

# STAFF SELECTION COMMISSION

## MULTI – TASKING STAFF RECRUITMENT – MODEL PAPER

No. of Questions: 150

Maximum Marks: 150

Time: 2 Hours

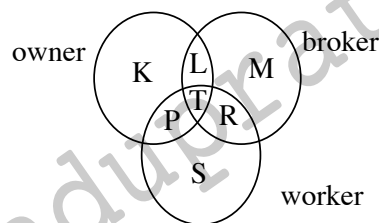
### GENERAL INTELLIGENCE

**Directions (Q.1 – 4):** In each of the following questions, select the related letter/ word/ figure/ number from the given alternatives.

- Teacher : Student : : Religious leader : ?  
1) Member                      2) Disciple                      3) Priest                      4) God
- 182 : ? : : 210 : 380  
1) 342                      2) 272                      3) 240                      4) 156
- ADHM : ZWSN : : CFJO : ?  
1) YVRM                      2) WSPK                      3) XUQL                      4) ZXVT
- Smoke : Pollution : : Battle : ?  
1) Victory                      2) Peace                      3) Treaty                      4) Destruction

**Directions (Q.5 – 8):** Find the odd word/letter/ number from the given alternatives.

- 1) Mizoram                      2) Sikkim                      3) Kohima                      4) Manipur
- 1) (117, 13)                      2) (162, 18)                      3) (171, 19)                      4) (304, 16)
- 1) ACDF                      2) TUOP                      3) HIVW                      4) FGJI
- 1) Krishna                      2) Cauvery                      3) Narmada                      4) Mahanadi
- The diagram given below represents owner, broker and worker. Identify the region which represents all the three i.e. owner, broker, worker:



- 1) L                      2) T                      3) P                      4) R
- A man walks 1 km towards East then turns to South and walks 5 kms. Again he turns to East and walks 2 kms. Then he turns North and walks 9 kms. How far is he from the starting point?  
1) 2 kms                      2) 3 kms                      3) 5 kms                      4) 9 kms
- Pointing to a boy Sunita said "He is the son of my grandfather's only son". How is the boy related to Sunita?  
1) Son                      2) Uncle                      3) Brother                      4) Grandfather
- If PASSPORT is coded as RCUURQTV then how will BOOKLET be coded?  
1) DQQMNVG                      2) DQQMNGV  
3) DRRNMGW                      4) None of these

13. What fraction comes next in the sequence?

$$\frac{1}{2}, \frac{2}{4}, \frac{5}{8}, \frac{7}{16}, \frac{9}{32}, \frac{11}{64}, ?$$

- 1)  $\frac{15}{72}$                       2)  $\frac{13}{128}$                       3)  $\frac{15}{125}$                       4)  $\frac{18}{144}$

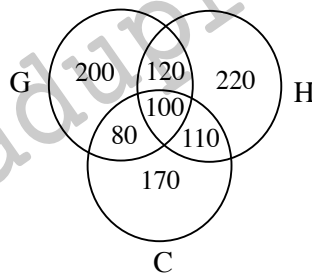
14. If Z = 52 and ACT = 48, then EAT will be equal to

- 1) 52                              2) 48                              3) 50                              4) 54

15. Find the character which is different from the rest three.

- 1) QPNK                      2) AZXU                      3) UTRN                      4) SRPM

16. A result of a survey of 1000 students with respect to their knowledge of History (H), Geography (G) and Civics (C) is given below:



What is the ratio of those who know all the three subjects to those who know only Civics?

- 1)  $\frac{1}{9}$                               2)  $\frac{1}{10}$                               3)  $\frac{5}{27}$                               4)  $\frac{10}{17}$

17. **Statements:** Some papers are pens.

All pencils are pens.

**Conclusions:** I. Some pens are pencils.

II. Some pens are papers.

- 1) Only I follows                      2) Only II follows  
3) Either I or II follows                      4) Both I and II follows

18. Choose the word from the following which cannot be formed by using letters in the word:

RECOMMENDATION

- 1) MEDICINE                      2) MEDIATE                      3) REMINDER                      4) COMMUNICATE

19. Arrange the following words in logical and meaningful order:

1. Poverty                      2. Population                      3. Death

4. Unemployment                      5. Disease

- 1) 2, 3, 4, 5, 1                      2) 3, 4, 2, 5, 1                      3) 2, 4, 1, 5, 3                      4) 1, 2, 3, 4, 5

**Directions (Q. 20 – 21):** Find the missing term in the series.

20. 125, 80, 45, 20, ?

