price of oil has _____ several times.
 1. faltered 2. fumbled 3. fluctuated 4. failed

Comprehension:

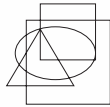
In the following passage, some words have been deleted. Select the most appropriate option to fill in each blank.

Kashmiri carpets have been appreciated since a long time for their intricate work. Their uniqueness (1) _____ in their manufacturing. These carpets are (2) _____ handmade and are knotted, not tufted. You can (3) _____ different carpets from a variety of silk or woolen ones. These are (4) _____ in colourful themes. The main art of carpet manufacturing is (5) _____ with the knotting. These knots determine the durability and value of the carpet.

21. Select the most appropriate option to fill in blank no. 1.
 1. lies 2. is lying 3. lie 4. lying
22. Select the most appropriate option to fill in blank no. 2.
 1. purely 2. simply 3. absolutely 4. merely
23. Select the most appropriate option to fill in blank no. 3.
 1. choose 2. indicate 3. elect 4. decide
24. Select the most appropriate option to fill in blank no. 4.
 1. defined 2. devised 3. described 4. designed
25. Select the most appropriate option to fill in blank no. 5.
 1. assisted 2. attended 3. associated 4. abetted

General Intelligence

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



1. 2. 3. 4.

27. Two different positions of the same dice are shown, the six faces of which are numbered from 1 to 6. Which number is on the face opposite to the face showing '2'?
-
1. 5 2. 1 3. 6 4. 3

28. Three of the following four letter-clusters are alike in a certain way and one is different. Select the odd one.
 1. LNQU 2. KMQT 3. ACFJ 4. QSVZ
29. Select the option that is related to the third term in the same way as the second term is related to the first term.
 DEBONAIR : EDRIOBAN :: HALLMARK : ?
 1. LLAMKRAM 2. AHLLAMKR
 3. AHKRLMA 4. AHKRLLAM
30. Four options have been given, out of which three are alike in some manner and one is different. Select the option that is different.
 1. Delhi 2. Chandigarh
 3. Jammu & Kashmir 4. Puducherry

31. In a code language, if FORTUNE is written as 716192122156, then how will OCTOBER be written in the same language?
 1. 14422163519 2. 1532063618
 3. 16421163619 4. 16420173819

32. Select the option that is related to the third word in the same way as the second word is related to the first word.
 Bed : Mattress :: Chair : ?

1. Foam 2. Pillow 3. Sack 4. Cushion

33. 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.

Growth : Expansion

1. Child : Birth 2. First : Last
 3. Temporary : Permanent 4. Urge : Request

34. Select the number from among the given options that can replace the question mark (?) in the following series.

8, 24, 48, 80, ?, 168

1. 122 2. 118 3. 120 4. 116

35. Vishal has a total of ₹ 4,100 in the denominations of 5, 10, 20 and 50 rupee notes. He has an equal number of 5 and 10 rupee notes. The number of 20 rupee notes is double the number of 5 rupee notes. The number of 50 rupee notes is thrice the number of 10 rupee notes. How many 5 rupee notes are there with Vishal?

1. 10 2. 40 3. 30 4. 20

36. Which of the following Venn diagrams best represents the words given below?

Engineers, Educated Persons, Males

1. 2. 3. 4.

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



1. 2. 3. 4.

38. 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. 13 : 169 2. 11 : 123 3. 17 : 291 4. 15 : 227

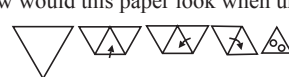
39. Select the option in which the numbers share the same relationship as that shared by the numbers in the given set. (7, 4, 33)

1. (7, 4, 71) 2. (11, 8, 175)
 3. (8, 5, 40) 4. (9, 5, 56)

40. Select the option that is related to the third number in the same way as the second number is related to the first number.
 6 : 27 :: 9 : ?

1. 66 2. 110 3. 95 4. 74

41. 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.

42. Select the option in which the numbers are related in the same way as are the numbers of the following set.
 29 : 36 : 39

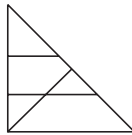
1. 78 : 79 : 82 2. 54 : 58 : 61

3. 69 : 72 : 76 4. 48 : 52 : 55

43. In a certain code language, ENDORSE is written as VMWLIHV. How will INSTRUCT be written in that language?

1. RMHGIFXG 2. SNRGSATOT
 3. SMSGSZPR 4. RMSHRZPG

44. Select the combination of letters that when sequentially placed in the blanks of the given letter series will complete the series.
a _bcd __abc _dea __cd _e
1. adebdda 2. adabdd 3. dabdade 4. adedabd
45. Select the correct option that indicates the arrangement of the following words in a logical and meaningful order.
1. Universe 2. Chennai 3. World 4. Asia
5. Tamil Nadu
1. 1, 3, 4, 2, 5 2. 1, 4, 3, 5, 2
3. 1, 3, 4, 5, 2 4. 3, 1, 5, 4, 2
46. How many triangles are there in the figure given below?



1. 7 2. 9 3. 8 4. 6
47. Which two digits need to be interchanged so as to balance the given equation?
 $75 \div 18 + 51 \times 8 - 82 = 87$
1. 8 and 2 2. 1 and 5 3. 5 and 2 4. 7 and 8
48. Select the correct mirror image of the given figure when the mirror is placed at the right side.
GRS?@915
1. ʇɹsʇ@915 2. 519@?SRG
3. ʇɹsʇ@915 4. ʇɹsʇ@915
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.

Statements:

- All computers are calculators.
- All calculators are boxes.

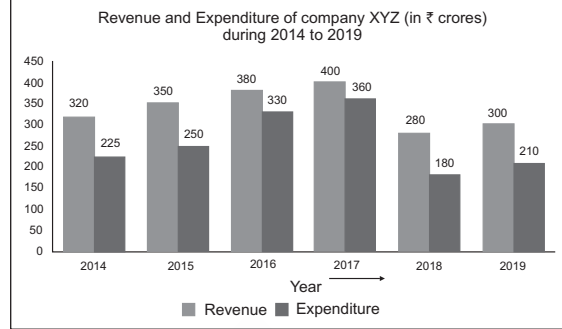
Conclusions:

- I. All computers are boxes.
 - II. Some boxes are computers.
1. Neither conclusion I nor II follows.
2. Only conclusion II follows.
3. Only conclusion I follows.
4. Both conclusions I and II follow.
50. If Raman is the brother of the son of Kshitij's son, how is Raman related to Kshitij?
1. Nephew 2. Grandson 3. Cousin 4. Son

Quantitative Aptitude

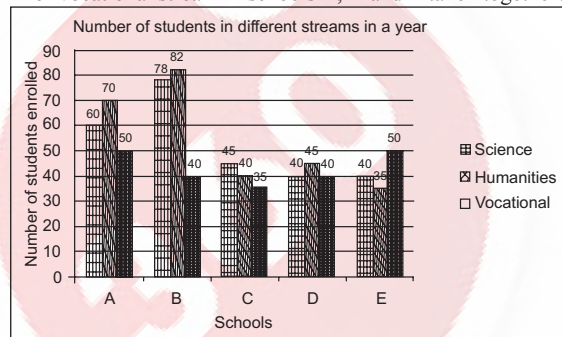
51. There are 3 groups of person – male, female and children. There are 20 males and the number of females and children taken together is 4 more than that of the males. The average weight of males is 54 kg, that of females is 49 kg and that of children is 30 kg. If the average weight of the whole group is 48.25 kg, then what is the difference between the number of females and the number of children?
1. 17 2. 14 3. 10 4. 7
52. Nalini's younger brother is 12 years old. If the ratio of the age of Nalini to that of her brother is 7 : 6, then what will be ratio in their ages 6 years hence?
1. 13 : 12 2. 10 : 6 3. 10 : 9 4. 17 : 15
53. Sunil can row a boat 20 km upstream in 1 hour 15 minutes. If the speed of the current of the river is 2 km/h, then how much time will he taken to row the boat 30 km downstream?
1. 1 h 45 m 2. 1 h 10 m 3. 1 h 30 m 4. 1 h 20 m

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



By what percentage is the average expenditure of the company in 2014, 2016 and 2018 less than the revenue in 2017?

