6. In a certain code, PARTICLE is written as USBQFMDI and GENERATE is written as FOFHFUBS how is DOCUMENT written in that code?
(1) VDEFUONF (2) VDPENFUQ
(3) VDPEUOFN (4) PEUVDNOF
(5) OFNVUEPD

7. In a class of 40 children, Sunetra’s rank is eighth from the top. Sujit is five ranks below Sunetra. What is Sujit’s rank from the bottom?
(1) 27 (2) 28
(3) 29 (4) 26
(5) Other than those given as options

Directions (8-9) : Study the following information carefully and answer the questions given below:

L, M, N, O and P are five different poles, each of different length. O is not the third shortest Pole. N is bigger than only P. L is shorter than only one Pole. The size of the shortest pole is 7 ft and that of the second tallest Pole is 13 ft.

8. Which of the following Poles is the third tallest?
(1) M (2) Cannot be determined
(3) N (4) P
(5) L

9. According to the given arrangement, which of the following combinations of Pole and length is correct?
(1) N-14ft (2) P-5ft
(3) O-12ft (4) L-13ft
(5) Other than options

10. R is sister of M. M is brother of H. D is mother of K. K is brother of M. How is R related to D?
Directions (11 - 15) : Each of the following questions, consists of a question and two statements numbered I and II given below it. You have to decide whether the data provided in the statements are sufficient to answer the question. Read both the statements and mark the appropriate answer.

Mark answer (1) If the data in statement I alone are sufficient to answer the question, while the data in statement II alone are not sufficient to answer the question.

Mark answer (2) If the data in statement II alone are sufficient to answer the question, while the data in statement I alone are not sufficient to answer the question.

Mark answer (3) If the data either in statement I alone or in statement II alone are sufficient to answer the question.

Mark answer (4) If the data in both statements I and II together are not sufficient to answer the question.

Mark answer (5) If the data in both the statements I and II together are necessary to answer the question.

11. P, Q, R, S and T are sitting around a circle facing towards the centre of the circle. Who is to the immediate right of T?
   I. R, Q and S are in the same respective sequence to the immediate left of T.
   II. P is between S and T.

12. How many dresses does ‘P’ have?
   I. P has two dresses less than what T has.
   II. M has seven dresses, which are thirty percent less than what T has.

13. How is ‘smoking’ written in a code language?
   I. ‘Thanks for not smoking’ is written as ‘be je we no’ in that code language.
   II. ‘No Smoking Area’ is written as ‘no se do’ in that code language.

14. Who is the youngest among A, B, C, D and E?
   I. B is younger than C and D.
   II. A is younger than C but older than E.

15. How many sons does P have?
   I. C is the brother of B and A.
   II. P has three children of which B is a girl.

Directions (16-20) : Study the following information carefully and answer the questions given below :

In a certain code language, ‘capital cities are crowded’ is written as ‘ju sh pi be’, ‘crowded cities create chaos’ is written as ‘sh be nt ro’.

‘huge industries create capital’ is written as ‘db ju nt ka’.

‘industries are huge chaos’ is written as ‘ka pi ro db’

(All the codes are two letter codes)

16. What is the code for ‘create’ in the given code language?
   (1) sh  (2) db  (3) nt  (4) ro  (5) pi

17. What does ‘ro’ stand for in the given code language?
   (1) chaos  (2) capital  (3) huge  (4) create  (5) are

18. What does ‘ka’ stand for in the given code language?
   (1) either ‘cities’ or ‘crowded’  (2) cities  (3) create  (a) either ‘huge’ or ‘industries’  (5) chaos

19. Which of the following possibly means ‘crowded metro cities’ in the given code language?
   (1) sh be ju  (2) sh be ka  (3) sh ka nt  (4) ka nt pi  (5) sh un be
20. What is the code for ‘capital’ in the given code language?
(1) pi   (2) sh
(3) db   (4) ju
(5) be

21. Pointing to a woman, Mr. Suresh said, she is the daughter of my grandfather’s only daughter. How is Suresh related to the woman?
(1) Cousin
(2) Brother
(3) Other than those given as options
(4) Uncle
(5) Cannot be determined

Directions (22-25) : Study the following information carefully and answer the questions given below:

Bight persons - S, T, U, V, W, X, Y and Z are seated in a straight line but not necessarily in the same order, some of them are facing south while some are facing North. S sits fourth to left of X. X sits at one of the extreme end of the line. Both the immediate neighbours of S face south. T sits second to left of Z. Z is not an immediate neighbour of S. Neither Z nor U sits at the extreme end of the line. Both the immediate neighbours of U face north. W sits to immediate left of Y. Immediate neighbours of V face opposite directions (i.e. if one neighbour of V faces north then the other faces south and vice versa). People sitting at the extreme ends face the same directions (i.e. if one person faces North then the other also faces north and vice-versa).

22. Which of the following pairs represents immediate neighbours of the persons seated at the two extreme ends of the line?
(1) U, Z   (2) T, Y
(3) W, T   (4) Y, Z
(5) S, T

23. How many persons are seated between T and X?
(1) Four   (2) More than four
(3) One    (4) Three
(5) Two

24. If each of the persons is made to sit in alphabetical order from right to left the positions of how many will remain unchanged as compared to the original seating arrangement?
(1) One   (2) Two
(3) Four   (4) None
(5) Three

25. Who amongst the following sits exactly between Z and T?
(1) U   (2) V
(3) Y   (4) X
(5) W

Directions (26-30) : In each of the following questions three statements followed by two conclusions numbered I and II have been given. You have to consider the given statements to be true even if they seem to be at variance with the commonly known facts and then decide which of the given conclusions logically follows from the given statements disregarding commonly known facts.