- 1) 10                              2) 8                              3) 5                              4) 3

21. AYBZC, DWEXF, GUHVI, JSKTL, ?

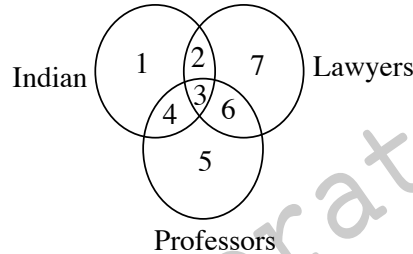
- 1) MQORN                      2) MQNRO                      3) NQMOR                      4) QMONR

22. From the given options choose the missing number.

3	4	5
6	8	10
216	512	?

- 1) 676                                      2) 625                                      3) 1100                                      4) 1000

23. Find out the number that shows those Indian Professors who are also lawyers?



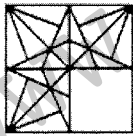
- 1) 2    2) 3    3) 4    4) 6

24. To satisfy the mathematical equation  $8 \times 2 + 3 - 5 = 21$ , which two signs need to be interchanged?

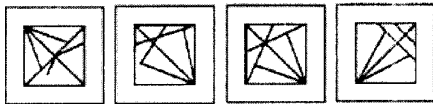
- 1) + and -                                      2)  $\times$  and +                                      3)  $\times$  and -                                      4) None

25. Identify the figure that will completes the pattern of the question figure?

Question figure:



Answer figures:



- 1)    2)    3)    4)

**QUANTITATIVE APTITUDE**

26. A fruit seller buys apples at the rate Rs.60/100. He spent 15% on transportation then find the selling price of 100 fruits to get 20% profit?

- 1) Rs.72    2) Rs.81.8    3) Rs.82.8    4) Rs.83.8

27. A man purchased 2 goats at Rs. 1008. He sells first goat at 20% loss and second goat at 44% profit. If the selling price of each goat is equal then find the cost price of goat which is sold at loss.

- 1) Rs.648    2) Rs.360    3) Rs.568    4) Rs.440

28. It takes 6 days for 3 women and 2 men working together to complete a work. 3 men would do the same work 5 days sooner than 9 women. How many times does the output of a man exceed that of a woman?

- 1) 3 times    2) 4 times    3) 5 times    4) 6 times

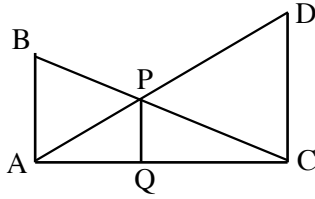
29. A student was asked to multiply a number by  $\frac{3}{2}$  but he divided that number by  $\frac{3}{2}$  His result was

10 less than the correct answer. The number was:

- 1) 10    2) 12    3) 15    4) 20

30. Rs.6,000 becomes Rs.7,200 in 4 years at a certain rate of simple interest. If the rate becomes 1.5 times of itself, the amount of the same principal in 5 years will be:  
 1) Rs.8,000                      2) Rs.8,250                      3) Rs.9,250                      4) Rs.9,000
31. At what rate of simple interest per annum will a sum become  $\frac{7}{4}$  of itself in 4 years?  
 1) 18%                      2)  $18\frac{1}{4}\%$                       3)  $18\frac{3}{4}\%$                       4)  $18\frac{1}{2}\%$
32. The average of nine consecutive numbers is 'n'. If the next two numbers are also included the new average will  
 1) increase by 2                      2) remain the same                      3) increase by 1.5                      4) increase by 1
33. If one pipe A can fill a tank in 20 minutes, then 5 pipes, each of 20% efficiency of A, can fill the tank in:  
 1) 8 min                      2) 100 min                      3) 20 min                      4) 25 min
34. The number, whose square is equal to the difference of the squares of 75.15 and 60.12 is:  
 1) 46.09                      2) 48.09                      3) 45.09                      4) 47.09
35. A dog is 50 of its own leaps behind a cat. The dog takes 5 leaps per minute to the cat's 4. If the dog and the cat cover 8 m and 5 m per leap respectively, what distance will the dog have to run before it catches the cat?  
 1) 600 m                      2) 700 m                      3) 800 m                      4) 1000 m
36. In the given figure, TU and VW intersect at point O. If  $\angle QOU = 90^\circ$  and  $a : b = 2 : 3$ , then find the value of c.
- 
- 1)  $48^\circ$                       2)  $54^\circ$                       3)  $113^\circ$                       4)  $126^\circ$
37. The average age of 9 students and their teacher is 16 years. The average age of the first four students is 19 years and that of the last five is 10 years. The teacher's age is:  
 1) 36 years                      2) 34 years                      3) 30 years                      4) 28 years
38. The sum of three numbers is 98. If the ratio of the first to the second is 2 : 3 and that of the second to the third is 5 : 8, then the second number is:  
 1) 49                      2) 48                      3) 30                      4) 20
39. Zinc and copper are in the ratio 5 : 3 in 400 gm of an alloy. How much of copper (in grams) should be added in the mixture to make the ratio 5 : 4?  
 1) 50                      2) 66                      3) 72                      4) 200
40. 5% of Nitya's income is equal to 15% of Ram's income. 10% of Ram's income is equal to 20% of Krishna's income. If the Krishna's income be Rs.2,000, then find the income of Nitya.  
 1) Rs.25,000                      2) Rs.12,000                      3) Rs.15,000                      4) Rs.20,000
41. The population of city Alwar is 120000. The population of males and females are increased by 12% and 9% respectively. If at the end of the year the population is 132750, then find the difference between the no. of males and females.  
 1) 8000                      2) 12000                      3) 10000                      4) 2750

