

TEST-BOOKLET

Test Battery Number

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Test Form No.

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Booklet Series



Test-Booklet Serial No.

2197

This Booklet consists *four* objective type tests as follows :

Name of the Tests

Sr. No. of Questions

- (i) Test I – Data Interpretation
- (ii) Test II – Verbal Ability
- (iii) Test III – Logical Ability
- (iv) Test IV – Quantitative Ability

- 1 – 40
- 41 – 80
- 81 – 120
- 121 – 160

1. Total duration of these tests is **Two Hours** and there are no separate time limits for each of them.
2. On the top right hand side of the cover page of your Test-Booklet, Test-Booklet-Serial No. is printed, enter this number in the rectangles for Test-Booklet Serial No. in your Answer-Sheet. The Answer-Sheet is placed inside your Test-Booklet.
3. On the top right hand corner of the cover page of your Test-Booklet, Booklet Series is printed as **A**. In the Box for Booklet Series in your Answer-Sheet, blacken circle **A** with your HB pencil. Similarly on the left hand corner of the cover page of your Test-Booklet, Test Form No. is printed, blacken the corresponding circles in the Box for Test Form No. in your Answer-Sheet. Please make sure that you do not blacken more than one circle in any column. Thus, the three circles blackened by you one in each column below the Test Form No. in your Answer-Sheet, should tally with the Test Form No. as printed on your Test-Booklet.
4. In the Box for category in your Answer-sheet blacken the circles for the code of the category you belong. The codes for the different categories are :
General – 01, OBC – 02, SC – 03, ST – 04, PwD HH – 05, PwD VH – 06 and PwD OH – 07.
5. For each question in your Test-Booklet, four alternative answers numbered as (1), (2), (3) and (4) are given. Of these four alternative answers **only one answer** is the correct answer to each question. Your task in this examination is to give your answer to each question on SIDE-2 of your Answer-Sheet by blackening with the H.B. Pencil, the circle having the alternative number of your choice below the corresponding serial number of that question. If at any stage, you want to change the answer given by you earlier to any question, then erase the black mark made by you earlier below that question number and make a fresh mark in the alternative of your new choice. If for any question more than one circles are found blackened, the machine will allot one **negative mark** to such an answer.
6. Don't forget to mention the Test-Booklet Serial Number which is printed on the cover page of your Test-Booklet at the indicated places in your Answer-Sheet.
7. Before attempting to answer the questions, please make sure that all the entries in your Answer-Sheet have been duly completed. Any carelessness in this regard may jeopardize your chances of selection.
8. Do not spend time on read all the questions before attempting to answer them. If time permits, you may again try the left out questions after attempting the last question.
9. For rough work, blank space has been provided on page 2 of your Test-Booklet. Don't mark elsewhere in the Test-Booklet.

Don't open the Test-Booklet and take out the Answer-Sheet from its inside before 9.55 A.M.

Test-I
Data Interpretation

Directions (Q. 1-5) : The table given below indicates the number of consumers who preferred one or both drinks. Read the table and answer questions.

Age of Consumer (in years)	Drink preferred						Total number of Consumers surveyed including those who did not prefer any drink	
	A		B		Both			
	Male	Female	Male	Female	Male	Female	Male	Female
18-25	240	180	180	120	90	60	600	720
26-40	360	120	480	360	90	180	840	540
41-60	300	240	240	300	120	180	1200	960

- Number of consumers in the age group 26-40 who did not prefer drink B is
 (1) 540 (2) 480
 (3) 360 (4) 180
- Number of consumers over 40 years who preferred at least one drink is
 (1) 450 (2) 780
 (3) 870 (4) 1320
- The number of consumers in the age group 18-25 who prefer only one drink is
 (1) 1020 (2) 720
 (3) 570 (4) 420
- The percent of consumers more than 40 years of age who did not prefer any one of the drinks is about
 (1) 43.2 (2) 54.7
 (3) 63.9 (4) 76.1
- In all, how many consumers did not prefer any drink ?
 (1) 1080 (2) 1380
 (3) 2160 (4) 2460

Directions (Q. 6-10) : The following table classifies the tea and coffee habits of all employees of a company. Complete the table and answer the questions.

	Tea		
	Less than 2 cups a day	2 to 3 cups a day	More than 3 cups a day
Males	95	?	?
Females	88	45	67
Total	?	106	?

	Coffee		
	Less than 2 cups a day	2 to 3 cups a day	More than 3 cups a day
Males	85	?	49
Females	40	108	?
Total	?	144	101

- How many employees drink more than three cups of tea a day ?
 (1) 183 (2) 106
 (3) 81 (4) 67
- Number of females who drink two or more cups of tea per day is
 (1) 45 (2) 108
 (3) 112 (4) 160
- The percentage of male employees in the company is close to
 (1) 43.5 (2) 45.9
 (3) 47.8 (4) 54.1
- The number of employees who drink upto three cups of coffee per day is
 (1) 269 (2) 264
 (3) 221 (4) 156
- The ratio of the number of males who drink two or more cups of tea per day to the number

of employees who drink less than 2 cups of coffee per day is

- (1) 15 : 17 (2) 19 : 25
(3) 5 : 3 (4) 3 : 5

Directions (Q. 11-15) : The following table gives demand and supply of cement, in million tons, for the period 2005 to 2010. Surplus is defined as excess of supply over demand. Read the table and answer the questions.

