

Answers and Explanations

1	b	21	b	41	d	61	c	81	c	101	c	121	c	141	c	161	a	181	b
2	c	22	d	42	c	62	c	82	b	102	d	122	c	142	d	162	b	182	d
3	a	23	b	43	a	63	c	83	a	103	c	123	b	143	b	163	c	183	a
4	d	24	d	44	b	64	a	84	c	104	b	124	d	144	d	164	b	184	b
5	a	25	c	45	d	65	d	85	b	105	a	125	c	145	d	165	d	185	d
6	b	26	b	46	c	66	a	86	a	106	b	126	b	146	d	166	b	186	c
7	a	27	c	47	b	67	c	87	c	107	d	127	a	147	c	167	b	187	d
8	c	28	b	48	c	68	c	88	b	108	d	128	d	148	a	168	b	188	d
9	c	29	a	49	d	69	d	89	a	109	d	129	c	149	b	169	a	189	d
10	a	30	a	50	b	70	a	90	a	110	c	130	d	150	c	170	d	190	c
11	b	31	d	51	c	71	b	91	b	111	c	131	b	151	b	171	d	191	a
12	c	32	d	52	b	72	c	92	a	112	a	132	c	152	a	172	c	192	d
13	a	33	d	53	c	73	c	93	c	113	a	133	a	153	c	173	c	193	b
14	d	34	d	54	a	74	c	94	d	114	d	134	c	154	c	174	c	194	a
15	b	35	a	55	d	75	d	95	d	115	a	135	d	155	d	175	a	195	d
16	c	36	c	56	c	76	d	96	d	116	a	136	c	156	c	176	c	196	b
17	b	37	a	57	b	77	d	97	b	117	a	137	a	157	c	177	b	197	a
18	c	38	d	58	c	78	d	98	c	118	b	138	c	158	d	178	c	198	d
19	d	39	a	59	c	79	d	99	c	119	d	139	b	159	c	179	b	199	c
20	c	40	b	60	c	80	b	100	c	120	c	140	a	160	d	180	d	200	b

41. d Statement I is clearly stated in the first line of the passage – ‘we and the whole ... are dependent on mathematics’. Statement II is also stated in the 3rd sentence – geometry, at least, was thought ... in which we live’. Statement III has been clearly disagreed with in the 4th sentence – ‘the world of reason, in a sense, controls the world of facts’. Thus, the answer is choice (d).
42. c The answer is option (c) that is ‘cannot be evaded’ means to do without.
43. a Fourth sentence in the passage ‘and in the application of its results to the ... are lost among approximations and working hypotheses’. Therefore, the answer should be choice a.
44. b Read the sentence – “A reciprocal liberty must be accorded ... facts cannot restrict reason”. Hence, the reciprocal liberty be accorded between reason and fact.
45. d The last sentence of the passage leaves an open-ended thought.
46. c Given in the 1st paragraph, ‘applause was dismal’.
47. b This answer can be inferred from the opening episode.
48. c Refer to the 3rd paragraph, ‘commission of war crimes’.
49. d Given towards the end of the passage.
50. b Can be inferred from the second paragraph, ‘I do moralize’.
51. c ‘To elicit’ something means to ‘draw out’ or to ‘bring out’, e.g. you elicit a response.
52. b Culminate means result in.
53. c Appertain means relate, be relevant, pertain.