1. 63.27% 2. 37.5% 3. 38.75% 4. 56.25%
55. The number of students enrolled in different streams at Senior Secondary level in five schools is shown in the bar graph. What is the ratio of the number of students of science stream of schools A, B and D taken together to the number of students of vocational stream in schools B, D and E taken together?

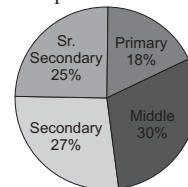


1. 178 : 125 2. 7 : 5 3. 89 : 65 4. 94 : 65

56. Simplify the given expression. $\left(x - \frac{2}{x}\right)^3 - \left(x + \frac{2}{x}\right)^3$

1. $2\left(x - \frac{4}{x^3}\right)$ 2. $4\left(3x - \frac{4}{x^3}\right)$
3. $-4\left(3x + \frac{4}{x^3}\right)$ 4. $-4\left(x + \frac{4}{x^3}\right)$

57. Students of Primary, Middle, Secondary and Sr. Secondary classes collected donation for a Relief Fund as shown in the given pie chart. If the donation collected from Middle classes was Rs. 6,750, then how much more money was collected by Middle classes as compared to Secondary classes?



1. Rs. 675 2. Rs. 1,125
3. Rs. 6,075 4. Rs. 2,025
58. If $x + \frac{1}{15x} = 3$, then the value of $x^3 + \frac{1}{375x^3}$ will be:
1. 237.6 2. 367.2 3. 273.6 4. 376.2
59. What is the sum of all the possible values of k for which a seven-digit number 23k56k is divisible by 3?
1. 109 2. 15 3. 16 4. 3

60. Evaluate the following expression.

$$\frac{3(\cot^2 46^\circ - \sec^2 44^\circ)}{2(\sin^2 28^\circ + \sin^2 62^\circ)} + \frac{2\cos^2 60^\circ \tan^2 33^\circ \tan^2 57^\circ}{\sec^2(90^\circ - \theta) - \cot^2 \theta}$$

1. 2 2. -1 3. 1 4. -2

61. The simple interest on a sum of Rs. 12,000 at the end of 5 years is Rs. 6,000. What would have been the compound interest on the same sum at the same rate for 3 years when compounded annually?

1. Rs. 3,972 2. Rs. 3,970 3. Rs. 2,520 4. Rs. 3,600

62. In $\triangle ABC$. Point D and E are on AB and AC, respectively, such that DE is parallel to BC. If AD = 3 cm, BD = 6 cm and AE = 2 cm, then find the length of CE.

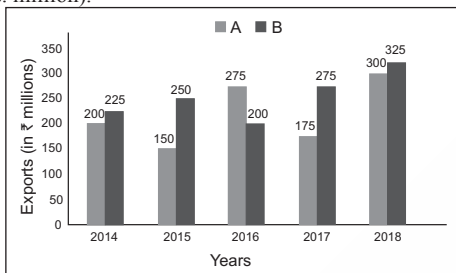
1. 6 cm 2. 8 cm 3. 16 cm 4. 4 cm

63. If $\tan \theta = \frac{4}{3}$, then the value of $\frac{9\sin \theta + 12\cos \theta}{27\cos \theta - 20\sin \theta}$ will be

equal to :

1. 72 2. 36 3. 100 4. 18

64. Study the given bar graph and answer the question that follows. The bar graph shows the exports of cars of types A and B (in Rs. million).



What is the ratio of the total exports of cars of type A in 2016 and 2018 to the total exports of cars of type B in 2015 and 2017?

1. 23 : 21 2. 21 : 23 3. 18 : 23 4. 15 : 29

65. For $\theta : 0^\circ < \theta < 90^\circ$

$3 \sec \theta + 4 \cos \theta = 4\sqrt{3}$, find the value of $(1 - \sin \theta + \cos \theta)$.

1. $\frac{1-\sqrt{3}}{2}$ 2. $\frac{1+2\sqrt{3}}{2}$ 3. $\frac{1+\sqrt{3}}{2}$ 4. $\frac{1-2\sqrt{3}}{2}$

66. After allowing a discount of 15% on the marked price of an article, it was sold for Rs. 425. Had the discount not been given, the profit would have been 25%. What was the cost price (in Rs.) of the article?

1. 500 2. 450 3. 325 4. 400

67. An article is sold at a certain price. If it is sold at $33\frac{1}{3}\%$ of

this price, there is a loss of $33\frac{1}{3}\%$. What is the percentage

profit or percentage loss when it is sold at 40% of the original selling price?

1. Profit 15% 2. Loss 20% 3. Profit 18% 4. Loss 12%

68. A person saves 25% of his income. If his income increase by 20% and his saving remains the same, then what will be the increased percentage of his expenditure?

1. 30 2. 20 3. 26 4. $26\frac{2}{3}$

69. ABC is a triangle inscribed in a circle and $\angle ACB$ is equal to 35° . P is a point on the circle on the side AB, opposite to C. What is the value of $\angle APB$ in degrees?

1. 70 2. 175 3. 145 4. 72.5

70. A solid metallic sphere of radius 10 cm is melted and recast into spheres of radius 2 cm each. How many such spheres can be made?

1. 64 2. 125 3. 216 4. 100

71. 10 men or 15 women can complete a work in 30 days. In how many days can 15 men 27 women complete the work?

1. $6\frac{1}{11}$ 2. $11\frac{1}{11}$ 3. $5\frac{1}{11}$ 4. $9\frac{1}{11}$

72. $16\frac{1}{4} \div [2\frac{1}{6} + \{4\frac{1}{3} - (2\frac{1}{2} + \frac{3}{4})\}]$ is equal to :

1. 3 2. 5 3. 4 4. 6

73. Let O be the centre of a circle and AC be the diameter. BD is a chord intersecting AC at E. AD and AB are joined. If $\angle BOC = 40^\circ$ and $\angle AOD = 120^\circ$, then $\angle BEC$ is equal to:

1. 90° 2. 70° 3. 80° 4. 55°

74. In triangle ABC, AD is the internal bisector of $\angle A$ meeting BC at D. If BD = 3.6 cm and BC = 8 cm, then the ratio of AB to AC will be:

1. 13 : 7 2. 9 : 11 3. 11 : 9 4. 7 : 13

75. If $x^6 - 6\sqrt{6}y^6 = (x^2 + Ay^2)(x^4 + Bx^2y^2 + Cy^4)$, then what will be the value of $(A^2 - B^2 + C^2)$?

1. 27 2. 36 3. 18 4. 42

General Awareness

76. Who among the following introduced the concept of electric field for the first time?

1. Michael Faraday
2. Charles Augustin de Coulomb
3. Blaise Pascal
4. Joseph Henry

77. Which of the following places in India has 0% forest area as per the Indian State of Forest Report 2019?

1. Lakshadweep
2. Goa
3. Puducherry
4. Andaman and Nicobar Islands

78. When was the Editors Guild of India founded?

1. 1978 2. 1982 3. 1956 4. 1989

79. Which of the following states has the longest roadway network as on March 2021?

1. Maharashtra 2. Gujarat
3. Madhya Pradesh 4. Rajasthan

80. Which of the following months was celebrated as 'Nutrition Month' in India in the year 2020?

1. November 2. September
3. August 4. December

81. In which of the following cities was the 89th Annual General Meeting of the Board of Control for Cricket in India held?

