Answers and Explanations

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

Scoring table

Section	Question number	Total questions	Total attempted	Total correct	Total wrong	Net Score	Time Taken
EU	1 to 50	50					
RC	51 to 100	50					
QA + DS	101 to 155	55					
DI	156 to 185	30					
Total		185					

1. c (c) is a pair of homophones. (a), (b) and (d) do not have pairs of homophones.

2. d Doggerel is a badly written verse, which is written by a poet. Pulp fiction is a badly written piece of fiction, written by a novelist. (a), (b) and (c) do not show this derogatory relationship.

3. b A premise is evidence which leads to a conclusion. An assumption does not lead to an inference. An assumption, if wrong, will weaken an inference. But a hypothesis does lead to a theory. A hypothesis is a suggested explanation for a group of facts or phenomena that is accepted as likely to be true.

4. a A barge is a kind of a vessel, and a shovel is a kind of an implement. (b), (d) and (e) do not show this item to categorise relationship.

5. d The second word in the pair is a higher degree of the first. (a), (b) and (c) do not display such a relationship.

6. d The second word belongs to the family in the first word. (a), (b) and (c) do not display such a relationship.
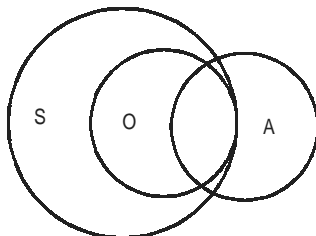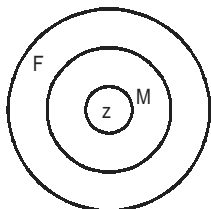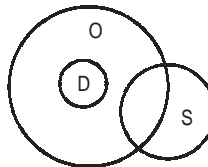
7. b
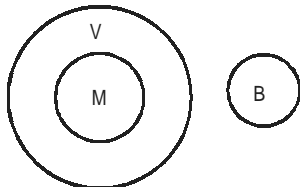
8. c
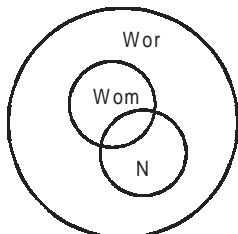
9. a

10. a

11. a

12. b Sam is not drunk, so he must be ill. One of the either ... or condition is true.

13. c As Ram did not lose sleep, it shows that he did not hear of the tragedy. When A, then B. Not B, hence not A.

14. d The train is not late, so it must have derailed. One of the either ... or condition is true.

15. a I did not have a nightmare, so I must not have read a horror story. When A, then B. Not B, hence not A.

16. b I did not get rashes which shows that I did not eat berries. When A, then B. Not B, hence not A.

17. d The sentence is incomplete as 'will do' does not have an object. It should therefore be followed by 'so'. (a) is not correct as 'government' is repeated. 'policy' is undefined in (b) and (c).

18. a We let go 'of' something, but we turn 'off' the lights. The proposals in (b) and (d) might go beyond the scope of the sentence.

19. c The correct idiomatic usage to refer to a proliferation of something is 'have mushroomed'. 'blooming' and 'blossoming' are not words that we use to indicate that a lot of schools have come up overnight. 'Mushrooming' is most apt, literally and figuratively, in this regard. 'all over' is a more generic term than 'in every corner'; the latter term is more specific.

20. a The phrase used is grammatically correct. There is a huge difference between 'important' and 'fact'. (d) similarly overlooks the serious tone of the sentence. (c) sounds verbose.

21. b We take 'note' of an important clause. There is nothing to 'notice' in the sentence, so (a) and (d) are ruled out. (c) sounds awkward when read along with the rest of the sentence.

22. c An act of vengeance relates to the 'beginning' of the misdeeds, and thus reopens the first chapter. Look for a suitable complement in sentences split with a semicolon. When there is a semicolon in the sentence, one has to look for a logical complement — 'closes : reopens'.

23. a The correct idiomatic usage is 'as far as' something can go. (b) and (d) sound extremely confusing as they add parameters. (c) sounds needlessly verbose.

24. a One sets out to achieve something. 'thought of' is not right as it should be followed by 'achieving'. 'thought to' does not sound as active as the author might wish it to be. 'went to' sounds similarly vague.

25. b One does 'tough talking'. 'talk tough' is a general idiomatic expression. 'has done some' should be followed by an -ing form of the verb, such as 'investigating' or 'probing'.

26. b 'Year by year' is the correct idiomatic usage here. 'annually' and 'progressively' are not the right words to use as we are just making a general observation, not dealing with statistics. The singular stress on 'each' is unwarranted in this sentence.

27. b 'Amendments' is a countable noun and so 'many' should be used as a quantifier for it. (c) and (d) tamper with the pronouncement in the sentence by using weak quantifiers.

28. a 'More crucial than ever' shows that though they were important earlier too, now they are even more important. (a) matches the verbal tense in the sentence 'more crucial than (they have) ever (been)'.

29. a 'Break down' is the correct idiomatic use here. 'barriers' are not 'crumbled' or 'dismantled'. We can 'break' a record. For an erect barrier, the appropriate verb would be 'break down'.

30. b C gives some examples to support 1. B introduces the era of computers as another example, A talks about the increasing technical terms, D introduces the idea of slangs, which is continued in 6.

31. c 6 speaks of a study of IIT undergraduates' mindset. C speaks of culture developed by IIT students. Therefore, C6 is mandatory. D speaks of success stories of IIT graduates and therefore follows A.

32. d A talks about the taste of the Maharaja of Kapurthala, B introduces another Maharaja with an exquisite taste, D introduces something in contrast to this, C continues with the idea which is exemplified in 6.

33. d A shows how 'his' gifts were unveiled, B states the effect it had on McLaughlin, D states his reaction to the same and C states the ultimate outcome.

34. a C states why India is on the brink of a major public health disaster, A states what happens if TB is untreated for 5 years, D presents some statistics to highlight the point, B states how the disease spreads and 6 continues with the fact.

35. b B introduces atypical pneumonia as the subject of the passage, D states that it appears like an ordinary flu, A states its symptoms and C states how these symptoms progress to give rise to complications.

36. a B introduces the problem of snakes, C states why there is not enough anti-snake serum, A elaborates on non-availability of the same, and D concludes the passage by stating what the final outcome could be.

37. a B talks about the previous records of mid-term elections, and its implications on the present situation, A presents a contradictory fact, and C states the implications of this fact. D concludes the passage.

38. b A introduces critical elections as the subject of the passage, B explains it, D states that none of the Indian elections so far has been a critical election, instead as C states, there have been many semi-critical ones.

39. a A introduces the subject, B elaborates on it, D states who is the current champion of the game and C states who other contenders are.

40. b A introduces the benefit of good advertising, C states why this benefit is important, B gives an example and D concludes by saying that in spite of this a minimum quality has to be maintained.

41. c B uses the word 'it' that refers to the 'philosophy' in C and so CB is a mandatory pair. Moreover, A 'century ago', C 'for 90 years', and B 'today', makes a chain and D concludes the passage.