Year	Demand	Supply
2005	45.1	48.2
2006	47.7	48.3
2007	50.0	51.2
2008	53.4	54.2
2009	57.5	60.0
2010	61.7	62.4

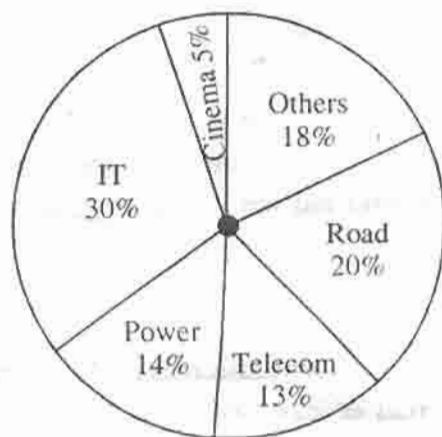
11. The surplus of cement was lowest for the year
(1) 2006 (2) 2007
(3) 2008 (4) 2010
12. The percentage increase in demand of cement was the highest as compared to its previous year in
(1) 2006 (2) 2007
(3) 2009 (4) 2010
13. What was the approximate average surplus (in million tons) of cement for the period 2005 to 2010 ?
(1) 1.1 (2) 1.2
(3) 1.3 (4) 1.5
14. In how many years the supply (in million tons) of cement was more than the average supply for 2005 to 2010 ?
(1) 4 (2) 3
(3) 2 (4) 1
15. For the years 2005 to 2010, total supply of cement was $x\%$ more than the total demand. The value of x is closest to

- (1) 1.8 (2) 2.1
(3) 2.3 (4) 2.8

Directions (Q. 16-20) : The following table shows the FDI in different states of a country in the year 2009-10.

State	A	B	C	D	E	F	G
FDI (in ₹ crores)	550	580	660	560	480	510	600

The following graph shows the investment in different sectors.



Read the table and graph and answer the questions.

16. In which of the following pairs of states the ratio of investment (FDI) in power sector is 11 : 8 ?
(1) A and B (2) B and C
(3) C and E (4) A, D
17. The ratio of investment in IT in state G to the investment in 'others' in state A is
(1) 11 : 20 (2) 20 : 11
(3) 5 : 3 (4) 3 : 5
18. The total investment (in ₹ crore) in 'Road Sector' by states B, C and D is
(1) 360 (2) 340
(3) 320 (4) 398

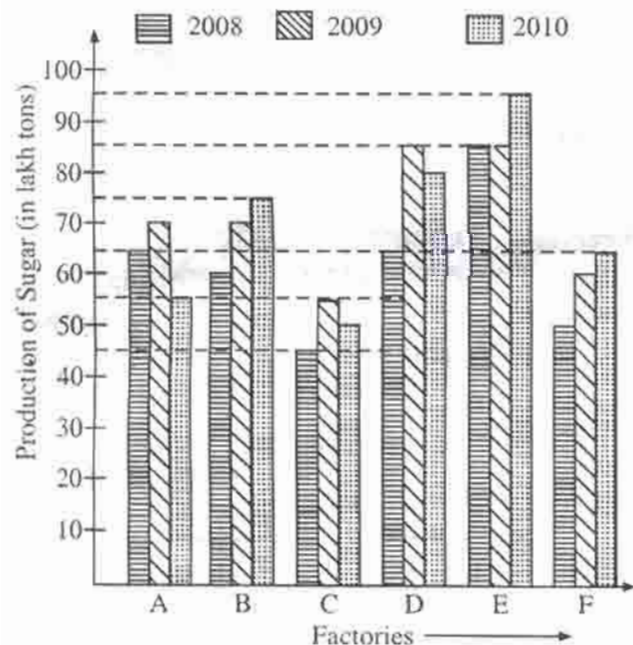
19. The FDI in cinema sector in state E is about what percent less than that in state B in telecom sector ?

- (1) 47 (2) 58
(3) 63 (4) 68

20. FDI in IT sector in State A is approximately what percent of that in telecom sector in state G and F combined ?

- (1) 114.3 (2) 118.3
(3) 121.7 (4) 138.5

Directions (Q. 21-25) : Read the following graph and answer the questions :



21. The difference (in lakh tons) between the average production of sugar by six factories in 2009 and average production by the same factories in 2008 is about

- (1) 6.6 (2) 9.2
(3) 9.4 (4) 9.8

22. The percentage increase in production of sugar by factory B from 2009 to 2010 is approximately

- (1) 11.7 (2) 8.3
(3) 7.1 (4) 1.6

23. Which of the six factories has recorded the maximum percentage growth in production from 2008 to 2009 ?

- (1) B (2) C
(3) D (4) E

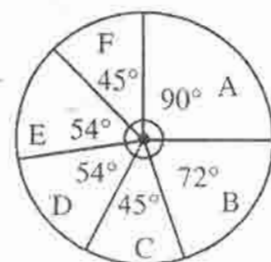
24. Production of sugar by factory C in 2009 and production of sugar by factory F in 2010 together is what percent of production by B in 2010 ?

- (1) 160 (2) 150
(3) 133.3 (4) 08.4

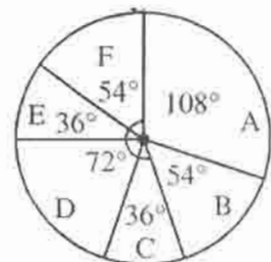
25. In which of the following pairs of factories, the difference between average production for 2009 and 2010 is minimum ?

- (1) A and B (2) B and C
(3) B and D (4) D and E

Directions (Q. 26-30) : The following pie-charts show the distribution of expenses over six different items A, B, C, D, E and F of a person for July and August 2012. She spent ₹ 27,000 in July and ₹ 30,000 in August, 2012.



July, 2012



August, 2012

Read the charts and answer the questions.