1. Nagpur 2. Ahmedabad
3. Indore 4. Lucknow

82. 'Rahide' is a long scarf worn by the women of _____ to protect their head from cool breeze as well as to show their traditional social affinity.

1. Madhya Pradesh 2. Himachal Pradesh
3. Uttar Pradesh 4. Arunachal Pradesh

83. Where was the first factory of the Indian Iron and Steel Company (IISCO) set up?

1. Hirapur 2. Jabalpur
3. Jamshedpur 4. Durgapur

84. Who among the following is the youngest mayor in India as of January 2021?

1. Sabitha Beegam 2. Arya Rajendran
3. Mekala Kavya 4. Rekha Priyadarshini

85. Which part of India did the Nizams of Asafjahi dynasty rule?

1. Western kingdoms 2. Deccan provinces
3. Eastern states 4. Northern India

86. Which of the following types of computer is used in climate research and weather forecasting?
 1. Mainframe computers 2. Micro-computers
 3. Mini-computers 4. Supercomputers
87. Which of the following has a tetragonal crystal system?
 1. Potassium nitrate 2. Zinc oxide
 3. Calcium sulphate 4. Cadmium sulphide
88. Who among the following was awarded the International Children's Peace Prize 2020?
 1. Malala Yousafzai 2. Sadat Rahman
 3. Greta Thunberg 4. Neha Gupta
89. Which of the following states emerged as a separate state in 1963?
 1. Tripura 2. Arunachal Pradesh
 3. Nagaland 4. Mizoram
90. Who among the following athletes was the first ever youth ambassador of United Nations International Children's Emergency Fund (UNICEF) India?
 1. KT Irfan 2. Dutee Chand
 3. Neeraj Chopra 4. Hima Das
91. Chemicals called _____ link to form proteins.
 1. citric acids 2. oxalic acids
 3. amino acids 4. nitric acids
92. 'Maand' is primarily a traditional folk singing style from _____.
 1. Rajasthan 2. Bihar
 3. Jharkhand 4. Madhya Pradesh
93. Which of the following is the state flower of Manipur?
 1. Shirui Lily 2. Pink Rhododendron
 3. Foxtail Orchids 4. Retusa
94. Which of the following Articles of the Constitution of India mentions 'Continuance of the rights of citizenship'?
 1. Article 12 2. Article 10
 3. Article 11 4. Article 9
95. Which of the following keys will you press in Windows 10 to turn the volume up?
 1. F5 2. F6 3. F4 4. F8
96. 'Nikshay Poshan Yojana' is a scheme introduced by the Government of India to provide nutritional support to _____ patients.
 1. diabetes 2. tuberculosis
 3. cancer 4. arthritis
97. Who among the following was a Portuguese writer who wrote about the trade and society in south India?
 1. Jean-Baptiste Tavernier 2. Duarte Barbosa
 3. Francois Bernier 4. Niccolao Manucci
98. Who among the following Indian cricketers holds the record of most number of catches taken by a non-wicket keeper while standing in the slip cordon, as of January 2021?
 1. Javagal Srinath 2. Rahul Dravid
 3. Manoj Prabhakar 4. VVS Laxman
99. Where was the world's largest solar tree installed in India in 2020?
 1. Bhopal 2. Jaipur 3. Durgapur 4. Bokaro
100. Which present day Indian state came into existence as the Mysore state in 1953?
 1. Kerala 2. Andhra Pradesh
 3. Tamil Nadu 4. Karnataka

Answer Key

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

Answers with Explanations

1. Option (2) is correct.

yet living

The error lies in the segment yet living which is grammatically wrong. Yet is commonly used in negative sentences or to talk about something that has not happened and is expected to happen. Yet living should be replaced with yet to live as it is expected to happen.

2. Option (2) is correct.

been sitting

The error lies in the segment 'being seating'. The tense is present perfect continuous and the verb must be written as: have been + ing form of the verb/has been + ing form of the verb.

3. Option (4) is correct.

Ordinary workers in a company

The rank and file are the ordinary members of an organization or the ordinary workers in a company, as opposed to its leaders or managers.

4. Option (2) is correct.

Insert

The synonym of expunge is to delete/remove. The synonym of deplete is to reduce. The synonym of exhaust is to use/

finish. The synonym for remove is to eliminate. Options 1,3, and 4 are not the antonyms of 'expunge'.

5. Option (2) is correct.

Rinckle

The words that are given in options 1,3, and 4 are correctly spelt. The incorrectly spelt word is option 2 'rinckle'. It must be WRINKLE. The synonym of wrinkle is fold or furrow.

6. Option (4) is correct.

DACB

Sentence D is the first sentence as it introduces Ranji's stay in Rajpur. Sentence A is the second sentence as it explains why he stayed in Rajpur. Sentence C is the third sentence as it explains how he spent his loneliness there. Sentence B is the last sentence.

7. Option (2) is correct.

Bridle

A saddle is a seat, usually made of leather, that you put on a horse so that you can ride it. A bridle is a set of straps that is put around a horse's head and mouth so that the person riding or driving the horse can control it. A stirrup is a light frame or

ring that holds the foot of a rider, attached to the saddle by a strap, often called stirrup leather. The meaning of bridal is a marriage festival or ceremony.

8. Option (1) is correct.

Abundant

The synonym of abundant is copious/profuse. The synonym of meagre is insufficient. The synonym of limited is inadequate. The synonym of consistent is reliable.

9. Option (1) is correct.

Forever

Definition of FOR GOOD (phrase): permanently, without the possibility of change.

10. Option (2) is correct.

misrable

The words that are given in options 1, 3, and 4 are correctly spelled. The incorrectly spelled word is misrable. The correct spelling is miserable and the synonym is unhappiness.

11. Option (3) is correct.

BACD

B is the first sentence as it introduces the fabric jamawar. A is the second sentence as it gives the meanings of the words jama and war. Sentence C is the third sentence as it explains the way people protected themselves from chilly weather in the past. D is the final sentence which details the combination of jamawar.

12. Option (4) is correct.

The Prime Minister chair a high-level meeting

The Prime Minister is the subject of the sentence and the sentence is to be in the simple present tense or in the past tense. The verb must be either 'chairs' if in simple present tense or 'chaired' in the past tense. Here the verb is 'chair' which is wrong.

13. Option (1) is correct.

Desert

The synonym of desert is to forsake. The synonym of claim is entitlement. The synonym of help is to aid. The synonym of hold is to grip.

14. Option (2) is correct.

The sun was hidden by the clouds.

The sentence given for conversion is: The clouds hid the sun. This sentence is in active voice. It has to be converted into passive voice. The sentence is in the simple past tense. In the active construction, 'the clouds' is the subject, 'hid' is the verb and 'the sun' is the object. When we convert the sentence into passive voice, the object of the active 'the sun' will become the subject in the passive and since the subject is singular and the tense is past, we must use 'was' as the be verb and the third form of the verb 'hid' (hidden), must be used. We have to use the connector 'by' to denote the agent 'the clouds'.

15. Option (3) is correct.

Oppose

The synonym of uphold is to support. The synonym of endorse is to approve. The synonym of maintain is to uphold. The synonym of oppose is to defy and the antonym is to uphold. The synonym of support is to uphold.

16. Option (1) is correct.

Aviary

An apiary is a beehive. An aquarium is a building where people can go to see fish and other water animals. A zoo is a facility in which animals are kept within enclosures for public exhibition and often bred for conservation purposes.