Give answer (1) if both the Conclusions I and II follow
Give answer (2) if either Conclusion I or Conclusion II follows
Give answer (3) if neither Conclusion I nor Conclusion II follows
Give answer (4) if only Conclusion I follows
Give answer (E) if only Conclusion II follows

26. Statements:
No meeting is an argument.
All debates are arguments.
Some debates are fights.

Conclusions:
I. No fight is a meeting.
II. Some fights are meetings.

27. Statements:
All hands are limbs.
All limbs are fingers.
Some fingers are thumbs.

Conclusions:
I. Some thumbs being limbs is a possibility.
II. All hands are fingers.

28. Statements:
All teams are participants.
All members are teams.
No member is a captain.

**Conclusions:**
I. At least some participants are members.
II. All teams being captains is a possibility.

**29. Statements:**
Some slopes are mountains.
No mountain is a river.
Some rivers are ponds.

**Conclusions:**
I. All ponds being mountains is a possibility.
II. All slopes being rivers is a possibility.

**30. Statements:**
No gate is a door.
All doors are walls.
No wall is a ceiling.

**Conclusions:**
I. At least some gates are ceilings.
II. No ceiling is a door.

**31. Statement:**
Company A has approached the government with a proposal to build road and other infrastructure for providing transport facilities in area X. Which of the following could possibly lead the government to turn down the proposal forwarded by Company A?

(1) Residents of Area X and its adjoining areas have to walk for several kilometers to seek transport facilities.
(2) Company B which had undertaken similar projects earlier had failed to build good quality roads in the area.
(3) Although, area X is in dire need of road and infrastructure facilities, any company which undertook it would not make huge profits in the long run.
(4) Area X is a land with very low economic productivity and negligible residents.
(5) Area X is the unofficial hub for transportation of agriculture goods from State A to State B.

**32. If in the word EQUALITY, the positions of first and the fifth letters are interchanged, similarly the positions of the second and the sixth letters are interchanged and so on, which letter will be third from the right end?**

(1) I (2) U (3) Q (4) E (5) L

**33. How many such pairs of letters are there in the word REFRESHING each of which has as many letters between them (in both forward and backward directions) in the word as they have in the English alphabet?**

(1) Three (2) One (3) Two (4) None (5) More than three

**Directions (34-35): Study the following information carefully and answer the questions given below:**
J is the father of T. P is the brother of J. L is the mother of V. V is the brother of T. T is mother of S. T is the daughter-in-law of W.

**34. How is J related to S?**
(1) Uncle (2) Brother (3) Grand-father (4) Cousin (5) Father

**35. How is W related to P?**
(1) Son (2) Cannot be determined (3) Grandson (4) Aunt (5) Uncle

**ENGLISH LANGUAGE**

**Direction (36-40): In the given sentences there are two blank spaces. Below each sentence five pairs of words have been given. Find out which pair of words can be filled up in the blanks in the sentence in the same sequence to make the sentence meaningfully complete.**

**36. The incident has ______ severe damage to the ______ of the employees.**
(1) resulted - optimism (2) led – emotions (3) produced – conduct, (4) contributed - integrity (5) caused - morale

**37. _____ investing in technology, the company has been ______ to complete globally.**
(1) For – trying
(2) Despite – gradual
(3) While – clear
(4) Since – enable
(5) By - able

38. The root ______ of slow reduction in poverty is ____ of investment in agriculture.
   (1) purpose - increase
   (2) reason - hike
   (3) cause lack
   (4) effect - incidence
   (5) consequence - Plunge

39. You have unfairly ______ his success to the fact that he is well _____.
   (1) reduced - behaved
   (2) doubted - adjusted
   (3) excluded - educated
   (4) attributed - connected
   (5) rated - known

40. To ______ the problems of the region it is ______ to interact with the local People.
   (1) discover - necessity
   (2) understand - essential
   (3) research - advice
   (4) manage - needful
   (5) focus - better

Directions (41-45) : In the following questions, read this sentences to find out whether there is any error in it. The error, if any, will be in one part of the sentence. That part is the answer. If there is no error, Select 'No error' as the answer. (Ignore the error of punctuation, if any)

41. Santosh succeed/ due to the encouragement/ of friends, relatives/ and well-wishers “
   (1) Santosh succeed
   (2) due to the encouragement
   (3) of friends, relatives
   (4) and well-wishers
   (5) No error

42. One of the foremost/ challenges faced by / the company is that of/ attracting and retaining talent.
   (1) One of the foremost
   (2) challenges faced by
   (3) the company is that of
   (4) attracting and retaining talent
   (5) No error

43. We aren’t bothered/ as long as / they don’t interfere/ with ours freedom.
   (1) We aren’t bothered
   (2) as long as
   (3) they don’t interfere
   (4) will ours freedom
   (5) No error

44. The two-part documentary/ is a critique of the education system/ and its impacting/on upliftment of women.
   (1) The two-part documentary
   (2) is a critique of the education system
   (3) and its impacting
   (4) on upliftment of women,
   (5) no error

45. All the Airlines is/ using the increased awareness/ about security to impose a new/code of conduct among passengers.
   (1) All the Airlines is
   (2) using the increased awareness
   (3) about security to impose a new
   (4) code of conduct among Passengers
   (5) No error

Directions (46-50) : In the given sentences, one word has been given, in bold. Below each sentence five words are suggested, one of which can replace the word given in bold without changing the meaning of the sentence. Find out the appropriate word in the given sentence.