26. The ratio of money spent on items C and F together in July to that spent on B and E together in August is

- (1) 9 : 10 (2) 10 : 9
(3) 3 : 4 (4) 4 : 5

27. The difference (in ₹) between the amounts spent on C in August and D in July is

- (1) 1,250 (2) 1,125
(3) 1,050 (4) 900

28. The sum of the differences between expenditures in July and August on items C and that on F as a percentage of the change in total expenditure between the two months is

- (1) 25 (2) 37.5
(3) 47.5 (4) 50

29. Number of items of July on which money spent is less than the average money spent on items in the month is

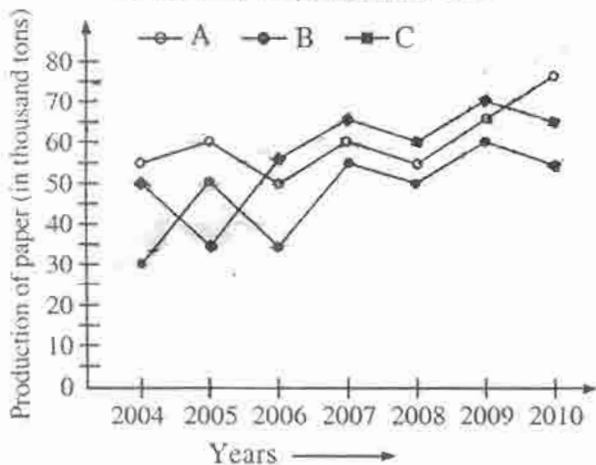
- (1) 5 (2) 4
(3) 3 (4) 2

30. If the amount spent for item B in August were the same as that in July, what would have been its central angle in the pie-chart?

- (1) 64.8° (2) 72°
(3) 60° (4) 42.5°

Directions (Q. 31-35) : Study the following graph and answer the questions.

Productions of paper (in thousand tons) by three different factories over the years 2004 to 2010



31. Total production of paper of the three factories together is equal for the years

- (1) 2004, 2006 (2) 2005, 2007
(3) 2007, 2008 (4) 2009, 2010

32. In which of the following years for factory B, the percent rise/fall in the production from the previous year is the maximum?

- (1) 2005 (2) 2006
(3) 2007 (4) 2009

33. Average production of paper per year for factory A is what percent of the average production per year for factory C?

- (1) 125 (2) 119
(3) 105 (4) 80

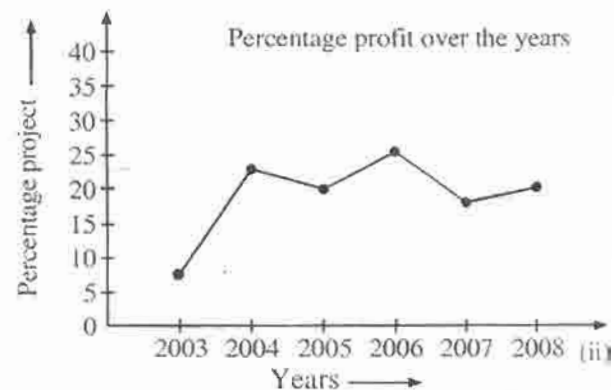
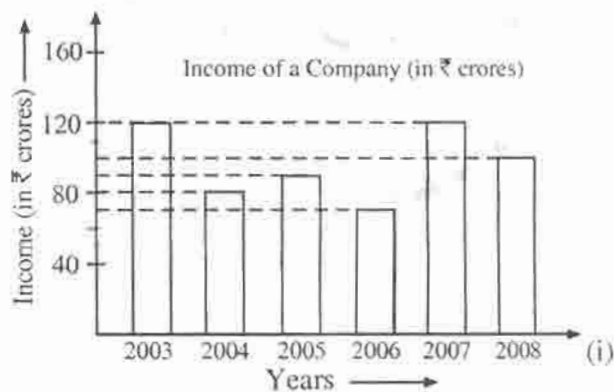
34. Ratio of total production of paper by factory A to the total production by factory C is

- (1) 20 : 21 (2) 21 : 20
(3) 80 : 67 (4) 84 : 67

35. In how many years the production of paper (in thousand tons) by factory C is less than the average production of paper by factory B over the years?

- (1) 1 (2) 2
(3) 3 (4) 4

Directions (Q. 36-40) : Study the following graphs (i) and (ii) which show income (in ₹ crores) and percentage profit over the years 2003 to 2008, and answer the questions.



36. In which year was the amount of profit maximum ?
- (1) 2004 (2) 2006
(3) 2007 (4) 2008
37. Difference in the amount of profit for 2005 and 2008 is
- (1) 1.67 crores (2) 1.87 crores
(3) 1 crore (4) 0.31 crore
38. Approximately what was the average expenditure (in ₹ crores) of the given years ?
- (1) 81.9 (2) 82.2
(3) 96.7 (4) 98.7
39. The expenditure (in ₹ crores) in 2006 is
- (1) 83.3 (2) 75
(3) 65.31 (4) 56
40. If the profit percent in 2008 was 25, what would have been the expenditure (in ₹ crores) in that year ?
- (1) 75 (2) 75.8
(3) 80 (4) 83.3

Test-II
Verbal Ability

41-44. In each of the following sentences four words or phrases have been underlined. One underlined part in each sentence is not acceptable in standard English. Pick up that part and mark its number.

41. The government initiated various
(1)
measure to raise the living standards of the
(2) (3) (4)
people.

42. The book must be old for its cover
(1) (2)
is torn bad.
(3) (4)

43. The region has a climate so severe that the
(1)
plants growing there had been rarely more
(2) (3)
than twelve inches high.
(4)

44. The reason for my prolonged absence from
(1) (2) (3)
the class was because I was ill.
(4) —

45-48 Fill in the blanks with the most appropriate words.

