Test-I
English Language

Directions (Q. 1-9): Read the passage carefully and answer the questions given below it.

At one level, the arrest of Asaram is a rather humdrum, same-old story. One more godman has fallen from grace. So, what is new under the Sun? Aren't we used to discovering the clay feet of our sadhu - sants? Perhaps George Orwell was on to something when he said that "saints should always be judged guilty until they are proved innocent", for no all-too-human godman can ever live up to the qualities of godliness. Perhaps the wise course to take is to reflect upon the tragedy of overweening human ambition of these fallen gurus and move on.

Yet, if one pauses to think about it, Asaram's arrest is not just a matter of one more godman's personal failings. Rather, this episode dramatises the thin line between faith and blind faith, and the near complete merger of faith, politics and money in contemporary Indian society.

Asaram's alleged rape of a 16-year-old girl is proof – if more proof is needed – why Narendra Dabholkar's struggle against superstitious beliefs and practices is indeed the need of the hour. The young girl was brought to the guru for an exorcism, of all things. From the revelations that are trickling in, it appears that this girl and her parents were made to believe by Asaram's associates that she had been possessed by evil spirits which the guru had the ability to drive out. This kind of andh shraddha, or blind faith, which our godmen so routinely encourage and exploit, is precisely what Dabholkar and his Maharashtra Andhshraddha Nirmulan Samiti were fighting against, a fight that cost him his life.

Asaram's case is also proof – if more proof is needed – that a state-temple-corporate complex is always and everywhere at work in India. Most of the times, it lies hidden in plain sight: we are so used to the sight of our elected representatives and the pillars of civil society – from prominent scientists, business tycoons to Bollywood superstars – prostrating themselves before gods and godmen that we do not notice how smoothly faith, politics and money blend into one another. It is when the godmen behave badly (as in Asaram's case), or when they fall foul of the powers-that-be (as happened to Baba Ramdev after his anti-corruption rally last year), that the veil is lifted. It is on occasions like these that we see what has been lying under our noses all along, namely, the state-temple-corporate complex.

Narendra Modi and other political leaders may want to distance themselves from the fallen godman for strategic reasons. But it is no secret that Asaram was treated as the de facto rajguru in Gujarat under both BJP and Congress governments. Indeed, when you examine the record closely, it is clear that Asaram's hugely profitable empire of ashrams, gurukuls and schools was built up with the largesse of land given by the state as grant (which he later expanded through encroachment) and as private donations from the wealthy Sindhi-Marwari community. His political connections created a protective shield around him, immunising him from many allegations of crimes (including murder of children) and misdemeanours. The godman could literally get away with murder. Asaram, of course, is hardly alone in using his political clout to amass a fortune. Behind every successful godman in India today stands a cluster of powerful politicos with free access to the public assets and the machinery of the state. Once launched, the successful gurus build business empires, which attract other corporate interests, especially those with interests in the burgeoning market in education and tourism.

1. What, according to the passage, is the state-temple-corporate complex all about?
   (A) It is a complex in which a person develops antipathy towards state and religious machinations.
   (B) It is a scheme under which the corporate sector guarantee funds to the state and religious institutions.
   (C) It is a machination in which religion, politics and money blend into one another very smoothly.
   1) Only (A) 2) Only (B)
   3) Only (C) 4) Only (A) and (B)
   5) Only (B) and (C)
2. What made Asaram immune from many allegations of crimes?
   (A) His firm faith in God
   (B) His political connection with both the BJP and the Congress
   (C) Political backing, and free access to the public assets and the machinery of the state
   1) All (A), (B) and (C) 2) Only (B)
   3) Only (B) and (C) 4) Only (A)
   5) None of these
3. Find the incorrect statement on the basis of the given passage.
   1) Asaram's *ashrams*, *gurukuls* and schools were built up with the largesse of land given by the state as grant.

2) Asaram was treated as *de facto rajguru* in Gujarat under both the BJP and the Congress governments.
3) Asaram received huge private donations from the wealthy Sindhi-Marwari community.
4) Being a state *rajguru*, Asaram never liked to acquire land through encroachment.
5) All the above are correct statements

4. Who was Narendra Dabholkar and what reason is he known for?
1) He was a well-known doctor and firm believer in the existence of God.
2) He was a social worker fighting against superstitious beliefs and practices.
3) He favoured well-known godmen for spreading mysticism all across the country.
4) He was the chairman of the Maharashtra Andhashraddha Nirmulan samiti and was killed by some unidentified assailants in Pune.
5) None of these

5. Which of the following is/are true about Asaram as mentioned in the given passage?
(A) Asaram's trajectory reflects the rapid progress of India's superstition industry.
(B) Asaram's arrest reflects the complete merger of blind faith, politics and money.
(C) Asaram's episode tells us how modern India looks down upon the integrity of saints.
1) Only (A) and (B)
2) Only (C)
3) Only (B)
4) Only (A)
5) Only (A) and (C)

6. Which of the following is/are the most important reason(s) behind the success of godmen in India? Give your answer in the context of the given passage.
1) Their knowledge about Indian religious scriptures such as the Vedas, the Puranas, the Mahabharata and the Ramayana
2) Their saintly lifestyle, religious sermons, preaching and discourse
3) Support of powerful politicians, and free access to public assets and state machinery
4) Their ability to pronounce exorcism, cure patients and dupe innocent people
5) None of these

7. Which of the following do you think can be correctly associated with the fallen gurus?
1) Qualities of godliness
2) Overweening human ambition
3) Personal failings
4) Misanthropic attitude
5) None of these

8. Who among the following help flourish the business of the so-called gods and godmen? Give your answer in the context of the given passage.
1) Innocent villagers, school children, shopkeepers and employers
2) Prominent scientists, business tycoons, Bollywood superstars and our elected representatives
3) Research scholars, social scientists and unemployed youths
4) Greedy, mentally challenged and depressed people
5) All the above

9. Which of the following proverbs can best explain the theme of the given passage?
1) Two wrongs do not make a right.
2) No man is an island.
3) Hope for the best, but prepare for the worst.
4) All that glitters is not gold.
5) You cannot make an omelette without breaking a few eggs.