46. The content of this passage relates to the Mughal Period.
   (1) depicts
   (2) shows
   (3) seems
   (4) happens
   (5) pertains

47. Nilima’s husband compelled her to give up her job.
   (1) cautioned
   (2) forced
   (3) protected
   (4) restricted
   (5) continued

48. Rahul played well to third rank in the competition.
   (1) finish
   (2) find
49. It was **evident** that the gold ring was stolen by the domestic servant.

(1) unknown (2) reveal (3) agreed (4) clear (5) proof

50. The sad tale narrated by the distressed woman affected everyone.

(1) contacted (2) realised (3) touched (4) surprised (5) cautioned

**Direction (51-60):** **Read the following passage carefully and answer the questions given below it.** Certain words are given in bold in the passage to help you to locate them while answering some of the questions.

By the mid-nineteenth century, the educated Indian had become sufficiently aware of both his rich historical heritage and the **abject** state of his current existence. Nostalgia and a sense of racial identity grew as Indians gradually perceived the oppressiveness of alien rule. In the early nineteenth century, Orientalist scholars associated with the Fort William College, Kolkata helped considerably to unearth several obscure Indian texts and traditions, thereby, also creating a new awareness and sensitivity among Indians about their cultural heritage.

In the first half of the nineteenth century, particularly in some parts of the country, patriotism was not grossly inconsistent with an undisguised support for the continuation of British rule. Writers of this period from this part of the country made repeated references to how the British had ‘rescued’ India from many centuries of ‘tyrannical’ and ‘unprogressive’ governance of earlier rulers. Many people of this time, in fact, made an important distinction between the pragmatic gains to be made from a short-term tutelage under British rule and a long-term objective of securing independence from it. Through such thoughts ultimately proved to be naive and over-optimistic, in the 1820s and 1830s the advantages of British rule seemed to outweigh its disadvantages. In a letter written in 1823 to Governor General Lord Amherst, an Indian social reformer Raja Rammohan Roy (1774-1883) opposed an official move to open a Sanskrit College on the ground that it would produce no positive of progressive influence on the educated Hindu. He felt rather than indulge in abstract metaphysical speculation as was likely to be the result of a purely Sanskritic education, Indians would profit far more by imbibing the best of modern European civilization-pragmatism and a rational, scientific outlook. Social usefulness more than anything else, was now to be the true measure of things. In fact, his emphasis on rationality and a common sense approach to religion led some of his friends and admirers to call him a ‘religious utilitarian’.

51. According to the passage, what was the contribution of early nineteenth century Orientalist scholars?

(1) Pointing out deficiencies in the study of Sanskrit (2) Criticising the study of Indian texts and traditions (3) Encouraging students to get admission in Fort William College (4) Creating awareness and sensitivity about British culture (5) Making Indians adequately nostalgic

52. Choose the word which is most opposite in meaning to the word “**naive**” as used in the passage.

(1) abstract (2) speculative (3) hypothetical (4) wise (5) lasting

53. In the first half of the nineteenth century, writers from some parts of the country 

(1) started appreciating the work of Raja Rammohan Roy. (2) appreciated the British rule from rescuing India from the way it was ruled by previous rulers. (3) proclaimed themselves as patriotic writers who could save India from cultural aggression. (4) realized the importance of careful and systematic study of ancient Indian texts. (5) provided tacit but strong support to the liberation movement.

54. Which awareness had dawned on Indians by the mid-nineteenth century?

(3) number (4) establish (5) get
The long-term advantages of British rule
Rationalistic attitude towards living.
Rich historical heritage

According to the passage what did Raja Rammohan Roy feel about pure Sanskrit education?
(1) It would imbibe the best of spiritual Indian civilization.
(2) It would create awareness of our true cultural heritage.
(3) It would generate nostalgia and strong racial identity.
(4) It would help enhance patriotism among people.
(5) It would spread abstract metaphysical education.

Choose the word which is the most OPPOSITE in meaning to the word “abject” as used in the passage.
(1) negative
(2) exalted
(3) absolute
(4) scarce
(5) virtual

Which thoughts, according to the passage, proved imprudent and over-optimistic?
(1) It was better for India to have British rule in the short-term.
(2) Making a distinction between short-term and long-term objectives.
(3) The ideal of patriotism and independence among Indians.
(4) Indians would profit more by Sanskrit education.
(5) Racial identity is crucial for political independence.

According to the passage which of the following was opposed by Ram Rammohan Roy?
(1) The tradition of ‘Sati’ and child marriage.
(2) Interference of Indians in governance.
(3) Official move to open a Sanskrit language.
(4) Orientalist scholars joining Fort William College.
(5) Rapid growth of English as a principal medium of instruction.

According to the passage, which factor brought a sense of racial identity among the Indians?
(1) Increasing understanding of the Indian education system.
(2) Economic equality among the people.
(3) Growing harshness of the British rule.
(4) Regional imbalance between India and its neighbours.
(5) Growing religious fundamentalism among the people.

Choose the word which is similar in meaning as the word ‘tutelage’ used in the passage.
(1) protection
(2) measure
(3) planning
(4) contribution
(5) strategy

Directions (61-65): In the following questions, which of the phrases given below should replace the phrase given in bold in each sentence to make the sentence grammatically meaningful and correct? If the sentence is correct as it is and no correction is required, selected ‘No correction required’ as your answer.