45. When such _____ remarks are circulated, we can only blame and despise those who produce them.
(1) adulatory (2) chance —
(3) rhetorical (4) redundant

46. It would be difficult for one so _____ to be led to believe that all men are equal and that we must disregard race, colour and creed.
(1) emotional (2) democratic
(3) intolerant (4) obsolete

47. The enemy soldiers were hot in pursuit; desperate. The fugitive sought _____ in the village church.

- (1) salvation (2) sanctuary
(3) therapy (4) mercy

48. Fitness experts claim that jogging is _____; once you begin to jog regularly, you may be unable to stop, because you are sure to love it more and more all the time.

- (1) exhausting (2) illusive
(3) addictive (4) exotic

49-52: Each question below consists of a related pair of words followed by four pairs of words. Select the pair that best expresses the relationship similar to the original pair.

49. Clay: mould::

- (1) Wood: carve (2) Paper: burn
(3) Pipe: blow (4) Trees: sway

50. Play: Acts::

- (1) Essay: Topics
(2) Novel: Chapters
(3) Game: Players.
(4) Poem: rhymes

51. Clock: time::

- (1) Watch: wrist
(2) Radio : sound
(3) Odometer : speed
(4) Yardstick : distance

52. Gazelle : swift::

- (1) Horse : slow
(2) Lion : roar
(3) Lamb : bleat
(4) Swan : graceful

53-56: In the following questions choose the alternative which best expresses the meaning of the given word.

53. Ecstasy

- (1) joy (2) treasure
(3) warmth (4) lack

54. Foster

- (1) fondle (2) rear
(3) roll (4) speed

55. Credible

- (1) worthy (2) believable
(3) noticeable (4) careful

56. Insipid

- (1) lucid (2) witty
(3) why (4) flat

57-60: Choose the word which is opposite in meaning to the given word.

57. Hubbub

- (1) capital (2) fury
(3) calm (4) axle

58. Undulating

- (1) ups (2) flat
(3) steep (4) gradual

59. Curtail

- (1) burden (2) lengthen
(3) encourage (4) express

60. Resilient

- (1) unyielding (2) pungent
(3) unsavoury (4) foolish

61-64: In the following questions the word at the top is used in four different ways. Choose the option in which the usage of the word is incorrect or inappropriate.

61. PUSH

- (1) The manufacturers are really pushing this new shampoo.
(2) He has difficulty pushing his feelings into words.
(3) We should be able to move this table if we push it together.
(4) She pushed through the crowd saying that she was a doctor.

62. HARBOUR

- (1) A large ship is anchoring in the harbour today.
(2) The crowing of the cock harbours the dawn.
(3) Antonio harboured the thoughts of revenge for his brother for doing him wrong.
(4) Dogs harbour fleas in their thick fur.

63. RIGHT

- (1) What a rightly idea he had to visit this place!
(2) You were quite right to refuse this assignment.
(3) The driver quickly righted the car after it skidded.
(4) I will come right away, without any delay.

64. MASTER

- (1) She could not master the courage to tell her friend about her loss.
(2) She quickly mastered the art of interviewing people.
(3) The terrorist was a master of disguise.
(4) He is the master of his house.

65-68: Fill in the blanks with appropriate alternative.

65. Anurag asked me _____

- (1) why didn't you pay the driver ?
 (2) why I didn't pay the driver.
 (3) why didn't I pay the driver ?
 (4) why you didn't pay the driver.
66. During the summer months, there is
 (1) prolonged country shortage in many parts of power.
 (2) prolonged parts of the country in many power shortage.
 (3) many parts of the country in prolonged power shortage.
 (4) prolonged power shortage in many parts of the country.
67. We heard an incessant noise from our neighbours' house. They _____ all the time.
 (1) are quarrelling
 (2) were quarrelling
 (3) will be quarrelling
 (4) would be quarrelling
68. The breakdown was said _____ a defective transformer.
 (1) to be caused by
 (2) it was caused by
 (3) that the cause was
 (4) to have been caused by
- 69-71: In the following questions, a sentence is given in active voice. Find the correct passive voice version from the given alternatives.
69. Somebody has put out the light.
 (1) The light is put out.
 (2) The light was being put out.
 (3) The light has been put out.
 (4) The light had been put out.
70. We justly rebuked him for acting so selfishly.
 (1) He has justly rebuked for selfishness.
 (2) he was justly rebuked by us for acting so selfishly.
 (3) He has been justly rebuked by us for acting so selfishly.
 (4) He has rebuked by us for acting so selfishly.
71. The rules forbid passengers to cross the railway line.
 (1) Passengers are forbidden by the rules to cross the railway line.
 (2) Passengers were forbidden by the rules to cross the railway line.
 (3) Passengers have been forbidden by the rules to cross the railway line.
 (4) Passengers had been forbidden by the rules to cross the railway line.
- 72-75: In the following sentences replace the underlined words with the appropriate expression from the given alternatives.
72. His friends expected that he would escape with a fine.
 (1) get off (2) go out
 (3) get out (4) give way
73. How did these things happen ?
 (1) came out (2) came about
 (3) came in (4) came up
74. Nobody was at home when the fire started.
 (1) took off (2) came about
 (3) kicked out (4) broke out
75. The crew of the boat underwent terrible suffering.
 (1) passed through (2) went by
 (3) stood up (4) pulled together
- 76-80: In the following passage there are blanks which have been numbered. For each blank, four words are suggested. Find out the most appropriate word to fill in the blank.

If you ask some people, "How did you learn English so well?" You may get a surprising answer: "In my sleep!"

These are _____76_____ who have taken part in one of the _____77_____ experiments to test learn-while-you-sleep methods, _____78_____ are now being tried out in several countries, and with _____79_____ subject, of which English is only one. Specialists say that _____80_____ sleep study method speeds language learning tremendously.

76.