17. Option (2) is correct.

Mother said that all the guests would arrive that night.

The sentence given for conversion is: Mother said, "All the guests will arrive tonight."

Here, the reporting verb is in the past tense. The sentence to be converted is a statement. We have to rewrite the reporting element 'Mother said' and then we use to use the connector that to connect the reporting element and the part to be converted. We have to rewrite the subject of the part to be reported: All the guests... and since the reporting verb is in the past form, we have to make will arrive will become would arrive and 'tonight' is changed as 'that night'.

18. Option (3) is correct.

No substitution required

The given sentence is grammatically correct and hence, no substitution is required.

19. Option (2) is correct.

Fare

A charge is a price we pay for goods or services. Fare: the amount of money we pay to travel by bus or train. A cost is the money you have to pay for something. Rent is the money we pay for using a land or building.

20. Option (3) is correct.

Fluctuated

Faltered means weakened. Fumbled means searched. Fluctuated means varied. Failed means become unsuccessful. So, fluctuated is the right terminology to be used.

21. Option (1) is correct.

Lies

The passage is about Kashmiri carpets and this sentence is about the uniqueness and says what makes it unique.

22. Option (1) is correct.

Purely

The sentence is about the uniqueness of the carpets and it cannot be simply or absolutely or merely handmade. It is purely handmade.

23. Option (1) is correct.

Choose

The sentence speaks about the variety of carpets that can be seen there and the choices are highlighted here. Options 2, 3, and 4 are inappropriate.

24. Option (4) is correct.

Designed

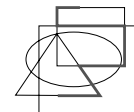
The themes that are being represented by the carpets are described here. It cannot be options 1, 2, and 3.

25. Option (3) is correct.

Associated

The art of carpet manufacturing is denoted here and how knotting is connected to it. So 'associated' is the right term.

26. Option (1) is correct.



In the given figure the option figure 1 is shown how it is embedded.

27. Option (2) is correct.

We know that in the first dice 5 and 6 cannot be the opposite of 2 because they are adjacent to 2. Hence, only one left which is 1. Hence, 1 is the correct answer.

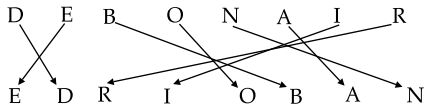
28. Option (2) is correct.

The pattern is

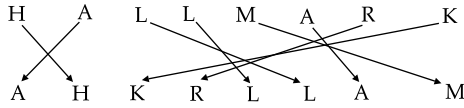
L	+2	N	+3	Q	+4	U
K	+2	M	+4	Q	+3	T
A	+2	C	+3	F	+4	J
Q	+2	S	+3	V	+4	Z

Hence, KMQT is the odd one out.

29. Option (4) is correct.



Similarly,



Hence, AHKRLLAM is the correct answer.

30. Option (2) is correct.

All of Delhi, Puducherry, Chandigarh, Jammu and Kashmir are Union territories. Whereas Chandigarh does not have legislative assembly. Hence, Chandigarh is the correct answer.

31. Option (3) is correct.

The pattern is

F	O	R	T	U	N	E
6	15	18	20	21	14	5
+1	+1	+1	+1	+1	+1	+1
7	16	19	21	22	15	6

Similarly

O	C	T	O	B	E	R
15	3	20	15	2	5	18
+1	+1	+1	+1	+1	+1	+1
16	4	21	16	3	6	19

Hence, 16421163619 is the correct answer.

32. Option (4) is correct.

As we use mattress for bed in the same way Cushion is used for chair.

Hence, cushion is the correct answer.

33. Option (4) is correct.

As growth is the synonym of Expansion in the same way urge is the synonym of request.

Hence, Urge: Request is the correct answer.

34. Option (3) is correct.

8	24	48	80	120 (?)	168
	16	24	32	40	48
		8	8	8	8

Hence, 120 is the correct answer.

35. Option (4) is correct.

Let the number of 5 and 10 rupee notes be 'x'.

The number of 20 Rupee notes is 2x.

and the number of 50 Rupee notes is 3x.

According to the question,

$$5(x) + 10(x) + 20(2x) + 50(3x) = 4100$$

$$\Rightarrow 5x + 10x + 40x + 150x = 4100$$

$$\Rightarrow 205x = 4100$$

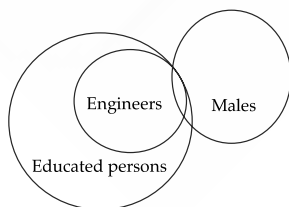
$$\Rightarrow x = \frac{4100}{205}$$

$$\Rightarrow x = 20$$

Therefore, Vishal has 20 notes of 5 Rupees.

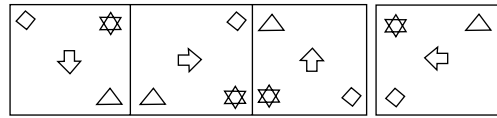
Hence, 20 is the correct answer.

36. Option (1) is correct.



We know all engineers are educated persons and some males can be engineers and males can be educated persons as well. Hence, option 1 best illustrates the above relationship among the given classes.

37. Option (2) is correct.



The pattern is that arrow is moving anticlockwise 90°.

And other objects are shifting place forward in clockwise direction.

38. Option (1) is correct.

$$169 = 13^2$$

$$123 = 11^2 + 2 = 121 + 2$$

$$291 = 17^2 + 2 = 289 + 2$$

$$227 = 15^2 + 2 = 225 + 2$$

Hence, 13:169 is the correct answer.

39. Option (4) is correct.

The pattern is (1st number² - 2nd number²) = 3rd number

$$(7, 4, 33) \rightarrow 7^2 - 4^2 = 49 - 16 = 33$$

Upon checking option 4, we get

$$(9, 5, 56) \rightarrow 9^2 - 5^2 = 81 - 25 = 56$$

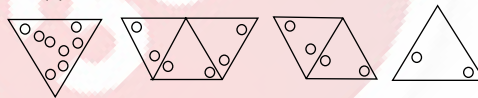
Hence, (9, 5, 56) is the correct answer.

40. Option (1) is correct.

$$6:27 \Rightarrow (6-1)^2 + 2 = 5^2 + 2 = 27$$

$$9:? \Rightarrow (9-1)^2 + 2 = 8^2 + 2 = 66$$

41. Option (3) is correct.



We can just copy the triangle and paste the same but on the opposite side.

42. Option (4) is correct.

The pattern is 2nd number = 1st number + (Subtraction of digits of 1st number).

3rd number = 2nd number + (subtraction of digits of 2nd number).

$$29 + (9 - 2) = 29 + 7 = 36$$

$$36 + (6 - 3) = 36 + 3 = 39$$

Similarly, 48:52:39

$$48 + (8 - 4) = 48 + 4 = 52$$

$$52 + (5 - 2) = 52 + 3 = 55$$

Hence, 48:52:55 is the correct answer.

43. Option (1) is correct.

The pattern is reverse letter of each letter in the English alphabet.

E N D O R S E

V M W L I H V

Similarly

I N S T R U C T

R M H G I F X G

Hence, RMHGIFXG is the correct answer.

44. Option (4) is correct.

The pattern is:

aabedde aabedde aabedde

First, we count the total number which is 21 and 21 can be

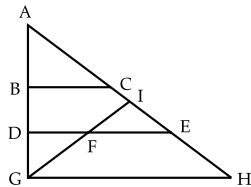
written as 7 × 3. It means we either form 7 groups or 3 groups.

If we make 3 groups then each group must be of 7 letters.