54. a Since the action is in the past tense, the verb will be 'was'.
55. d The answer is 'premise' because a premise is a basis for any logical deduction. Hence, it is the answer. Other options do not make sense. 'Understanding' indicates a kind of agreement or a mutual acceptance of an idea. Hence, it cannot be the answer.
56. c The sound made by a bird is 'squawk'. Hence, choice 'c' is right.
57. b The blank word has to be the opposite of sound as 'light' and 'shadow' are opposites. 'Silence' is the right option.
58. c We normally say 'prefer....to....'. Hence, the answer is 'c'.
59. c 'Prodigal' means extravagant while 'chary' means cautious. These words are, hence, almost antonyms. So are 'wealth' and 'poverty'.
60. c Catastrophe is an advanced form of misfortune. Knowledge is an advanced form of learning.
61. c Molecule is made up of atoms. Tissue is made up of cells. Body is not made up of limb, but limbs.
62. c Limping is the incorrect form of walking. Stuttering is the incorrect form of talking.
63. c You solve a riddle, and unravel a tangle.
64. a D introduces an action of the government, A explains what it is, C relates it to another action and B concludes the passage by stating the consequences of the action.
65. d C starts with 'once upon a time' indicating that this should be the beginning of the passage. B talks about how C prompted Indians to stay closer to Soviet Union, D states how this could be done and A elaborates on the same.
66. a C introduces an American to the passage, D states who he was, B talks about something he said, and A shows the author's reaction to it.
67. c Statement C indicates Indian roads as an important mode of transport. Followed by the percentage of traffic 50 years back - to increased percentage till 1995 in statement B and A accordingly.
68. c Statement C introduces the Urdu daily scene in Hyderabad. Statement A follows giving the Urdu daily names. Further statement D follows, giving its outgrowth owing to international presence.
69. d 'as' is redundant in the sentence.
70. a 'already' is the right usage.
71. b 'better than' is the right usage for comparison.
72. c 'not only was he ... but also' is the right usage.
73. c 'rainfall' will take the verb 'has'.
74. c 'to upset the apple cart' means to 'disturb the plans'.
75. d 'not as black as he is painted' means that Ryan is quite a nice person.
76. d 'to chew over' means to think over carefully.

77. d 'to be upright' means to be 'just'. Fair and square implies meting out justice.

78. d An audit is a check on whether things are done properly.

79. d An authentic matter is genuine, not a duplicate.

80. b An avid person is active, not passive.

81. c The supply in 1974-75 and 1984-85 was 66 and 151, respectively.

$$\text{Therefore, the percentage increase} = \left[\frac{(151 - 66)}{66} \right] \times 100 = \left(\frac{85}{66} \right) \times 100 \approx \left(\frac{4}{3} \right) \times 100 \approx 128\% .$$

82. b The decade starting from 1974-75 will end in 1983-84. The cumulative difference over these 10 years is $12 + 9 + 5 + 16 + 13 + 19 + 15 + 14 + 13 + 15 = 131$.

83. a The supply in 1976-77 = 83. Requirement in 1983-84 = 145.
Therefore, the ratio = $83 : 145 \approx 8 : 14 \approx 0.57$.

84. c The percentage increase in the supply from 1976-77 to 1980-81

$$= \left[\left(\frac{105 - 83}{83} \right) \right] \times 100 \approx 26 .$$

The percentage increase in the requirement from

$$1980-81 to 1984-85 = \left[\left(\frac{170 - 120}{120} \right) \right] \times 100 \approx 42 .$$

Thus, the difference is $42 - 26 = 16\%$.

85. b Only two years, 1977-78 and 1984-85 have registered a 10% increase in the requirement of power.

86. a For urban consumers, the per capita expenditure in 1973 and 1983 were, respectively, 64.5% and 59.1%. Thus,

$$\text{the percentage decrease} = \left[\left(\frac{64.5 - 59.1}{59.1} \right) \right] \times 100 = \left(\frac{5.4}{60} \right) \times 100 \approx 9$$

87. c In 1973, in an urban household, 3.6% of the total expenses was spent on sugar. This is equal to

$$\left[\left(\frac{3.6}{100} \right) \times 531 \right] = \text{Rs. } 19.12$$

88. b In 1978, in rural areas, the amount spent on clothing was 8.7% of 580 \approx Rs. 50.50.