- | | |
|------------|-------------|
| (1) men | (2) women |
| (3) people | (4) persons |

77.

- | | |
|------------|----------|
| (1) recent | (2) late |
| (3) modern | (4) new |

78.

- | | |
|-----------|-----------|
| (1) they | (2) who |
| (3) these | (4) which |

79.

- | | |
|----------|---------------|
| (1) all | (2) several |
| (3) both | (4) different |

80.

- | | |
|----------|-----------|
| (1) this | (2) a |
| (3) any | (4) every |

Test-III
Logical Ability

Directions (Qs. 81-85) : In questions given below, Assumption 'A' is followed by Reasons RI and RII. Apply RI and RII to A and mark your answer as under :

- (1) Only RI is the reason for A.
(2) Only RII is the reasons for A.
(3) Both RI and RII are the reasons for A.
(4) Neither RI nor RII is the reason for A.
81. A. Since time immemorial more people have been killed or made to suffer in the name of religion than for any other reasons.
RI. The essence of religion is hatred in other religions.
RII. Those who lose their lives in the name of religion go straight to Heaven, so devotees do not mind losing their lives.
82. A. Most of the columns of modern magazines are covered with news of political events.
RI. Readers are very much interested in political turmoil and scandals.
RII. It is not difficult to write about politics as one does not need originality.
83. A. Only secularism in thought, word and deed can save India from chaos.
RI. Communal differences would only result in riots and destruction of life, faith and property.
RII. Our democracy demands an open mind and heart for moral, spiritual and physical uplift of the country.
84. A. Vice-Chancellors do not have a very comfortable time.
RI. Students are always causing disciplinary problems.

RII. When people become vice-chancellors they are very old.

85. A. TV does not give much coverage to activities undertaken by ex-Presidents and Prime Ministers.

RI. Everyone salutes the chair.

RII. Those persons do not perform any activity worth mentioning.

Directions (Qs. 86-90) : Find the odd-man out.

86. (1) Idle (2) Lethargic
(3) Lazy (4) Subdued

87. (1) Blackmail (2) Forgery
(3) Snobbery (4) Sabotage

88. (1) Milk (2) Orange
(3) Cotton (4) Snow

89. (1) Cement (2) Brick
(3) Wall (4) Stone

90. (1) Raw (2) Tasty
(3) Ripe (4) Rotten

Directions (Q. 91-94) : Match the following questions with (1), (2), (3) and (4) on the basis of similar relationship. The items may not be in the same order.

91. Car : road : petrol (1) Post-office : hospital : city

92. Day : light : night (2) Army : defence : navy

93. Music : dance : art (3) Pen : ink : paper

94. Body : liver : heart (4) Life : alive : dead

Directions (Q. 95-99) : A word arrangement machine when given an input line of words, rearranges them following a particular rule in each step. The following is the illustration of the input and the steps of arrangement :

Input : She was shot dead at her residence

Step I : at was shot dead she her residence

Step II : at her shot dead she was residence

Step III : at her she dead shot was residence

Step IV : at her she was shot dead residence

Step V : at her she was shot dead residence

Since the words are fully arranged, the machine stops. Otherwise it may go on till the words get fully arranged. Study the logic and answer the questions.

95. In how many steps will the following input be fully arranged ?

Input : India has always been a critical factor

- (1) Three (2) Four
(3) Five (4) Six

96. What would be the Step III for the following input ?

Input : this is one thing on which I caution

- (1) I is one thing on which this caution
(2) I is on one this which thing caution
(3) I is on thing one which this caution
(4) I is one thing which this caution

97. If step II of an input reads "by he out the efforts made spells us," which of the following would be the last step ?

- (1) step III (2) step IV
(3) step V (4) step VI

98. What could be the penultimate step for the following input ?

Input : You hardly see any motorised vehicle

- (1) step I (2) step III
(3) step IV (4) step VI

99. What could be the step IV for the following input ?

Input : the foliage along road can deceive you

- (1) can foliage along road the deceive you

(2) can the you road along the deceive foliage

(3) can the you road foliage deceive along

(4) can the along road foliage deceive you

Directions (Q. 100-105) : Study the following information and answer the questions given below:

In a certain code, the symbol for 0 (Zero) is @ and for 1 is \$. There are no other symbols for all other numbers greater than one. The numbers greater than 1 are to be written only by using the two symbols given above. The value of the symbol for 1 doubles itself every time it shift one place to the left. Study the following examples :

'0' is written as @

'1' is written as \$

'2' is written as \$ @

'3' is written as \$ \$

'4' is written as \$ @@ and so on

100. Which of the following numbers will be represented by \$ \$ @ \$?

- (1) 8 (2) 11
(3) 13 (4) 12

101. Which of the following will represent the value of $3 \times 3 + 1$?

- (1) \$ \$ @ \$ (2) \$ @ \$ @
(3) \$ @ @ \$ \$ (4) \$ \$ \$

102. Which of the following numbers will be represented by \$ @ @ @ \$?

- (1) 22 (2) 31
(3) 14 (4) 17

103. What is the average of \$\$\$@@ and \$\$@@ ?

- (1) \$@@@ (2) \$\$\$\$
(3) \$@\$@@ (4) \$@@\$@

104. What is the value of $[(S@) + (S@) + (S@)]^{S@}$?

- (1) \$@@\$@ (2) \$@\$@\$
(3) \$\$\$ \times \$\$\$ - \$@ (4) (\$\$)^{S@}

105. What is the value of $[(8 + 16) \div (4 \times 3)]^3$?

- (1) \$@@\$ (2) \$\$@@
(3) \$\$\$@ (4) \$@@@

Directions (106-110) : In each question below, there are three statements followed by four conclusions numbered I, II, III and IV. You have to take the given statements to be true even if they seem to be at variance with commonly known facts and then decide which of the given conclusions logically follow (s) from the given statement.

