

STAFF SELECTION COMMISSION
COMBINED GRADUATE LEVEL (TIER-I)
SOLVED PAPER

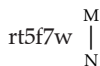
(5th December 2022: Shift-2)

Time Allotted: 1 hour

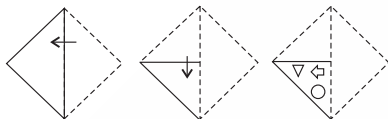
Max marks: 200

General Intelligence and Reasoning

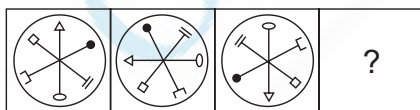
- Select the option that represents the correct order of the given words as they would appear in an English dictionary.
 1- Accusable 2- Acerbity 3- Accursed 4- Acetify
 5- Accuser
 1. 3, 1, 5, 4, 2 2. 1, 3, 5, 2, 4 3. 3, 1, 5, 2, 4 4. 1, 3, 5, 4, 2
- A & B means 'A is the wife of B'.
 A # B means 'A is the father of B'.
 A @ B means 'A is the son of B'.
 A % B means 'A is the husband of B'.
 A + B means 'A is the mother of B'.
 If A & B # C & D @ E % F + G, then how is D related to G?
 1. Brother 2. Father 3. Son 4. Son-in-law
- Select the correct mirror image of the given combination when the mirror is placed at line MN as shown.



1. w 5 f 7 w 2. m 5 f 7 w 3. w 5 f 7 w 4. w 5 f 7 w
- A paper is folded and cut as shown below. How will it appear when unfolded?



1. 2. 3. 4.
- Which number will replace the question mark(?) in the following series?
 729, 243, ?, 27, 9, 3
 1. 54 2. 78 3. 81 4. 36
- In a certain code language, 'OXYGEN' is written as QZAIGP' and 'MINI' is written as 'OKPF'. how will 'DOCTOR' be written in that language?
 1. FQEVPS 2. EQDUPS 3. FQEVQT 4. EQEVQT
- Select a suitable figure from the answer figure which would replace the question mark (?).



1. 2. 3. 4.
- Select the set in which the numbers are related in the same way as the numbers of the following set.
 (NOTE: Operations should be performed on the whole numbers without breaking down the numbers into its

constituent digits. For example: 13 – Operations on 13 such as adding/subtracting/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. (5 : 25 : 30) 2. (9 : 81 : 109)
 3. (16 : 256 : 272) 4. (13 : 169 : 182)
9. Which of the following equations will be correct by interchanging the given two numbers?
 7 and 4
 1. $4 - 7 + 6 \div 2 \times 3 = 12$ 2. $4 \times 3 + 7 - 9 \div 3 = 20$
 3. $7 + 4 \times 2 - 6 \div 2 = 17$ 4. $7 + 5 \times 2 - 4 \div 1 = 9$
10. In the following question, four number pairs are given. In each pair, the number on the left side of (-) is related to the number of the right side of (-) with some Logic/Rule/Relation. Three pairs are similar on basis of same Logic/Rule/Relation. Select the odd one out from the given alternatives. (NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. For example: 13 – Operations on 13 such as adding/subtracting/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. 12 – 50 2. 8 – 36 3. 10 – 44 4. 18 – 76
11. Select the option that is related to the fourth term in the same way as the first term is related to the second term and the fifth term is related to the sixth term.
 729 : 90 :: ? : 56 :: 512 : 72
 1. 323 2. 343 3. 352 4. 335
12. In a certain code language, 'STAR' is coded as '92678' and 'FLAG' is coded as '20261521'. How will 'LOGO' be coded in that language?
 1. 12201215 2. 12221214 3. 15122012 4. 12201325
13. Which two numbers from among the given option, should be interchanged to make the given equation correct?
 $72 + (7 \times 8) - (126 \div 14) - (4)2 = 150$
 1. 72 and 126 2. 7 and 4 3. 8 and 4 4. 14 and 7
14. 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.
 17 : 4607 :: 11 : ? :: 23 : 11615
 1. 1440 2. 1572 3. 1463 4. 1199
15. Select the option that is related to the fifth letter-cluster in the same way as the second letter-cluster is related to the first letter-cluster and the fourth letter-cluster is related to the third letter-cluster.
 AREA : BRFA :: BABY : CACY :: GOLD : ?
 1. IOMD 2. HOME 3. HOMD 4. HOND
16. In the following question, below are given some statements followed by some conclusions based on, those statements. Taking the given statements to be true even if

they seem to be at variance from commonly known facts. Read all the conclusions and then decide which of the given conclusion logically follows the given statements.

Statements:

I. All colour are small. II. No small are big.

Conclusions:

I. All small are colour. II. Some small are colour.

III. All big are colour.

1. Neither conclusions follow.

2. Only conclusion III follows.

3. Only conclusion II follows.

4. Both conclusions I and II follow.

17. Based on the position in the English alphabetical order, three of the following letter-clusters are alike in some manner and one is different. Select the odd letter-cluster.
1. ZWSQ 2. TRNL 3. PNJH 4. JHDB

18. A series is given with one term missing. Select the correct alternative from the given ones that will complete the series.

TMT, ZOB, FQJ, LSR, ?

1. RYO 2. RZO 3. RUZ 4. RZQ

19. Which of the following letter-cluster will replace the question mark(?) in the given series?

WNM, ULO, SJQ, QHS, ?

1. OFU 2. PFS 3. OGU 4. PGT

20. Three statements are given followed by three conclusions numbered I, II and III. Assuming the statement to be true, even if they seem to be at variance with commonly known facts, decide which of the conclusions logically follow(s) from the statements.

Statements:

All books are pencils.

Some pencils are pens.

Conclusions:

I. Some erasers are pencils.

II. All pens are books.

III. Some erasers are pens.

1. Only conclusions I and II follow.

2. Only conclusions II and III follow.

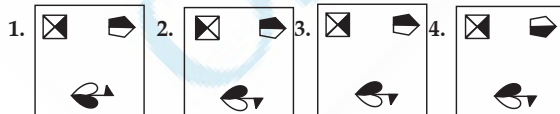
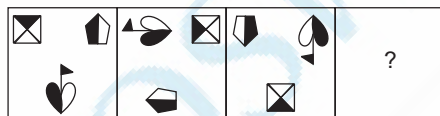
3. Only conclusions I and III follow.

4. All conclusions follow.

21. If $A \div B$ means that A is the mother of B, $A - B$ means that A is the father of B, $A + B$ means that A is the sister of B, then which of the following expressions shows that P is the mother of R?

1. $P + Q - R$ 2. $P \div Q + R$ 3. $P - R + Q$ 4. $Q + P - R$

22. Select the figure that will come next in the following figure series.



23. Select the word-pair that best represents a similar relationship to the one expressed in the pair of words given below.

(The words must be considered as meaningful English words and must not be related to each based on the number of letters/number of consonants/vowels in the word.)

Race : Track

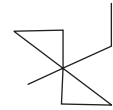
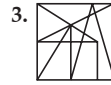
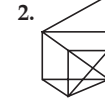
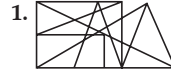
1. Athletics : stadium

2. Cart : Wheel

3. Wrestling : Court

4. Exercise : Course

24. Select the option figure in which the given figure (X) is embedded as its (rotation is NOT allowed).



25. By interchanging the given two signs and numbers, which of the following equations will not be correct?
÷ and ×, 1 and 3

1. $6 \div 3 - 1 + 4 \times 2 = 5$

2. $4 \times 3 - 1 + 8 \div 2 = 9$

3. $5 - 8 \times 3 + 9 \div 1 = 24$

4. $6 + 4 - 9 \times 3 \div 1 = -17$

General Awareness

26. A group of ribosomes attached to mRNA is known as:

1. polypeptide 2. polysomes 3. polymer 4. monomer

27. Keucharan Mohapatra, who was awarded the Padma Vibhushan in the year 2000, was a dance of which of the following classical dance forms?

1. Odissi 2. Kathakali 3. Kathak 4. Manipuri

28. The Right to Freedom of Religion is contained within which Articles of the Constitution of India?

1. Article 19 to Article 22 2. Article 29 to Article 30

3. Article 25 to Article 28 4. Article 14 to Article 18

29. Which of the following is NOT an indirect tax?

1. Excise tax 2. Goods and services tax

3. Customs duty 4. Wealth tax

30. Under which scheme, Lieutenant Governor Manoj Sinha inaugurated "UMEED Market Place" in Jammu and Kashmir?

1. Stand up India scheme 2. Ujjwala scheme

3. AVSAR scheme of airport Authority of India

4. KUSUM scheme

31. The bird like pheasant and monals are found in which type of forest?

1. Temperate deciduous forest

2. Tropical evergreen forest

3. Temperate evergreen forest

4. Mediterranean forests.

32. In which of the following years was the first train run in India?

1. 1853 2. 1854 3. 1852 4. 1855

33. Which of the following dance forms is mentioned in the ancient text of Vyavaharmala?

1. Sattriya 2. Mohiniyattam

3. Manipuri 4. Odissi

34. The SI unit of electric charge is a ____.

1. coulomb 2. watt 3. newton 4. joule

35. In September 2022, the Supreme Court allowed all women, irrespective of their marital status, to safely and legally abort their child till ____ of pregnancy under the Medical Termination of Pregnancy (MTP) Act.