Hence, adedabd is the correct answer.

45. Option (3) is correct.

The logical order will be the descending order of the places
 Universe → World → Asia → Tamil Nadu → Chennai
 Hence, 1, 3, 4, 5, 2 is the correct answer.

46. Option (1) is correct.

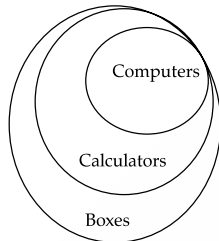
ABC, ADE, AGH, AIG, IGH, DGF, FIE.
 Hence, 7 is the correct answer.

47. Option (3) is correct.

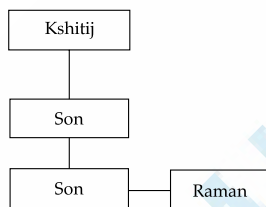
Using BODMAS Rule: checking option 3 we get,
 $72 \div 18 + 21 \times 8 - 85 = 4 + 168 - 85 = 4 + 83 = 87$
 Therefore, LHS = RHS.

48. Option (1) is correct.

When we place the mirror at the right side then objects appear on the left side will appear on the right side and the objects which appear on the right side will appear on the left side and the position of the object will be changed from right to left and left to right.
 21909220

49. Option (4) is correct.

From the above Venn Diagram both conclusions I and II follows.

50. Option (2) is correct.

From the blood relation tree, it can be seen that Raman is the grandson of Kshitij.
 Hence, Grandson is the correct answer.

51. Option (3) is correct.

Total number of males = 20
 Let number of females = x
 And the number of children = $24 - x$
 According to the question,
 Total weight of males = $54 \times 20 = 1080$ kg
 And total weight of females = $49x$ kg
 Total weight of children = $(24 - x) \times 30$ kg
 Total weight of whole group = $(20 + 24) \times 48.25 = 2123$ kg
 According to the question,

$$\begin{aligned} 2123 &= 1080 + 49x + (24 - x) \times 30 \\ \Rightarrow 1043 &= 49x + 720 - 30x \\ \Rightarrow 19x &= 323 \\ \Rightarrow x &= 17 \end{aligned}$$

So, number of females = 17
 And number of children = $24 - 17 = 7$
 Required difference = $17 - 7 = 10$

52. Option (3) is correct.

Given:
 Nalini's younger brother age = 12 years
 Let Nalini's age = x years
 According to the question,

$$\Rightarrow \frac{x}{12} = \frac{7}{6}$$

$\Rightarrow x = 14$
 So, Nalini's age = 14 years
 6 years hence,
 Nalini's age = 20 years
 Nalini's younger brother age = 18 years
 Required ratio = $20 : 18 = 10 : 9$

53. Option (3) is correct.

Given, Distance = 20 km
 Time = 1 h 15 m = $1\frac{15}{60}$ h = $\frac{5}{4}$ h

Speed of current of river = 2 km/h
 Let the speed of boat = x km/h
 So, upstream speed = $(x - 2)$ km/h
 downstream speed = $(x + 2)$ km/h
 We have,
 \Rightarrow distance = speed \times time
 According to the question,

$$\Rightarrow 20 = (x - 2) \times \frac{5}{4} \Rightarrow x = 18$$

So, the speed of boat = 18 km/h
 Now distance has to cover downstream = 30 km
 Let boat will cover 30 km downstream in t hours.

$$\begin{aligned} \text{So, } 30 &= (18 + 2) \times t \\ \Rightarrow t &= \frac{3}{2} \text{ h} = 1 \text{ h } 30 \text{ m} \end{aligned}$$

So, time taken to cover 30 km downstream
 = 1 h 30 m

54. Option (3) is correct.

Expenditure of the company in 2014, 2016 and 2018 = $225 + 330 + 180 = 735$ cr

Average expenditure of the company in 2014, 2016 and 2018
 = $\frac{735}{3} = 245$ cr

Revenue of the company in 2017 = 400 cr
 Required percentage

$$= \frac{400 - 245}{400} \times 100 = \frac{155}{4} = 38.75\%$$

55. Option (3) is correct.

Number of students of science stream of schools A, B and D
 = $60 + 78 + 40 = 178$
 Number of students of vocational stream of schools B, D and E
 = $40 + 40 + 50 = 130$
 Required ratio = $178 : 130 = 89 : 65$

56. Option (3) is correct.

$$\text{Given: } \left(x - \frac{2}{x}\right)^3 - \left(x + \frac{2}{x}\right)^3 = \left(x - \frac{2}{x} - x - \frac{2}{x}\right)$$

$$\left(\left(x - \frac{2}{x}\right)^2 + \left(x + \frac{2}{x}\right)^2 + \left(x - \frac{2}{x}\right)\left(x + \frac{2}{x}\right)\right)$$

$$= \left(-\frac{4}{x}\right) \left(x^2 + \frac{4}{x^2} - 4 + x^2 + \frac{4}{x^2} + 4 + x^2 - \frac{4}{x^2}\right)$$

$$= \left(-\frac{4}{x}\right) \left(3x^2 + \frac{4}{x^2}\right) = -4 \left(3x + \frac{4}{x^3}\right)$$

57. Option (1) is correct.

Donation collected from middle classes = ₹ 6750

Let total collection by all the students = ₹ x

According to the question,

$$\Rightarrow x \times \frac{30}{100} = 6750$$

$$\Rightarrow x = 22500$$

So, total collection by all the students = ₹ 22500

Now, donation collected from secondary classes

$$= \frac{27}{100} \times 22500 = ₹ 6075$$

$$\text{Required difference} = 6750 - 6075 = ₹ 675$$

58. Option (1) is correct.

$$\text{Given: } x + \frac{1}{15x} = 3$$

$$\text{cubing both sides, } \left(x + \frac{1}{15x}\right)^3 = 27$$

$$\Rightarrow x^3 + \frac{1}{3375x^3} + \frac{1}{5} \left(x + \frac{1}{15x}\right) = 27$$

$$\Rightarrow x^3 + \frac{1}{3375x^3} + \frac{1}{5}(3) = 27$$

$$\Rightarrow x^3 + \frac{1}{3375x^3} = 27 - \frac{3}{5}$$

Multiply both sides by 9,

$$\Rightarrow 9x^3 + \frac{1}{375x^3} = 9 \times 26.4 = 237.6$$

59. Option (2) is correct.

Given number = 23 k 567 k

We know, the number will only be divisible by 3, if the sum of the digits is divisible by 3.

So, sum of digits = 2 + 3 + k + 5 + 6 + 7 + k = 23 + 2k

Possible values of k when the will divisible by 3 = 2, 5 and 8

So, the required sum = 2 + 5 + 8 = 15

60. Option (2) is correct.

Given equation:

$$\Rightarrow \frac{3(\cot^2 46 - \sec^2 44)}{2(\sin^2 28 + \sin^2 62)} + \frac{2\cos^2 60 \cdot \tan^2 33 \cdot \tan^2 57}{\sec^2(90 - \theta) - \cot^2 \theta}$$

$$= \frac{3(\cot^2(90 - 44) - \sec^2 44)}{2(\sin^2(90 - 62) + \sin^2 62)} + \frac{2\cos^2 60 \cdot \tan^2(90 - 57) \cdot \tan^2 57}{\operatorname{cosec}^2 \theta - \cot^2 \theta}$$

$$= \frac{3(\tan^2 44 - \sec^2 44)}{2(\cos^2 62 + \sin^2 62)} + \frac{2\cos^2 60 \cdot \cot^2 57 \cdot \tan^2 57}{\operatorname{cosec}^2 \theta - \cot^2 \theta}$$

$$= \frac{3(-1)}{2(1)} + \frac{2\left(\frac{1}{4}\right) \cdot (1)}{1} = -\frac{3}{2} + \frac{1}{1} = -1$$