42. c B states that RBI has wrested many powers from the government, A states that in spite of this the government has the final say, C elaborates on this fact and D questions this state of affairs.

43. c B introduces the fact that the author was depressed, D gives a reason for the same, C shows the extent of his depression and A concludes the passage.

44. a B introduces the idea of the possibility of stopping the decline in writing skills, C states how this is being done, D talks about a number of programmes being developed for the same and A gives the example of one such programme.

45. b All others except 'kin' are synonyms.

46. b All others except 'adapt' are synonyms.

47. c All others except 'bell' refer to circular shapes. Bell is an object.

48. a All others except 'computer' refer to some kind of a network.

49. d Withstand is almost the opposite of the other three words.

50. d All others except 'bridge' refer to some kind of a gap or opening.

51. c In the first five paragraphs, the author makes it clear that Indians do not understand themselves yet. (a) is far from the truth. (b) is unlikely and (d) is not true.

52. b The author tries to show what exactly was India's history like and what are the prospects for the future. The writer is making observations and analysing these, hence there is no reason why the attitude should be critical, cynical or cold.

53. c   Through the example he has tried to show us what centuries of slaughter and plunder actually meant for the country. (a) and (b) are not true, the writer is not glorifying the Vijayanagar empire.

54. a   The author is critical of people having a child's view of history and equates it with the slave's idea of the ruler's mercy. (b) is not true as the writer does take a critical stand on history. (c) is besides the fact.

55. c   The writer says that during British rule, and for 50 years after that, there was a revival of energy and intellect. (d) is not true in light of facts presented in the passage. (a) and (b) are not true in an isolated context.

56. d   With self-awareness, people ask for more of everything. (b) and (c) are both found in the ninth paragraph. (a) is simply not true.

57. c   He says that India's present situation is 'primitive and messy'. The writer has not expressed any pessimistic opinion 'bleak' or an extreme opinion 'horrific'.

58. a   Self-criticism is important for a country to be alive and progressive. Refer to the last paragraph. (b) and (c) are thus not true.

59. b   The writer says that the future will be fairly chaotic. (a), (c) and (d) find no mention in the passage.

60. c   Every invasion was accompanied by slaughter of the country's most talented people. (a) and (b) did take place, but it is (c) which is the main feature of the tyranny of foreign rulers.

61. a   The author is critical of the government policies. Refer to the beginning of each paragraph. The writer is not rude enough to be derisive. There is no reason for the writer to be sarcastic or ironical.

62. c   He is surprised as in all other cases government looked at the industrialists as crooks. (a) is a different point of view. (b) is a fact presented in the passage that does not contribute to the writer's surprise. (d) is not true as the reason is cited below the writer's feelings.

63. c   Foreign exchange bankruptcy and paucity of funds compelled government to open up its economy. (a) and (b) in no way influenced the government's move.

64. b   The author says that in another 50 years the world would have moved even further ahead. Hence, there is no room for any kind of optimism or pragmatism.

65. b   Its infrastructure should have helped India to perform better than other Asian countries. (c) is not cited in the passage. Given (b), (a) cannot be a better answer as India's infrastucture is compared with the infrastructure of the other countries.

66. d   (a) and (b) are reasons for India being in a better condition than other nations. Refer to the third paragraph. (c) is not stated in the passage.

67. a   Economic isolationism has led to India's poor performance. Refer to the beginning of the fourth paragraph. Hence, (b) and (c) are rendered void.

68. d   Government tried to protect its own industries through discouraging imports. Refer to the beginning of the fourth paragraph. Hence, (a), (c) and (b) are not the best answers.

69. b   While Korean Cielos are sold in India, no Indian cars are sold abroad. (a), (c) and (d) are opinionated answers, hence, not necessarily true.

70. a   Indian politicians are unable to see beyond their noses. Whether (b) and (c) are true or not is unclear from the passage.

71. d   The passage actually talks about the advantages of democracy. Hence, the opinions expressed in (a), (b) and (c) find no place in the passage.

72. b   The passage says that there is no guarantee that all dictatorships will be enlightened. Refer to the beginning of the third paragraph. Hence, there is no reason to mark (a), (c) or (d), though they may have a shade of truth.

73. c   The author sees a low but unfaltering rate of growth as a sign of stability amidst growth. (b) and (d) are not true. (a) is also doubtful, after all, how low can the growth be?

74. c   Dictatorships are more prone to making huge mistakes and risking everything on a single decision. (c) is a more complete answer as compared to (a) and (b).

75. b   The writer does not support statism under any circumstances. Refer to the penulitmate paragraph. (a) is a confusing response. (c) and (d) do not address the question.

76. d   All the choices (a), (b) and (c) have been implied in the sixth paragraph.

77. c   The passage states that Internet will play an important role in the decades to come. Refer to the eighth paragraph. We cannot infer (b) for sure. (a) is almost stated in the passage.

78. d   Though (a) and (b) are desirable outcomes, they are not specifically stated in the passage.

79. b   The main reason is (b), the dictatorship factor that figures so often in the passage. (a), (c) and (d) may be desirable factors, but not conclusive.

80. d   (a), (b) or (c) have not been distinctly mentioned in the passage.

81. a   Infosys has awarded stock options among its employees. (b) has not been mentioned in the passage. Refer to the second paragraph.

82. b Infosys does have a hierarchy, it does not have a hierarchy 'just' for control. Refer to the third paragraph. (d) may be true, but it is a rather vague response. (a) and (c) are not true.

83. b He believes that betterment of man can happen through creation of wealth, ethically and legally. Refer to the sixth paragraph. Given (b), (a) and (c) are weaker choices.

84. d The example highlights all the given facts. The qualities stated in (a), (b) and (c) are evident in the case.

85. c Murthy believes that learning is a process that helps him learn through failure. (a) is not the focus of the question. Learning transcends (b) as per information given in paragraph 9.

86. d Today the company works backwards to achieve its goals. Refer to the penultimate paragraph. Given (d), the other choices (a), (b) and (c) are weak.

87. d Openness at Infosys includes payment of taxes as well as giving complete information. (c) sounds rather ambiguous.

88. a (a) is stated in the last paragraph. (b) and (c) sound rather extreme.

89. d Infosys' HR treats its employees as customers. (d) is directly stated in the passage in paragraph 4, line 3. (a), (b) and (c) are generic and not very strong contenders for the answer.

90. a The CEO's actions set the template for all Infoscians. (b), (c) and (d) do not reflect the truth as per the passage.

91. b The diverse cultural and socio-economic factors are a major problem affecting the Indian education system. (a) and (c) are not stated in the passage.

92. d 'Grizzled mandarins' refers to bureaucrats. It would be unfair to label the mandarins as (a), (b) or (c).

93. c Those in charge of education are totally out of touch with the ground reality. This point is given in the fourth paragraph. Hence, it will not be necessary to mark (a), (b) or (d) as the answer.

94. a The author advocates decentralizing education planning and implementation to improve the education system. This point is given in the fourth paragraph. Hence, it will not be necessary to mark (b), (c) or (d) as the answer.