1. 30 weeks 2. 15 weeks 3. 24 weeks 4. 18 weeks

36. Which Article of the Constitution of India mentions that business in Parliament shall be transacted in Hindi or English?

1. Article 120 2. Article 121 3. Article 122 4. Article 119

37. In 1526, the battle of Panipat was fought between ____.

1. Babua and Rana Sanga 2. Akbar and Hemu

3. Humayun and Sher Khan 4. Babur and Ibrahim Lodi

38. The highest sex ratio, according to Census 2011, is in which state?
 1. Chhattisgarh 2. Andhra Pradesh
 3. Tamil Nadu 4. Kerala
39. The age range for the Youth Boxer category is:
 1. 15 - 16 years 2. 19 - 20 years
 3. 17 - 18 years 4. 13 - 18 years
40. Hot, dry winds blowing in the Northern Plains in India are known as _____.
 1. North easterly winds 2. Westerlies
 3. Loo 4. Nor westers
41. In which of the following Indian states is the Lokrang festival observed?
 1. Jharkhand 2. Gujarat
 3. Rajasthan 4. Madhya Pradesh
42. In which of the following period Catal Huyuk was one of the most famous sites?
 1. Neolithic 2. Mesolithic 3. Palaeolithic 4. Chalcolithic
43. In 1600, the East India company acquired a charter from which ruler?:
 1. King George-I 2. Queen Elizabeth-I
 3. Queen Victoria 4. King James-I
44. 'Imperfect' is an autobiography of:
 1. Rahul Dravid 2. Ravi Shastri
 3. Milkha Singh 4. Sanjay Manjrekar
45. Which of the following HYV seeds is/are associated with the green Revolution in India?
 (A) Rice (B) Wheat
 1. Both A and B 2. Both A
 3. Neither A nor B 4. Both B
46. In Tennis, which of the following scores is a complete set?
 1. 5-3 2. 6-4 3. 6-6 4. 6-5
47. Identify a protein-digesting enzyme.
 1. lipase 2. Amylase 3. Collagen 4. Pepsin
48. Which of the following became India's first State Assembly to implement the National e-Vidhan Application (NeVA) programme to become paperless?
 1. Haryana 2. Tripura 3. Nagaland 4. Assam
49. Who among the following ruled before Prithviraj Chauhan over Delhi?
 1. Ghiyasuddin Balban 2. Ananga Pala
 3. Jalaluddin Khalji 4. Qutbuddin Aiyak
50. The motion of an object is _____ if its velocity is constant.
 1. only accelerating 2. only decelerating
 3. non-uniform 4. uniform

Quantitative Aptitude

51. $\cos^2 35^\circ + \cos 55^\circ \cdot \sin 35^\circ + \frac{\tan 34^\circ}{\cot 56^\circ} = \underline{\hspace{2cm}}$.
 1. 2 2. 3 3. 4 4. 1
52. The total surface area of a cube is $1,536 \text{ m}^2$. Find its volume.
 1. 216 m^3 2. 125 m^3 3. $4,096 \text{ m}^3$ 4. 729 m^3
53. A certain sum of money becomes triple of itself in 26 years at simple interest. In how many years it will become five times of itself?
 1. 64 years 2. 52 years 3. 56 years 4. 60 years
54. On dividing a certain number by 363, we get 17 as the remainder. What will be the remainder when the same number is divided by 11?
 1. 7 2. 8 3. 6 4. 9
55. If $a - b = 2$ and $a^3 - b^3 = 80$, then what will be the value of ab ?
 1. 12 2. -24 3. 24 4. -12

56. If $\frac{1}{x^2 + a^2} = x^2 - a^2$, then the value of x is:

1. $(1 - a^4)^{\frac{1}{4}}$ 2. a
 3. $(a^4 - 1)^{\frac{1}{4}}$ 4. $(a^4 + 1)^{\frac{1}{4}}$

57. The following table shows the shares traded on Mumbai, Rajasthan, Uttar Pradesh and Uttarakhand stock exchanges.

Name of the company	Mumbai		Uttarkhand		Rajasthan		Uttar Pradesh	
	High	Low	High	Low	High	Low	High	Low
Aata Tea	540	395	450	4255	320	210	440	310
Colgate	34	57	60	42	25	60	20	70
Ambuja Cement	150	155	120	125	160	135	145	170

The average of the high rates of the shares in all four stock exchanges for Colgate is:

1. ₹ 34.75 2. ₹ 51.07 3. ₹ 52.04 4. ₹ 63.21

58. The speed of a boat in still water is $5\frac{1}{3}$ km/h. It is found that the boat takes thrice as much time to row up as it does to row down the same distance in the river stream. Find the speed of the river stream.

1. $\frac{23}{27}$ m/s 2. $\frac{22}{27}$ m/s 3. $\frac{20}{27}$ m/s 4. $\frac{19}{27}$ m/s

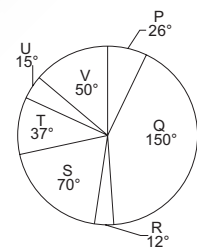
59. The largest five-digit number which when divided by 7, 9 and 11, leaves the same remainder as 3 in each case, is:

1. 95840 2. 98685 3. 96720 4. 99795

60. If the ratio of area of two similar triangles is $\sqrt{3} : \sqrt{2}$, then what is the ratio of the corresponding sides of the two triangles?

1. 9 : 4 2. 3 : 2 3. $\sqrt[3]{3} : \sqrt[3]{2}$ 4. $\sqrt[4]{3} : \sqrt[4]{2}$

61. The pie chart given below shows the sales of 7 different companies. The total sale of all these 7 companies is 2,160. The sale of a particular company is shown in terms of degree with respect to the total sales of all these 7 companies. The total sales of P, R and S are how much per cent less than the total sales of Q, T and U?



1. 56.42 per cent 2. 24.42 per cent
 3. 46.53 per cent 4. 32.32 per cent

62. $\sqrt{\frac{1 + \cos \theta}{1 - \cos \theta}} + \sqrt{\frac{1 - \cos \theta}{1 + \cos \theta}} = \underline{\hspace{2cm}}$.

1. $2 \sin \theta$ 2. $2 \cos \theta$ 3. $2 \operatorname{cosec} \theta$ 4. $2 \sec \theta$

63. The table given below shows the marks obtained by two students in 6 subjects.

Subjects	Students	
	A	B
P	180	90
Q	240	420
R	360	390
S	300	210
T	60	270
U	330	120

What is the difference between the total marks obtained by A and B in all the 6 subjects?

1. 40 2. 30 3. 20 4. 50
64. $\triangle ABC$ and $\triangle DEF$ are congruent, respectively. If $AB = 6 = DE$, $BC = 8 = EF$ and $\angle B = 30^\circ$, then $\angle D + \angle C =$ _____.
1. 160° 2. 120° 3. 130° 4. 150°
65. The following table gives the percentage of marks obtained by six students in six different subjects in an examination.

	English (100)	Science (100)	Mathematics (100)	Social Science (100)	Hindi (100)	Computer Science (100)
A	75	58	72	68	63	73
B	82	85	74	36	52	65
C	65	58	61	63	68	75
D	84	78	72	73	65	68
E	78	72	59	63	71	72
F	74	68	75	82	88	86

The number of students who obtained 60% marks and above in all subjects is:

1. 3 2. 1 3. 2 4. 4
66. If an angle of a right-angled triangle is 35° , then find the other angles.
1. 90° and 75° 2. 90° and 35° 3. 90° and 55° 4. 90° and 45°
67. A dishonest dealer sells a product at 11% loss on cost price, but uses 22% less weight. What is his percentage profit or loss?
1. 14.1% loss 2. 14.1% gain
3. 11.4% gain 4. 11.4% loss
68. A shopkeeper earns 10% on an investment but loses 20% on another investment. If the ratio of the two investments is 2 : 3, then the combined loss percentage is:
1. 5.5% 2. 7% 3. 6% 4. 8%
69. Which of the following statement is correct?
I. The value of $100^2 - 99^2 + 98^2 - 97^2 + 96^2 - 95^2 + 94^2 - 93^2 + \dots + 22^2 - 21^2$ is 4840.
II. The value of $\left(k^2 + \frac{1}{k^2}\right)\left(k - \frac{1}{k}\right)\left(k^4 + \frac{1}{k^4}\right)\left(k + \frac{1}{k}\right)\left(k^4 - \frac{1}{k^4}\right)$ is $k^{16} - \frac{1}{k^{16}}$
1. Neither I nor II 2. Only II
3. Only I 4. Both I and II
70. A contractor decided to complete a work in 80 days and employed 60 men at the beginning and 20 men additionally after 20 days and got the work completed as per schedule. If he had not employed the additional men, how many extra days would he have needed to complete the work (round off to the nearest integer)?
1. 32 days 2. 20 days 3. 30 days 4. 26 days
71. The length of the side of a cube is 4.2 cm. What is the volume of the largest sphere that can be taken out of the cube?
1. 26.40 cm^3 2. 20.50 cm^3 3. 38.80 cm^3 4. 48.60 cm^3
72. A tradesman marks his goods 20% above his cost price. If he allows his customer a 20% discount on the marked price, how much profit or loss does he make, if any?
1. 2% loss 2. 4% loss 3. 1% profit 4. 3% profit
73. What will be the value of $\cos x \operatorname{cosec} x - \sin x \sec x$?
1. $\cot \frac{2x}{2}$ 2. $\tan 2x$ 3. $\cot 2x$ 4. $2\cot 2x$
74. A varies directly as the positive square root of B, and inversely as the cube of C. If $A = 15$, when $B = 27$ and $C = 2$, then find B when $A = 9$ and $C = 2$.