106. **Statements :** Some charts are darts.
All darts are carts.
Some carts are smarts.

Conclusions : I. Some charts are carts.
II. Some carts are darts
III. Some darts are smarts.
IV. Some smarts are charts.

- (1) Only I and III follow
(2) Only II and III follow
(3) I and II follow
(4) I, III and IV follow

107. **Statements :** All boxes are tables.
No desks are tables.
Some desks are curtains.

Conclusions : I. No Boxes are desks.
II. Some Boxes are desks.
III. Some curtains are not boxes
IV. Some curtains are boxes.

- (1) III and either I or II follow
(2) I and either III and IV follow
(3) Either I or II and either III and IV follow
(4) I and III follow

108. **Statement :** No killer is a sweater.
No jacket is a sweater.
Some jacket are roses.

Conclusions : I. Some roses are sweters

II. some roses are not swaters.

III. No killer is a jucked.

IV. Some jackels are killers.

- (1) Either I or II and III follows
(2) Either III or IV or II follow
(3) Either II and III follow
(4) Either I or II and either III or IV follow

109. **Statements :** No student is decent
Some decent are bags.
All bags are roses

Conclusions : I. Some bags are not students.
II. All bags are students.
III. Some decents are roses.
IV. All roses are decent.

- (1) Only I follows
(2) Either I or II follows
(3) Either I or II, and III follows
(4) I and III follow

110. **Statements :** Some birds are stones.
Some, tigers are birds.
All stones are grapes.

Conclusions : I. Some stones are birds.
II. Some stones are not birds.
III. Some grapes are birds.
IV. Some tigers are stones

- (1) I, II, and III follow
(2) I, III and IV follow
(3) Either I or II and III follow
(4) I and III follow

Directions (Q. 111-115) : A researcher studying organic compounds has found that five different molecules. T, W, X, Y and Z form chains according to the following rules :

A chain consists of three or more molecules, though the molecules in the chain are not necessarily different.

T is never found on either end of a chain.
If W appears in a chain, it appears more than once.

X is never found next to y in a chain.

W is never found on the end of a chain unless Z is found somewhere in the chain.

If Y appears in a chain, Z appears also.

111. Which of the following is a possible chain of molecules ?

- (1) T X Y Z (2) Y T X X
(3) W Z T Y (4) W W X Z

112. Which of the followings is NOT a possible chain of molecules ?

- (1) X X T Z (2) Z X W W Z
(3) W X Z Y W (4) Y W T Z X X

113. The chain W W T Y Z X can be changed into another chain by carrying out any one of the following EXCEPT

- (1) replacing the T molecule with a W molecule
(2) replacing the Y molecule with an X molecule
(3) replacing the X molecule with a T molecules
(4) interchanging the T and the Z molecules

114. Which of the following is not a chain but could be turned into a chain by changing the order of the molecules ?

- (1) X Y T X (2) T X X Y
(3) W T T W (4) W X X W

115. Which of the following sequences can be converted into a chain by adding Z and rearranging the molecules ?

- I. X Y X T II. W T T Z
III. X X Y W
(1) I only (2) I and III only
(3) III only (4) I, II and III

Directions (Q. 116-120) : In the following questions the symbols @, @, =, © and © are used with the following meaning :

P @ Q means P is greater than Q.

p @ Q means P is either greater than or equal to Q.

P = Q means P is equal to Q.

P © Q means P is smaller than Q.

P © Q means P is either smaller than or equal to Q.

For each questions you have to assume given statements to be true and then decide which of the two given conclusions is / are definitely true. Give answer :

- (1) if only conclusion II is true
(2) if either conclusion I or II is true
(3) if neither I nor II is true
(4) if both the conclusions are true

116. Statements : B @ V, K © C, C © B

Conclusions : I. V @ C II. B @ K

117. Statements : K @ T, S = K, T © R

Conclusions : I. S @ R II. T = R

118. Statements : U = M, P @ U, M @ B

Conclusions : I. P = B II. P @ B

119. Statements : L @ N, J © P, P @ L

Conclusions : I. J = L II. P = N

120. Statements : H @ G, D @ E, H = E

Conclusions : I. D @ H II. G © D

Test-IV
Quantitative Ability

121. The number 123456789 and 999999999 are multiplied. How many of the digits in the product are 9's ?

- (1) 0 (2) 1
(3) 2 (4) 3

122. If the expression $15^6 \times 28^5 \times 55^7$ is evaluated, the number of zeros at the end of the number is

- (1) 8 (2) 10
(3) 18 (4) 20

123. $\sqrt[4]{2001\ 2001\ 2001\ 2001}$ is closest to

- (1) 2001 (2) 2100
(3) 6700 (4) 10010

124. The units digit of $(2002)^{2002}$ is

- (1) 2 (2) 4
(3) 6 (4) 8

125. Three different numbers are chosen such that when each of the numbers is added to the average of the remaining two, the number 65, 69 and 76 are obtained. The average of the three original numbers is

- (1) 35 (2) 38
(3) 43 (4) 70

126. abc and def are 3-digit numbers such that

$$\begin{array}{r} a \ b \ c \\ d \ e \ f \\ \hline 10 \ 0 \ 0 \end{array}$$

and none of $a, b, c, d, e,$ or f is 0. What is the sum $a + b + c + d + e + f$?