Directions (Q. 10-15): In each of the following questions four words are given of which two are most nearly the same or opposite in meaning. Find the two words which are most nearly the same or opposite in meaning and find the number of the correct letter combination.

10. (A) Vocal (B) Benign (C) Unpleasant (D) Drastic
1) A-B 2) B-C 3) C-D 4) A-C 5) A-D

11. (A) Abysmal (B) Diligence (C) Zenith (D) Nadir
1) A-B 2) B-D 3) C-D 4) B-C 5) A-C

12. (A) Elude (B) Avoid (C) Harness (D) Hatch
1) A-B 2) A-C 3) A-D 4) B-C 5) B-D

13. (A) Languid (B) Gorgeous (C) Knack (D) Ability
1) A-B 2) A-D 3) B-C 4) C-D 5) B-D

14. (A) Gregarious (B) Quixotic (C) Sociable (D) Discernible
1) A-B 2) B-C 3) C-D 4) A-C 5) B-D

15. (A) Testimony (B) Aura (C) Augment (D) Decrease
1) A-B 2) B-C 3) C-D 4) A-D 5) B-D

Directions (Q. 16-20): Rearrange the following six sentences (A), (B), (C), (D), (E) and (F) in the proper sequence to form a meaningful paragraph and then answer the questions given below.

(A) The belief that whatever God did was for the good

of human beings served as a great consolation to people when a natural calamity fell upon them.

(B) Our forefathers had deep faith in God and religion which is missing in the present generation.

(C) But now those spiritual beliefs have more or less gone.

(D) In the past, religious faith used to be a great prop to human beings in times of distress or misfortune.

(E) As a result of scientific discoveries, we find it difficult now to believe in the existence of God, in the soul, or in a life after death.

(F) The difficulties, disappointments and failures were attributed to God's will and people bowed without much questioning.

16. Which of the following would be the **THIRD** sentence after rearrangement?
1) D 2) A 3) E
4) C 5) F

17. Which of the following would be the **LAST (SIXTH)** sentence after rearrangement?
1) A 2) F 3) D
4) C 5) B

18. Which of the following would be the **FOURTH** sentence after rearrangement?
1) B 2) A 3) C
4) D 5) E

19. Which of the following would be the **FIFTH** sentence after rearrangement?
1) C 2) B 3) E
4) A 5) F

20. Which of the following would be the **SECOND** sentence after rearrangement?
1) D 2) C 3) E
4) B 5) A

Directions (Q. 21-30): In the following passage, some of the words have been left out, each of which is indicated by a number. Find the suitable word from the options given against each number and fill up the blanks with appropriate words to make the paragraph meaningful.

Purists in Delhi, of course, will never stop grumbling. Their analytical clarity is uncluttered by the larger political and economic imperatives facing India's foreign policy. Pragmatists, the few that there are in the capital, must adopt a different course.

For one, they must concede publicly that **(21)** solutions to the problems of cross-border **(22)** with Pakistan are not on the **(23)**. Until we get there, the pragmatics must affirm, India must responsibly **(24)** to reduce violence on the disputed borders and prevent the **(25)** of every military incident into a major bilateral crisis.

Although the confidence-building measures can't immediately address the "root causes" of the **(26)** with Pakistan and China, they expand the **(27)** between the Indian armed forces and those of Pakistan and China, create a measure of trust, and make it easier **(28)** a period of time to resolve the underlying conflicts.

Having embarked on a substantive negotiation of military CBMs with Pakistan and China, the UPA government has some work to do at home. It needs to get the armed forces, the ministry of defence, the ministry of home and the foreign office to **(29)** the interconnected nature of India's diplomatic objectives, military strategy and border management and ensure effective **(30)** between the different stakeholders.

21. 1) adequate 2) efficient 3) dilute
4) effective 5) impressive

22. 1) terrorism 2) complication 3) lawlessness
4) agitation 5) anarchism

23. 1) boundary 2) border 3) horizon
4) sphere 5) prospect

24. 1) seek 2) question 3) inquire
4) follow 5) browse

25. 1) wane 2) growing 3) happening
4) escalation 5) decline

26. 1) rigidity 2) tensions 3) balance
4) fight 5) brawl

27. 1) combination 2) divide 3) affinity
4) association 5) interface

28. 1) across 2) over 3) for
4) in 5) above

29. 1) recognise 2) diagnose 3) nail
4) tag 5) remark

30. 1) allotment 2) disposal 3) grouping
4) grading 5) coordination

Test-II
Reasoning Ability

31. How many such pairs of letter are there in the word MANAGED each of which has as many letters between them in the word as in the English alphabetical series?
1) Two 2) Three
3) None 4) More than three
5) None of these

32. How many meaningful English words can be formed with the letters RLIA, using each letter only once in each word?
1) One 2) Two 3) Four
4) More than four 5) Three

Directions (Q. 33-35): Read the following information carefully and answer the questions.