1. $\frac{281}{42}$ 2. $\frac{243}{25}$ 3. $\frac{264}{37}$ 4. $\frac{275}{51}$
75. The average weight of 5 men decreases by 3 kg when one of them weighing 150 kg is replaced by another person. Find the weight of the new person.
1. 125 kg 2. 100 kg 3. 120 kg 4. 135 kg

English Comprehension

76. Select the correct passive form of the given sentence.
My parents have booked a mini-getaway for me.
1. A mini-getaway was being booked for me by my parents.
2. A mini-getaway had been booked for me by my parents.
3. A mini-getaway had been booked for me by my parents.
4. A mini-getaway has been booked for me by my parents.
77. The following sentence has been split into four segments. Identify the segment that contains a grammatical error. There are some monkeys / on the roof of the carriage but Madhav / did not see them.
1. on the roof of the 2. There are some monkeys
3. carriage but Madhav 4. did not see them
78. Select the most appropriate synonym of the word Amend.
1. Rectify 2. Harm 3. Impair 4. Worsen
79. Select the most appropriate option that can substitute the underlined segment in the given sentence. If there is no need to substitute it, select 'No substitution'.
Rita will never have changed her job if she would have been promoted.
1. No substitution 2. should never have
3. would never have 4. shall never have
80. Select the INCORRECTLY spelt word in the following sentence.
Sudhir's harrassment is not only perceivable and occasional but also has become a matter of humorous incident before his colleague.
1. colleague 2. harrassment
3. humorous 4. perceivable
81. Select the most appropriate option to fill in the blank.
The trainee wanted to know the _____ of the course to get a better understanding of the job prospects.
1. ins and outs 2. bird's eye view
3. crying need 4. tall talk
82. Select the most appropriate option to fill in the blank.
The drama is extremely informative _____ life in Roman times.
1. on 2. of 3. about 4. for
83. Select the most appropriate collocation to fill in the blank.
Arun and his wife were _____ a baby boy after 18 years of their marriage.
1. delighted with 2. prepared with
3. provided with 4. blessed with
84. Select the most appropriate synonym of the given word. Impede
1. Intend 2. Prompt 3. Respite 4. Hinder
85. Select the INCORRECTLY spelt word.
1. Warden 2. Poliseman 3. Engineer 4. Doctor
86. Select the most appropriate synonyms of the underlined word in the given sentence.
The audience was mesmerised by the speech delivered by the vivacious lady.
1. energetic 2. fearless 3. prosperous 4. friendly

87. Select the option that expresses the given sentence in active voice.
The gate was opened by the peon.
1. The peon is opening the gate
2. The peon opened the gate
3. The peon was opening the gate
4. The gate was being opened by the peon.
88. The question below consists of a set of labelled sentences. Out of the four options given, select the most logical order of the sentences to form a coherent paragraph.
P. They are on the market already but they are costly.
Q. Their cost depends on the sort you install and the size of your home.
R. These devices extract warmth from the air or the ground, or from water – a bit like a fridge operating in reverse.
S. Climate advisers anticipate that most homes in future will be warmed by heat pumps.
1. RQPS 2. SQRP 3. SRPQ 4. PRSQ
89. Select the most appropriate option that can substitute the underlined segment in the given sentence.
The art history teacher was sacked after she were thought taking school supplies.
1. she was wondered 2. she was dumped
3. she was caught 4. she was enlightened
90. Rearrange the parts of the sentence in correct order.
Lighting has
P. to become a disrupter and
Q. become human-centric as our
R. requirements change during the day and
S. lighting has to adapt to our change in needs
1. PSQR 2. RPQS 3. QRSP 4. PQRS
91. Select the most appropriate synonym of the given word.
Mercy
1. Legacy 2. Clarity 3. Clemency 4. Plurality
92. Select the option that can be used as a one-word substitute for given groups words.
The art of washing oneself
1. Ablutions 2. Solutions 3. Steaming 4. Bathing
93. Select the correct direct form of the given sentence.
Aryan told me that I knew where to find him.
1. Aryan said to me, "You know where to find me."
2. Aryan said to me, "You knowing where to find me."
3. Aryan said to me, "You are know where to find me."
4. Aryan says to me, "You know where to find me."
94. Select the idiom that can correctly replace the underlined part of the given sentence.
I know she really wants the promotion, but she really hit me below the hand by telling the boss about my personal problems.
1. hit me the brick 2. hit me below the books
3. hit me below the bottle 4. hit me below the belt
95. The following sentence has been split into four segments. Identify the segment that contains a grammatical error.
He will make mistakes, but he will learn / by making mistakes. So, dear parents, / once you put the money in your / children's little pockets, forget all on it.
1. children's little pockets, forget all on it
2. once you put the money in your
3. by making mistakes. So dear parents.
4. He will make mistakes, but he will learn

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.

Women won their present status through (1) _____ and sacrifices rather than through men's kindness. Women and their supports have fought, and in some places continue to fight for the same rights as (2) _____. Laws were made to replace local customs which denigrated and suppressed women's rights. Women have (3) _____ higher positions in the world at all levels; political, economic and social. But in reality, women still suffer from (4) _____ at various levels. For example, women work more and earn less than men. In addition to that, the majority of the world's poor and illiterate are women. The road to real (5) _____ is still long.

96. Select the most appropriate option to fill in blank number 1.
1. struggle 2. happiness 3. dignity 4. joy
97. Select the most appropriate option to fill in blank number 2.
1. everyone 2. men 3. universal 4. politicians
98. Select the most appropriate option to fill in blank number 3.
1. snatched 2. gripped 3. plucked 4. gained
99. Select the most appropriate option to fill blank number 4.
1. issues 2. tolerance
3. equality 4. discrimination
100. Select the most appropriate option to fill blank number 5.
1. probability 2. maturity 3. equality 4. eligibility

Answer Key

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

Answers with Explanations

General Intelligence and Reasoning

1. Option (3) is the correct.

Explanation: From the given question, we have

Accursed	Accusable	Accuser	Acerbity	Acetify
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2. Option (1) is the correct.

Explanation:

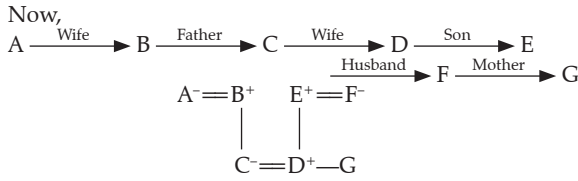
A & B means 'A is the wife of B'

A # B means 'A is the father of B'

A @ B means 'A is the son of B'

A % B means 'A is the husband of B'

A + B means 'A is the mother of B'



D is the brother of G.

3. Option (1) is the correct.

Explanation:

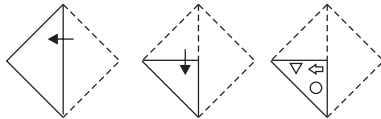
Logic: In the mirror image the left becomes right and the right becomes left.

Now, the mirror image of



4. Option (3) is the correct.

Explanation:



The logic of symmetry will be followed here:

5. Option (3) is the correct.

Explanation:

Logic is as follows:

$$729 \xleftarrow{\times 3} 243 \xleftarrow{\times 3} 81 \xleftarrow{\times 3} 27 \xleftarrow{\times 3} 9 \xleftarrow{\times 3} 3$$

6. Option (3) is the correct.

Explanation: Table of alphabetical series (point to remember)

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

Now,

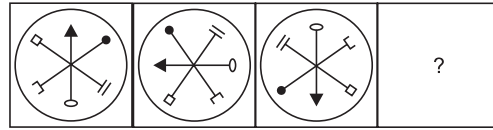
O	X	Y	G	E	N
15	24	25	7	5	14
↓ +2	↓ +2	↓ +2	↓ +2	↓ +2	↓ +2
Q	Z	A	I	G	P
17	26	1	9	7	16
M	I	N	D		
13	9	14	4		
↓ +2	↓ +2	↓ +2	↓ +2		
O	K	P	F		
15	11	16	6		

Similarly,

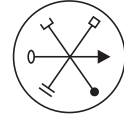
D	O	C	T	O	R
4	15	3	20	15	18
↓ +2	↓ +2	↓ +2	↓ +2	↓ +2	↓ +2
F	Q	E	V	Q	T
6	17	5	22	17	20

7. Option (2) is the correct.

Explanation:



Logic: Each shape inside the circle is rotated by 90 degrees in an anticlockwise direction. Hence,