95. c Rajasthan, Bihar and Madhya Pradesh show very low education levels. The answer is given in the second paragraph. We are not sure about (a), (b) or (d).

96. c The programme, launched in 1994, has been successful in 122 districts. The answer is given in the fifth paragraph. Choices (a), (b) and (d) are thus rendered void.

97. d The village panchayats are responsible for scholarships, construction and maintenance of primary schools and for organizing non-formal education. We do not know if (a) forms part of the portfolio.

98. c Politicians are specially responsible for obstructing the implementation of education policies as decentralization of educational administration will take away certain powers from them. We are not sure about the intentions of (a), (b) or (d).

99. d None of the given statements can be related to primary education, on the basis of the passage.

100. a The author advocates greater community involvement for successful implementation of education policy. This point is given in the fourth paragraph. We are not sure about either (b) or (c).

101. c If he travels at minimum speed over stretch A (i.e. 40 km/hr), the total time taken to cover this stretch

$= (\frac{2}{40}) = \frac{1}{20}$ hr = 3 min.

If he then travels at the fastest speed over stretch B (i.e. 50 km/hr), the total time taken to cover this stretch

$= (\frac{2}{50}) = \frac{1}{25}$ = 2.4 min.

Thus, total time taken over the first two stretches = (3 + 2.4) = 5.4 min.
In order to break the previous record he will have to cover the third stretch in (10 − 5.4) = 4.6 min.
To do this he will have to cover the third stretch at

$(\frac{2}{4.6})$ = 0.434 km per minute or 26.08 km/hr. But the

maximum speed over the stretch C is 20 km/hr. Hence, it is not possible for C to break the previous record.

102. b The minimum speed in stretch A is 40 km/hr. If Mr Hare travels the first stretch at this speed, then the time

taken by him to cover this stretch $= \left(\frac{2}{40}\right)$ = 3 min.

Also he takes 3 min to cover stretch B. And he covers the entire race in (1.5 x 10) = 15 min. This means that he should have taken (15 − 3 − 3) = 9 min to cover stretch C. Hence, his speed over this stretch should

be $(\frac{2}{9})$ = 0.22 km per minute or 13.3 km/hr.

103. c Let his average speed over the last stretch be x. Hence, his average speed for first two stretches = 4x. So total time taken to cover the three stretches

$= (\frac{4}{4x}) + (\frac{2}{x})$

His average speed over the race is 20 km/hr.

Hence, time taken to complete the race = $(\frac{6}{20})$

Hence, we have the equation $(\frac{4}{4x}) + (\frac{2}{x}) = (\frac{6}{20})$

Solving this equation, we get x = 10 km/hr

104. d Although the number of students in group D is more than in any other group, we still cannot say anything about the average weight of this group as nothing is mentioned about the average weights of any of the groups or of individual students.

105. c Although one student is shifted from group A to group B, the number of students in the class and the total weight of the students remain the same. Therefore, the average weight of the class remains the same.

106. c The total weight of any group will vary according to the number of students in that group. Hence, the total weight of group A and C which has (15 + 25) = 40 will be twice that of students in group B which has 20 students. However, it is clear that if all the students are of same weight, then the average weight of all groups remains same irrespective of how many students are present in each group. Hence, clearly the statement 3 is false

107. c Let his marks be 100, 90, 80, 70 and 60 in the five subjects. Hence, totally he has scored 400 marks. This constitutes only 60% of the total marks. Hence,

total marks = $\frac{400}{0.6}$ = 667, which incidentally is the

maximum marks in all 5 subjects. Since the total marks in each subject is the same, hence maximum marks in

each subject will be ($\frac{667}{5}$) $\simeq$ 133. Out of this 50% is

the passing marks. In other words, to pass in a subject he needs to score 66.5 marks. We can see that only in one subject he scored less than this, viz. 60. Hence, he passed in 4 subjects.

108. b
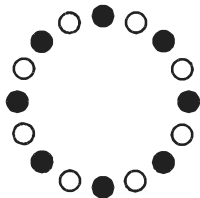
If we consider the Chairman and the vice chairman as one set, we can see that this set can fit 8 slots in between the 8 directors. Hence, this can be done in 8! ways. Between themselves, the chairman and the vice chairman can be arranged in 2 ways. Hence, the required answer = 2 x 8!.

109. c We know that if $\log_a x = y$, then $x = a^y$. So comparing this form with our equation, we can get $\log_7 (x^2 - x + 37) = 2^1 = 2$ and furthermore from this we can say that

$(x^2 - x + 37) = 7^2 = 49$
Thus, we have the equation
$x^2 - x - 12 = 0$
The solutions of this equations are,
$x = 4$ or $x = -3$.
The value that satisfies the given answer-choices is
$x = 4$.

110. a **Hint:** Students please note that the percentages that are given are the basic percentages derived from

basic fractions. e.g. 11.11% = $\frac{1}{9}$ and 14.28 = $\frac{1}{7}$.

Hence, you should make the most of this knowledge.

So let the CP be Re 1. Since he makes a profit of $\frac{1}{7}$,

his SP = (1 + $\frac{1}{7}$) = Rs. $\frac{8}{7}$.

His marked price should be $\frac{1}{9}$ above this. So if we

subtract $\frac{1}{9}$ of MP from the MP, we will get the SP.

So (MP $-\frac{1}{9}$ MP) = SP = $\frac{8}{7}$

Hence, MP = $\frac{9}{7}$

Therfore, percentage of mark-up on CP
= (MP $-$ CP)/CP

= ($\frac{9}{7}$ $-$ 1)/1

= $\frac{2}{7}$ = 2($\frac{1}{7}$)
= 2 x 14.28
= 28.56%

Alternative method:

We can use the formula z = x $-$ y $-$ $\frac{xy}{100}$, where

z = Gain percentage
x = Percentage above CP
y = Discount percentage

$\therefore$ 14.28% = x $-$ 11.11% $-$ $\frac{11.11x}{100}$

or 14.28 = $\frac{100x - 1111 - 11.11x}{100}$

or 1428 $-$ 1111 = 88.89x
or x = 28.56% (Approximately)

111. b The given expression can be written as

$\left(\frac{16n^2}{n}\right) + \left(\frac{7n}{n}\right) + \left(\frac{6}{n}\right) = 16n + 7 + \left(\frac{6}{n}\right)$

Since n is an integer, the expression (16n + 7) will always be an integer. Hence, for the entire expression

to be an integer, the part ($\frac{6}{n}$) should also be an integer.

This can be possible only if n is a factor of 6, viz.
n = 1, 2 and 3. Hence, n can have three values.

✳CL MBA Test Prep

112. d Let him mix 3 kg, 4 kg and 5 kg of dry fruits at Rs. 100, Rs. 80 and at Rs. 60 per kilogram respectively. Hence, his effective cost of the dry fruits per kilogram should be the weighted average

$$= \left(\frac{3 \times 100 + 4 \times 80 + 5 \times 60}{3 + 4 + 5} \right) = \frac{920}{12}$$

In order to make a 50% profit, he will have to sell it at

$\left(\frac{920}{12} \times 1.5 \right) = \frac{920}{12} \times \frac{3}{2} = \frac{920}{8} = $ Rs. 115 per kilogram. Since none of the answer-choices confirms this, the answer is (d).