- (1) 10 (2) 19
(3) 21 (4) 28

127. When a number is divided by 5, the remainder is 2, when divided by 7, the remainder is 3, when divided by 9, the

remainder is 4. The sum of digits of such smallest number is

- (1) 13 (2) 11
(3) 9 (4) 7

128. The expression

$$\frac{1}{8} + \frac{1}{10} + \frac{1}{11} + \frac{1}{15} + \frac{1}{20} + \frac{1}{41} + \frac{1}{110} + \frac{1}{1640}$$

is equal to

- (1) 1 (2) $\frac{13}{15}$
(3) $\frac{11}{15}$ (4) $\frac{7}{15}$

129. Let r be the least non-negative remainder when $(22)^7$ is divided by 123. The value of r is

- (1) 5 (2) 22
(3) 32 (4) 52

130. If $\frac{97}{19} = w + \frac{1}{x + \frac{1}{y}}$, where x, y and w are all

positive integers, the value of $x + 2y - 3w$ is

- (1) 2 (2) -2
(4) 3 (4) -5

131. Let $a = 2^{129} \times 3^{81} \times 5^{128}$, $b = 2^{127} \times 3^{81} \times 5^{128}$, $c = 2^{126} \times 3^{82} \times 5^{128}$, and $d = 2^{125} \times 3^{82} \times 5^{129}$.

Then

- (1) $b > c > d > a$ (2) $b < c < d < a$
(3) $b > c > a > d$ (4) $b < c < a < d$

132. The positive integer a is a 2-digit number (01, 02 are *not* 2-digit number) the positive integer b has 'a' digit and the positive integer 'c' has 'b' digits. The smallest possible value for c is

- (1) 10^{99} (2) 10^{10^9}
(3) $10^{10^{10}} - 1$ (4) $10^{10^9 - 1}$

133. If $2^{36} - 1 = 68a 19476735$, when all the digits are correct except a , the correct value of a is

- (1) 9 (2) 8
(3) 7 (4) 3

134. The value of

$$\frac{(1 \cdot 121)^3 - (3 \cdot 333)^3 + (2 \cdot 212)^3}{(1 \cdot 121)(3 \cdot 333)(2 \cdot 212)}$$
 is

- (1) 1 (2) -2
(3) -3 (4) 4

135. If $a : b = 3 : 4$, $b : c = \frac{8}{9}$ and $c : d = \frac{2}{3}$, then

the value of $\sqrt[4]{\frac{ad}{b^2}}$ is

- (1) $\frac{3}{4}$ (2) $\frac{9}{8}$
(3) $\frac{3\sqrt{3}}{4}$ (4) $\frac{3\sqrt{2}}{4}$

136. The value of $\sqrt{43 - 12\sqrt{7}} - 2/\sqrt{16 + 6\sqrt{7}}$ is

- (1) 1 (2) 2
(3) 3 (4) $3 - 2\sqrt{7}$

137. Let N be the greatest natural number that will divide 13511, 13903 and 14589 leaving same remainder in each case. The sum of digits of N is

- (1) 10 (2) 13
(3) 15 (4) 17

138. The value of

$$\frac{(0.251)^2 - (0.051)^2 - (0.511)^2 - 2(0.051)(0.511)}{(0.251)^2 + (0.051)^2 - 2(0.251)(0.051) - (0.511)^2}$$
 is

- (1) $\frac{271}{237}$ (2) $\frac{237}{271}$
(3) $\frac{823}{711}$ (4) $\frac{701}{823}$

139. The cost of making a rectangular table is calculated by adding two variables. The first is proportional to the area of the table and the other to the square of the length of the longer side. In making $2\text{m} \times 3\text{m}$ table it costs ₹ 5,000 and in making a $1.5\text{m} \times 4\text{m}$ table, it cost ₹ 6,400. The cost of making a $2.5\text{m} \times 2.5\text{m}$ table is (nearest to a rupee)

- (1) ₹ 3,383 (2) ₹ 4,583
(3) ₹ 4,853 (4) ₹ 4,835

140. Anu is walking at a constant speed halfway between two parallel train tracks. On each track is a train of the same length. They are approaching Anu from different directions both at the same speed v km/hour. The train going in the same direction as Anu going takes t_1 second to pass her, while the other takes t_2 seconds to pass her. Speed of Anu (in km/hour) is

- (1) $\frac{t_1 - t_2}{t_1 + t_2} v$ (2) $\frac{t_2 - t_1}{t_1 + t_2} v$
(3) $\frac{t_1 + t_2}{t_1 - t_2} v$ (4) $\frac{t_1 + t_2}{t_2 - t_1} v$

141. A multiple choice examination consists of 20 questions. The scoring is +5 for each correct answer, -2 for each incorrect answer, and 0 for each unanswered question. A student's score on the examination is 48. The maximum number of questions he could have answered correctly is

- (1) 14 (2) 12
(3) 10 (4) 9

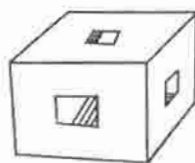
142. At an institute, 99% of the 100 students are girls but only 98% of the students living on the campus are girls. If same girls live on campus, how many students live off campus?

- (1) 2 (2) 40
(3) 50 (4) 98

143. A and B share a piece of land. The ratio of the area of A's portion to the area of B's portion is 2 : 3. They each grow wheat and

barley on their pieces of land. The entire land is covered by wheat and barley in the ratio 7 : 3. On A's land, the ratio of wheat to barley is 4 : 1. The ratio of wheat to barley for B's land is

- (1) 11 : 19 (2) 19 : 11
 (3) 11 : 9 (4) 9 : 11



- (1) 48 (2) 50
 (3) 72 (4) 78

144. A box has apples and oranges. $\frac{2}{3}$ of all the apples and $\frac{3}{4}$ of all the oranges are rotten. The number of rotten apples equals the number of rotten oranges. What fraction of the total number of fruits in the box is rotten?