8. Option (4) is the correct.

Explanation: Given that:

$$(5 : 25 : 30)$$

$$(16 : 256 : 272)$$

Logic: 2nd number = square of 1st number

$$3^{\text{rd}} \text{ number} = 1^{\text{st}} \text{ number} \times 2^{\text{nd}} \text{ number}$$

Now, (5 : 25 : 30)

$$25 = 5^2$$

$$30 = 5 + 25$$

And (16 : 256 : 272)

$$256 = 16^2$$

$$272 = 16 + 256$$

Similarly, (13 : 169 : 182)

$$169 = 13^2$$

$$182 = 13 + 169$$

9. Option (1) is the correct.

Explanation: According to the BODMAS rule,

B	Bracket in order (), [], {}
O	Of
D	Division (÷)
M	Multiplication (×)
A	Addition (+)
S	Subtraction (-)

Upon Interchanging 7 and 4

1. $4 - 7 + 6 \div 2 \times 3 = 12$

$$\begin{aligned} \text{LHS} &= 7 - 4 + 6 \div 2 \times 3 \\ &= 7 - 4 + 3 \times 3 \\ &= 7 - 4 + 9 \\ &= 16 - 4 = 12 = \text{RHS} \end{aligned}$$

2. $4 \times 3 + 7 - 9 \div 3 = 20$

$$\begin{aligned} \text{LHS} &= 7 \times 3 + 4 - 9 \div 3 \\ &= 7 \times 3 + 4 - 3 \\ &= 21 + 4 - 3 \\ &= 25 - 3 = 23 \neq 20 \neq \text{RHS} \end{aligned}$$

3. $7 + 4 \times 2 - 6 \div 2 = 17$

$$\begin{aligned} \text{LHS} &= 4 + 7 \times 2 - 6 \div 2 \\ &= 4 + 7 \times 2 - 3 \\ &= 4 + 14 - 3 \\ &= 18 - 3 = 15 \neq 17 \neq \text{RHS} \end{aligned}$$

4. $7 + 5 \times 2 - 4 \div 1 = 9$

$$\begin{aligned} \text{LHS} &= 4 + 5 \times 2 - 7 \div 1 \\ &= 4 + 5 \times 2 - 7 \\ &= 4 + 10 - 7 \\ &= 14 - 7 \\ &= 7 \neq 9 \neq \text{RHS} \end{aligned}$$

10. Option (1) is the correct.

Explanation: 1. $12 - 50 = 12 \times 4 + 2 = 50$

Similarly, 2. $8 - 36 = 8 \times 4 + 4 = 36$

3. $10 - 44 = 10 \times 4 + 4 = 44$

4. $18 - 76 = 18 \times 4 + 4 = 76$

11. Option (2) is the correct.

Explanation: Given that:

$$729 : 90 :: ? : 56 :: 512 : 72$$

$$\begin{array}{ccc} 729 : 90 & ? : 56 & 512 : 72 \\ \text{Logic:} & \text{Similarly,} & \text{Logic:} \\ (9)^3 - 9 \times 10 & (7)^3 - 7 \times 8 & (8)^3 - 8 \times 9 \end{array}$$

Hence, $(7)^3 = 343$ is the correct answer.

12. Option (1) is the correct.

Explanation: Table of alphabetical series (point to remember)

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

Logic:

Letter

↓
Opposite letter

And then write the obtained opposite letter as per the direction shown, i.e.,

Now,

S	T	A	R
19	20	1	18
↓	↓	↓	↓
H	G	Z	I
8	7	26	9

Hence, the code = 92678

Similarly,

F	L	A	G
6	12	1	7
↓	↓	↓	↓
U	O	Z	T
21	15	26	20

Hence, the code = 20261521

Similarly,

L	O	G	O
12	15	7	15
↓	↓	↓	↓
O	L	T	L
15	12	20	12

Hence, the code = 12201215

13. Option (4) is the correct.

Explanation: Given expression:

$$72 + (7 \times 8) - (126 \div 14) - (4)^2 = 150$$

1. 72 and 126

$$\begin{aligned} 126 + (7 \times 8) - (72 \div 14) - (4)^2 &= 150 \\ 126 + (56) - (5.142) - 16 &= 150 \\ 182 - 21.142 &= 150 \\ 160.858 &\neq 150 \end{aligned}$$

2. 7 and 4

$$\begin{aligned} 72 + (4 \times 8) - (126 \div 14) - (7)^2 &= 150 \\ 72 + 32 - 9 - 49 &= 150 \\ 104 - 58 &= 150 \\ 46 &\neq 150 \end{aligned}$$

3. 8 and 4

$$\begin{aligned} 72 + (7 \times 4) - (126 \div 14) - (8)^2 &= 150 \\ 72 + 28 - 9 - 64 &= 150 \\ 100 - 73 &= 150 \\ 27 &\neq 150 \end{aligned}$$

4. 14 and 7

$$\begin{aligned} 72 + (14 \times 8) - (126 \div 7) - (4)^2 &= 150 \\ 72 + (112) - 18 - 16 &= 150 \\ 184 - 34 &= 150 \\ 150 &= 150 \end{aligned}$$

14. Option (4) is the correct.

Explanation: Given that:

$$17 : 4607 : 11 : ? :: 23 : 11615$$

$$\begin{array}{ccc} 17 : 4607 & 11 : ? & 23 : 11615 \\ \text{Logic:} & \text{Similarly,} & \text{Logic:} \\ (17)^3 - 18 \times 17 & (11)^3 - 12 \times 11 & (23)^3 - 23 \times 24 \\ = 4607 & = 1199 & = 11615 \end{array}$$

Hence, 1199 is the correct answer.

15. Option (3) is the correct.

Explanation: Table of alphabetical series (point to remember)

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

AREA : BRFA :: BABY : CACY :: GOLD : ?

Now,

A	R	E	A
1	18	5	1
↓ ⁺¹	↓	↓ ⁺¹	↓
B	R	F	A
2	18	6	1

Similarly,

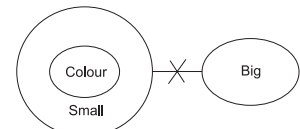
B	A	B	Y
2	1	2	26
↓ ⁺¹	↓	↓ ⁺¹	↓
C	A	C	Y
3	1	3	26

Hence,

G	O	L	D
7	15	12	4
↓ ⁺¹	↓	↓ ⁺¹	↓
H	O	M	D
8	15	13	4

16. Option (3) is the correct.

Explanation: According to the given question, the Venn diagram is as follows:



- All colours are inside small. So, all small are not colours.
- All colours are inside small. So, some small are colours.

3. Since no small are big and all colours are small. So, no big are colour.

Hence, Both conclusions I and II follows.

17. Option (1) is the correct.

Explanation: Table of alphabetical series (point to remember)

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

Now,

Z	$\xrightarrow{-3 \text{ gives}}$	W	$\xrightarrow{-4}$	S	$\xrightarrow{-2}$	Q
26		23		19		17
T	$\xrightarrow{-2 \text{ gives}}$	R	$\xrightarrow{-4}$	N	$\xrightarrow{-2}$	L
20		18		14		12
P	$\xrightarrow{-2 \text{ gives}}$	N	$\xrightarrow{-4}$	J	$\xrightarrow{-2}$	H
16		14		10		8
J	$\xrightarrow{-2 \text{ gives}}$	H	$\xrightarrow{-4}$	D	$\xrightarrow{-2}$	B
10		8		4		2

18. Option (3) is the correct.

Explanation:

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

20	13	20
T	M	T
$\downarrow +6$	$\downarrow +2$	$\downarrow +8$
Z	O	B
26	15	2
$\downarrow +6$	$\downarrow +2$	$\downarrow +8$
F	Q	J
6	17	10
$\downarrow +6$	$\downarrow +2$	$\downarrow +8$
L	S	R
12	19	18
$\downarrow +6$	$\downarrow +2$	$\downarrow +8$
R	U	Z
18	21	26

19. Option (1) is the correct.

Explanation:

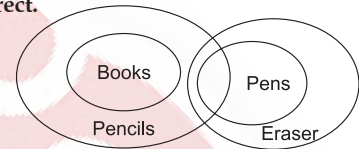
Alphabets	A	B	C	D	E	F	G	H	I	J	K	L	M
Positional value	1	2	3	4	5	6	7	8	9	10	11	12	13
Alphabets	Z	Y	X	W	V	U	T	S	R	Q	P	O	N
Positional value	26	25	24	23	22	21	20	19	18	17	16	15	14

W	N	M
23	14	13
$\downarrow -2$	$\downarrow -2$	$\downarrow +2$
U	L	O
21	12	15
$\downarrow -2$	$\downarrow -2$	$\downarrow +2$
S	J	Q
19	10	17
$\downarrow -2$	$\downarrow -2$	$\downarrow +2$
Q	H	S
17	8	19
$\downarrow -2$	$\downarrow -2$	$\downarrow +2$
O	F	U
15	6	21

20. Option (3) is the correct.

Explanation:

According to the given question, the Venn diagram is as follows:



- The Venn diagram of pencils and erasers is overlapping. Hence, some erasers are pencils.
- There is no relation between books and pens. Hence, there is no definite relation between them.
- All pens are erasers. Hence, some erasers are pens.