113. b 20 kg fresh grapes will contain $(0.9 \times 20) = 18$ kg water and 2 kg mass. If the dry grape has to contain 2 kg mass, it should constitute 80% of that. Hence, if 80% of dry grapes corresponds to 2 kg, its total

weight will be $\left(\frac{2}{0.8} \right) = 2.5$ kg

114. c Effective speed of two trains = $(80 - 40) = 40$ km/hr. (Since they are moving in the same direction as inferred from the word 'overtakes'). At this speed in 54 s, they

would travel an effective distance of $\frac{(40 \times 54)}{3600}$

= 0.6 km or 600 m. This effective distance should be equal to the sum of the lengths of the two trains. So, if length of the express train is L, length of the goods train will be 2L. Hence, our equation will be L + 2L = 600 or L = 200 m.
So the time taken by this train to cross a platform

400 m long will be = $\frac{(200 + 400)}{\left(80 \times \frac{5}{18} \right)} = 27$ s.

(Note that we have converted the denominator in

metres per second. Hence, the factor of $\frac{5}{18}$).

115. a This equation is very straightforward. If the number is

'x', then $\frac{7x}{8} - \frac{7x}{18} = 770$. On solving this equation, we

get x = 1584.

Hint: Students please note that if the difference in

$\frac{7}{8}$ and $\frac{7}{18}$ of a number is 770, then the difference in

$\frac{1}{8}$ and $\frac{1}{18}$ of the number should be 110. If we express

this as an equation, we get

$\frac{x}{8} - \frac{x}{18} = 110$
or 10x = 110 × 18 × 8
or x = 11 × 18 × 8
You can further proceed from here in two ways: (i) the last digit of the required answer should be (1 × 8 × 8) = 4, (ii) number should be divisible by 11.

In both cases, the answer that is obtained from the given choices is 1584.

116. d If we were to express 64 as product of two positive integers, we can get the following combinations: (64 × 1), (32 × 2), (16 × 4), (8 × 8).
Thus, we find that P + Q cannot be 35.

117. b Total marks scored by the student in 10 papers = (80 × 10) = 800. If we exclude the papers in which he scored the highest and the lowest marks, then the total marks scored by him in remaining 8 papers = (81 × 8) = 648. Hence, his total in these two papers in which he scored the highest and the lowest marks = (800 − 648) = 152. Since his highest score is 92, his lowest score is (152 − 92) = 60.

118. a We know that the sum of the roots $= -\frac{b}{a}$.

Hence, $x_1 + x_2 = 2$. Now we have two equations, viz. $x_1 + x_2 = 2$ and $7x_2 - 4x_1 = 47$. Solving these two equations, we get $x_1 = -3$ and $x_2 = 5$. Since it does not satisfy options (b) and (c), we will verify it for option

(a). The product of roots = $(-3) \times 5 = -15$, $\frac{c}{a}$ in our

case is c. Hence, c = −15.

Alternative method:
Put values of x_1, x_2 in equation (ii). Do not match. So put c = −15 in equation (i) to get the roots of equation. After finding the roots of equation (i), check whether they satisfy equation (ii) or not. The roots (5, −3) satisfy equation (ii) so answer is (a).

119. a If the radii of two circles are r_1 and r_2, then the two equations can be written $\pi r_1^2 + \pi r_2^2 = 153\pi$ or $(r_1^2 + r_2^2) = 153$ and $r_1 + r_2 = 15$.
Now $r_1^2 + r_2^2 = (r_1 + r_2)^2 - 2r_1r_2$
Therefore, $153 = (15)^2 - 2r_1r_2$ or $r_1r_2 = 36$.
If 36 is to be expressed as product of two integers, it could be (36 × 1), (18 × 2), (12 × 3), (9 × 4), (6 × 6). The only two factors that add up to 15 are 12 and 3. Hence, $r_1 = 12$, $r_2 = 3$. Therfore, the ratio of larger radius to the smaller one is 12 : 3 = 4.

120. c **Hint:** Students please note that the best way to solve this is the method of simulation, e.g. let m = 10 and n = 5. Hence, m − n = 5, which is divisible by 5. $m^2 - n^2 = 100 - 25 = 75$, divisible by 25. m + n = 10 + 5 = 15 is not divisible by 10.
Hence, the answer is (c). Note that for the sum of two multiples of 5 to be divisible by 10, either both of them should be odd (i.e. ending in 5) or both of them should be even (i.e. ending in 0).

121. b $7^{3^2} = 7^9$ and $(7^3)^2 = 7^6$. Since $7^9 > 7^6 \Rightarrow 7^{3^2} > (7^3)^2$

122. c In order to maximise the percentage of people who watch all the three channels, we should assume the number of people who watch exactly two channels is zero. The Venn diagram will hence be as shown on the right. It can be observed that the maximum value that the central area can take will be equal to one of the extreme three values and it will indeed be the least

of the three values. In our case, it will be 15%. So the Venn diagram will look as shown.
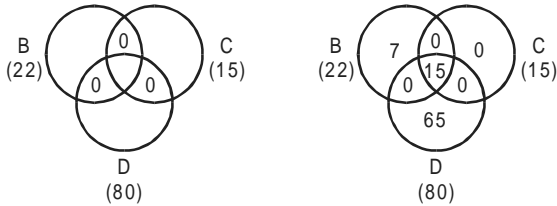
Hint: Students please note that if nothing is mentioned about the people who watch two or more channels and also about people who watch exactly one channel, then the maximum value that (all the three) can take is the least among the three extreme values. In our case, it is 15%.

123. a If we consider that people watching BBC and CNN only as 'x', we will get the Venn diagram I. Now from this diagram, if we remove the people, who watch DD, viz. 80%, we will be left with the diagram given below. (Figure II)

(Fig I)

(fig II)
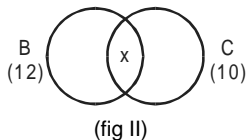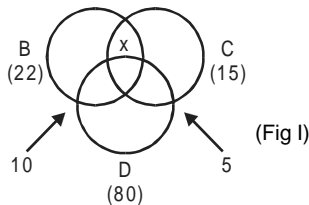
Now this can be solved as a normal two sets of problems, with at least 1 = 20% (since we have removed 80% who watch DD, the number of people who fall in this area should be 20%). Note also that we have taken B as 12% and C as 10%. This is so, because among 80% who watch DD, there are 10% who watch BBC as well and 5% who watch CNN as well. Hence, we can apply the formula:
20 = 12 + 10 − x or x = 2. Therefore, only 2% of the people watch BBC and CNN only.

124. d It can be observed that without knowing what percentage of the people watched BBC and CNN or what percentage of people watched only DD, this question cannot be answered. This can further be verified by the fact that the answer choices (a) and (b) are both a valid answer-choices. Also anything less than or equal to 5% will be a valid answer (it cannot exceed 5% as percentage who watched DD and CNN is 5%).