89. a In 1983, the total expenses on food in rural areas were $\left[\left(\frac{65.6}{100} \right) \times 665 \right] \approx \left[\left(\frac{2}{3} \right) \times 665 \right] \approx \text{Rs. } 436 (-)$,

while in the urban areas, they were

$$\left[\left(\frac{59.1}{100} \right) \times 765 \right] \approx \left[\left(\frac{3}{5} \right) \times 765 \right] \approx \text{Rs. } 452 (+).$$

Thus, the difference is $(452 - 436) = \text{Rs. } 16$.

90. a In 1973, in rural areas, oils formed 3.5%, while vegetables formed 3.6 of the total expenditure.

$$\text{Therefore, the required percentage} = \left[\left(\frac{3.5}{3.6} \right) \times 100 \right] \approx 97$$

91.b The new licences issued in '93 were

Metallurgical : $1400 - 1280 = 120$

Electrical : $850 - 720 = 130$

Chemical : $445 - 425 = 20$

Textiles : $670 - 645 = 25$

Total = $120 + 130 + 20 + 25 = 295$.

The new licences issued in '95 were

Metallurgical : $1620 - 1480 = 140$

Electrical : $980 - 910 = 70$

Chemical : $525 - 480 = 45$

Textiles : $840 - 785 = 55$

Total = $140 + 70 + 45 + 55 = 310$.

\therefore The difference = $310 - 295 = 15$.

92. a The difference between the figures of the two years for a given category will give the number of licences newly issued within that period.

Electrical = $910 - 720 = 190$

Metallurgical = $1480 - 1280 = 200$.

\therefore The required percentage = $\frac{190}{200} \times 100 = 19 \times 5 = 95$.

93.c Using the formula for percentage deviation and the figures for 1992 and 1995 as the initial and final values, calculate the industry with the smallest percentage increase.

$$\text{Metallurgical} = \frac{1620 - 1280}{1280} \times 100$$

$$= \frac{34}{128} \times 100 \approx 26(+)\%$$

$$\text{Electrical} = \frac{980 - 720}{720} \times 100$$

$$= \frac{26}{72} \times 100 \approx 35(+)\%$$

$$\text{Chemical} = \frac{525 - 425}{425} \times 100$$

$$= \frac{100}{425} \times 100 \approx 24(+)\% ; \text{Textiles} = \frac{840 - 645}{645} \times 100 \approx \frac{200}{645} \times 100 \approx 31(+)\%$$

So chemical industry has the smallest percentage increase.

94. d New textiles units in '93 = $670 - 645 = 25$; Existing units = 645. Total expenditure = $(20 \times 25) + (1 \times 645)$
= Rs. 1,145 lakh.

\therefore The expenditure per unit = $\frac{1145}{670} \approx 1.7(+)$ i.e. \approx Rs. 1.7 lakh.

95. d New licences to chemical units in '94 = $480 - 445$

= 35. 40% of these new units = $0.4 \times 35 = 14$ units. 20% of the existing units = $\left(\frac{20}{100}\right) \times 445 = 89$ units.

Thus, the total number of units which had to be closed down were $14 + 89 = 103$. From the total of 480, 103

were closed down. So $480 - 103 = 377$ remained unaffected. Thus the percentage of unaffected industries $= 377 \times 100 / 480 \approx 78$.

96. d The prices of the toothpastes are given as a range and thus it is not possible to determine the exact price of a toothpaste used by any particular household.

97. b Required probability =

$$\frac{1500 + 500 + 1750 + 750 + 350 + 150 + 500 + 1200 + 400 + 200}{\text{Total number of households with income} < 5000} = \frac{7300}{9600} = 0.76$$

98. c P (at least Rs. 2,500 per month)

= P (Rs. 2, 500 per month) + P (more than Rs. 2,500 per month)

$$\frac{400 + 200 + 50}{500 + 1200 + 400 + 200 + 50} = \frac{650}{2350} \approx 0.28$$

99. c Required ratio

$$= \frac{1500 + 1750 + 500 + 250 + 50}{\text{Total number of households}} = \frac{4050}{10000} = 0.405$$

100. c Statement I is true, as the table clearly shows that as the income of households increases, the number of households using toothpastes in the range $< 4, 4 - 6$ and $6 - 8$ reduces.