According to our analysis, allocation for the agriculture sector being high from last year.
(1) is as high
(2) is higher than
(3) was higher to
(4) can be high
(5) No correction required

He did not invest wisely and has lost his entire life savings.
(1) entire life savings
(2) live savings entirely
(3) savings for entire life
(4) entire lifetime of savings
(5) No correction required

It would be worthwhile to educate teenagers about the consequences of drinking to drive.
(1) drunk for driving
(2) drunk and driving
(3) drink to drive
(4) drinking and driving
(5) No correction required
64. Hearing rumours of a fraud, investors begun to pull out their money in panic.
(1) beginning pulling out
(2) began putting in
(3) will begin by putting
(4) began to pull out
(5) No correction required

65. There are a large number of employees whom took the option of voluntary retirement.
(1) who is taken
(2) which taken
(3) who took
(4) that will be taken
(5) No correction required

**QUANTITATIVE APTITUDE**

66. If the present population of a state is 27500 and after 2 years it increases to 40,931, then what is the rate of increase per year?
(1) 25%
(2) 10%
(3) 17%
(4) 13%
(5) 22%

67. Train A which is 320 m long can cross a pole in 6 seconds. If it halts 5 times each time for exactly 18 minutes, how many hours will it take to cover a distance of 576 kms? (in -hours)
(1) 8
(2) 10\frac{1}{2}
(3) 8\frac{1}{2}
(4) 9
(5) 9\frac{1}{2}

68. Gita, Shweta and Sita invested Rs. 4200, Rs. 8400 and 5400 respectively while starting a business. At the end of the year, they earned a profit of Rs. 24,000. Sita invested 32% of her share of the profit in a saving scheme. How much amount is left with her?
(1) Rs.5,432
(2) Rs. 4,324
(3) Rs. 4,899
(4) Rs. 5,966
(5) Rs. 4,896

69. In a class of 80 students and 5 teachers, each student got sweets that are 15% of the total number of students and each teacher got sweets, that are 25% of the total number of students. How many sweets were there?

(1) 1050
(2) 1060
(3) Other than options those given as
(4) 1040
(5) 1030

**Directions (70-74) :** Refer to the pie-chart and the table and answer the given questions.

**Distribution of total number of shirts (linen and cotton) sold by 6 different stones in 2003**
Total number of shirts sold : 84,000

<table>
<thead>
<tr>
<th>Stores</th>
<th>Respective ratio of number of linen shirts to cotton shirts</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>7 : 5</td>
</tr>
<tr>
<td>B</td>
<td>5 : 6</td>
</tr>
<tr>
<td>C</td>
<td>3 : 2</td>
</tr>
<tr>
<td>D</td>
<td>5 : 3</td>
</tr>
<tr>
<td>E</td>
<td>4 : 3</td>
</tr>
<tr>
<td>F</td>
<td>7 : 3</td>
</tr>
</tbody>
</table>

70. What is the difference between average number of linen shirts sold by stores D and E together and average number of cotton shirts sold by the same stores together?
(1) 2920
(2) 2880
(3) 2940
(4) 3140
(5) 3060

71. What is the respective ratio between the number of shirts (linen and cotton both) sold by store C and number of linen shirts sold by store F?
(1) 22 : 31
(2) 30 : 41
(3) 40 : 49
(4) 20 : 29
(5) 44 : 57
72. Total number of cotton shirts sold by stores A and B together is what percent of the number of shirts (linen and cotton both) sold by store E?

(1) $\frac{62}{3}$  
(2) $\frac{64}{3}$  
(3) $\frac{61}{3}$  
(4) $\frac{68}{2}$  
(5) $\frac{66}{3}$

73. What is the central angle corresponding to the number of shirts (linen and cotton) sold by store E?

(1) 100.8°  
(2) 96.4°  
(3) 104.2°  
(4) 98.8°  
(5) 102.6°

74. Number of shirts (linen and cotton both) sold by store D is what percent more than the number of linen shirts sold by store B?

(1) 18  
(2) 22  
(3) 16  
(4) 24  
(5) 20

75. A bag contains 6 black and 8 white balls. One ball is drawn at random. What is the probability that the ball drawn is white?

(1) $\frac{3}{4}$  
(2) $\frac{4}{7}$  
(3) $\frac{1}{8}$  
(4) $\frac{3}{7}$  
(5) $\frac{1}{4}$

76. The present ages of Ranjana and Rakhi are in the ratio of 15 : 17 respectively. After 6 years, the respective ratio between the age of Ranjana and Rakhi will be 9 : 10. What will be the age of Ranjana after 6 years?

(1) Other than those given as options  
(2) 40 years  
(3) 34 years  
(4) 30 years  
(5) 36 years

77. The simple interest (p.a.) accrued on an amount of Rs. 17,000 at the end of four years is Rs.6,800. What would be the compound interest (compounded annually) accrued on the same amount at the same rate after two years?

(1) Cannot be determined  
(2) Other than those given as options  
(3) Rs.3,570  
(4) Rs. 3,260  
(5) Rs. 3,980

78. In how many different ways can the letters of the word ‘CANDIDATE’ be arranged in such a way that the vowels always come together?

(1) 4320  
(2) 1440  
(3) 720  
(4) 840  
(5) 1560

79. If 7 boys and 2 men working together can do three times as much work per hour as a boy and & a man together, what will be the respective ratio of work done by boy and a man for the given time?

(1) 3 : 1  
(2) 1 : 2  
(3) 1 : 3  
(4) 2 : 3  
(5) 1 : 4

Directions (80-84) : Refer to the graph and answer the given questions.

Data related to number of candidates appearing for an entrance test from various cities (in lakhs)

80. What is the respective ratio of the number of candidates appearing for the entrance test from city A in 2013 and city E in the same year?