125. b The two equations can be written

$$2000\left(\frac{x}{100}\right) + 2000\left(\frac{y}{100}\right) = 700 \text{ and } 2000\left(\frac{x}{100}\right)$$

$$+ 3000\left(\frac{y}{100}\right) = 900$$

The equations can be simplified to x + y = 35 and 2x + 3y = 90. Solving these two equations simultaneously, we get x = 15%.

126. d
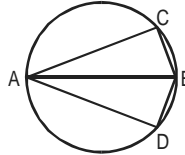
Since AB is the diameter of the circle, ∠ACB would be right angle. In this triangle, we know AB = 15 and AC = 12. So we can find BC. Since 3-4-5 forms a triplet, 3 × (3-4-5) also forms a triplet. So 9-12-15 forms a triplet. Hence, BC = 9. Since BC = BD, AD = AC (similar triangles).
Hence, area of ∆ACB = Area of ∆ ABD

$$= \frac{1}{2} AC \times CB = \frac{1}{2} \times 12 \times 9 = 54$$

So area of quadrilateral ACBD = 2 × 54 = 108 sq. cm. None of the answer-choices matches this.

127. c As P, Q and R are consecutive odd numbers, Q = P + 2 and R = P + 4. Now 3P = 2(P + 4) − 3. On solving this equation, we get P = 5.
Therefore, R = 5 + 4 = 9

128. b This question can be done fast by assuming some values for x, y and z, e.g. let x = 4, y = 3 and z = 1. Thus,
la(4, 3, 1) = min(7, 4) = 4. le(x, y, z) = max(1, 2) = 2.

$$ma(x, y, z) = \frac{1}{2}(4 + 2) = 3.$$ Hence, we can see that the

only answer-choice that satisfies the relationship is ma(x, y, z) < la(x, y, x).

129. b $ma\big(10, 4, \ le\big(la(10, 5, 3), 5, 3\big)\big)$

$= ma\big(10, 4, \ le(min(15,8),5,3)\big)$

$= ma\big(10, 4, le\big(8, 5, 3\big)\big)$

$= ma\big(10, 4, max\,(3,2)\big)$

$= ma\big(10, 4, 3\big)$

$= \frac{1}{2}[le(10, 4, 3) + la(10, 4, 3)]$

$= \frac{1}{2}[max(6,1) + min(14, 7)]$

$= \frac{1}{2}(6 + 7) = 6.5$

❀CL MBA Test Prep

130. c $le\left(15, \min\left(10, 6\right), le\left(9, 8, ma\left(15, 10, 9\right)\right)\right)$

Now $ma\left(15, 10, 9\right) = \dfrac{1}{2}\left[le(15, 10, 9) + la(15, 10, 9)\right]$

$= \dfrac{1}{2}\left[\max(5, 1) + \min(25, 19)\right]$

$= \dfrac{1}{2}(5 + 19) = 12$

Hence, our original expression would now be

$le\left(15, \min\left(10, 6\right), le\left(9, 8, 12\right)\right)$

$= le\left(15, 6, \max\left(1, -4\right)\right)$

$= le\left(15, 6, 1\right) = \max(9, 5) = 9$

131. c   The value of the number ABC = 100A + 10B + C = A! + B! + C!. Since it is a three-digit number, the maximum value that it can have is 999. But looking which means the number is less than 7! (as 7! = 5040). So the individual digits should obviously yield less than 7!. From the answer-choices, we can see that the answer could be 4 or 2.

4! = 24 and 2! = 2. So let us find the two remaining digits. 1! = 1, 3! = 6, 5! = 120 and 6! = 720. Now it can be observed that one of the remaining two digits has to be either 5! and/or 6!, as any other combination when added to 2!, or 4! does not yield a three-digit answer (i.e. > 100). Hence, the four combinations that we have are 2! + 5! = 122, 2! + 6! = 722, 4! + 5! = 144 and 4! + 6! = 744. Knowing that the remaining digits can be 1 or 3 or (2 or 4), i.e in value of factorial terms 1, 6, (2 or 24), we can see that the only combination that fits our requirement is 144 + 1 = 145 = 1! + 4! + 5!.

132. b
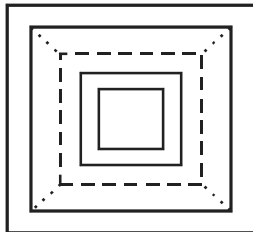
The diagonal of the innermost square is 2 units. The diagonal of every successive square would increase by 2 units (since corners are one unit apart). So the diagonal of the 7th square = 14 and that of the 8th square = 16. Areas of the 7th square = $\dfrac{1}{2}\,14^2$ and that of 8th square = $\dfrac{1}{2}\,16^2$, i.e. 98 and 128 respectively. Hence, the difference in their areas

= (128 − 98) = 30 sq. units.

133. d $A = \dfrac{2.000004}{[(2.000004)^2 + 2(2.000004)]}$

$= \dfrac{2.000004}{2.000004[(2.000004) + 2]}$

$= \dfrac{1}{[(2.000004) + 2]}$

$= \dfrac{1}{4.000004}$

$= \dfrac{1}{4} = 0.25$ (Approximately)

$B = \dfrac{3.000003}{[(3.000003)^2 + 3(3.000003)]}$

$= \dfrac{3.000003}{3.000003[(3.000003) + 3]}$

$= \dfrac{1}{[(3.000003) + 3]} = \dfrac{1}{6.000003}$

$= \dfrac{1}{6} = 0.166$ (Approximately)

$C = \dfrac{4.000002}{[(4.000002)^2 + 2(4.000002)]}$

$= \dfrac{4.000002}{4.000002[(4.000002) + 2]}$

$= \dfrac{1}{[(4.000002) + 2]} = \dfrac{1}{6.000002}$

$= \dfrac{1}{6} = 0.166$ (Approximately)

Looking at the answer choices, we can see that the only (d) satisfies the relationship, viz. B is the smallest.

134. b   Let D_1, T_1 and D_2, T_2 denote the diameters and the thickness of the two coins respectively. If V_1 and V_2 are the values of the two coins

$\dfrac{V_1}{V_2} = \left(\dfrac{D_1^2\, T_1}{D_2^2\, T_2}\right) = \left(\dfrac{D_1}{D_2}\right)^2\left(\dfrac{T_1}{T_2}\right).$

Therefore, $\dfrac{4}{1} = \left(\dfrac{4}{3}\right)^2\left(\dfrac{T_1}{T_2}\right)$ or $\left(\dfrac{T_1}{T_2}\right) = \dfrac{9}{4}$

135. c   In a triangle, the line joining the mid-points of any two sides is half the length of its third side. Hence, every side of ΔPQR would be half the sides of ΔABC. Hence, area of ΔPQR would be $\dfrac{1}{4}$ the area of ΔABC

$= \dfrac{1}{4} \times 20 = 5$ sq. units.

136. d Let L and B denote the length and the breadth of the rectangle. So diagonal will be $\sqrt{\left(L^2 + B^2\right)}$. Hence, from the data given, $(L + B) - \sqrt{\left(L^2 + B^2\right)} = \frac{1}{2}$ L.