42. In the given figure  $AB \parallel CD \parallel PQ$ ,  $AB = 12$  cm,  $CD = 18$  cm and  $AC = 6$  cm then the value of  $PQ$  is:



- 1)  $\frac{18}{5}$  cm                      2) 9 cm                      3)  $\frac{36}{5}$  cm                      4)  $\frac{14}{5}$  cm
3. Find the length of the string bound on a cylindrical tank whose base diameter and height are  $5\frac{1}{11}$  m and 48 cm respectively.  
The string makes exactly four complete turns round the cylinder, while its two ends touch the tank's top and bottom.
- 1) 80 cm                      2) 70 cm                      3) 60 cm                      4) 75 cm
44. If  $\frac{4P}{P^2 - 4P + 8} = \frac{1}{8}$ ,  $P \neq 0$  the value of  $P + \frac{4}{P}$  will be:
- 1) 34                      2) 37                      3) 35                      4) 36
45. If the angular diameter of the moon be 30, how far from the eye a coin of diameter 4.4 cm be kept to hide the moon?
- 1) 500 cm                      2) 504 cm                      3) 252 cm                      4) 300 cm
46. Pankaj standing at a point P is watching the top of a tower which makes an angle of elevation of  $30^\circ$ . Pankaj walks some distance towards the tower and then his angle of elevation of the top of the tower is  $60^\circ$ . If the height of the tower is 30 m, then find the distance Pankaj moves.
- 1)  $20\sqrt{3}$  m                      2)  $22\sqrt{3}$  m                      3) 22 m                      4) 20 m
47. If  $x = 2 + \sqrt{3}$ ,  $y = 2 - \sqrt{3}$ , then find the value of  $\frac{x^2 + y^2}{x^3 + y^3}$ ?
- 1)  $\frac{7}{26}$                       2)  $\frac{7}{19}$                       3)  $\frac{7}{38}$                       4)  $\frac{8}{52}$
48. If  $a + b + c = 2s$ , then find the value of  $(s - a)^3 + (s - b)^3 + 3(s - a)(s - b)c$
- 1)  $2c^2$                       2)  $c^2$                       3)  $c^3$                       4)  $c$
49. If  $x = 2 - 2^{1/3} + 2^{2/3}$ , then find the value of  $x^3 - 6x^2 + 18x + 26$ ?
- 1) 45                      2) 88                      3) 48                      4) 40
50. If  $\cot \theta (1 + \sin \theta) = 4m$  and  $\cot \theta (1 - \sin \theta) = 4n$  then  $(m^2 - n^2) = ?$
- 1)  $m^2 n^2$                       2)  $m^3 n^3$                       3)  $m^2 n$                       4)  $mn$

### ENGLISH LANGUAGE

**Direction:** In Question nos. 51 to 55 some part of the sentences have errors and some are correct. Find out which part of a sentence has an error. If a sentence is free from error, blacken the oval corresponding to (4) in the Answer Sheet.

51. Akshay Shahrukh's, 'The stories of maddening crowd' (1)/ have been read (2)/ by me. (3)/ No error (4).
52. Several people (1)/ saw the thief (2)/ to snatch my purse today. (3)/ No error (4).
53. Supposing if (1)/ you are arrested (2)/ what will you do? (3)/ No error (4).