(1) 15 : 14  
(2) 11 : 12  
(3) 12 : 13  
(4) 16 : 15  
(5) 17 : 16

81. What is the average number of candidates appearing for the entrance test from all cities together in the year 2012?
82. The number of candidates appearing for the entrance test from city D in the year 2013 is what percent more than the number of candidates appearing for the entrance test from city C in the same year?
(1) 7.7
(2) 8.7
(3) 6.7
(4) 9.72
(5) None of these

83. What is the respective ratio of the number of students appearing for the entrance test from cities B, C and F in the year 2012 to the number of students appearing for the entrance test in the year 2013 from the same cities?
(1) 18 : 19
(2) 15 : 16
(3) 11 : 12
(4) 17 : 20
(5) 15 : 19

84. If the total number of candidates appearing from all the cities together in year 2014 is 10% more than that in 2013, then what is the total number of candidates in the year 2014?
(1) 36675000
(2) 45000000
(3) 26675000
(4) 245000000
(5) Other than those given as options

85. What is the probability that a number selected from numbers 1, 2, 3, ...., 30, is prime number, when each of the given numbers is equally likely to be selected?
(1) \( \frac{9}{30} \)
(2) \( \frac{8}{30} \)
(3) \( \frac{10}{30} \)
(4) \( \frac{11}{30} \)
(5) \( \frac{21}{30} \)

86. Bhavana decided to donate 12% of her monthly salary to an orphanage. On the day of donation she changed her mind and donated Rs. 2,400 which was 125% of what she had decided earlier. How much is Bhavana’s salary?
(1) Cannot be determined
(2) Other than those given as options
(3) Rs. 14,750
(4) Rs. 18,500
(5) Rs. 16,000

87. Gaurav spent Rs. 38460 on the renovation of his home, Rs. 24468 on buying home theatre and the remaining 28% of the total amount he had as cash with him. What was the total amount?
(1) Cannot be determined
(2) Rs. 76,500
(3) Other than those given as options
(4) Rs. 92,600
(5) Rs. 87,400

Directions (88-93) : Study the table to answer the questions that follow:

<table>
<thead>
<tr>
<th>YEARS</th>
<th>ORGANISATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
</tr>
<tr>
<td>2001</td>
<td>247</td>
</tr>
<tr>
<td>2002</td>
<td>324</td>
</tr>
<tr>
<td>2003</td>
<td>331</td>
</tr>
<tr>
<td>2004</td>
<td>375</td>
</tr>
<tr>
<td>2005</td>
<td>345</td>
</tr>
<tr>
<td>2006</td>
<td>400</td>
</tr>
</tbody>
</table>

88. What is the average number of employees working in Organisation C over the given years?
(1) Other than those given as options
(2) 315
(3) 331
(4) 328
(5) 309

89. The total number of employees working in organisation A and B together in the year 2005 is what percent more than the number of employees working in organisation D in the same year? (rounded off to two places after decimal)
90. What is the respective ratio between the number of employees working in organisation A in the year 2006 and the total number of employees working in Organisation E in the same year?
(1) 2 : 3  (2) 12 : 19  (3) 22 : 39  (4) 25 : 32  (5) Other than those given as options

91. The number of employees working in organisation C in the year 2004 is approximately what percent of the total number of employees working in various organisations B, D and E together in that year?
(1) 30  (2) 35  (3) 27  (4) 23  (5) 13

92. What is the difference between the total number of employees working in organisation B over the years 2001, 2002 and 2003 together and the total number of employees working in organisation D over the same years together?
(1) 133  (2) 138  (3) 135  (4) 131  (5) Other than those given as options

93. What is the average number of employees working in organization B over the given years?
(1) 336  (2) 363  (3) 366  (4) 367  (5) 376

Directions (94-98) : What approximate value will come in place of the question mark in the given questions? You are not expected to calculate the exact value.

94. \(5003 \times 14.96 \div 25.12 + ? = 12^2\)
(1) 600  (2) 1200  (3) 800  (4) 1000  (5) 900

95. \(11.95^2 \times 5.05 + 15.01^2 \times 2.99 = ?\)
(1) 1150  (2) 1215  (3) 1885  (4) 1180  (5) 1395

96. \(31.95^2 - 12.05^2 + (1987.25 + 21.85) \div ? = 900\)
(1) 115  (2) 120  (3) 90  (4) 85  (5) 100

97. \(\frac{3}{5} \times \frac{2}{7} \times \frac{5}{12} \times 555 = ?\)
(1) 27  (2) 48  (3) 58  (4) 40  (5) 32

98. \(2489.99 + 9.85 + 54.94\% \text{ of } 271 = ?\)
(1) 800  (2) 300  (3) 500  (4) 700  (5) 400

99. The average height of 16 students in a class is 142 cm. If the height of the teacher is added the average increases by 1 cm. What is the height of the teacher in cm?
(1) 159  (2) 149  (3) 158  (4) 168  (5) 159.5

100. A shopkeeper bought a table marked at Rs.
200 at successive discounts of 10% and 15% respectively. He spent Rs .7 on transport and sold the table for Rs. 208. What will be his Profit percentage?
(1) 35  (2) 40  (3) 30  (4) 45  (5) 32
(1-2) \[ V \geq M = T > X \]
\[ R < T \geq S \]
\[ V \geq M = T > R \]
\[ S \leq M = T > X \]
\[ R < T > X \]
\[ V \geq M = T \geq S \]

1. (4) Conclusions
   I. \( R < V \): True
   II. \( S \leq X \): Not True

2. (5) Conclusions
   I. \( X < R \): Not True
   II. \( V \geq S \): True

3. (4) \( P < E \leq R > F \)
   \[ E \geq M \]
   \[ R < T \]
   \[ M \leq E \leq R < T \]
   \[ M < E < R > F \]