Statement II is false as there are households with low income using expensive toothpaste, e.g. 50 households with income $< \text{Rs. } 1,500$ use toothpaste which cost $> \text{Rs. } 10$ each.

Statement III is true as number of households with incomes $< \text{Rs. } 2,500 = \text{Rs. } 7,050$ which is more than 50% of the total number of households i.e. 10000.

101. c By adding up the values of the exports for the given months, the answer is obtained as Rs. 2,257.5.

102. d By checking out the options it becomes clear that the answer is August and November.

103. c The difference between the imports and exports for the three months are $+ 12.5, -5$ and $+10$. So, the total difference is Rs. 17.5 million.

104. b Adding up the differences gives a difference of $+60$. So, the imports exceeded the exports by Rs. 60 million.

105. a Counting it gives us the answer as 8.

106. b Production of both P-and Q-type vehicles in

1985 = $120 + 140 = 260$ thousands

1986 = $100 + 120 = 220$ thousands

1987 = $140 + 100 = 240$ thousands

1988 = $80 + 130 = 210$ thousands

1989 = $120 + 110 = 230$ thousands

1990 = $160 + 150 = 310$ thousands

107. d 1988; $\frac{(130 - 100)}{100} = 30\%$

108. d $130 = ?\% \text{ of } 80 \Rightarrow 162.5$

109. d $(130 - 90) = 40$

110. c $\frac{60}{140} \times 100 = 42.85\% \approx 40\%$

For these questions, you are not required to find the actual numerical solution. However, we have solved it to get the numerical solution to enhance your understanding of the question.

111. c Using statement I, we can find out the total price of the 3 cameras.

(Since average = \$172, total = $172 \times 3 = 516$)

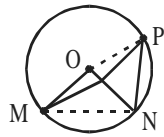
From statement II, we know that 2 cameras which are identical, cost \$332 together. Therefore, each one costs

$$\frac{332}{2} = \$166.$$

Since we know the total price from statement I, we can find the price of the third camera

by subtracting \$332 from the total price, i.e. \$516, which gives us \$184 as the price of the third camera. Thus, statements I and II together are required to answer the question.

112. a



Statement I gives us the measure of $\angle OMN = 31^\circ$

$$\Rightarrow \angle MON = 180 - 2 \times 31^\circ \\ = 118^\circ$$

$$\Rightarrow \angle MPN = \frac{118^\circ}{2} = 59^\circ$$

(Rule: Angle inscribed by an arc at the circumference is half the angle inscribed by it at the centre)

But still $\angle ONP$ cannot be calculated.

So, statement I is not sufficient alone.

Statement II gives the measure of $\angle NMP = 98^\circ$

So, $\angle NOP = 48 \times 2 = 96^\circ$ (Using Rule I stated above)

Now, In $\triangle ONP$

$$\angle OPN + \angle ONP + \angle NOP = 180^\circ$$

$$2\angle ONP = 180 - 96 \quad (\because ON = OP \text{ (radii)})$$

$$= 84^\circ$$

$$\Rightarrow \angle ONP = 42^\circ$$

So, statement II alone is sufficient.

113. a Statement I is not useful in answering the question as the values of n and m both are unknown.

Statement II tells us that $m = 6n$.

$$\Rightarrow \frac{n}{m} = \frac{1}{6}$$

Thus, statement II alone is sufficient to answer the question.

114. d None of the given statements helps us solve the problem. Statement I could be misleading. You might jump to the conclusion that $n = 50 \times 2 = 100$. However, this is not necessarily true. For example, n could be 105, 110, 120, etc. In case of all these numbers, there are only two integers, between 1 and n which are divisible by 50, i.e. 50 and 100. However the power of 5 that divides $n!$ for each of these is different.