So $\sqrt{\left(L^2 + B^2\right)} = \frac{L}{2} + B$

Squaring both sides, we get $(L^2 + B^2) = (\frac{L}{2} + B)^2$, i.e.

$L^2 = \frac{L^2}{4} + LB$

Therefore, $\frac{3L^2}{4} = LB$ or $\frac{B}{L} = \frac{3}{4}$

Shortcut:

First write the relation, $(L + B) - \sqrt{\left(L^2 + B^2\right)} = \frac{1}{2}$ L.

$\frac{L}{2} + B = \sqrt{L^2 + B^2}$

Put the values of options. Option (d) satisfies. So the answer is (d).

137. c As there is no day in the week whose first letter is R, it can be concluded that Raja does not have any holidays. Since 1996 is a leap year, we can figure out that Raja has totally worked for 7 days. Let his rate of doing the job be one unit per day. So he would complete 7 units work in a week. J's situation is similar to Raja and does not have any holiday during the week. T will have two holidays in a week (Tuesday and Thursday). Since the rate of working for all the three of them is the same, the working pattern of J and T would be as follows.
We can see that depending on which day is February 25, 1996, to complete 7 units, they would either take 4 days or 5 days. Hence, the answer is (c).

Sun.	Mon.	Tue.	Wed.	Thurs.	Fri.	Sat.
2 units	2 units	1 unit	2 units	1 unit	2 units	2 units

138. c Now Raja has worked for (5 days in February + 31 days in March + 2 days in April) = 38 days. Let us assume his rate to be the same as in the previous question, viz. one unit a day. Hence, he completes 38 units totally. In a week, T takes holiday on Tuesday and Thursday, while S takes holiday on Saturday and Sunday. We can see that their working pattern would be as follows.

Sun.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
1 unit	2 units	1 unit	2 units	1 unit	2 units	1 unit

So in a week they work together 10 units work. Thus, in three weeks, they would complete 30 units work. It can be found out that February 25 is Sunday. So the

remaining 8 units of work can be completed only on Friday, i.e. March 22.

For questions 139 to 141:
Let us convert all the time to same time zone, viz. Boston. So X left Frankfurt at 6 p.m. on Friday (Frankfurt time) or 10 p.m. on Friday (Boston time). X reached Boston at 10 a.m. on Saturday (Boston time). In other words, X has taken 12 hr in all to go from Frankfurt to Boston. After 2 hr wait, X leaves at 12 noon (Boston time). Now X reaches India at 1 a.m. on Sunday (Indian time) or 11 a.m. on Saturday (Boston time).
Thus, X takes 11 hr in all to go from Boston to India.

139. b Overall, X has travelled for 25 hr (including stoppages) at an average speed of 180 miles per hour. Hence, the distance between Frankfurt and India is (25 × 180) = 4500 miles.

140. a On the return journey, X halts at Boston for one hour less than his previous halt there. Therefore, X takes 24 hr for his return journey.

141. a Since distance between Frankfurt and India is 4,500 miles, overall distance travelled by him (to and fro)
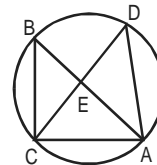
= 9000 miles. And he has taken $(25 + 24 + 1\frac{11}{12}\,{}^*)$

= $50\frac{11}{12}$ hr in all to cover this distance.

*Note: $1\frac{11}{12}$ hr has been accounted for the halt that he had in India (from 1 a.m. to 2.55 a.m.). Hence, his

average speed for the entire journey = $\dfrac{9000}{\left(50\frac{11}{12}\right)}$,

i.e. 176.75 mph.

142. a

It can be seen that in $\triangle$CBE and $\triangle$ADE, $\angle$CBA = $\angle$CDA (as both of them subtend the same arc at the circumference). Similarly, $\angle$BCD = $\angle$BAD. Since two of the angles are congruent, the third angle also has to be congruent. Hence, the two triangles are similar (A-A-A theorem). So the proportion of its sides also

be the same. Since $\dfrac{BC}{DA} = \dfrac{12}{24} = \dfrac{1}{2}$, $\dfrac{BE}{DE} = \dfrac{CE}{AE} = \dfrac{1}{2}$.

Since all the sides of the two triangles are in the ratio

$\dfrac{1}{2}$, their areas will be in the ratio $\dfrac{1}{4}$.

143. b
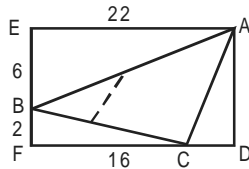
We know that length of the line joining the mid-points of two sides of a triangle is half the length of third side. Hence, the required length is half the length of side AC. Since EADF is rectangle, EF = AD = 8.
CD = (22 − 16) = 6.
So in the right-angled $\triangle$ADC, AD = 8 and CD = 6. Therefore, AC = 10. Hence, length of the line joining the mid-points of AB and BC = $\frac{1}{2}$ (10) = 5.

144. c Since the policeman started 15 min late, in this time the thief would have already covered ($\frac{60}{4}$) = 15 km. To catch the thief, the policeman will have to make up for this distance of 15 km. Every hour the policeman is travelling (65 − 60) = 5 km more than the thief. Hence, to make up the distance of 15 km, he would take 3 hr. Since policeman started at 12.15 p.m., he would catch the thief at 3.15 p.m.

145. b Every hour the second policeman covers (65 − 60) = 5 km less than the first one. Since the first policeman catches the thief in 3 hr, in this time the second policeman will be (3 × 5) = 15 km behind.

146. d $a^3 + b^3 = (a + b)(a^2 + b^2 - ab)$. Combining statements I and II, we get the value of (a + b) = $\sqrt{28}$ or $-\sqrt{28}$. Since we do not have the unique value of (a + b), we cannot get the unique answer $a^3 + b^3$.

147. b 11 and 9 are coprimes of 99, and hence the number divisible by 99 must be divisible by 9 and 11.
Certainly statement I alone is sufficient to answer the question. Statement II says when the digits of the number are reversed, the new number formed is divisible by 9 and 11. The best way to handle this particular case is by simulation. Let us select any number which is divisible by 9 and 11. Let us select 1386 which is divisible by 9 and 11. Hence, the original number will be 6831 which, in turn, is also divisible by 99. Hence, statement II also is independently sufficient to answer the question. Since both the statements are independently sufficient to answer the question, the answer is (b).

148. b
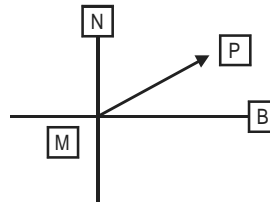
The diagram will be as shown. M is Mali and P is Pali.

Consider statement I. When the person covers $\frac{1}{3}$ distance, he is 3 km east and 1 km north of Mali. Based on this statement alone, we can easily find out where he will be on line MP by using Pythagoras' theorem. Once we find this distance, we can easily get distance MP by multiplying it by 3. Similarly, based on statement II also, we can find distance MP. Hence, both the statements are independently sufficient to answer the question. Hence, the answer is (b).