61. Option (1) is correct.

Given,

Principal amount (P) = ₹ 12000

Time (T) = 5 years

SI = ₹ 6000

Let, the rate of interest = R% per annum

We have,

$$SI = \frac{P \times R \times T}{100}$$

$$\Rightarrow 6000 = \frac{12000 \times R \times 5}{100}$$

$$\Rightarrow 6000 = 600 R$$

$$\Rightarrow R = 10\%$$

Now time = 3 years

By compound interest formula,

$$A = P \left(1 + \frac{R}{100}\right)^3$$

$$\Rightarrow A = 12000 \left(1 + \frac{10}{100}\right)^3$$

$$\Rightarrow A = 12000 \times \frac{11}{10} \times \frac{11}{10} \times \frac{11}{10} \Rightarrow A = 15972$$

$$\text{So, compound interest} = 15972 - 12000 = ₹ 3972$$

62. Option (4) is correct.

As shown in above diagram,

In $\triangle ABC$, AD = 3 cm,

BD = 6 cm

So, AB = 6 + 3 = 9 cm

AE = 2 cm,

Let EC = x cm

So, AC = (2 + x) cm

As DE \parallel BC, then by triangle property,

$$\Rightarrow \frac{AB}{AD} = \frac{AC}{AE} \Rightarrow \frac{9}{3} = \frac{2+x}{2} \Rightarrow 18 = 6 + 3x \Rightarrow x = 4$$

So, CE = 4 cm

63. Option (1) is correct.

$$\text{Given, } \tan \theta = \frac{4}{3}$$

$$\text{we have, } \tan \theta = \frac{\text{Perpendicular}}{\text{Base}} = \frac{4}{3}$$

$$\text{so, hypotenuse} = \sqrt{4^2 + 3^2} = 5$$

$$\text{so, } \sin \theta = \frac{4}{5} \text{ and } \cos \theta = \frac{3}{5}$$

$$\text{now, } \frac{9 \sin \theta + 12 \cos \theta}{27 \cos \theta - 20 \sin \theta} = \frac{9\left(\frac{4}{5}\right) + 12\left(\frac{3}{5}\right)}{27\left(\frac{3}{5}\right) - 20\left(\frac{4}{5}\right)}$$

$$= \frac{\frac{36}{5} + \frac{36}{5}}{\frac{81}{5} - \frac{80}{5}} = \frac{\frac{72}{5}}{\frac{1}{5}} = 72$$

64. Option (1) is correct.

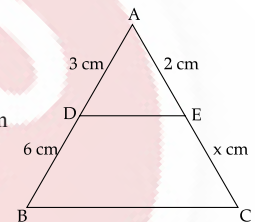
Total exports of cars of type A in 2016 and 2018 = 275 + 300 = 575 million

Total exports of cars of type B in 2015 and 2017 = 250 + 275 = 525 million

Required ratio = 575 : 525 = 23 : 21

65. Option (3) is correct.

$$\text{Given: } 3 \sec \theta + 4 \cos \theta = 4\sqrt{3}$$



$$\Rightarrow \frac{3}{\cos\theta} + 4\cos\theta = 4\sqrt{3}$$

$$\Rightarrow 4\cos^2\theta - 4\sqrt{3}\cos\theta + 3 = 0$$

$$\Rightarrow (2\cos\theta - \sqrt{3})^2 = 0$$

$$\cos\theta = \cos 30^\circ$$

$$\text{So, } \theta = 30^\circ$$

$$\text{Value of } 1 - \sin\theta + \cos\theta = 1 - \sin 30^\circ + \cos 30^\circ$$

$$= 1 - \frac{1}{2} + \frac{\sqrt{3}}{2} = \frac{1 + \sqrt{3}}{2}$$

66. Option (4) is correct.

Given:

Selling price of article = ₹ 425

Discount percentage = 15%

Let MRP = ₹ x

According to the question,

$$\Rightarrow x \times \frac{85}{100} = 425$$

$$\Rightarrow x = 500$$

So, MRP = ₹ 500

Let the cost price is y.

According to the question,

$$y \times \frac{125}{100} = 500, y = 400$$

So, the cost price = ₹ 400

67. Option (2) is correct.

Let the cost price and selling price of an article are ₹ x and ₹ y respectively.

According to the question,

$$\Rightarrow x \times \frac{100 - \frac{100}{3}}{100} = y \times \frac{100}{100}$$

$$\Rightarrow x \times \frac{200}{300} = \frac{y}{3} \Rightarrow \frac{x}{y} = \frac{1}{2} \Rightarrow x = \frac{1}{2}y$$

So, cost price of article = ₹ $\frac{1}{2}y$

$$\text{Now, new selling price} = \frac{40}{100} \times y = \frac{2}{5}y$$

$$\text{So, loss percentage} = \frac{\frac{1}{2}y - \frac{2}{5}y}{\frac{1}{2}y} \times 100 = \frac{1}{5} \times 100 = 20\%$$

68. Option (4) is correct.

Let the income of person = ₹ 100

Then savings of the person = ₹ 25

And expenditure of the person = ₹ 75

According to the question,

Salary is increased by 20%, then new income = ₹ 120

Still his saving remains same. So new expenditure

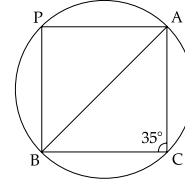
$$= 120 - 25 = 95$$

Percentage increase of his expenditure

$$= \frac{95 - 75}{75} \times 100 = 26\frac{2}{3}\%$$

69. Option (3) is correct.

As shown in above diagram,



APBC is cyclic quadrilateral.

$$\text{So, } \angle APB + \angle ACB = 180^\circ$$

$$\Rightarrow \angle APB = 180^\circ - 35^\circ$$

$$\Rightarrow \angle APB = 145^\circ$$

70. Option (2) is correct.

Given: Radius of solid sphere = 10 cm

$$\text{We have, volume of sphere} = \frac{4}{3} \times \pi \times r^3 = \frac{4}{3} \times \pi \times 10^3$$

Now, the radius of new sphere = 2 cm

$$\text{So, volume of this sphere} = \frac{4}{3} \times \pi \times 2^3$$

$$\text{So, total number of spheres can be made} = \frac{\frac{4}{3} \times \pi \times 10^3}{\frac{4}{3} \times \pi \times 2^3} = 125$$

71. Option (4) is correct.

Given,

10 men can complete the work in = 30 days

15 women can complete the work in = 30 days

We have, $M_1D_1 = M_2D_2$

$$\Rightarrow 10M \times 30 = 15W \times 30 \Rightarrow \frac{M}{W} = \frac{3}{2}$$

So, ratio of man's and woman's efficiency = 3:2

So, let the total work = $3 \times 10 \times 30 = 900$ units

$$\text{Per day work of 15 men and 27 women} = 15 \times 3 + 27 \times 2 = 99 \text{ unit/day}$$

$$\text{Required number of days} = \frac{900}{99} = 9\frac{1}{11} \text{ days}$$

72. Option (2) is correct.

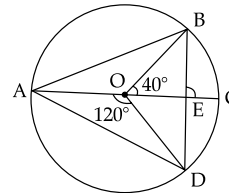
Given:

$$\Rightarrow 16\frac{1}{4} \div \left[2\frac{1}{6} + \left\{ 4\frac{1}{3} - \left(2\frac{1}{2} + \frac{3}{4} \right) \right\} \right]$$

$$= \frac{65}{4} \div \left[\frac{13}{6} + \left\{ \frac{13}{3} - \frac{13}{4} \right\} \right]$$

$$= \frac{65}{4} \div \left[\frac{13}{6} + \frac{13}{12} \right] = \frac{65}{4} \div \frac{13}{4} = 5$$