Conclusions
   I. \( T > M \): True
   II. \( F < M \): Not True

4. (3) \( R = Q \leq I \geq M = E \)
   \[ I < Z \]
   \[ Z > I \geq M \]

Conclusions
   I. \( Q \leq E \): Not True
   II. \( M \geq Z \): Not True

5. (1) \( N = D < H \geq R \)
   \[ V \geq H < J \]
   \[ N = D < R \leq V \]
   \[ J > H \geq R \]

Conclusions
   I. \( V \geq D \): True
   II. \( R < J \): True

6. (3) \[ P \geq A \geq T \]
   \[ +1 \]
   \[ U < S \geq B \]
   \[ \geq Q \]
   \[ G \geq E \geq N \]
   \[ +1 \]
   \[ F \geq O \geq F \]
   \[ H \]

Therefore,
\[ D \geq O \geq C \geq U \]
\[ +1 \]
\[ \geq M \geq E \geq N \geq T \]
\[ +1 \]
\[ V \geq D \geq P \geq E \]
\[ \geq U \geq O \geq F \]
\[ \geq N \]

7. (2) The rank of Sunetra from the top = 8th
   The rank of Sujit from the top
   \[ = 8 + 5 = 13 \text{th} \]
   Therefore, Sujit’s rank from the bottom
   \[ = 40 – 13 + 1 = 28 \text{th} \]

8. (1) Pole M is the third tallest.

9. (4) The size of Pole L is 13 feet.

10. (1) K is brother of H, M and R.
    D is mother of H, M and R.
    R is daughter of D.

11. (1) From statement I

P is to the immediate right of T.
From statement II

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12. (5) From statement I
   P has two dresses less than what T has.
   No answer.
   From statement II
   M has seven dresses and T has 10 dresses.
   From both the statements
   P has 10 \( - \ 2 = 8 \) dresses

13. (5) From both the statements
   thanks for not smoking \( \rightarrow \) be je we no
   No smoking area \( \rightarrow \) no se do

14. (4) From statement I
   C, D > B
   From statement II
   C > A > E
   From both the statements
   C, D > B 
   \( \frac{A}{E} \)

15. (2) From statement I
   C is the brother of B and A.
   It is not clear whether they are children of P or not.
   From statement II
   P has three children of which B is a girl.
   Therefore, P has two sons and one daughter.

16. (3) ‘nt’ is the code for create in the given code language.

17. (1) ‘ro’ stands for ‘chaos’.

18. (4) ‘ka’ stands for either ‘huge’ or ‘industries’.

19. (5) ‘crowded metro cities’ may be sh un be

20. (4) ‘ju’ is the code for capital.

21. (5) Only daughter of Suresh’s grandfather means aunt or mother of Suresh. Therefore, Suresh is either brother or cousin of that women.

22. (4) W and X are seated at the two extreme ends of the line. Y is immediate neighbour of W and Z is immediate neighbour of X.

23. (5) Two persons-V and Z-are seated between T and X.

24. (1) W Y U S T V Z X
   \( \uparrow \uparrow \downarrow \downarrow \downarrow \uparrow \uparrow \uparrow \uparrow \uparrow \)
   Z Y X W V U T S

25. (2) V sits exactly between Z and T.

26. (2) All debates are arguments.
   No argument is a meeting.
   “No debate is a meeting”.
   Some fights are debates.
   All debates are arguments.
   I + A \( \rightarrow \) L -type of Conclusion
   “Some fights are arguments”.
   Conclusion I and Conclusion II form Complementary Pair.
   Therefore, either Conclusion I or Conclusion II follows.

27. (1) All hands are limbs.
All limbs are fingers.
A + A \Rightarrow A \text{-type of Conclusion}
“All hands are fingers”.
This is Conclusion II.
Venn diagrams of ‘All limbs are fingers’: 

<table>
<thead>
<tr>
<th>Limbs</th>
<th>Fingers</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>I</td>
</tr>
</tbody>
</table>

Venn diagrams of ‘Some fingers are thumbs’: 

<table>
<thead>
<tr>
<th>Fingers</th>
<th>Thumb</th>
</tr>
</thead>
<tbody>
<tr>
<td>III</td>
<td>III</td>
</tr>
</tbody>
</table>

After combining the Venn diagrams II and V, we get:

<table>
<thead>
<tr>
<th>Fingers</th>
<th>Thumbs</th>
</tr>
</thead>
<tbody>
<tr>
<td>IV</td>
<td>IV</td>
</tr>
</tbody>
</table>

Thus, Conclusion I also follows.

28. (4) All members are teams.

All teams are participants.
A + A \Rightarrow A \text{-type of Conclusion}
“All members are participants”.
Conclusion I is Converse of it.
No captain is a member.

All members are teams.
E + A \Rightarrow O_1 \text{-type of Conclusion}
“All some teams are not captains”.
Venn diagrams of ‘Some teams are not captains’:

<table>
<thead>
<tr>
<th>Teams</th>
<th>Captains</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>I</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Teams</th>
<th>Captains</th>
</tr>
</thead>
<tbody>
<tr>
<td>II</td>
<td>II</td>
</tr>
</tbody>
</table>

From Venn diagrams I and II, some (not all) teams are captains.

29. (3) Some slopes are mountains.