149. d Students! be careful. Generally, as we see two unknowns (i.e. x and y in this case) and two equations, we tempt to mark the answer as c, i.e. combining two statements, we can easily find the values of x and y. But have a look at the equations 3x + 2y = 45 and 10.5x + 7y = 157.5. Multiplying 1st equation by 3.5, we get 2nd equation. Hence, these are not really two different equations. Hence, data is insufficient to answer the question. In general, remember the following rule. If we have two equations Ax + By = k_1 and Cx + Dy = k_2, and
A × D = B × C, then the equations cannot be solved.

150. d P says he can see one black and one white hat. So either Q is wearing white and R is wearing black, or Q is wearing black and R is wearing white. Q also makes same statement. Still we cannot say the colour of the hat which P is wearing.

151. c Let speed of the motorcycle be x km/hr. Therefore, speed of the car will be (x + 10) km/hr.
From statement II, we can form the following equation.

$$\left(\frac{100}{(x+10)}\right) = \left(\left(\frac{100}{x}\right) + 2\right)$$

After solving this equation, we can get the speed of the car. Hence, this question can be answered by combining both the statements.

152. b Let V_1 be the original volume and r_1 and h_1 be the radius and height of the cone respectively.

$V_1 = \left(\frac{1}{3}\right) \times \pi \times (r_1)^2 \times h_1$. Consider statement I. If the cone is cut parallel to base and dividing the height in the ratio 1 : 2, then $r_2 = (\frac{1}{2}) \times r_1$ and $h_2 = (\frac{1}{2}) \times h_1$, where r_2 and h_2 are the radius and height of the

new cone respectively. If V_2 is volume of new cone,

then $V_2 = (\frac{1}{3}) \times \pi(r_2)^2 \times h_2$

$$= (\frac{1}{3}) \times \pi \times (\frac{1}{2} \times r_1)^2 \times ((\frac{1}{2}) h_1) = (\frac{1}{8}) \times V_1$$

Hence, statement I alone is sufficient to answer the question. (As we get the ratio as 1 : 8) Similarly, based on statement II alone, we can find the ratio. (Which will be 1 : 27)

153. c   If we solve the two given equations, we get the point of intersection as (3, 2). Let A = (3, 2). The lines of our interest (let it be L_1 and L_2) also pass through A. One of the lines passes through (0, 4). Let L_1 passes through (0, 4), but it also passes through (3, 2). Hence, we can find the slope of L_2 (which is equal to $-\frac{2}{3}$).

Hence, slope of L_2 will be $\frac{3}{2}$ since L_1 and L_2 are perpendicular. Hence, equations of L_1 and L_2 can be obtained by using slope point form. (Students! we need not really find out the equations.) After getting both the equations, we can find the area bounded by L_1 and L_2 and coordinate axes.

154. d   Let A and B be the CP of the chair and the table respectively. So 1.15A + 1.2B = SP.
Hence, profit = 0.15A + 0.2B. Now consider statement II, CP = 1.1A + 1.2B. As per new CP, now profit will be (1.15A + 1.2B) − (1.1A + 1.2B) = 0.05A + 0xB = 0.05A. Combining both statements, we get the equation as 0.05A = 0.15A + 0.2B − 20. Still we cannot find the answer.

155. d   None of the statements specifies the direction in which Tez and Gati are moving, which is very significant.

156. a

Company	Cost/Room
Lokhandwala	225/536 " 225/535 = 0.42
Raheja	250/500 = 0.50
IHCL	275/600 = 0.45
ITC	300/300 = 1

From the right-side column, for Lokhandwala Group, cost per room is least.

157. c   In previous question, we have found out for which group the cost per room is least. To answer the second question, we need to take the reciprocals of fractions in the first question. Naturally, the answer will be same, i.e. Lokhandwala Group.

158. c   Two projects are completed in 1998, one is Mumbai Heights and the second is Royal Holidays.
The cost of project is 250 + 225 = 475 crore. *Cost incurred = 475 + 47.5 = 522.5. (Students please note the last step. Rather than doing 1.1 × 475, it is convenient to do 475 + 10% of 475, which is = 475 + 47.5)

159. a   Four projects are completed in 1999. They are: (i) Majestic Holiday, (ii) Supremo Hotel, (iii) Windsor Manor and (iv) Leela Hotels. It is very much similar to previous situation.
The cost of project is 250 + 300 + 275 + 235 = 1060 Hence, the cost incurred = 1060 × $(1.1)^2$
                         = 1282.6 crore

160. b   Students! read the question carefully. It says what is the cost of projects completed by 2000.
It will be addition of previous two answers + Cost incurred for the projects completed in 2000. Approximate cost of projects completed by 2000 is 1282.6 + 522.5 + (250 × $(1.1)^3$) ≈ 2140.

161. a

Year	Male population	Female population	Total	Per capita production
1990	34	36	70	5/70 = 0.071
1992	35	37	72	7/72 = 0.09
1994	39	37	76	7.6/76 = 0.1
1996	43	40	83	7/83 " 7/84 = 0.08

From the table, it is clear that in 1990, the per capita production of milk was least.

162. d   We can prepare a similar kind of table, that we prepared for previous question. This table prepared is for food grains.

Year	Total population	Per capita production
1992	72	20/72 = 0.27
1993	74	22/74 = 0.297
1994	76	25/76 " 25/75 = 0.33
1995	80	31/80 " 30/80 = 0.375

Hence, per capita production of foodgrains was maximum in 1995.

163. c Percentage increase in production of food

Year	Production of foodgrains	% increase = X	Production of milk	% increase = Y	X – Y
1992	20		7		
1993	22	2/20 = 10%	8	1/7 = 14.2%	–4.28%
1994	25	3/22 = 13.6%	7.5	–0.5/8 = –6.2%	19.8%
1995	31	6/25 = 24%	6.8	-0.7/7.5 = –9.3%	33.3%
1996	23	– 9/32 = – 28.1%	7	0.2/6.8 = 2.9%	31%

From the last table, it is clear that in 1995, the difference between percentage increase in production of foodgrains and percentage increase in production of milk was maximum.

164. c

Year	Per capita consumption of milk = A	Calories consumed = X(X = 320x A)	Per capita consumption of foodgrains = B	Calories consumed = Y(Y = 160 x B)	X + Y
1993	0.11	35.2	0.28	44.8	80
1994	0.1	32	0.33	52.8	84.8
1995	0.093	29.76	0.37	59.2	88.96
1996	0.08	25.6	0.33	52.8	78.4

From the last column of the table, it is clear that the per capita consumption of calories was highest in 1995.

165. c

Year	Production of milk = A	Availability of nutrient= 120A =X	Production of foodgrains = B	Availability of nutrient= 60B =Y	X +Y
1993	8	960	22	1320	2280
1994	7.5	900	25	1500	2400
1995	6.8	816	32	1920	2736
1996	7	840	23	1380	2220

Clearly, from the table, availability of nutrient is maximum in 1995.