There is a group of six persons M, N, O, P, Q and R. Each of them has a different height. P is taller than Q. M is taller than N but smaller than O. R is shorter than only two persons. Q is shorter than only one person.

33. Who among the following is the tallest?
1) P 2) R 3) O
4) N 5) None of these

34. Who among the following is the third shortest?
1) N 2) Q 3) R
4) P 5) O

35. How many persons are taller than only M?
1) One 2) Two 3) Three
4) Four 5) Five

Directions (Q. 36-40): Study the following information carefully and answer the given questions.

A word and number arrangement machine when given an input line of words and numbers, rearranges them following a particular rule in each step. The following is an illustration of input and rearrangement.

Input : based 18 scheme 49 after 9 interested 25 aadhar 4 payment 42
Step I: aadhar 4 based 18 scheme 49 after 9 interested 25 payment 42
Step II: aadhar 4 after 9 based 18 scheme 49 interested 25 payment 42
Step III: aadhar 4 after 9 based 18 interested 25 scheme 49 payment 42
Step IV: aadhar 4 after 9 based 18 interested 25 payment 42 scheme 49

Step IV is the last step of the above input as the desired arrangement is obtained. As per the rules followed in the above question find the appropriate step for the given input.

Input: people 100 India 24 added 9 country 12 democratic 16 eligible 19

36. How many steps will be required to complete the above input?
1) Five 2) Six 3) Eight
4) Nine 5) Four

37. In Step III what will be the position of 16 from the left?
1) Third 2) Seventh 3) Fifth
4) Sixth 5) Eighth

38. How many numbers exist between 9 and 24 in Step V?
1) Two 2) Three 3) Four
4) Six 5) Five

39. In Step IV, if 16 is related to 19 then which number or word will 9 be related to?
1) 24 2) people 3) 12
4) 100 5) eligible

40. Which of the following steps would be the last step but one?
1) VI 2) IV 3) II
4) V 5) VII

41. If the expressions, $R < P$ and $Q \geq T$ are true, then which of the following symbols should be placed in the blank spaces respectively in the given expression?
$R \_ P > N = T \_ Q$
1) $>, \geq$ 2) $\leq, <$ 3) $<, \leq$
4) $>, \geq$ 5) $\leq, \geq$

42. Which of the following expressions is not necessarily true, if the given expression is true?
$S > T \geq R > P = N \leq O > Q$
1) $S > P$ 2) $T > N$ 3) $T > P$
4) $P > Q$ 5) None of these

43. Which of the following symbols should be placed in the blank spaces respectively to make the expressions $T > O$, $R \leq O$ and $S < R$ definitely true?
$O \_ S \_ R \_ T$
1) $<, >, <$ 2) $<, <, \leq$ 3) $>, >, <$
4) $<, \leq, >$ 5) None of these

44. Which of the following expressions is true, if the given expression is true?
$B < U \leq E > V \geq L$
1) $L < E$ 2) $L > V$ 3) $L \geq E$
4) $U > V$ 5) None of these

45. In the following number sequence, how many such odd digits are there which are each divisible by its immediate preceding digit but not exactly divisible by its immediate succeeding digit?
3 9 4 2 6 5 3 1 2 2 8 3 1
1) One 2) Three 3) Four
4) None 5) Two

Directions (Q. 46-50): Study the following information carefully and answer the given questions.

In BRICS summit the PM of each country is denoted by letters A, B, C, D and E. They are sitting around a circular table for dinner, but not in the same order. The PM of China is sitting second to the right of B. The PM of Russia is sitting second to the right of the PM of SA. Neither A nor E is the PM of Brazil or Russia. C is not the PM of India, who is sitting on the immediate left of the PM of Russia. The PM of China is sitting second to the left of D. C and E are immediate neighbours of each other.

46. Who is the PM of SA?
1) E 2) B 3) Either A or D
4) A 5) Can't be determined

47. What is the position of the PM of India with respect to E?
1) Immediate left 2) Second to the right
3) Second to the left 4) Immediate right
5) Can't be determined

48. If A becomes the PM of Brazil, then who will become the PM of SA(The two countries interchange their PMs)?
1) D 2) C
3) Either D or B 4) Can't be determined
5) None of these

49. How many persons are sitting between B and C, if we start counting from B in clockwise direction?
1) One 2) None 3) Two
4) Three 5) Four

50. In which of these pairs is the first PM not sitting on the immediate left of the second one?
1) EA 2) DB 3) CE
4) AD 5) CB

Directions (Q. 51-55): Study the following information carefully and answer the given questions.

Seven friends P, Q, R, S, T, U and V study in Class X in three different sections A, B and C.

Not less than two friends study in one section.

All of them have a different favourite subject—Social Science, Physics, History, Mathematics, English, Biology and Chemistry.

Each of them has a favourite sport – Cricket, Hockey, Football, Basketball, Tennis, Volleyball and Table Tennis.

T's favourite subject is Chemistry and plays Table Tennis.

Q and V study in the A section. Q's favourite subject is History. Neither Tennis nor Volleyball is his favourite game.

The one whose favourite game is Football has Physics as his favourite subject and is in Section B only with R.

P's favourite subject is Social Science. He plays Cricket and studies only with U.

R studies Mathematics and V studies Biology. U plays Basketball.

The one whose favourite subject is Maths doesn't play Volleyball.