115. a From statement I, we get the measurement of one side of the hexagon. Since a regular hexagon is made up of 6 equilateral triangles where each triangle comprises one side of hexagon, the area of the hexagon.

$$= 6 \times \left(\frac{\sqrt{3}}{4} \times 36 \times 36 \right)$$

116. a In order to determine the annual income of Mr Dhingra, we need following information:

- (i) his income by way of visiting lectures
- (ii) his income if any during his free time while the information at (i) above is provided in the question statement, information in (ii) above is provided in statement I. Thus only statement I is sufficient to answer the question . Statement II is redundant.

117. a In order to determine the required number, we need following information:

- (i) the divisibility by other numbers
 - (ii) an upper limit of the number.
- While the information in
- (i) above is provided in the question statement, the information in (ii) above is provided in the statement II. Thus, only statement II is sufficient to answer the question.

118. b In order to determine the cost price of the radio we need following information:

- (i) the profit percentage
Given in question statement.
- (ii) the discount offered if any
Given in question statement.
- (iii) sales price after/before discount can be ascertained independently from either statement I or II. Thus, either statement I or II is independently sufficient to answer the question.

119. d In order to determine the total cost of painting, we need following information:

- (i) the size of the room
Provided in statement I coupled with the question statement.
- (ii) how many sides are to be painted
- (iii) the unit cost of painting.
- (ii) and (iii) not provided at all. Thus, neither statement I nor II is sufficient to answer the question.

120. c In order to determine the speed of the train, we need following information:

- (i) the distance it travels.
- (ii) if length of the train = x m.

$$\text{By statement I. Speed} = \frac{\text{distance}}{\text{time}} = \frac{(x + 400)}{40}$$

$$\text{By Statement II. Speed} = \frac{(x + 800)}{64}$$

Solving the above we can determine 'x' and thereafter by substituting this value of 'x' we get the speed of the train.

121. c Let C be the cost price of the watch.

$$\frac{820 - C}{C} \times 100 = \frac{C - 650}{C} \times 100$$

$$2C = 1470$$

$$C = \text{Rs. } 735$$

122. c Let x and y be the present ages of Anjali and Smita, respectively, then

$$\frac{x}{y} = \frac{2}{3} \quad \dots (i)$$

$$\frac{x+6}{y+6} = \frac{5}{7} \quad \dots (ii)$$

From (i) and (ii), $x = 24$ and $y = 36$

123. b $\frac{7 \times 17 + 2 \times 19 - 25}{8} = 16.5$.

124. d Data is inadequate to find out, as there is no mention that all the students joined any of the camp.

125. c Let Q's capacity be x .

\therefore P's capacity = $3x$.

\therefore In 1 turn, P fills $3x$ of the drum = $\frac{1}{60}$ th portion of the drum.

$$\therefore x = \frac{1}{180}$$

Number of turns taken by both buckets together to fill the drum = $\frac{180}{4} = 45$.

126. b Let the sum of money be s .

(Original number of children) + 1 = New number of children

$$\therefore \frac{s}{60} + 1 = \frac{s}{50}$$

$$\therefore s = \$300.$$

127. a By alligation rule, number of boys : number of girls : : 4 : 1.

Therefore, if there are 60 boys, then there are 15 girls.

128. d All the factors of x will also be the factors of x^2 . If x and x^2 have only 1 and x as their common factors, x has to be a prime number.

129. c If the salesman's sales was worth Rs. x ,

$$\frac{5}{100}x + 600 = 1000 + \frac{2.5}{100}(x - 4000).$$

$$\Rightarrow \frac{5x}{100} - \frac{x}{40} = 300$$

$$\Rightarrow x = \text{Rs. } 12,000.$$

130. d If R is the number of refills and L the number of labels, then $R \times 160 + L \times 30 = 2000$

$$\therefore R = \frac{200 - 3L}{16}. \text{ For the minimum value of } L,$$

$200 - 3L$ must be divisible by 16. Hence, L should be 8.