166. c

Year	Total population	Per capita consumption of nutrient
1993	74	2280/74 = 30.81
1994	76	2400/76 = 31.5
1995	80	2736/80 = 34.2
1996	83	2220/83 = 26.7

From the table, it is clear that the per capita consumption is maximum in 1995.

For questions 167 to 172:
The values in the graph can be represented in the table given below.
Here O.H. is overheads and Int. is interest, P/C is profit/cost.

Year	Raw Mat.	Wages	O.H.	Int.	Profit
1991	60	45	10	50	15
1992	50	55	20	55	25
1993	65	60	15	55	20
1994	75	65	25	50	-30
1995	80	65	20	50	15
Total	330	290	90	260	45

167. b We can see that the increase in raw material has been maximum in 1993, viz. 15 points increase.

168. c The change in the profit is maximum in 1993-94. In this year, there is a 50 points drop in the profits.

169. a It can be seen that the interest has remained more or less constant over the given period.

170. c

Year	Raw Mat.(RM)	O.H.	OH/RM x 100
1991	60	10	16.66%
1992	50	20	40%
1993	65	15	23.07%
1994	75	25	33.33%
1995	80	20	25%

Thus, it can be seen from the above table that the overheads as a percentage of raw material is maximum for 1992.

171. b The total profits over the period
= (15 + 25 + 20 – 30 + 15) = 45
Total costs
= (330 + 290 + 90 + 260) = 970

Hence, profit/costs = $\dfrac{45}{970}$ = 4.6%

= 5% (Approximately)

172. b If the interest component is not included in the cost, the data can be represented as follows.

Year	Cost	Profits	P/C x 100
1991	115	15	13.04%
1992	125	25	20%
1993	140	20	14.28%
1994	165	-30	-
1995	165	15	9.09%

Hence, we can see from the table that maximum profit per unit cost is in 1992.

173. a If the amount of tariff consumed by sector 1 is the same, then we can directly compare the tariffs to the two regions and get the answer.

	Tariff 1994-95	% change over 1991-92	Tariff 1991-92
Region 1	425	+15%	369.5
Region 2	472	+5%	449.5
Region 3	420	-4%	437.5
Region 4	415	+8%	384.25
Region 5	440	+10%	400
	2172		2040.75

Hence, we can see that as compared to 1991-92, the net tariff in 1994-95 increased by

$\dfrac{(2172 - 2040)}{2040}$ = 6.5%

174. b

	Tariff 1994-95	% change over 1991-92	Tariff 1991-92
Sector 1	420	-4	437.5
Sector 2	448	+7	418.7
Sector 3	432	+6	407.5
Sector 4	456	+10	414.5
			1678.3

Hence, the average tariff for region 3 in 1991-92 is

$\dfrac{1678.3}{4}$ = 419.5 = 420 (Approximately)

✳ CL MBA Test Prep

175. a In 1994-95, the power consumed by various sectors out of 7875 megawatts can be given as follows.

Category	Percentage	Consumption in 94-95
Urban	25	1969
Domestic	20	1575
Industrial	40	3150
Rural	15	1181
		7875

Since there was a 10% decrease in domestic consumption of power in 1994-95, the domestic

consumption in 1991-92 = $\left(\dfrac{1575}{0.9}\right)$ = 1750 megawatts.

But this constitutes 20% of total power consumed in 1991-92 and the rural consumption constitutes 15% of total power in 1991-92. Hence, in 1991-92, the rural

consumption = (1750 × $\dfrac{15}{20}$) = 1312 megawatts.

176. d We only know the tariff rates for the two years for various regions and sectors. But we do not know the category-wise break-up of tariffs, i.e. the rates for urban sector is not known. In the light of this, we cannot answer this question.

177. b Let us evaluate each of the above statements. The average tariff in region 4

= $\dfrac{(415 + 423 + 441 + 451)}{4}$ = 432.5 p/kwh

region 2 = $\dfrac{(472 + 468 + 478 + 470)}{4}$ = 472 p/kwh

region 5 = $\dfrac{(440 + 427 + 439 + 446)}{4}$ = 438 p/kwh

Hence, the average tariff in region 2 is higher than in region 5. This statement is true. Note that we cannot evaluate the third statement at all.

178. a In 1974, agricultural loans amounted to
= Rs. 34.54 million. Loans from rural banks in 1974
= (260 × 98 × 243) = Rs. 6.19 million.
Hence, total amount of loans
= (34.54 + 6.19) = Rs. 40.73 million.
Hence, percentage of agricultural loans

= $\dfrac{34.54}{40.73}$ = 84.79% = 85% (Approximately)

179. b

Year	No. of rural banks	Average no. of loans	Total no. of loans
1970	90	28	2520
1971	115	39	4485
1972	130	52	6760
1974	260	98	25480
1975	318	121	38478
1980	605	288	174240
1981	665	312	207480
1983	840	380	319200

So total number of loans up to 1980
= (2520 + 4485 + 6760 + 25480 + 38478 + 174240)
= 251963
And the total number of rural loans in 1983
= 319200

Hence, $\dfrac{251963}{319200}$ = 78.93% = 80% (Approximately).

180. d

Year	Total no. of loans	Increase
1970	2520	-
1971	4485	1965
1972	6760	2275
1974	25480	18720
1975	38478	12998
1980	174240	-
1981	207480	33240
1983	319200	-

Thus, we find that the maximum increase in the number of loans for rural banks is in 1980-81.

Note: Students please note that we have not calculated the increase for 1970, 1980 and 1983 as their previous years' figure is not known.

181. b The value of agricultural loan in 1983 is Rs. 915.7 million. But this at consumer price index (CPI) = 149. So if we want this value at 1970 CPI, viz. 43, it would simply be

$$\frac{43 \times 915.7}{149} = 264.26.$$

182. c Students please note that what they are really asking is for which year the average number of loans is the least, and we can see in 1970.

183. b From 1970 to 1983, in 13 years the number of agricultural loans went up from 18,300 to 2,11,600, an increase of 1,93,300. So percentage increase in this

$$= \frac{193300}{18300} = 1057.$$ However, this growth is spread across 13 years. Hence, simple annual rate of increase

$$= \frac{1057}{13} = 81.3\% = 81 \text{ (Approximately)}.$$

184. a The CPI in 1970 is 43. But it has to be taken as 105. Presently in 1983 and 1975, the CPI is 149 and 78 respectively. Hence, they should actually be taken as

$$\left(149 \times \frac{105}{43}\right) = 363.83 \text{ and } \left(78 \times \frac{105}{43}\right) = 190.46$$

respectively. Hence, their difference
= (363.83 − 190.46) = 173.37 = 174 (Approximately).

185. b Total value of loans
= Rural bank loans + Agricultural loans.
Rural bank loan in 1980 = (605 × 288 × 567)
= Rs. 98.79 million. Total value of agricultural loan in 1980 = Rs. 498.4 million.
Hence, total loans in 1980
= (98.79 + 498.4) = 597.19.
But this is at a CPI = 131
If it is to be calculated at 1983 CPI, viz. 149, then its

value will be $597.19 \times \left(\dfrac{149}{131}\right)$ = Rs. 679.24 million

= Rs. 680 million (Approximately).