51. Who plays Tennis?
1) P 2) R 3) T
4) U 5) V

52. Who among the following study in Section B?
1) RP 2) UT 3) RS
4) TS 5) PS

53. How many friends study in Section A?
1) Four 2) Three 3) Two
4) One 5) None of these

54. Who among the following plays Hockey?
1) P 2) Q 3) R
4) S 5) T

55. Which of the following pairs of games is not played by students of the same section?
1) Cricket and Basketball 2) Hockey and Tennis
3) Tennis and Football 4) Hockey and Volleyball
5) Table Tennis and Volleyball

Directions (Q. 56-60): Study the following information carefully to answer the given questions.

In a certain code language 'weather is so cool' is written as 'la pa ma se', 'so are we going' is written as 'ma ne ta ra', 'as going cool' is written as 'pa ne he', 'is weather hot' is written as 'la se ka', 'desert are hot' is written as 'ka te ra' and 'mountains are cool' is written as 'pa ra ha'.

56. What is the code for 'mountains'?
1) pa 2) ra 3) pa or ha
4) ha 5) Can't be determined

57. What is the code for 'cool'?
1) pa 2) la 3) na
4) ra 5) None of these

58. What is the code for 'going'?
1) ne 2) la 3) ka
4) se 5) ma

59. What is the code for 'going hot desert'?
1) ne ka la 2) ka te se 3) ka te ne
4) ka ta na 5) None of these

60. What will be the code for 'so desert'?
1) ma ta 2) se te 3) ma se
4) te ne 5) None of these

Directions (Q. 61-65): In each question below are given three statements followed by two conclusions numbered I and II. You have to take the given statements to be true even if they seem to be at variance with commonly known facts. Read all the conclusions and then decide which of the given conclusions logically follows from the given statements, disregarding commonly known facts. Give answer

1) if only conclusion I follows.
2) if only conclusion II follows.
3) if either conclusion I or II follows.
4) if neither conclusion I nor II follows.
5) if both conclusions I and II follow.

(61-62):

Statements: Only medicines are tablets.
Most tablets are tonic.
Many tablets are bitter.

61. **Conclusions:** **I.** Many tonics are medicines.
II. Many bitter are medicines.

62. **Conclusions:** **I.** Only tonics being tablets is a possibility.
II. Only tonics being bitter is a possibility.

63. **Statements:** A few towns are cities.
Only cities are villages.
No city is cool.
Conclusions: **I.** No village is cool.
II. Only villages being cool is a possibility.

(64-65):

64. **Statements:** Some red are colours.
No red is a paint.
All colours are black.
Conclusions: **I.** Some colours are not paints.
II. All red being black is a possibility.

65. **Conclusions:** **I.** Some black being paints is a possibility.
II. All paints being black is a possibility.

Test-III
Quantitative Aptitude

66. 5 persons are chosen at random from a group of 4 men, 3 women and 5 children. The probability that exactly 3 of them are children is
1) $\frac{36}{48}$ 2) $\frac{35}{132}$ 3) $\frac{34}{139}$
4) $\frac{35}{221}$ 5) $\frac{37}{135}$

67. There are two mixtures in which milk and water are in the ratio of 2 : 3 and 3 : 7 respectively. In what ratio should the two mixtures be mixed to form a new mixture in which the ratio of milk to water is 4 : 7?
1) 7 : 4 2) 7 : 3 3) 7 : 2
4) 3 : 8 5) None of these

68. A money lender finds that due to a fall in the rate of interest from 13% to $12\frac{1}{2}\%$ his yearly income has reduced by 104. What is his capital?
1) 10400 2) 20800 3) 10800
4) 20400 5) None of these

69. The traffic lights at three different road crossings change after every 48 seconds, 72 seconds and 108 seconds respectively. If they all change simultaneously at 8 : 20 hours then at what time will they again change simultaneously?
1) 8 : 27 min 12 sec
2) 8 : 28 min 12 sec
3) 8 : 30 min 12 sec
4) 8 : 29 min 12 sec
5) None of these

70. An aeroplane started 30 minutes later than the scheduled time from a place 1800 km away from its destination. To reach the destination at the scheduled time the pilot increased the speed by 300 kmph. What was the speed of the aeroplane in kilometre per hour during the entire journey?
1) 1300 km/h 2) 1200 km/h 3) 1250 km/h
4) 1320 km/h 5) 1420 km/h

71. There is an equilateral triangle of which each side is 2m. With all three corners as centres, circles of radius 1m each are described. Calculate the area common to all the circles and triangles.
1) 1.57m^2 2) 15.7m^2 3) 0.157m^2
4) 1.67m^2 5) None of these

72. What sum of money at compound interest will amount to 2249.52 in 3 years, if the rate of interest is 3% for the first year, 4% for the second year and 5% for the third year?
1) 4000 2) 5000 3) 3080
4) 2000 5) 2530

73. Three partners altogether invested 114000 in a business. At the end of the year, the first partner got 337.50, the second partner got 1125 and the third partner got 675 as profit. What is the ratio of their investments?
1) 3 : 10 : 6 2) 10 : 3 : 6 3) 6 : 10 : 3
4) 6 : 3 : 10 5) None of these

74. A box contains 4 white balls, 3 black balls and 9 red balls. In how many ways can 4 balls be drawn from the box, if at least one white ball is to be included in a draw?
1) 1325 2) 1421 3) 325
4) 428 5) 912

75. The area of a rectangle is equal to the area of the circle whose radius is 21 cm. If the length and the breadth of the rectangle are in the ratio of 14 : 11, what is its perimeter?
1) 142 cm 2) 140 cm 3) 132 cm
4) 136 cm 5) 150 cm

Directions (Q. 76-80): In each question below equations are given, find the relation between x and y and mark your answer:
1) if x = y
2) if x > y
3) if x < y
4) if x ≥ y
5) if x ≤ y

76. $\frac{3}{4}\times\frac{7}{6}x=\frac{12}{15}\times\frac{25}{24}y$

77. $\frac{42}{33}\times\frac{12}{7}x=\frac{18}{7}\times\frac{28}{27}y$

78. (i) $x+y=16$
(ii) $x^2+y^2+xy=192$

79. (i) $x^2-8x+16=0$
(ii) $y^2-7y+12=0$

80. (i) $x^2-10x+24=0$
(ii) $y^2-12x+36=0$

Directions (Q. 81-85): In each of the following questions a number series is given. A number in the series is represented by x. You have to find out the number in the place of x and use this number of find ut the value in the place of question mark (?) in the equation following the series.