21. Option (2) is the correct.

Explanation:

$A \div B$ means that A is the mother of B,

$A - B$ means that A is the father of B,

$A + B$ means that A is the sister of B,

Since, P is the mother of R, the gender of P will be female. Hence, only option 1 and option 2 shows P is a female.

Now,

1. $P + Q - R$

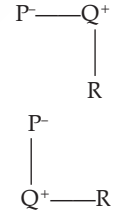
Family tree:

P is the aunt of R

2. $P \div Q + R$

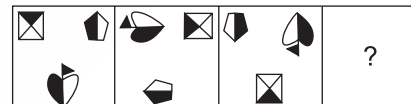
Family tree:

P is the mother of R.



22. Option (3) is the correct.

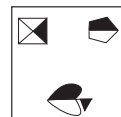
Explanation:



Step 1: Each small figure is rotated by 90 degrees anticlockwise.

Step 2: Each figure is moved by 1 and half step clockwise.

Hence,



23. Option (1) is the correct.

Explanation: Given that:

Race : Track

As race is performed on track. Similarly, Athletics are played in stadium.

24. Option (4) is the correct.

Explanation:

The above figure is embedded in the option (4) which is the correct answer.



25. Option (2) is the correct.

Explanation: According to the BODMAS rule,

B	Bracket in order (), [], {}
O	Of
D	Division (\div)
M	Multiplication (\times)
A	Addition ($+$)
S	Subtraction ($-$)

\div and \times , 1 and 3

$$(1) \quad 6 \div 3 - 1 + 4 \times 2 = 5$$

$$6 \times 1 - 3 + 4 \div 2 = 5$$

$$6 \times 1 - 3 + 2 = 5$$

$$6 - 3 + 2 = 5$$

$$8 - 3 = 5$$

$$5 = 5$$

$$(2) \quad 4 \times 3 - 1 + 8 \div 2 = 9$$

$$4 \div 1 - 3 + 8 \times 2 = 9$$

$$4 - 3 + 8 \times 2 = 9$$

$$20 - 3 = 9$$

$$17 \neq 9$$

$$(3) \quad 5 - 8 \times 3 + 9 \div 1 = 24$$

$$5 - 8 \div 1 + 9 \times 3 = 24$$

$$5 - 8 + 27 = 24$$

$$32 - 8 = 24$$

$$24 = 24$$

$$(4) \quad 6 + 4 - 9 \times 3 \div 1 = -17$$

$$6 + 4 - 9 \div 1 \times 3 = -17$$

$$6 + 4 - 9 \times 3 = -17$$

$$10 - 27 = -17$$

$$-17 = -17$$

General Awareness

26. Option (2) is correct.

A group of ribosomes attached to mRNA is known as polysomes. Polysome is bound to mRNA molecule like a bead or thread. These play an important role in the process of translation and they form several copies of a particular polypeptide during protein synthesis. Protein synthesis in a cell takes place in two steps of transcription and translation.

Transcription is the process of copying a segment of DNA into RNA and this happens inside the nucleus.

Translation is the second step that begins after transcription. In this process, ribosomes synthesise proteins in the cytoplasm or endoplasmic reticulum.

27. Option (1) is correct.

Kelucharan Mohapatra, awarded with the Padma Vibhushan in the year 2000, was an Odissi dancer. He was an Indian classical guru, dancer who played a major role in popularising Odissi dance. He was the first person to receive Padma Vibhushan award in Odisha.

The Odissi dance form is a traditional dance-drama genre of performance art that originated in temples of Odisha. In this dance form, artists and musicians enact and dance on a story, a spiritual message or devotional poem from the Hindu texts, using body movements, mudras, abhinaya, symbolic costumes. The eight major forms of Indian classical dance.

28. Option (3) is correct.

The Right to Freedom of Religion is contained within Articles 25 to 28 of the Indian Constitution. The Constitution of India was amended in 1976 to add the word 'secular'.

- Article 25—Freedom of conscience and free profession, practice and propagation of religion.
- Article 26—Freedom to manage religious affair.
- Article 27—freedom as to payment of taxes for promotion of any particular religion.
- Article 28—Freedom as to attendance at religious instruction or religious worship in certain educational institutions.

29. Option (4) is correct.

Wealth tax is a direct tax. Indirect tax is a type of tax which is not levied on the direct income of the person. It is imposed on the goods and services and is levied by the suppliers or manufacturers. Ultimately, it is passed on to the final consumer. GST (Goods and Services Tax) is the single largest indirect tax in India. However, sales tax, VAT, excise duty, etc. are examples of indirect tax.

Direct tax is paid by the person or organisation directly to the entity that imposed it. Some of the examples are income tax, property tax, capital gains tax, and Corporate Income Tax.

30. Option (3) is correct.

Under AVSAR Scheme of Airport Authority of India, Lieutenant Governor Manoj Sinha inaugurated "UMEED Market Place" in Jammu and Kashmir. AVSAR stands for Airport as Venue for Skilled Artisans of The Region. It is an initiative of Airport Authority of India (AAI) to encourage the talent of women, artisans and craftsmen and provide them with the right opportunities. Under this scheme, an area of 100–200 square feet has been earmarked at each AAI operated airport. The space is being allotted to the self-help groups, turn on turn basis, for a duration of 15 days.

31. Option (1) is correct.

The birds like pheasant and monals are found in temperate deciduous forest. These forests areas are found in warm moist summers and cool winters. They have trees that lose leave each year.

32. Option (1) is correct.

The first train was run in 1853. It was run on 16 April 1853 between Bori Bunder, Mumbai and Thane and it covered a distance of around 34 km.

Lord Dalhousie brought railways network to India, and he is regarded as the father of Indian railways. He served as the Governor General of India from 1848–1856.

33. Option (2) is correct.

Mohiniyattam is mentioned in the ancient text of Vyavaharmala. Mohiniyattam is a classical solo dance form of Kerala. Mohiniyattam is dance of Mohini, who is considered to be an incarnation of Lord Vishnu. The reference of this dance form can be found in Vyavaharamala written in 1709 by Mazhamagalam Narayanan Namputiri. It is a Lasya type of dance that showcases a more graceful, gentle and feminine form of dancing.

34. Option (1) is correct.

The SI unit of electric charge is a coulomb and is represented by C. It is the amount of electricity that a current of 1 Ampere carries in 1 second. $1C = 6.24 \times 10^{18}$ electrons. The formula for electrical charge is $Q = I.t$.

Watt is the SI unit of Power and it quantifies the rate of energy transfer. 1 watt is equal to 1 joule per second.

Newton is the SI unit of force. It is defined as the force which gives a mass of 1 kilogram an acceleration of 1 metre per second per second. Its units are kgms^{-2} . It is named after Issac Newton.

Joule is the unit of work done in the SI system. It is named after the English Physicist James Prescott Joule. It can be defined as the amount of work done when a force of 1 Newton displaces a mass through a distance of 1 metre in the direction of the force applied. Its units are $\text{kgm}^2\text{s}^{-2}$.

35. Option (3) is correct.

In September 2022, the Supreme Court allowed all women, irrespective of their marital status, to safely and legally abort their child till 24 weeks under the Medical Termination of Pregnancy (MTP) Act. This judgement brought marital rape under the purview of MTP act. The judgement declared that right to reproductive choice for women is a facet of the right to personal liberty under Article 21 of the Constitution. This means each woman is entitled to right of safe reproductive healthcare. According to this judgement, there is no discrimination between married and unmarried women.

36. Option (1) is correct.

Article 120 of the Constitution of India mentions that business in Parliament shall be transacted in Hindi or English.

Article 122 of the Constitution of India deals with the restrictions on courts to not to inquire into proceedings of Parliament. The validity of any proceedings in Parliament shall not be called in question on the ground of any alleged irregularity of procedure.

Article 121 of the Indian Constitution mentions the restriction on the discussion in Parliament. It states that no discussion shall take place in Parliament with respect to the conduct of any Judge of the Supreme Court or of a High Court in the discharge of his duties except upon a motion for presenting an address to the President praying for the removal of the Judge as here in after provided.

Article 119 of the Indian constitution deals with regulation by law of procedure in Parliament in relation to financial business.

37. Option (4) is correct.

In 1526, the battle of Panipat was fought between Babur and Ibrahim Lodi. It was the first battle of Panipat and took place on 20 April 1526. This battle was the beginning of Mughal empire and end of the Delhi Sultanate. The battle involved the use of gunpowder firearms and field artillery. Babur used the tactics of Tughluq and Arba that led to the victory. Eventually, the battle was won by the Mughal forces of Babur with the death of Ibrahim Lodi. This eventually led to laying the foundation stone of Mughal empire in the country.

The second battle of Panipat was fought between the forces of Samrat Hem Chandra Vikramaditya and Akbar on November 5, 1556. This battle was won by Akbar's generals Khan Zaman I and Bairam Khan.

The third battle of Panipat took place on 14 January 1761 between the Maratha empire and Durrani empire of Afghanistan and was won by the Durrani.