131. b If x be the original rate,

$$\frac{1000 \times 1 \times x}{100} + \frac{500 \times \frac{2}{3} \times 3x}{100} = \text{Rs. } 100$$

$$\Rightarrow 20x = 100.$$

$$\Rightarrow x = 5\%.$$

132. c Alternative I is equivalent to one discount of 44%. Alternative II is equivalent to one discount of 48.15%. Thus, obviously, the shopkeeper would prefer choosing alternative I in order to earn a higher profit, while the customer would prefer alternative II, in order to save more.
 $42\% < 44\%$. Thus, the shopkeeper wouldn't like to exercise the option given in (3). Therefore, (3) is not true. However, the customer would prefer a discount of 48.5% to a discount of 40%. Thus (d) is true.

133. a C.P. of $\frac{1}{4}$ th of the goods = Rs. 250. C.P. of the rest

$$= \text{Rs. } 750.$$

$$\text{S.P. of } \frac{1}{4} \text{th of the goods} = \frac{90}{100} \times 250 = \text{Rs. } 225; \text{ S.P. of all the goods} = \text{Rs. } 1,200.$$

\therefore The remaining goods costing Rs. 750 must be sold for Rs. (1200 – 225) or for Rs. 975.

$$\therefore \text{Gain per cent at which they should be sold} = \frac{225}{750} \times 100 = 30\% .$$

134. c Portion of the tank filled by both taps in 5 min = $5 \times \left(\frac{1}{10} + \frac{1}{30} \right) = \frac{2}{3}$

$$\therefore \text{Time taken by second tap to fill the remaining } \frac{1}{3} \text{ portion of tank} = \frac{1}{3} \div \frac{1}{30} = 10 \text{ min} .$$

135. d New textiles units in '93 = $670 - 645 = 25$;

Existing units = 645. Total expenditure

$$= (15 \times 25) + (2 \times 645)$$

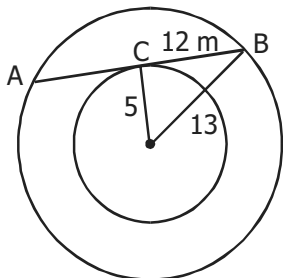
$$= \text{Rs. } 1,665 \text{ lakh.}$$

$$\therefore \text{The expenditure per unit} = \frac{1665}{670} \approx 2.5 \text{ i.e. } \approx \text{Rs. } 2.5 \text{ lakh.}$$

136. c Suppose Principal = P

$$\therefore [(P \times 6 \times 3) / 100] + [(P \times 8 \times 5) / 100] + [(P \times 10 \times 2) / 100] = 1560 \therefore P = \text{Rs. } 2,000$$

137. a Since $CB = 12$, the radii of the inner and outer circles have to be 5 and 13 respectively, so that they can be integers (verify using Pythagoras, theorem).



138. c Expression on the left = $\frac{\frac{3}{48}}{\frac{5}{48}} = \frac{3}{5}$

Expression on the right = $\frac{\frac{1}{48}}{\frac{1}{4} \times \frac{7}{48}} = \frac{4}{7}$.

139. b Let the number of sides of the polygon be n.
 Exterior angles are respectively $60^\circ, 55^\circ, 50^\circ, \dots$
 Sum of the exterior angles of n sides = 360°
 $360 = 60 + 55 + 50 + 45 + \dots$
 [A.P. with $a = 60, d = -5$]

$$\frac{n}{2} [2a + (n-1)d] = 360$$

$$\Rightarrow \frac{n}{2} [120 + (n-1)(-5)] = 360$$

$$\Rightarrow n^2 - 25n + 144 = 0 \Rightarrow n = 9, 16$$

We don't take $n = 16$ as it will give negative exterior angles.

140. a Let the amount invested at 4% be x.
 The amount invested at 5% = $(100 - x)$

$$\frac{x \times 4 \times 1}{100} + \frac{(100 - x) \times 5 \times 1}{100} = 46.50$$

$$\Rightarrow 5x - 4x = 5000 - 4650$$

$$\Rightarrow x = \text{Rs. } 350$$

\therefore Amount invested at 4% = Rs. 350

Amount invested at 5% = Rs. 650.