81. 23 30 x 53 69 88 110
$x^2-500=?$
1) 1000 2) 1100 3) 1200
4) 1300 5) 1400

82. 16 21 30 45 x 101
$x+12=?\div 4$
1) 320 2) 325 3) 330
4) 340 5) 350

83. 15 35 75 x 315 635
$x\div 30=?$

1) $4\frac{1}{3}$ 2) $5\frac{1}{2}$ 3) $4\frac{1}{2}$
4) $5\frac{1}{3}$ 5) $5\frac{1}{6}$

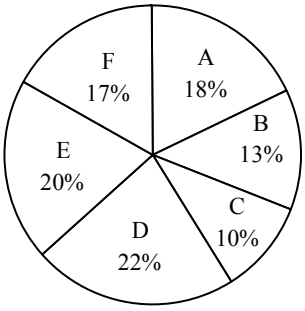
84. 576 24 2.25 1.5 1.4641 x
x × 4.5 = ?
1) 4.455 2) 4.545 3) 5.445
4) 4.554 5) None of these

85. x $\frac{3}{10}$ $\frac{1}{5}$ $\frac{1}{10}$ $\frac{1}{15}$ $\frac{1}{30}$
$x+\frac{2}{5}=?$
1) 1 2) $\frac{4}{5}$ 3) $\frac{3}{5}$
4) $\frac{2}{5}$ 5) None of these

Directions (Q. 86-90): Study the following information carefully and answer the questions given below:

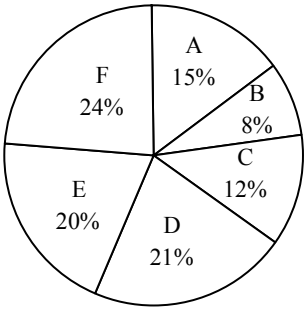
Pie-chart-I shows the percentage distribution of students who appeared in an examination from six different schools and pie-chart-II shows the percentage distribution of students who passed from these schools.

Pie-chart-I



Total students appeared = 9500

Pie-chart-II



Total students passed = 2400

86. What is the difference between the number of students appeared from School A and those appeared from School D?
1) 320 2) 340 3) 360
4) 380 5) 400

87. How many students passed from School B and School F together?
1) 760 2) 768 3) 774
4) 784 5) 788

88. How many students failed from School C?
1) 662 2) 664 3) 666
4) 668 5) 672

89. What is the difference between the total number of failed and passed students from School D?
1) 1012 2) 1048 3) 1064
4) 1078 5) 1082

90. Total number of failed students from School E is approximately what percentage of the total number of appeared students from all six schools together?
1) 15% 2) 18% 3) 21%
4) 24% 5) 27%

Directions (Q. 91-95): What should come in place of the question mark (?) in the following questions?

91. $18.5 \times 22.5 \times ? = 5161.5$
1) 13.5 2) 11.4 3) 16.5
4) 12.4 5) None of these

92. $(9)^2 + (12)^2 = (?)^2$
1) 21 2) 15 3) 25
4) 18 5) None of these

93. $(23)^2 = ?$
1) 12167 2) 17576 3) 2197
4) 5832 5) None of these

94. $15 \div 5 \div 5 = ?$
1) 1 2) 15 3) 0
4) 3 5) None of these

95. $18^{1.3} \times 18^{4.4} = 18^{?}$
1) 3.1 2) 4 3) 5.7
4) 6 5) None of these

Directions (Q. 96-100): What approximate value should come in place of the question mark (?) in the following questions? (You are not expected to calculate the exact value.)

96. $32.156 \times 41.998 \times 24.053 = ?$
1) 30418 2) 28625 3) 26544
4) 32483 5) 39623

97. $(85.05)^2 = ?$
1) 7200 2) 6400 3) 7800
4) 7700 5) 6900

98. $8989 \div 45 = ?$
1) 150 2) 200 3) 250
4) 300 5) 100

99. $12.999 + 18.956 + 284.005 = ?$
1) 396 2) 301 3) 316
4) 338 5) 361

100. $\sqrt{7550} = ?$
1) 94 2) 78 3) 64
4) 70 5) 87

Answers and explanations

1. 3 2. 3 3. 4 4. 2 5. 1
6. 3 7. 2 8. 2 9. 4
10. 2; opposite
11. 3; opposite
12. 1; same
13. 4; same
14. 4; same
15. 3; opposite

(16-20): BEDAFC

16. 1 17. 4 18. 2 19. 5 20. 3
21. 4 22. 1 23. 3 24. 1 25. 4
26. 2 27. 5 28. 2 29. 1 30. 5

31. 2;

32. 4; RAIL, LIAR, RIAL, LAIR, LIRA

(33-35):

P > Q ... (i)
O > M > N ... (ii)
_ > _ > R ... (iii)
_ > Q ... (iv)
Combining these, we get
P > Q > R > O > M > N

33. 1
34. 5
35. 4

(36-40): The machine rearranges the words in alphabetical order one by one. The numbers remain tagged with their preceding word.