No mountain is a river.
I + E \Rightarrow O \text{-type of Conclusion}
“All some slopes are not rivers”.
Venn diagrams of ‘Some slopes are not rivers’:

<table>
<thead>
<tr>
<th>Slopes</th>
<th>Rivers</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>I</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Slopes</th>
<th>Rivers</th>
</tr>
</thead>
<tbody>
<tr>
<td>II</td>
<td>II</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Slopes</th>
<th>Rivers</th>
</tr>
</thead>
<tbody>
<tr>
<td>III</td>
<td>III</td>
</tr>
</tbody>
</table>

From Venn diagrams I and II, it is clear that ‘Some slopes are rivers’.

No mountain is a river.

Some rivers are ponds
E + I \Rightarrow O_1 \text{-type of Conclusion}
“All some ponds are not mountains”.
Venn diagrams of ‘Some ponds are not
mountains’:

From Venn diagrams I and II, Some ponds are mountains.

30. (5) No gate is a door. All doors are walls.
E + A ⇒ O₁ -type of Conclusion
“Some walls are not gates.”
All doors are walls.

31. (5) Obviously, option (5) may be the reason for turning down the proposal of Company A. Area X is indulged in illegal trade of agriculture goods. Therefore, the Government may not be interested in developing infrastructure in the Area X.

32. (3) 1 2 3 4 5 6 7 8
E Q U A L I T Y
According to questions,
L I T Y E Q U A

33. (1) 18 5 6 18 5 19 8 9 14 7
R E F R E S H I N G

34. (3) T is the daughter of J and L.
V is the son J and L.
J is the husband of L.

35. (2) T is the daughter-in-law of W.
P is the brother of J.
J is the father of T.
P is the uncle of T.
The sex of W is not known.

36. (5) 37. (5) 38. (3) 39. (4) 40. (2)
41. (1) 42. (5) 43. (4) 44. (3) 45. (1)
46. (5) 47. (2) 48. (3) 49. (4) 50. (3)
51. (5) 52. (4) 53. (2) 54. (5) 55. (5)
56. (2) 57. (1) 58. (3) 59. (3) 60. (1)
61. (2) 62. (1) 63. (4) 64. (4) 65. (3)

66. (1) Present population = 27500
Population after two hours = 40931
Percentage Increase in population
\[ \frac{40931 - 27500}{27500} \times 100 \]
\[ = \frac{13431}{27500} \times 100 = 48.84\% \]
Percentage increase per year = 24.42% = 25%

67. (5) Speed of train A = \( \frac{320}{16} = 20 \) m/sec
\[ = 20 \times \frac{18}{5} = 72 \text{ km/hr} \]
Distance = \( \frac{576}{72} = 8 \) hours
Time taken in 5 halts = 5 × 18 = 90 min.
Total time taken = 8 hours + \( \frac{1}{2} \) hr.
\[ = 9 \frac{1}{2} \text{ hours} \]

68. (5) Ratio of their investment
\[ = 4200 : 8400 : 5400 \]
\[ = 7 : 14 : 9 \]
Share of Sita in Profit
\[ \frac{9}{30} \times 24000 = 7200 \]
Amount left with Sita = 68% of 7200
\[ \frac{68}{100} \times 7200 = 4896 \]

69. (2) Total sweets students got
\[ 80 \times 15\% \text{ of } 80 = 12 \]
Total sweets teachers got
\[ 5 \times 25\% \text{ of } 80 = 10 \]
Total sweets = 12 + 10 = 22

70. (3) Linen Shirts
Store D
\[ \frac{12}{100} \times 84000 = 10080 \times \frac{5}{8} = 6300 \]
Store E
\[ \frac{28}{100} \times 84000 = 23520 \times \frac{4}{7} = 13440 \]
\[ \frac{6300 + 13440}{2} = \frac{19740}{2} = 9870 \]

Cotton Shirts
Store D
\[ \frac{12}{100} \times 84000 = 10080 \times \frac{3}{8} = 3780 \]
Store E
\[ \frac{28}{100} \times 84000 = 23520 \times \frac{3}{7} = 10080 \]
Average
\[ \frac{3780 + 10080}{2} = 6930 \]
Required Difference
\[ 9870 - 6930 = 2940 \]

71. (3) No. of shirts by store C
\[ \frac{8}{100} \times 84000 = 6720 \]
No. of linen shirts by Store F
\[ \frac{7}{10} \times \frac{14}{100} \times 84000 = 8232 \]
Required ratio = 6720 : 8232 = 40 : 49

72. (5) Cotton shirts by store A
\[ \frac{16}{100} \times 84000 \times \frac{5}{12} = 5600 \]
Cotton shirts by store B
\[ \frac{22}{100} \times 84000 \times \frac{6}{11} = 10080 \]
Total shirts by store E
\[ \frac{28}{100} \times 84000 = 23520 \]
Required percentage
\[ \frac{5600 + 10080}{23520} \times 100 = 66.66\% \]

73. (1) Central angle
\[ \frac{28}{100} \times 360 = 100.8\degree \]

74. (5) Shirts sold by store D
\[ \frac{12}{100} \times 84000 = 10080 \]
Linen shirts sold by store B
\[ \frac{22}{100} \times 84000 = 8400 \]
Required percentage
\[ \frac{10080 - 8400}{8400} \times 100 = 20\% \]

75. (2) Probability of white ball drawn
\[ \frac{8}{14} = \frac{4}{7} \]

76. (5) According to the question
\[ \frac{15x + 6}{17x + 6} = \frac{9}{10} \]
\[ \Rightarrow 150x + 60 = 153x + 54 \]
\[ \Rightarrow 3x = 6 \Rightarrow x = 2 \]
Present age of Ranjana = 15 \times 2 = 30 years
Age of Ranjana after 6 years = 36 years