141. c Volume of the large cube = Sum of the volumes of the smaller cubes. Side of the large cube = $(3^3 + 4^3 + 5^3)^{\frac{1}{3}}$
 $= (216)^{\frac{1}{3}} = 6$.

\therefore Surface area of the large cube = $6 \times 6^2 = 216$

Total surface area of the smaller cubes = $6 \times (3^2 + 4^2 + 5^2) = 300$

\therefore Ratio is $6 \times 50 : 6 \times 6^2 = 25 : 18$

142. d One day's work of (A, B), (B, C) and (C, A) is $\frac{1}{30}, \frac{1}{24}, \frac{1}{20}$

Adding all three fractions gives two days, work of (A, B, C) = $\frac{15}{120}$

(A + B + C)'s 1 day work = $\frac{1}{2} \times \frac{15}{120} = \frac{1}{16}$.

A's one days, work = $\frac{1}{16} - \frac{1}{24} = \frac{1}{48}$. A can do rest $(1 - \frac{5}{8}, \text{ i.e. } \frac{3}{8})$ of the work in 18 days.

143. b Let A be the average age of the whole team. Then, $11A - (25 + 25 + 3) = 9(A - 1)$
 $11A - 53 = 9(A - 1) \Rightarrow A = 22$ years.

144. d One way walking + one way car = 5 hours
Two-way car = $5 - 3 = 2$ hour One way car = 1 hour
 \therefore One way walking = $5 - 1 = 4$ hours
 \therefore Two-way walking = $4 \times 2 = 8$ hours

145. d Required percentage = $1 \left(1 + \frac{10}{100}\right)^3 = 1 \times \frac{11}{10} \times \frac{11}{10} \times \frac{11}{10} = 1.331$ feet

146. d The average increases by 0.1 year so that total increases by $(40 + 10) \times 0.1$ or 5 years. \therefore 10 boys increase the total by 5 years, i.e. the new boy's average must be $\frac{5}{10}$ or 0.5 year more than the class average.
 \therefore Their average = 12.5 years.

147. c Let a denote Anand
b denote Bharat
c denote Chandra
then,

$$\left(\frac{1}{a} + \frac{1}{b}\right) = \frac{1}{20}, \left(\frac{1}{b} + \frac{1}{c}\right) = \frac{1}{40}, \left(\frac{1}{a} + \frac{1}{c}\right) = \frac{1}{30}$$

Simplify to get 'c'.

148. a Uprate + downrate = $2 \times 4 \frac{1}{2} = 9$ kmph . Since downrate
= 2 x uprate is 9 km. \therefore uprate = 3 kmph
 \therefore Speed of the current $4 \frac{1}{2} - 3 = 1 \frac{1}{2}$ kmph .

149. b Let the side of the smaller square = x
 \therefore It's diagonal = $\sqrt{2}x$
 \therefore The diagonal of the bigger square = $2\sqrt{2}x$

$$\text{The ratio of their area} = \frac{\frac{1}{2}(2\sqrt{2}x)^2}{\frac{1}{2}(\sqrt{2}x)^2} = \frac{4}{1}$$

150. c To avoid fractions, take the L.C.M. of $5 + 3$ and $8 + 5$.

\therefore If 104 kg of each alloy are mixed, weight of tin in the alloy = $\frac{5}{13} \times 104 = 40$ kg

\therefore Weight of tin per kg of 3rd alloy = $\frac{40}{104 + 104} = \frac{5}{26}$ kg