Input : people 100 India 24 added 9 country 12 democratic 16 eligible 19
Step I: added 9 people 100 India 24 country 12 democratic 16 eligible 19
Step II: added 9 country 12 people 100 India 24 democratic 16 eligible 19
Step III: added 9 country 12 democratic 16 people 100 India 24 eligible 19
Step IV: added 9 country 12 democratic 16 eligible 19 people 100 India 24
Step V: added 9 country 12 democratic 16 eligible 19 India 24 people 100

36. 1 37. 4 38. 2
39. 3 40. 2

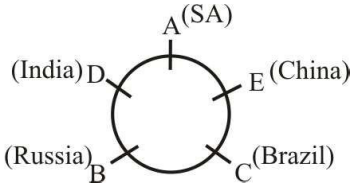
41. 3; **Check the options one by ones**
Option 1) R > P > N = T ≥ Q
This leads to R > P and T ≥ Q. Hence, does not follow.
Option 2) R ≤ P > N = T < Q
This leads to R ≤ P and Q > T. Hence it is false and does not follow.
Option 3) R < P > N = T ≤ Q
This leads to R < P and Q ≥ T, which is true and hence follows.
Option 4) R > P > N = T ≥ Q
This leads to R > P and T ≥ Q, which is false and hence does not follow.
Option 5) R ≤ P > N = T ≥ Q
This leads to P ≥ R and T ≥ Q, which is false and hence does not follow.
Hence only option 3) is true.

42. 4; **Given expression:**
S > T ≥ R > P = N ≤ O > Q
Thus, S > P is true, hence 1) does not follow.
Again, T > N is true and hence 2) does not follow.
And, T > P is true and hence 3) does not follow.
We can't compare P and Q. Hence option 4) follows.

43. 5; **Check options one by one:**
1) O < S > R < T
Thus T and O can't be compared. Hence does not follow.
2) O < S < R ≤ T
Thus, T > O. But R > O. Hence does not follow.
3) O > S > R < T
Again, T and O can't be compared. Hence does not follow.
4) O < S ≤ R > T
T and O can't be compared. Hence, does not follow.

44. 1
45. 1; 394

(46-50):



46. 4 47. 2 48. 2 49. 4 50. 5

(51-55): From the given statement we can draw the following chart:

Friend	Favourite subject	Favourite sport	Section
P	Social Science	Cricket	C
Q	History	Hockey	A
R	Mathematics	Tennis	B
S	Physics	Football	B
T	Chemistry	Table Tennis	A
U	English	Basketball	C
V	Biology	Volleyball	A

51. 2 52. 3 53. 2 54. 2 55. 2

(56-60):

weather is so cool → la pa ma se ... (i)
so are we going → ma ne ta ra ... (ii)
as going cool → pa ne he ... (iii)
is weather hot → la se ka ... (iv)
desert are hot → ka te ra ... (v)
mountains are cool → pa ra ha ... (vi)
From (i) and (ii), so → ma ... (vii)
From (i), (iii) and (vi), cool → pa ... (viii)
From (ii), (v) and (vi), are → ra ... (ix)
From (ii) and (iii), going → ne ... (x)
From (iii), (vi) and (x), as → he ... (xi)
From (iv) and (v), hot → ka ... (xii)
From (v), (ix) and (xii), desert → te
From (vi), (viii) and (ix), mountains → ha
From (i) and (iv), weather/is → la/se
From (ii), (vii), (ix) and (x), we → ta

56. 4 57. 1
58. 1 59. 3

60. 5; ma te

61. 4; Only medicines are tablets = All tablets are medicines (A) → conversion → Some medicines are tablets (I) + Most tablets are tonics (I) = I + I = No conclusion. Hence I does not follow. Similarly, II also does not follow.

62. 5; Since there is no negative statement, the possibilities in I and II exist.

63. 1; Only cities are villages → conversion → All villages are cities (A) + No city is cool (E) = A + E = E = No village is cool. Hence conclusion I follows. But conclusion II does not follow.

64. 5; Some red are colours (I) + All colours are black (A) = I + A = I = Some red are black. Hence, conclusion II follows. Again, Some red are colours (I) → conversion → Some colours are red (I) + No red is a paint (E) = I + E = O = Some colours are not paints. Hence, conclusion I follows.

65. 5; Some red are colours + All colours are black = I + A = I = Some red are black → conversion → Some black are red (I) + No red is a paint = I + E = O = Some black are not paints. Thus, both I and II are possible.

66. 2; n(S) = Number of ways of selecting 5 persons out of

$$12 = {}^{12}C_5 = \frac{12}{5!7!} = 792$$

n(E) = Number of ways of selecting 3 children out of 5, and 2 persons out of (4 + 3 =) 7 persons =

$${}^5C_3 \times {}^7C_2 = \frac{\lfloor 5}{\lfloor 3 \lfloor 2} \times \frac{\lfloor 7}{\lfloor 5 \lfloor 2} = 210$$

$$\therefore P(E) = \frac{n(E)}{n(S)} = \frac{210}{792} = \frac{35}{132}$$

67. 1; Let the two mixture be mixed in the ratio x : y.