38. Option (4) is correct.

Highest sex ratio according to census 2011 is of Kerala. As of 2011, the sex ratio of Kerala is 1084. It has risen by 26 points.

Population Census is the total process of collecting, compiling, analysing, evaluating, publishing and disseminating statistical data regarding the population and housing and their geographical location.

Census is conducted every 10 years under the provisions of the Census Act, 1948.

39. Option (3) is correct.

The age range for the Youth Boxer category is 17–18 years. Men and Women Boxers between the ages of 19–34 are categorised as Elite Boxers. Boys and Girls Boxers between the ages of 15 and 16 are categorised as Junior Boxers.

40. Option (3) is correct.

Hot, dry winds blowing in the Northern plain in India are known as Loo. These are strong, dusty and hot winds that flow over the western Indo-Gangetic plain regions of North India and Pakistan. These are generally flowing across the Northern region in months of May and June, and can lead

to fatal heatstrokes. They originate over Iranian, Thar, and Baloch deserts. Exposure to these can lead to fatal heatstrokes. North easterly wind is the one that blows from the north-east. Westerlies are the winds prevailing from west towards east in between 30 and 60 degrees latitude. These are known as anti-trades or prevailing westerlies and originate from high pressure areas in the horse latitudes and flow towards the poles and steer extratropical cyclones in this manner.

Nor westers are localised rainfall and thunderstorm event occurring in Bangladesh, and some states of India namely Bihar, Jharkhand, Odisha, West Bengal and Tripura. These storms often exceed the speed limit of 100 km/h and generally occur in afternoon or just before sunset.

41. Option (4) is correct.

Lokrang festival is observed in Madhya Pradesh. This festival is observed on 26 January every year in Bhopal and is celebrated for five days. It is celebrated by Adivasi Lok Kala Academy in the city of lakes Bhopal.

42. Option (1) is correct.

Catal Huyuk was one of the most famous sites of Neolithic period. It is located near the modern city of Konya in south central Turkey and was inhabited 9,000 years ago. It was declared as a UNESCO heritage site in 2012.

The Neolithic period is the last stage of the Stone Age. The stone age is covered in three different periods- Palaeolithic, Mesolithic and Neolithic. Neolithic age is known for the use of polished stones for weapons and spread of agricultural practices. In this age, cereal cultivation and animal domestication was introduced. In the end of Neolithic era, copper metallurgy was introduced. Pottery first appeared during the Neolithic age. Neolithic era led to the Bronze Age (Chalcolithic or Eneolithic Era).

43. Option (2) is correct.

In 1600, the East India company acquired a charter from Queen Elizabeth I. It gave the sole trading right to the East India Company and there was no other trading company in England that could compete with the East India company.

East India Company set up their first company on the banks of Hugli in Bengal in 1651.

44. Option (4) is correct.

'Imperfect' is an autobiography of Sanjay Manjrekar. He is a batsman turned commentator and the book talks about his cricket career, obsession, and life.

The Nice Guy Who Finished First is the biography of Rahul Dravid and was written by Devendra Prabhudesai.

Stargazing: The players in my life was written by Ravi Shastri and is co-authored by Ayaz Memon.

45. Option (1) is correct.

Rice and wheat are the HYV seeds that are associated with the Green revolution in India. HVY seeds are High Yielding Variety seeds that are better in quality than normal seeds. Their produce is better than the original with a stronger immune system.

Green Revolution was led by MS Swaminathan which aimed at converting agricultural practices into modern industrial system by the use of technology. It was started in the year 1965 till 1978. Swaminathan is also known as the Father of Green Revolution. Chidambaram Subramaniam is known as the Political father of Green Revolution.

46. Option (2) is correct.

In Tennis, 6–4 scores is a complete set. The scoring system is a standard widespread method for scoring tennis matches, including pick-up games. A tennis match is made of points, games, and sets.

A game is played until a player scores four points. A set is collection of games, played until a player wins six games

or more. A match is played to a best-of-three or five sets. A player must win at least six games to win a set. A player must also win by two games in order to win the set.

47. Option (4) is correct.

Pepsin is a protein digesting enzyme that degrades proteins into peptides. The enzyme is found in the stomach lining.

Lipase is an enzyme present in the digestive juice that helps the body to digest fats in the body. It leads to the hydrolysis of fats.

Amylase enzyme is found in human saliva and is an enzyme that catalyses hydrolysis of starch into sugars.

Collagen is a protein that makes up structural framework of cells and tissues. It is the most abundant structural protein present in animals. It found mainly in connective tissue, skin, tendons, bones, and cartilage

48. Option (3) is correct.

Nagaland became India's first State Assembly to implement the National e-Vidhan Application (NeVA) programme to become paperless. It is a system for digitising the legislative bodies of all Indian states and the Parliament through a single platform. This single platform will have all the proceedings, starred/unstarred questions and answers, committee reports, etc.

49. Option (2) is correct.

Ananga Pal ruled before Prithviraj Chauhan over Delhi. Ananga Pal is known as Anangpal II and was the founder of Dhillika Puri, that later on came to be known as Delhi. He was succeeded by his grandson Prithviraj Chauhan. However, Delhi Sultanate was established after Chauhan lost to Ghurid forces in the Battle of Tarain.

Ghiyas ud din Balban was the ninth sultan of the Mamluk dynasty of Delhi.

Jalal-ud-din Khalji was the founder of the Khalji dynasty that ruled the Delhi Sultanate from 1290 to 1320.

Qutb ud-Din Aibak was a Turkic general of the Ghurid king Muhammad Ghori. He started the Mamluk dynasty and also established the Delhi Sultanate

50. Option (4) is correct.

Motion of an object is uniform if its velocity is constant. Velocity is a vector quantity which means that it has to be defined using magnitude and direction. In uniform motion the object travels in a straight line with constant velocity. If the velocity is constant and the object is moving in a straight line, the acceleration is zero. The object covers equal distance in equal intervals of times.

Quantitative Aptitude

51. Option (1) is correct.

We have,

$$\begin{aligned} & \cos^2 35^\circ + \cos 55^\circ \cdot \sin 35^\circ + \frac{\tan 34^\circ}{\cot 56^\circ} \\ &= \cos^2 35^\circ + \cos (90^\circ - 35^\circ) \cdot \sin 35^\circ + \frac{\tan (90^\circ - 56^\circ)}{\cot 56^\circ} \\ &= \cos^2 35^\circ + \sin 35^\circ \cdot \sin 35^\circ + \frac{\cot 56^\circ}{\cot 56^\circ} \\ &= \cos^2 35^\circ + \sin^2 35^\circ + 1 \\ &= 1 + 1 \quad (\text{Because } \cos^2 \theta + \sin^2 \theta = 1) \\ &= 2 \end{aligned}$$

52. Option (3) is correct.

We have,

$$\text{Surface area of cube} = 1,536 \text{ m}^2$$

$$\text{Let the side of cube} = x$$

$$\text{Surface area of cube} = 6x^2$$

$$\text{So, } 6x^2 = 1,536$$

$$\Rightarrow x^2 = 256$$

$$\Rightarrow x = 16$$

$$\text{Volume of cube} = x^3 = 16^3 = 4,096 \text{ m}^3$$

53. Option (2) is correct.

Let the principal amount = P

$$\text{Simple interest earned in 26 years} = 3P - P = 2P$$

So, simple interest for next 26 years will also be 2P only.

$$\text{Total SI earned in 52 years} = 2P + 2P = 4P$$

And total amount will become 5P after 52 years.

54. Option (3) is correct.

On dividing the number by 363, we get 17 as a remainder.

$$\text{Let the number} = 363x + 17$$

Now, remainder when the above number is divided by

$$11 = \left[\frac{363x + 17}{11} \right]_R = \left[\frac{363x + 11 + 6}{11} \right]_R$$

We know 363 and 11 are multiples of 11.

So, remainder = 6

55. Option (1) is correct.

$$\text{We have, } a^3 - b^3 = 80$$

$$a - b = 2$$

cubing both sides,

$$\Rightarrow (a - b)^3 = 8$$

$$\Rightarrow a^3 - b^3 - 3ab(a - b) = 8$$

$$\Rightarrow 80 - 3ab(2) = 8$$

$$\Rightarrow 6ab = 80 - 8$$

$$\Rightarrow ab = 12$$

56. Option (4) is correct.

We have,

$$\Rightarrow \frac{1}{x^2 + a^2} = x^2 - a^2$$

$$\Rightarrow 1 = (x^2 - a^2)(x^2 + a^2)$$

$$\Rightarrow x^4 - a^4 = 1$$

$$\Rightarrow x^4 = 1 + a^4$$

$$\Rightarrow x = (1 + a^4)^{1/4}$$

57. Option (1) is correct.

The average of the high rates of the shares in all the four stock exchanges for colgate

$$= \frac{34 + 60 + 25 + 20}{4}$$

$$= \frac{139}{4} = ₹ 34.75$$

58. Option (3) is correct.

We have,

$$\text{Speed of boat in still water} = \frac{16}{3} \text{ km/h}$$

$$\text{Let speed of stream} = x \text{ km/h}$$

And distance covered by boat in each direction = d

As given in the question,

$$\Rightarrow \frac{3d}{\frac{16}{3} + x} = \frac{d}{\frac{16}{3} - x}$$

$$\Rightarrow 3 \left(\frac{16}{3} - x \right) = \frac{16}{3} + x$$

$$\Rightarrow 2 \cdot \frac{16}{3} = 3x + x$$

$$\Rightarrow x = \frac{8}{3} \text{ km/h}$$

$$\text{Speed of stream} = \frac{8}{3} \text{ km/h} = \frac{8}{3} \times \frac{5}{18} = \frac{20}{27} \text{ m/s}$$

59. Option (4) is correct.

The largest 5 digit number divisible by 7, 9 and 11 will be a multiple of its LCM.