160. d Each side of the triangle is 1 cm, and radius of the circle is 1 cm.
161. a Required portion is the triangle (English) excluding the portion that also comes under square (Punjabi),
i.e. $12 + 4 + 5 + 6 = 27$.
162. b Required region is the intersection of circle and rectangle, i.e. $10 + 5 + 3 + 4 = 22$.
163. c Required region is intersection of circle and triangle minus the region that also falls under square,
i.e. $5 + 4 = 9$.
164. b Mother's husband is father. Now, the lady is the sister of the girl's father or the girl is the daughter of the lady's brother, so the girl is lady's niece.
165. d Ifather-in-law of one's husband is her father. So, we have, "your father is the son of my grandfather". Now, son of my grandfather means either my father or my father's brother. So, father's of the two women are either brothers or is just the same person. Hence, the two women are either sisters or cousins.
166. b Clearly, maternal grandfather of children of my husband's sister is my father-in-law.
167. b Every alternate term is obtained by subtracting and adding 5 from the previous terms, respectively.
1st term = 60;
2nd term = 40;
3rd term = $60 - 5 = 55$;
4th term = $40 + 5 = 45$;
5th term = $55 - 5 = 50$;
6th term = $45 + 5 = 50$
 \therefore 7th term = $50 - 5 = 45$
168. b The series follows the following trend
Previous term $\times 1, \times 2, \times 3, \times 4, \dots$ and so on.
169. a The letters are alternately capital and small. The number of letters skipped is 2, 3, 2, 3....
but letters are arranged in decreasing order.
170. d The first letters of the terms are decreasing in E D C ?
The second letters of the terms are increasing by 1, i.e. C D E ?
The third letters of the terms are at a gap of one letter, i.e. P R T ?
 \therefore The unknown term is B F V.
171. d Each letter is coded by the letter at a difference of +1, +2, +3, +4, and +5.
172. c Each letter is coded at a difference of -1, +1, -1, +1 ... letters.
173. c From I and III 'dir' = boxes. From II and III 'bix' = row, hence, from III 'fac' = of.
174. c From I and III 'tom' = is, from I and II 'nae' = green, then from I 'pit' = apple.
175. a Specific movement of letters is there, according to which choice 1 is the correct answer.
176. c Sum of each column = 62 [can be checked by the sum of last two columns.]
The value of D then = 18
and from choice only (c) has $D = 18$ therefore, we get (c) as the correct answer.
177. b In each column
 $3^{\text{rd}}_{\text{row}} = 2 \times (1^{\text{st}}_{\text{row}} - 2^{\text{nd}}_{\text{row}})$

178. c $2^{\text{nd}} \text{ column} = (1^{\text{st}} \text{ column})^3 + 1$
 $3^{\text{rd}} \text{ column} = 2^{\text{nd}} \text{ column} + 7$

Questions 179 to 183:

The given information can be analysed as follows:

Q - Mother of S(ii) and (iii)

S - Son of Q(ii) and (iii)

R - Wife of S(iv)

P - Son of R and S.....(i)

179. b 4

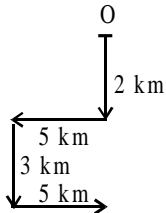
180. d Grandmother

181. b Father

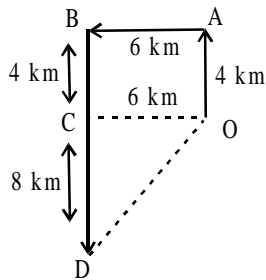
182. d Daughter-in-law

183. a Wife

184. b The movement is



185. d



$$OD = \sqrt{(OC)^2 + (CD)^2}$$

$$OD = \sqrt{6^2 + 8^2}$$

$$= \sqrt{36 + 64}$$

$$= \sqrt{100}$$

$$= 10 \text{ km}$$

195. d I is not implicit: it is more of a conclusion. As we don't have any information on our judiciary monopolized by Brahmins, statement II is irrelevant.
196. b It is not implicit as it is not relevant to the main statement, II only indicates the financial support of the nation to them. Hence, II is implicit.
197. a I is implicit: how else would the services come into being in the 'next two months'? II is irrelevant.
198. d The passage clearly says that the imposition of martial law in the South led to problems into this century. Thus, (d) is not an assumption.
199. c Choice (c) talks of the women performers, something that has not been mentioned in the passage.
200. b Choice (b) will weaken the impact of the book. If visitors do not have the relevant information about any new place, they will not dare to venture out on their own.