77. (3)\[ 68000 = \frac{17000 \times r \times 4}{100} \]
\[ \Rightarrow r = \frac{680000}{17000 \times 4} \Rightarrow r = 10\% \]
C.I = 17000 \left(1 + \frac{10}{100}\right)^2 - 17000
\(= 17000(1.1)^2 - 17000 = 20570 - 17000 = 3570\)

78. (1) Number of arrangements
\[
= \frac{6 \times 4!}{2!} \times \frac{6 \times 5 \times 4 \times 3 \times 2 	imes 4 \times 3 	imes 2}{2 \times 2} = 4320
\]

79. (5) \(7B + 2M = 3(B + 1M)\)
\[
= 7B + 2M = 3B + 3M
\Rightarrow 4B = M
\]
\[
\frac{B}{M} = \frac{1}{4} = 1:4
\]

80. (4) No. of candidates from city A = 40
No. of candidates from city E = 37.5
Respective ratio = 40 : 37.5 = 16 : 15

81. (2) Required average
\[
= \frac{30 + 32.5 \times 25 + 35 + 30 + 27.5}{6}
\]
\[
= \frac{180}{6} = 30.00000
\]

82. (1) No. of candidates from city D in 2013 = 35
No. of candidates from city C = 32.5
Required percentage
\[
= \frac{32.5 - 32.5}{32.5} \times 100 = 7.69 \pm 7.7%\]

83. (4) Students from city B, C and F in 2012
\[
32.5 + 25 + 27.5 = 85
\]
Student from city B, C and F in 2013
\[
= 37.5 + 32.5 + 30 = 100
\]
Required ratio = 85 : 100 = 17 : 20

84. (5) Total candidates in 2013
\[
= 40 + 37.5 + 32.5 + 35 + 37.5 + 30 = 212.5
\]
Total candidates in 2014
\[
= 212.5 \times \frac{110}{100} = 233.75 \text{ lakhs}
\]

85. (3) Prime numbers between 1 to 30
2, 3, 5, 7, 11, 13, 17, 19, 23, 29 = 10
Required probability = \(\frac{10}{30}\)

86. (5) Let the original monthly salary of Bhawna be \(x\)
\[
\Rightarrow 12 \times \frac{x}{100} \times \frac{125}{100} = 2400
\]
\[
\Rightarrow x = 2400 \times \frac{100}{15} = 16000
\]

87. (5) Let the total amount be \(x\)
\[
\Rightarrow 38460 + 24468 + \frac{28}{100} x = x
\]
\[
\Rightarrow 62928 = \frac{72}{100} x
\]
\[
\Rightarrow x = 87400
\]

88. (2) Required average
\[
= \frac{197 + 225 + 263 + 377 + 396 + 432}{6}
\]
\[
= \frac{1890}{6} = 315
\]

89. (1) Total employees together in A and E in 2005 = 345 + 445 = 790
Employees in organization D in 2005 = 440
Required percentage
\[
= \frac{790 - 440}{440} \times 100 = 79.55%
\]

90. (4) Employees in organization A in 2006 = 400
Employees in organization E in 2006 = 512
Required ratio = 400 : 512 = 25 : 32

91. (1) Total employees in B, D and E in 2004
\[
= 404 + 454 + 406 = 1264
\]
Total employees in organization C in 2014
\[
= 377
\]
Required percentage
\[ \frac{377}{1264} \times 100 = 29.82\% \approx 30\% \]

Required difference = 1226 – 1095 = 131

93. (2) Required average
\[ \frac{298 + 385 + 412}{2 + 4 + 3} = \frac{2178}{6} = 363 \]

94. (1) \[ 5000 \times 15 \div 25 + ? \approx 12^2 \times 5^2 \]
\[ \Rightarrow \frac{5000 \times 15}{25} + ? \approx 144 \times 25 \]
\[ \Rightarrow 3000 + ? \approx 3600 \]
\[ \Rightarrow ? \approx 3600 - 3000 \approx 600 \]

95. (5) \[ ? \approx 12^2 \times 5 + 15^2 \times 3 \]
\[ \approx 144 \times 5 + 225 \times 3 \]
\[ \approx 720 + 675 \approx 1395 \]

96. (5) \[ 32^2 - 12^2 + (1987.25 + 21.85) \div ? \approx 900 \]
\[ \Rightarrow (32 + 12)(32 - 12) + 2009 \div ? \approx 900 \]
\[ \Rightarrow 880 + \frac{2009}{?} \approx 900 \]

97. (4) \[ ? = \frac{3 \times 2 \times 5}{7 \times 12} \times 555 \approx 40 \]

98. (5) \[ ? \approx 2490 + 10 + \frac{55 \times 270}{100} \]
\[ \approx 249 + 148.5 \approx 397.5 \]
\[ \therefore \text{Required answer} = 400 \]

99. (1) Height of teacher = (142 + 17 \times 1) = 159 cm.

100. (3) Single equivalent discount for 10% and 15%
\[ = \left( 15 + 10 - \frac{15 \times 10}{100} \right) \% = 23.5\% \]
\[ \therefore \text{C.P. of table} = 200 \times (100 - 23.5) \% \]
\[ = \frac{200 \times 76.5}{100} = \text{Rs.153} \]
Expense on transport = Rs. 7
\[ \therefore \text{Actual C.P} = 153 + 7 = \text{Rs. 160} \]
\[ \therefore \text{Profit percent} \]
\[ = \frac{208 - 160}{160} \times 100 = \frac{4800}{160} = 30\% \]