So, LCM [7,9,11] = 693

Largest 5 digit number which is also a multiple of 7, 9 and 11 = $693 \times 144 = 99,792$

Required number = $99,792 + 3 = 99,795$

60. Option (4) is correct.

We have,
For similar triangles,

$$\Rightarrow \frac{\text{Area } \Delta_1}{\text{Area } \Delta_2} = (\text{ratio of their corresponding sides})^2$$

\Rightarrow (ratio of their corresponding sides)

$$= \sqrt{\frac{\text{Area } \Delta_1}{\text{Area } \Delta_2}}$$

\Rightarrow (ratio of their corresponding sides)

$$= \sqrt{\frac{\sqrt{3}}{\sqrt{2}}} = \frac{\sqrt[4]{3}}{\sqrt[4]{2}}$$

61. Option (3) is correct.

We have, The total sales for all 7 companies = 2,160
Total sales for company P, R and S

$$= (26^\circ + 12^\circ + 70^\circ) \times \frac{1}{360^\circ} \times 2,160 = 648$$

Total sales for company Q, T and U

$$= (150^\circ + 37^\circ + 15^\circ) \times \frac{1}{360^\circ} \times 2,160 = 1212$$

$$\text{Required percentage} = \frac{1,212 - 648}{1,212} \times 100 = 46.53\%$$

62. Option (3) is correct.

We have,

$$\Rightarrow \sqrt{\frac{1 + \cos \theta}{1 - \cos \theta}} + \sqrt{\frac{1 - \cos \theta}{1 + \cos \theta}}$$

$$= \frac{1 + \cos \theta + 1 - \cos \theta}{\sqrt{(1 - \cos^2 \theta)}}$$

$$= \frac{2}{\sqrt{(\sin^2 \theta)}} = \frac{2}{\sin \theta} = 2 \operatorname{cosec} \theta$$

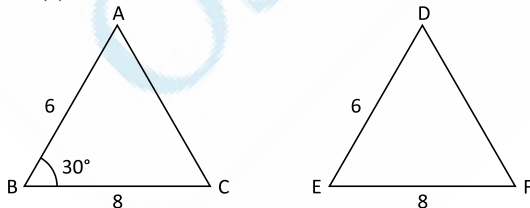
63. Option (2) is correct.

Total marks obtained by A in all subjects = $180 + 240 + 360 + 300 + 60 + 330 = 1,470$

Total marks obtained by B in all subjects = $90 + 420 + 390 + 210 + 270 + 120 = 1,500$

Required difference = $1,500 - 1,470 = 30$

64. Option (4) is correct.



As shown in figure,

ΔABC and ΔDEF are congruent, respectively.

$$\angle A = \angle D$$

$$\angle B = \angle E = 30^\circ$$

$$\angle C = \angle F$$

In ΔABC , $\angle A + \angle B + \angle C = 180^\circ$

$$\angle D + 30^\circ + \angle C = 180^\circ$$

$$\angle D + \angle C = 150^\circ$$

65. Option (3) is correct.

From the given table, only D and E obtained more than 60% marks in each subject.

66. Option (3) is correct.

We have,

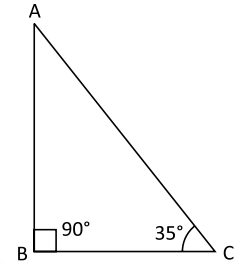
$$\angle BCA = 35^\circ$$

In right angle triangle, one angle 90° . Here, $\angle ABC = 90^\circ$

$$\angle BCA + \angle ABC + \angle CAB = 180^\circ$$

$$\Rightarrow 35^\circ + 90^\circ + \angle CAB = 180^\circ$$

$$\Rightarrow \angle CAB = 55^\circ$$



67. Option (2) is correct.

We have,

Loss on cost price = 11%

Percentage profit by using 22% less weight

$$= \frac{22}{100 - 22} \times 100 = 28.20\%$$

By successive percentage change,

Overall profit or loss percentage

$$= 28.20 + (-11) + \frac{(28.20)(-11)}{100}$$

$$= 17.20 - 3.102 = 14.1\%$$

Here, result is positive. So, there is a profit of 14.1%.

68. Option (4) is correct.

Let two investments be $2x$ and $3x$.

Total investments = $2x + 3x = 5x$

$$\text{Total S.P} = 2x \times \frac{110}{100} + 3x \times \frac{80}{100} = \frac{46x}{10}$$

$$\text{Loss}\% = \frac{5x - \frac{46x}{10}}{5x} \times 100 = 8\%$$

69. Option (3) is correct.

Statement 1:

$$100^2 - 99^2 + 98^2 - 97^2 + 96^2 - 95^2 \dots \dots \dots 22^2 - 21^2$$

We know that, $a^2 - b^2 = (a + b)(a - b)$

$$\text{So, } (100 - 99)(100 + 99) + (98 - 97)(98 + 97) +$$

$$(96 - 95)(96 + 95) + \dots \dots \dots + (22 - 21)(22 + 21)$$

$$= 199 + 195 + 191 + \dots \dots \dots + 43$$

Above series is arithmetic progression with a common difference of -4 .

$$\text{So } l = a + (n - 1)d$$

$$\Rightarrow 43 = 199 - (n - 1)4$$

$$\Rightarrow n = 40$$

$$\text{Sum of above series} = \frac{n}{2} (a + l)$$

$$= \frac{40}{2} (199 + 43)$$

$$= 4,840$$

Statement 2: Maximum power of k is 12 after simplifying the equation. So, this statement is wrong.

70. Option (2) is correct.

As given in the question,

20 men added in team of 60 men to complete the task on time.

Now, time taken by 80 men to finish the remaining work = 60 days

So, time taken by 60 men to finish the remaining work
 $= \frac{80 \times 60}{60} = 80$ days

So, required time = $80 - 60 = 20$ days

71. Option (3) is correct.

Given that, Side of cube = 4.2 cm

We have, Diameter of the largest sphere that can be taken out of the cube = side of the cube = 4.2 cm

So, radius of sphere = 2.1 cm

Now, volume of sphere = $\frac{4}{3}\pi r^3 = \frac{4}{3}\pi \times 2.1 \times 2.1 \times 2.1$
 $= 38.80 \text{ cm}^3$

72. Option (2) is correct.

Let the cost price = ₹ 100

So, the marked price = ₹ 120

Now, after allowing a discount of 20%, the sale price
 $= \frac{80}{100} \times 120 = 96$

So, loss percentage = $\frac{100 - 96}{100} \times 100 = 4\%$

73. Option (4) is correct.

We have, $\cos x \cdot \operatorname{cosec} x - \sin x \cdot \sec x$

$$\begin{aligned} &= \frac{\cos x}{\sin x} - \frac{\sin x}{\cos x} \\ &= \frac{\cos^2 x - \sin^2 x}{\sin x \cdot \cos x} \\ &= \frac{2(\cos^2 x - \sin^2 x)}{2\sin x \cdot \cos x} \\ &= \frac{2\cos 2x}{\sin 2x} = 2\cot 2x \end{aligned}$$

74. Option (2) is correct.

We have, A = 15, B = 27, C = 2

As given in the question,

$$\begin{aligned} A &\propto \sqrt{B} \\ \Rightarrow A &= k\sqrt{B} \quad (\text{where } k \text{ is constant}) \end{aligned}$$

$$\Rightarrow 15 = k\sqrt{27}$$

$$\Rightarrow k = \frac{5}{\sqrt{3}}$$

And

$$A \propto \frac{1}{C^3}$$

$$\Rightarrow A = \frac{R}{C^3} \quad (\text{where } R \text{ is constant})$$

$$\Rightarrow 15 = \frac{R}{2^3}$$

$$\Rightarrow R = 120$$

Now, again when A = 9 and C = 2,

$$\text{Then, } A = k\sqrt{B}$$

$$\Rightarrow k^2 \cdot B = A^2$$

$$\Rightarrow \left(\frac{5}{\sqrt{3}}\right)^2 \cdot B = 9^2$$

$$\Rightarrow B = \frac{81 \times 3}{25} = \frac{243}{25}$$

75. Option (4) is correct.

Let the new person's weight = x kg

Average weight of 5 men decreased by 3 kg.

As per the question,

$$150 - x = 5 \times 3$$

$$\Rightarrow x = 150 - 15 = 135$$

So, new person's weight = 135 kg

English Comprehension

76. Option (4) is correct.

The subject of the active sentence becomes the object of the passive sentence. Similarly, the object of the active sentence becomes the subject of the passive sentence. Also, if the sentence is in present perfect tense, then the passive form will have 'has/have + been + past participle' structure.