73. Option (3) is correct.



As shown in diagram,

$$\angle BOC = 40^\circ$$

$$\text{So, } \angle BOA = 180^\circ - 40^\circ = 140^\circ$$

As, angle by arc AB at centre is 140° . So, from same arc angle on the circumference = $\frac{140^\circ}{2} = 70^\circ$

$$\begin{aligned} \text{Now } \angle \text{DOC} &= 360^\circ - (\angle \text{AOB} + \angle \text{AOD} + \angle \text{BOC}) \\ &= 360^\circ - (140^\circ + 120^\circ + 40^\circ) = 60^\circ \end{aligned}$$

As, angle by arc DC at centre is 60° . So, from same arc angle on the circumference = $\frac{60^\circ}{2} = 30^\circ$

$$\text{Now, } \angle \text{BEC} = (180^\circ - (70^\circ + 30^\circ)) = 80^\circ$$

74. Option (2) is correct.

As shown in diagram,

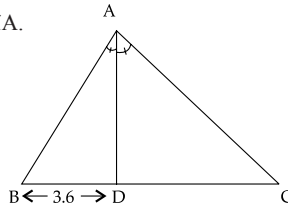
$$\text{DC} = 8 - 3.6 = 4.4$$

AS AD is angle bisector of $\angle A$.

$$\text{So, } \frac{AB}{AC} = \frac{BD}{DC}$$

$$\Rightarrow \frac{AB}{AC} = \frac{3.6}{4.4}$$

$$\text{So, } AB : AC = 9 : 11$$

**75. Option (2) is correct.**

Given:

$$\Rightarrow x^6 - 6\sqrt{6}y^6 = (x^2 + Ay^2)(x^4 + Bx^2y^2 + Cy^4)$$

$$\Rightarrow (x^2 - \sqrt{6}y^2)(x^4 + \sqrt{6}x^2y^2 + 6y^4) = (x^2 + Ay^2)(x^4 + Bx^2y^2 + Cy^4)$$

$$\text{By comparing both sides, } A = -\sqrt{6}, B = \sqrt{6}, C = 6$$

$$\text{Now, } A^2 - B^2 + C^2 = 6 - 6 + 36 = 36$$

76. Option (1) is correct.

The Father of Electricity is Michael Faraday. He was the one who first introduced the concept of an electric field. He discovered electromagnetism's laws. He also discovered electric current induction. In 1825, he also discovered benzene. He also invented the first electric generator and motor. Pascal, a French mathematician, physicist, inventor, philosopher, writer, and Catholic theologian were born in Blaise. He was a child prodigy raised by his father. Joseph Henry was a scientist from the United States. He was the Smithsonian Institution's first Secretary. He was the National Institute for the Promotion of Science's secretary.

77. Option (1) is correct.

The Forest Survey of India's 16th biennial assessment of India's forests is the India State of Forest Report 2019. FSI conducts the National Forest Inventory to assess the growing stock in forests and TOF, bamboo resources, carbon stock, and people living in Forest Fringe Villages' reliance on fuel wood, fodder, small timber, and bamboo. For the first time, the 2019 report evaluated the qualitative nature of the forest cover, including listing its biodiversity and the types of plants and trees found. It also created a national forest inventory of forest products for the first time. Mizoram (85.4%), Arunachal Pradesh (79.63%), and Meghalaya (76.33%) have the highest percentage of forest cover.

78. Option (1) is correct.

The Editors Guild of India is a journalistic non-profit organisation. Kuldip Nayar, a prominent journalist, founded it in 1978. It represented Indian newspapers in government communications. Its goals are to protect press freedom and raise the editorial leadership standards of newspapers and magazines. Seema Mustafa is the president (As of March 2022).

79. Option (1) is correct.

Maharashtra has the largest roadway network in India, with 247,652 km that has been meticulously planned and designed to provide the most convenient passenger road transport for Indians. National Highway 44 is India's longest highway. NH 47A is India's shortest highway. The Khardung La Highway is India's highest road. Nitin Gadkari is the Minister of Road Transport and Highways.

80. Option (2) is correct.

Nutrition Month was established to promote healthy eating among women and children. Rashtriya Poshan Maah is another name for it. Rashtriya Poshan Maah will be held in September

2020. Poshan Maah is observed every year to encourage Jan Bhagidaari in order to ensure everyone's health and nutrition. Poshan Maah is celebrated every year across the country as part of the POSHAN Abhiyaan, which was launched in 2018. Prime Minister Shri Narendra Modi emphasised the importance of nutrition in our lives in his popular programme "Mann ki Baat" on August 30, 2020. PM Narendra Modi declared September to be National Nutrition Month. In his Mann Ki Baat programme, he emphasised raising awareness about childhood malnutrition, particularly among girls.

81. Option (2) is correct.

The BCCI held its 89th Annual General Meeting in Ahmedabad on December 24, 2020. The Board of Control for Cricket in India (BCCI) is the governing body of cricket in India, reporting to the Ministry of Youth Affairs and Sports of the Government of India. President: Roger Binny, Headquarters: Mumbai, Established: December 1928.

82. Option (2) is correct.

Rahide is a long headscarf worn by Himachal Pradesh women to protect their heads from the cool breeze and to represent their culture. Rahide is available in a variety of fabrics and patterns. The floral print was the most commonly used pattern, representing the state's and its surroundings' rich flora and fauna. For centuries, these scarves have been mostly made by local women.

83. Option (1) is correct.

The Indian Iron and Steel Company (IISCO) is a steel plant in Burnpur (now). It is a steel plant owned by the Steel Authority of India Limited (SAIL). It was founded in 1918 as an Indian Iron and Steel Company under the Martin Burn group's banner. In 2006, it merged with SAIL and was renamed IISCO Steel Plant. It can produce 2.5 million tonnes of crude steel per year. SAIL is India's third and the world's twentieth-largest steel producer, with an annual output of 16.30 million metric tonnes. Important Considerations In 1922, IISCO produced iron from an open-top blast furnace in Hirapur (later renamed Burnpur) in West Bengal for the first time.

84. Option (2) is correct.

At the age of 21, Arya Rajendran, a member of the Communist Party of India (Marxist), became India's youngest mayor. She was elected mayor of Thiruvananthapuram, Kerala's capital. In India, the municipal commissioner, a bureaucrat appointed by the state government, serves as the de facto head of the municipal body. Although the mayor is the political and executive head of the city, they have little executive power.

85. Option (2) is correct.

The Asaf Jahi dynasty was a Muslim one. It ruled the Hyderabad kingdom. They arrived in India in the late 17th century and worked for the Mughal Empire. Asaf Jahi is the ruler of Golconda, with the capital in Aurangabad. Mir Qamar-ud-Din Siddiqi, a Viceroy of the Deccan emperors from 1713 to 1721, founded the city. Mir Osman Ali Khan was the last ruler.

86. Option (4) is correct.

A supercomputer would be used to forecast the weather. Climate research, molecular modelling, and oil and gas exploration all use supercomputers. Meteorologists use them to study the atmosphere and global temperature variations. Scientists use them for sub-atomic demonstrations, which allow them to determine the structures and properties of natural composites. They're also used to calculate the effect of wind and turbulence on a plane.

87. Option (3) is correct.

Calcium sulphate and its hydrates are calcium compounds with the formula CaSO_4 . Its main application is in the production of Plaster of Paris. It is used as a coagulant in tofu. Prior to the 1970s, the compound was used to produce sulphuric acid. It is used to detect moisture.