Then, in the first mixture, milk = $\frac{2x}{5}$ and water = $\frac{3x}{5}$

In the second mixture, milk = $\frac{3y}{10}$ and water = $\frac{7y}{10}$

Now, we have, $\frac{2x}{5} + \frac{3y}{10} : \frac{3x}{5} + \frac{7y}{10} : \frac{4}{7}$

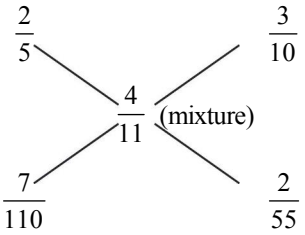
or, $\frac{4x + 3y}{6x + 7y} = \frac{4}{7}$

or, $28x + 21y = 24x + 28y$
or, $4x = 7y$

$\therefore \frac{x}{y} = \frac{7}{4} = 7 : 4$

By Method of Alligation: We can apply alligation rule over the fractional values of either milk or water, let us consider fractional values of milk.

1st mixture : 2nd mixture



Therefore they should be mixed in the ratio

$$\frac{4}{110} : \frac{2}{55} = \frac{7}{110} \times \frac{55}{2} = \frac{7}{4} = 7 : 4$$

Note: You can slove this through taking the factional values of water also. Try it youself.

68. 2; Let the capital be x.

Then, $\frac{x \times 1 \times 13}{100} - \frac{x \times 25 \times 1}{2 \times 100} = 104$

or, $\frac{x}{100}\left(13 - \frac{25}{2}\right) = 104$

or, $\frac{x}{100} \times \frac{1}{2} = 104$

$\therefore x = 104 \times 200 = 20800$

69. 1; LCM of 48, 72, 108 = 432 seconds

So, $\frac{432}{60}$ = 7 minutes, 12 seconds.

Thus required time = 8 hrs 20 min + 7 min 12 sec = 8 : 27 : 12 seconds

70. 2; Let the time taken at normal speed be $(x + \frac{1}{2})$ hours.

Then time taken, when speed increases to 300 km/h, is x hours.

$$\text{So, } \frac{1800}{x} - \frac{1800}{\left(x+\frac{1}{2}\right)} = 300$$

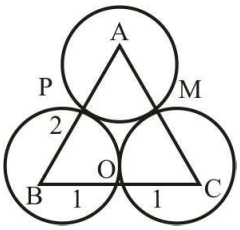
$$\text{or, } 6\left(x+\frac{1}{2}\right) - 6x = x\left(x+\frac{1}{2}\right)$$

or, $2x^2 + x - 6 = 0$
or, $2x^2 - 3x + 4x - 6 = 0$
or, $x(2x-3) + 2(2x-3) = 0$
or, $(x+2)(2x-3) = 0$
or, $(x+2) = 0$
$\therefore x = -2$ (neglect negative value)
And $(2x-3) = 0$

$$\therefore x = \frac{3}{2} \text{ hr}$$

$$\therefore \text{Speed} = \frac{1800}{\frac{3}{2}} \text{km/h} = 1200 \text{ km/h}$$

71. 1;



AB = BC = CA = 2m
Now, PA = PB = BO = OC = MC = AM = 1m
$\angle ABC = \angle ACB = \angle BAC = 60^\circ$

$$\text{Area } \Delta ABC = \frac{\sqrt{3}}{4}(\text{side})^2 = \frac{\sqrt{3}}{4} \times 2^2 = \sqrt{3} = 1.732 \text{m}^2$$

Area of ΔABC covered by all circles

$$= 3 \times \frac{\pi r^2}{360^\circ} \times 60^\circ = 3 \times \frac{\pi r^2}{6}$$

$$= \frac{3 \times 3.14 \times 1^2}{6} = 1.57 \text{m}^2$$

72. 4; Let money be x.

$$\text{Then, } x\left(1+\frac{3}{100}\right)\left(1+\frac{4}{100}\right)\left(1+\frac{5}{100}\right) = 2249$$

or, $x \times 1.03 \times 1.04 \times 1.05 = 2249.52$

$$\therefore x = \frac{2249.52}{1.03 \times 1.04 \times 1.05} = 2000$$

Direct Formula: By rule of fraction:

$$P = 2249.52 \times \frac{100}{103} \times \frac{100}{104} \times \frac{100}{105} = 2000$$

73. 1; HCF of 337.50, 1125 and 675 is 112.5. Then, ratio is

$$\frac{337.50}{112.5} : \frac{1125}{112.5} : \frac{675}{112.5} = 3 : 10 : 6$$

74. 1; Reqd number of ways

$$= \left({}^4C_1 \times {}^{12}C_3\right) + \left({}^4C_2 \times {}^{12}C_2\right) + \left({}^4C_3 \times {}^{12}C_1\right) + {}^4C_4$$

$$= \left(4 \times \frac{12 \times 11 \times 10}{6}\right) + \left(\frac{4 \times 3}{2} \times \frac{12 \times 11}{2}\right) + (4 \times 12) + 1$$

$$= (4 \times 22 \times 10) + (6 \times 6 \times 11) + 48 + 1$$
$$= 880 + 396 + 48 + 1 = 1325$$

75. 5; Area of circle $= \pi r^2 = \frac{22}{7} \times (21)^2$

Let the length be 14x and breadth be 11x.
Then,

$$\text{Area of rectangle} = 14x \times 11x = \frac{21}{7} \times (21)^2$$

$$\text{Now, } x^2 \times 14 \times 11 = \frac{22}{7} \times 21 \times 21$$

$$\text{or, } x^2 = \frac{22 \times 21 \times 21}{7 \times 14 \times 11} = 9$$

$\therefore x = 3$
Length of rectangle = 14 × 3 = 42 cm.
Breadth = 11 × 3 = 33 cm
$\therefore$ Perimeter = 2(42 + 33) = 2 × 75 = 150 cm