(1) This option is in past continuous tense.

(2) This option is in past perfect tense.

(3) This sentence is grammatically incorrect as 'was been' is incorrect conjugation.

(4) This option has the correct passive formation of the verb.

77. Option (2) is correct.

The verb 'did' suggests that the sentence should be in past tense. So, the first verb 'are' is incorrect. So, the error is in option (2), making it the correct answer. The correct phrase will be 'There were some monkeys'.

78. Option (1) is correct.

'Amend' is to make minor changes to a text in order to make it fairer or more accurate, or to reflect changing circumstances.

(1) 'Rectify' is to put right or correct something. It is the synonym of the given word.

(2) 'Harm' is to have an adverse effect on something/someone.

(3) 'Impair' is to weaken or damage something, especially a faculty or function.

(4) 'Worsen' is to make or become worse.

79. Option (3) is correct.

This sentence is in third conditional, which suggests the past consequence of an unrealistic action or situation in the past. In the main clause, the verb should be 'would + have + past participle'.

(1) The verb is in future tense.

(2) 'Should' is used for an obligation and not a past activity.

(3) This is as per the correct structure.

(4) 'Shall' is used for future tense.

80. Option (2) is correct.

(1) 'Colleague' is a person with whom one works in a profession or business.

(2) The correct spelling of the word is 'harassment', which means aggressive pressure or intimidation.

(3) 'Humorous' is something or someone that causes laughter and amusement.

(4) 'Perceivable' means capable of being perceived especially by sight or hearing.

81. Option (1) is correct.

The sentence talks of the trainee who wanted to know something about the course that will help improve his understanding of the job prospects.

(1) 'Ins and outs' refers to the detailed or complicated facts of something. This will definitely improve the understanding.

(2) 'Bird's eye view' refers to an overall or cursory look at something. This may not necessarily improve the understanding of the job prospects.

(3) 'Crying need' refers to a very obvious need. It doesn't fit in the given context.

(4) 'Tall talk' refers to exaggerated story telling. It is incorrect as per the given context.

82. Option (3) is correct.

The preposition used with the word 'informative' is 'about'.

83. Option (4) is correct.

The sentence talks of the couple having a baby after 18 years of their marriage.

- (1) 'Delighted with' means to feel or show great pleasure.
- (2) 'Prepared with' is to be ready with something or someone.
- (3) 'Provided with' means to be supplied with. It doesn't fit the given context.
- (4) 'Blessed with' is to have something that you feel is special or lucky. This fits the given context.

84. Option (4) is correct.

'Impede' is to delay or prevent someone or something by obstructing them.

- (1) 'Intend' is to have a course of action as one's purpose or intention.
- (2) 'Prompt' is to cause or bring about an action or feeling.
- (3) 'Respite' is a short period of rest or relief from something difficult or unpleasant.
- (4) 'Hinder' is to make it difficult for someone to do something or for something to happen. It is the synonym of the given word.

85. Option (2) is correct.

- (1) 'Warden' is a person responsible for the super-vision of a particular place or activity or for enforcing the regulations associated with it.
- (2) The correct spelling of the word is 'police-man', which refers to a male member of a police force.
- (3) 'Engineer' is a person who designs, builds, or maintains engines, machines, or structures.
- (4) 'Doctor' is a person who is qualified to treat people who are ill.

86. Option (1) is correct.

'Vivacious' means attractively lively and animated. It is typically used to describe a woman.

- (1) 'Energetic' means showing or involving great activity or vitality. It is the synonym of the given word.
- (2) 'Fearless' means showing a lack of fear.
- (3) 'Prosperous' means successful in material terms.
- (4) 'Friendly' means kind and pleasant.

87. Option (2) is correct.

The subject of passive voice is changed as the object of the active voice. Similarly, the object of passive voice is changed as the subject of the active voice. The tense of the sentence is not changed.

- (1) This sentence is in present continuous tense.
- (2) This sentence is in simple past tense, just as the given sentence.
- (3) The sentence is past continuous tense.
- (4) The option is in past perfect continuous tense.

88. Option (3) is correct.

Sentence S introduces the subject of the paragraph – heat pumps. So, S should begin the sequence, eliminating options (1) and (4). Now, sentence P calls them costly and sentence Q talks of what their cost depends on. So, PQ is a mandatory pair, which is present in option (3). So, SRPQ is the correct sequence.

89. Option (3) is correct.

- (1) 'She was wondered' is incorrect as it suggests that as 'she' is the object of the verb 'wondered'.
- (2) 'Dumped' means to dispose off in a hurried way. It is neither a contextual nor a grammatical fit.

(3) 'To be caught' is to be discovered or seen doing something wrong.

(4) 'She was enlightened' means she became wiser. It doesn't fit in the context.

90. Option (4) is correct.

S has the subject and the verb. From the given options, we can see that P and Q should come together as they talk of something becoming a 'disrupter' and 'human-centric'. P should come before Q because of 'and'. Now, Q talks of 'our', which needs a noun (requirements) that is given by R. So, R should come after PQ. So, PQRS is the correct sequence.

91. Option (3) is correct.

'Mercy' is compassion or forgiveness shown towards someone whom it is within one's power to punish or harm.

- (1) 'Legacy' is an amount of money or property left to someone in a will.
- (2) 'Clarity' is the quality of being coherent and intelligible.
- (3) 'Clemency' means mercy or lenience. It is the appropriate synonym of the given word.
- (4) 'Plurality' is the fact or state of being plural.

92. Option (1) is correct.

- (1) 'Ablutions' refers to the washing of one's body or part of it, usually as a part of a religious rite.
- (2) 'Solutions' means solving a problem or dealing with a difficult situation.
- (3) 'Steaming' refers to something that gives off steam.
- (4) 'Bathing' is to wash oneself or someone while immersing in a bath.

93. Option (1) is correct.

The verb of the indirect speech is in past simple; this suggests that the direct speech will take the corresponding present tense, i.e., present simple. But, the reporting verb of the direct speech will retain the past tense.

- (1) This option has the direct speech is in present simple.
- (2) This option is grammatically incorrect because the present participle needs a helping verb before. Also, the direct speech needs to be in present simple tense.
- (3) This direct speech of this option uses past perfect tense. Also, it is grammatically incorrect because the helping verb in present tense used with the second person is 'has/have'.
- (4) The tense of reporting verb of both the direct speech and indirect speech remains the same.

94. Option (1) is correct.

The correct idiom is 'hit me below the belt', which means to pass a remark that is insulting and unfair.

95. Option (1) is correct.

One doesn't forget on something but about something. The correct phrase is 'forget all about it'.

96. Option (1) is correct.

The blank needs a word related to sacrifices which has given women their present status.

- (1) 'Struggle' is a forceful or violent effort to get free of restraint or resist attack. This is similar to sacrifice.
- (2) 'Happiness' refers to the state of being happy.
- (3) 'Dignity' is the state or quality of being worthy of honour or respect.
- (4) 'Joy' is a feeling of great pleasure and happiness.

97. Option (2) is correct.

The blank talks of women wanting the same rights as someone else.

- (1) 'Everyone' is incorrect as it would include 'women'.
- (2) 'Men' would fit in the context as it would be the opposite of 'women'. Also, the paragraph compares the rights of men and women.
- (3) 'Universal' is an adjective and doesn't fit the structure.
- (4) 'Politicians' is irrelevant as though women's rights are being talked, there is no mention of the rights of politicians.

98. Option (4) is correct.

The sentence talks of women holding higher positions in the world.

- (1) 'Snatched' is to quickly secure or obtain (something) when a chance presents itself. It has a negative tone and hence will not fit in the context.
- (2) 'Gripped' is to take and keep a firm hold of. It doesn't fit the context of holding higher positions.
- (3) 'Plucked' is to catch hold of and pull quickly. This is irrelevant to the context.
- (4) 'Gained' is to obtain or secure something wanted or desirable. It fits the context of women securing or holding higher positions.

99. Option (4) is correct.

This sentence talks of women suffering because of a particular reason.

- (1) 'Issues' refers to problems or difficulties. It is incorrect as it isn't particular.
- (2) 'Tolerance' is the ability or willingness to tolerate the existence of opinions or behaviour that one dislikes or disagrees with. Tolerance cannot cause suffering.
- (3) 'Equality' is the state of being equal, especially in status, rights, or opportunities. This cannot cause suffering as it is a positive word.
- (4) 'Discrimination' is the unjust or prejudicial treatment of different categories of people, especially on the grounds of ethnicity, age, sex, or disability. This is a specific reason that causes suffering.

100. Option (3) is correct.

The sentence talks of an objective desired by women.

- (1) 'Probability' is the quality or state of being probable. It is irrelevant to the context.
- (2) 'Maturity' is the state, fact, or period of being mature. Women don't aim to be mature.
- (3) 'Equality' is the state of being equal, especially in status, rights, or opportunities. It is clear from the previous sentence that the women suffer because of discrimination. So, they would definitely want equality.
- (4) 'Eligibility' is the state of having the right to do or obtain something through satisfaction of the appropriate conditions. There is no mention of wanting eligibility.