88. Option (2) is correct.

Bangladesh's Sadat Rahman has been awarded the prestigious International Children's Peace Prize 2020. He received the award for his efforts in establishing his social organisation and mobile app 'Cyber Teens' to combat cyberbullying. During

a ceremony in the Netherlands, Nobel Peace Prize laureate Malala Yousafzai presented the award. He was chosen from 142 applicants from 42 countries.

89. Option (3) is correct.

On December 1, 1963, Nagaland was formally recognised as a separate state, with Kohima designated as its capital. The Parliament passed the State of Nagaland Act in 1962 to grant Nagaland statehood. After India's independence in 1947, the Naga territory was initially incorporated into Assam. However, a strong nationalist movement began to advocate for the Naga tribes' political union, and extremists demanded outright secession from the Indian union. The Naga Hills region of Assam and the Tuensang frontier division to the northeast were merged into a single unit directly administered by the Indian government in 1957. Nagaland was designated as a constituent state of the Indian Union in 1960.

90. Option (4) is correct.

Hima Das is well-known in athletics for his involvement in track and field. She was born in the state of Assam. She is also referred to as the Dhing Express. She is also a Deputy Superintendent of Police (DSP) in the Assam Police Department. She competes in 100m, 200m, and 400m races. She won gold at the 2018 Asian Games in Jakarta. In 2018, she also received the Arjuna Award. Hima Das became the first Indian woman and the first Indian athlete to win a gold medal in any format of a global track event when she clocked a time of 51.46 seconds at the IAAF World U20 Championships. UNICEF India appointed her as the organization's first Youth Ambassador.

91. Option (3) is correct.

Amino acids are molecules that form proteins when they combine. It is the foundation of life. The human body uses amino acids to make proteins, which aid in digestion, growth, tissue repair, and a variety of other bodily functions. Further Information Lime and lemon both contain citric acid. It's a mild organic acid. It is found in many fruits and vegetables and is one of the more potent edible acids. It is also used in food and beverages as a flavouring and preservative. The oxalic acids Oxalic acid is found in many leafy green plants. Oxalate is a synonym for oxalic acid. Oxalic acid absorbs essential nutrients such as calcium and iron. The concentration of oxalic acid in plants and plant-based foods is low. Oxalic acid is a naturally occurring organic compound. Nitric acids. It is a mineral acid that is extremely corrosive. The pure compound has no colour. Nitric acid, which is commercially available, has a water concentration of 68%.

92. Option (1) is correct.

Maand folk music is associated with the state of Rajasthan. Legendary singers such as Allah Jilai Bai immortalised the classic Maand composition. The Best of Rajwadi Mand provides valuable insights into Maand, a form of Rajasthani music that once flourished in Rajasthan's courts or Rajwadis. Munshi Khan of Nagaur, Allah Jilai Bai of Bikaner, Lalita Bai of Kishangarh, the Jamila-Kulsum group from Jodhpur, Suraiyaa Begum from Jaipur, the Rukma-Hakla group from Barmer, and the Hasan Khan Manganiyar group from Jaisalmer are among the other artists featured in the compilation.

93. Option (1) is correct.

The Shirui Lily is a rare Indian plant found only in the upper reaches of the Shirui hill ranges in Manipur's Ukhrul district. It is a seasonal flowering plant that blooms best in May and June. Manipur is a state in Northeast India, with the capital city of Imphal. It is bounded to the north by Nagaland, to the south by Mizoram, and to the west by Assam. It also shares borders with two Myanmar regions: Sagaing Region to the east and Chin State to the south.

94. Option (2) is correct.

Article 10: Preservation of citizenship rights - any person who is or is deemed to be a citizen of India under any of the preceding provisions of this Part shall continue to be such a citizen, subject to the provisions of any legislation enacted by Parliament. Article 9: Persons who voluntarily obtain citizenship of a foreign state are not citizens. Article 12 defines

the State as the Government and Parliament of India, as well as the Government and Legislature of each of the States, as well as all local or other authorities within Indian Territory or under the control of the Government of India. Article 11: By law, Parliament shall regulate the rights of citizens.

95. Option (4) is correct.

To increase the laptop volume on the keyboard, we must simultaneously press the Fn + F8 keys. To reduce the volume, press the Fn + F7 keys simultaneously. Fn + F6 is the keyboard shortcut for muting the volume. In File Explorer and most browsers, including Google Chrome and Microsoft Edge, pressing F4 brings up the address bar. The most common use of F5 is to refresh the current web page.

96. Option (2) is correct.

Nikshay Poshan Yojana is related to Tuberculosis. The Patient must be registered on the NIKSHAY Portal. The financial incentive of ₹ 500/- per month for each notified TB patient. NIKSHAY POSHAN YOJANA is a direct benefit transfer scheme. NIKSHAY POSHAN YOJANA is an initiative of the Ministry of Health and Family Welfare. The scheme is a centrally sponsored scheme.

97. Option (2) is correct.

Duarte Barbosa was a Portuguese writer and officer from Portugal's Indian subcontinent. He worked as a scrivener in a feitoria in Kochi and was a Christian pastor. One of the earliest examples of Portuguese travel literature is his Book of Duarte Barbosa. Niccolao Manucci was a writer, doctor, and traveller from Venice. He chronicled the Mughal Empire firsthand. He is best known for his work "Storia do Mogor," a history and biography of the Mughals. Jean-Baptiste Tavernier was a 17th-century French traveller and gem merchant. He is best known for discovering or purchasing the 116-carat Tavernier Blue diamond in 1666. Bernier, Francois He was a French doctor and traveller. Travels in the Mughal Empire is a book he wrote about the reigns of Dara Shikoh and Aurangzeb.

98. Option (2) is correct.

Rahul Dravid holds the record for the most non-wicketkeeper catches (210) taken. In the 509 matches he played for India, he caught 406 balls. He holds the record for most catches by a non-wicket keeper in Test cricket, as well as the highest scoring partnership in Test cricket with Sachin Tendulkar (6520 runs). He is a former Indian cricketer known as 'Mr. Dependable and The Great Wall'. He made his international ODI debut against Sri Lanka on 3 April 1996, and his test debut against England on 20 June 1996. He has received national honours such as the Arjuna Award, Padma Shri, and Padma Vibhushan, and was inducted into the ICC Hall of Fame in 2018.

99. Option (3) is correct.

CSIR's Central Mechanical Engineering Research Institute have developed world's largest 'solar tree'. It is installed in Durgapur, West Bengal, at its residential complex. Its purpose is to promote the use of solar energy. The solar tree has been designed to provide maximum sunlight exposure to each solar photovoltaic (PV) panel while also creating the least amount of shadow area beneath. The Solar Tree has an installed capacity of more than 11.5 kWp (kilowatts peak). Its annual capacity is 12,000-14,000 units of Clean and Green Power. Each tree has 35 Solar PV Panels with a total capacity of 330 wp (watts peak).

100. Option (4) is correct.

Following independence, the Mysore State was formed in 1953, with all Kannada-dominant areas unified under different dispensations, and the enlarged Mysore state was carved in 1956 and renamed Karnataka in 1973. It is known as Unification Day. Karnataka is a state in southwest India with coastlines on the Arabian Sea. Bengaluru (formerly Bangalore) is the capital and a high-tech hub known for its shopping and nightlife. To the southwest, Mysore is home to opulent temples such as Mysore Palace, the former residence of the region's maharajas. Hampi, the mediaeval Vijayanagara Empire's capital, has Hindu temple ruins, elephant stables, and a stone chariot.