76. 3; $\frac{3}{4} \times \frac{7}{6} x = \frac{12}{15} \times \frac{25}{24} y$

or, $\frac{7}{8} x = \frac{5}{6} y$

or, $\frac{x}{y} = \frac{5}{6} \times \frac{8}{7}$

or, $\frac{x}{y} = \frac{20}{21} < 1$

$\therefore x < y$

77. 2; $\frac{42}{33} \times \frac{12}{7} x = \frac{18}{7} \times \frac{28}{27} y$

or, $\frac{24}{11} x = \frac{8}{3} y$

or, $\frac{x}{y}=\frac{8}{3}\times\frac{11}{24}$

or, $\frac{x}{y}=\frac{11}{9}>1$

$\therefore x > y$

78. 1; $x+y=16$

$(x+y)^2 = (16)^2$

$x^2+y^2+2xy=256$

But $x^2+y^2+xy=192$

On subtracting, $xy=64$

$(x-y)^2 = (x+y)^2-4xy$

$(x-y)^2 = 256-4\times64$

$(x-y)^2 = 256-256$

$(x-y)^2=0$

$x-y=0$

$\therefore x=y$

79. 4; (i) $x^2-8x+16=0$

$x^2-2\times4\times x+(4)^2=0$

$(x-4)^2 = 0$

$x=4$

(ii) $y^2-7y+12=0$

$y^2-3y-4y+12=0$

$y(y-3)-4(y-3)=0$

$(y-3)(y-4)=0$

$\therefore y=3$ or 4

But $x=4$

$\therefore x \geq y$

80. 5; (i) $x^2-10x+24=0$

$x^2-6x-4x+24=0$

$x(x-6)-4(x-6)=0$

$(x-6)(x-4)=0$

$\therefore x=6$ or 4

(ii) $y^2-12y+36=0$

$y^2-2\times6\times y+(6)^2=0$

$(y-6)^2 = 0$

$y=6$

$\therefore x \leq y$

81. 2; $23_{+7}\ \ 30_{+10}\ \ \boxed{40}\ \ x_{+13}\ \ 53_{+16}\ \ 69_{+19}\ \ 88_{+22}\ \ 110$

$\therefore x=30+10=40$

$\therefore x^2-500=(40)^2-500=1600-500=1100$

82. 1; 16, 21, 30, 45, x, 101

+5, +9, +15, +23, +33

+5, +6, +8, +10

$x=45+23=68$

$\therefore x+12=?\div4$

or, $68+12=\frac{?}{4}$

or, $80\times4=?$

$\therefore ?=320$

83. 5; $15_{\times2+5}\ \ 35_{\times2+5}\ \ 75_{\times2+5}\ \ \boxed{155}\ \ x_{\times2+5}\ \ 315_{\times2+5}\ \ 635$

$x=75\times2+5=155$

$x\div30=?$

or, $155\div30=?$

or, $?=\frac{155}{30}=\frac{31}{6}=5\frac{1}{6}$

84. 3; 576, 24, 2.25, 1.5, 1.4641, x

$\sqrt{576}$, $\sqrt{2.25}$, $\sqrt{1.4641}$

$x=\sqrt{1.4641}=1.21$

$?=x\times4.5=1.21\times4.5=5.445$

85. 1; x, $\frac{3}{10}$, $\frac{1}{5}$, $\frac{1}{10}$, $\frac{1}{15}$, $\frac{1}{30}$

$\boxtimes\frac{1}{2}$, $\boxtimes\frac{2}{3}$, $\boxtimes\frac{1}{2}$, $\boxtimes\frac{2}{3}$, $\boxtimes\frac{1}{2}$

$x\times\frac{1}{2}=\frac{3}{10}$

or, $x=\frac{3}{5}$

or, $?=x+\frac{2}{5}=\frac{3}{5}+\frac{2}{5}=\frac{5}{5}=1y$

86. 4; Reqd difference $=9500\times\frac{(22-18)}{100}=380$

87. 2; Total number of students passed from School B and F together

$=2400\times\frac{(8+24)}{100}$

$=24\times32=768$

88. 1; $\because C_{App}=9500\times\frac{10}{100}=950$

$C_{Pass}=2400\times\frac{12}{100}=288$

$\therefore$ Number of failed students $=950-288=662$

89. 5; $D_{App}=9500\times\frac{22}{100}=2090$

$D_{Pass}=2400\times\frac{21}{100}=504$

$\therefore D_{Fail}=2090-504=1586$

$\therefore$ Reqd difference $=1586-504=1082$

90. 1; $E_{Fail} = \left(9500 \times \frac{20}{100}\right) - \left(2400 \times \frac{20}{100}\right)$

$= 1900 - 480 = 1420$

$\therefore$ Total appeared students = 9500

$\therefore$ Reqd % $= \frac{1420}{9500} \times 100 = 14.94 \approx 15\%$

91. 4; $? = \frac{5161.5}{18.5 \times 22.5} = \frac{5161.5}{416.25} = 12.4$

92. 2; $? = \sqrt{81 + 144} = \sqrt{225} = 15$

93. 1; $? = (20 + 3)^3$

$= (20)^3 + (3)^3 + 3 \times 20 \times 3(20 + 3)$

$= 8000 + 27 + (180 \times 23) = 8027 + 4140 = 12167$

94. 5; $? = 15 \times \frac{1}{5} \times \frac{1}{5} = \frac{3}{5}$

95. 3

96. 4; $? = 32.156 \times 41.998 \times 24.053 = 32483.280$

$= 32483$ (approx)

97. 1

98. 2

99. 3

100. 5