- (1) $\frac{12}{17}$ (2) $\frac{5}{17}$
 (3) $\frac{9}{13}$ (4) $\frac{11}{13}$

148. If a 6 cm \times 6 cm square is placed on a triangle, it can cover up to 60% of the triangle. If the triangle is placed on the square it can cover up to $\frac{2}{3}$ of the square. The area (in cm^2) of the triangle is

- (1) 24 (2) 36
 (3) 40 (4) 60

145. A TV set is available for ₹ 19,650 cash payment or for ₹ 3,100 cash down payment and three equal annual instalments. If the interest is charged at the rate of 10% per annum compounded annually, the amount of each instalment is

- (1) ₹ 6,555 (2) ₹ 6,612
 (3) ₹ 6,655 (4) ₹ 6,665

149. A circular grass plot 4 m in diameter is cut by a straight path 1 m wide, one edge of which passes through the centre of the plot. Area of the remaining portion is

- (1) $\frac{4\pi}{3} - \sqrt{3}$ (2) $\frac{10\pi}{3} - \sqrt{2}$
 (3) $\frac{10\pi}{3} + \sqrt{3}$ (4) $\frac{10\pi}{3} - \sqrt{3}$

146. A person bought n articles for ₹ d . He sold two articles at half their cost and the rest at a profit of ₹ 8 on each article. If the overall profit is ₹ 72, then the least possible value of n is

- (1) 12 (2) 10
 (3) 8 (4) 16

150. Three concentric circles have radii (in cm) a , b and c , where $a < b < c$. If $a = 8$ and $b = 9$ and the middle circle bisects the area between the other two circles, then the value of c is

- (1) $7\sqrt{2}$ (2) $6\sqrt{3}$
 (3) $7\sqrt{3}$ (4) 10

147. A 3 cm \times 3 cm \times 3 cm cube has three holes each of 1 cm \times 1 cm cross-section running from the centre of each face to the centre of the opposite face. The total surface area (in cm^2) of the solid so obtained is

151. A sphere has a diameter of $500\sqrt{3}$ cm. A biggest cube is fitted in it. Now a biggest sphere is fitted within this cube. Again a biggest cube is fitted in the smaller sphere. The ratio of the volume of bigger cube to the volume of smaller cube is

- (1) 3 : 1 (2) $2\sqrt{3} : 1$
 (3) $3\sqrt{3} : 1$ (4) $4\sqrt{3} : 1$

152. A rectangular box has dimensions x , y and z units, where $x < y < z$. If one dimension only is increased by one unit, then the increase in volume is

- (1) greatest when x is increased
- (2) greatest when y is increased
- (3) greatest when z is increased
- (4) the same regardless of which dimension is increased.

Read the following table and answer questions 153 to 156.

School	Number of Students scoring less than 60% marks	Percentage of Students scoring more than 60% marks	Total Number of Students appeared
A	320	55	800
B	220	40	400
C	300	20	375
D	280	10	350
E	210	25	300

153. Which school has the lowest percentage of students scoring less than 60% marks ?

- (1) A
- (2) B
- (3) D
- (4) E

154. Number of schools which have the same percentage of students scoring exactly 60% is

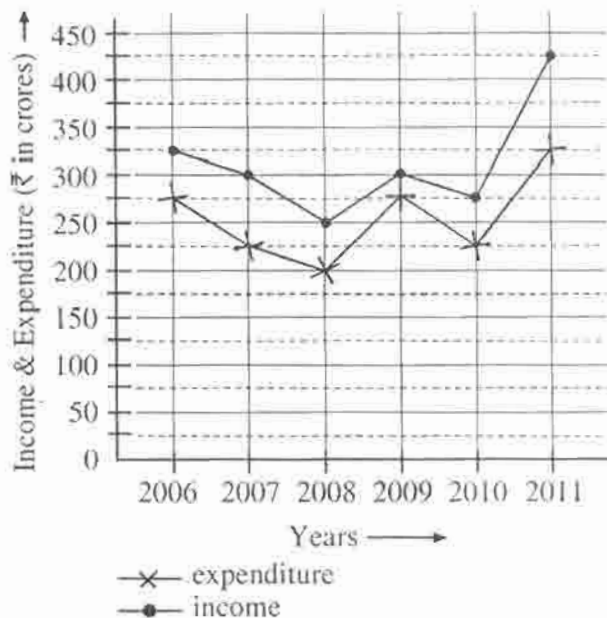
- (1) 1
- (2) 2
- (3) 3
- (4) 4

155. Total number of students scoring 60% or more marks is

- (1) 110
- (2) 775
- (3) 785
- (4) 895

156. The ratio of the total number of students scoring less than 60% marks to that of scoring exactly 60% marks is

- (1) 11 : 133
- (2) 133 : 11
- (3) 157 : 22
- (4) 285 : 179



The above graph shows income and expenditure (₹ in crores) of a company in the years 2006 to 2011. Read the graph and answer the questions 157 to 160.

157. The total expenditure of which of the following pairs of years was equal to the income in 2011 ?

- (1) 2006 and 2007
- (2) 2007 and 2008
- (3) 2006 and 2008
- (4) 2007 and 2010

158. In how many of the given years was the income more than the average income of the given years ?

- (1) 1
- (2) 2
- (3) 3
- (4) 4

159. What was the approximate percentage increase expenditure from 2010 to 2011 ?

- (1) 72.3
- (2) 70.5
- (3) 54.5
- (4) 44.4

160. In which year was the percentage of expenditure to income, the highest ?

- (1) 2009
- (2) 2008
- (3) 2007
- (4) 2006

Answer Key

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

Remark:

1. In directions (Q.95 to 99), Step V should be "at her she was deat shot residence".
2. In Q.96, option (2) should be "I is on one thing which this cautions".