54. Shalini and Sid are good friends (1)/ and we met (2)/ each other often. (3)/ No error (4).
55. I thought I would pass in the examination (1)/ although I did not answer (2)/ most of the questions correctly. (3)/ No error (4).

**Direction:** In Question nos. 56 to 60, sentences given with blanks to be filled in with an appropriate word(s). Four alternatives are suggested for each question. Choose the correct alternative out of the four.

56. After a lot of arguments, I brought her ..... my point of view.  
1) around                      2) round                      3) upto                      4) round to
57. I have been given a topic to write .....  
1) about                      2) on                      3) over                      4) upon
58. .... is the way to the R. K. Math?  
1) What                      2) Where                      3) How                      4) Which
59. Gayle often ..... hitting while in powerplay.  
1) keep                      2) goes on                      3) had been                      4) did
60. We must wait until our boss ..... those suggested corrections for the question paper.  
1) has given                      2) will be giving                      3) gives                      4) would give

**Direction:** In question nos.61 to 63, out of the four alternatives, choose the one which best expresses the meaning of the given word.

61. **Temerity**  
1) audacity                      2) sincerity                      3) confidence                      4) strength
62. **Affectation**  
1) boasting                      2) pretence                      3) pedantry                      4) euphemism
63. **Equanimity**  
1) temper                      2) composure                      3) affability                      4) humour

**Direction:** In question nos. 64 to 66, choose the word opposite in meaning to the given word.

64. **Culpable**  
1) Irresponsible                      2) Careless                      3) Blameless                      4) Defendable
65. **Infructuous**  
1) Devious                      2) Straight                      3) Remote                      4) Profitable
66. **Tentative**  
1) Immediate                      2) Urgent                      3) Developed                      4) Final

**Direction :** In question nos. 67 to 68, four words are given in each question, out of which only one word is spelt correctly. Find the word spelt correct and mark your answer in the Answer Sheet.

67. 1) possesion                      2) reflaxively                      3) auxiliaries                      4) persistance
68. 1) conducive                      2) parception                      3) quartors                      4) subodinate

**Direction:** In Question nos. 69 to 73, four alternatives are given for the underlined Idiom/ Phrase. Choose the alternative which best expresses the meaning of the Idiom /Phrase and mark it in the Answer Sheet.

69. The principal of this college is a little hard of hearing.  
1) Inaudible                      2) Disinterested                      3) Deaf                      4) Insensitive

70. Being a celebrity everyone wants to have his cake and eat it.
- 1) Enjoy forever  
2) Have it both ways  
3) Run away from responsibility  
4) Ask greedily for service
71. The dispute regarding the border infringement between these two nations came to a head this summer.
- 1) Became worse  
2) dealt very quickly  
3) accepted unconditionally  
4) imposed vehemently
72. When IPL starts, everything boils down to cricket.
- 1) ceases to something  
2) prohibit doing something  
3) something becoming very important  
4) exert difference
73. Shyam did not tell anything after the accident, he blocked out.
- 1) became averse  
2) ran away  
3) lost consciousness temporarily  
4) became violent
- Direction:** In Question nos. 74 to 82, a sentence/ a part of the sentence is underlined. Below are given alternatives to the underlined/ BOLD part at (1), (2), (3) which may improve the sentence. Choose the correct alternative. In case no improvement is needed your answer is (4). Mark your answer in the Answer Sheet.
74. As poor as they are they never refuse to donate, they have for any noble cause.
- 1) Becoming poor  
2) Having been poor  
3) Poor as they are  
4) No improvement
75. I sent a word to Monika that I would be coming office late.
- 1) sent word  
2) had sent a word  
3) sent words  
4) No correction required
76. There are so many houses in Delhi for letting.
- 1) for letting out  
2) to rent out  
3) to let  
4) No correction required
77. Dhoni is one of subtlest cricketer that ever played behind the stumps.
- 1) the subtle cricketer  
2) one of the subtlest cricketers  
3) one of the subtletst  
4) No correction required
78. Was his advice ever any good to you?
- 1) a good for  
2) a good about  
3) about good to  
4) No correction required
79. SBI has still studied the matter and is still collecting reports regarding the scam.
- 1) is still studying  
2) has studied still  
3) still has studied  
4) No improvement
80. We cannot ignore the contribution of M.S. for bringing about change in our winning streak.
- 1) for bringing in  
2) in bringing about  
3) in bringing of  
4) No improvement

81. No sooner he ordered for food than the waiter was ready with it.  
1) No sooner had he order                      2) He ordered no sooner  
3) No sooner did he order                      4) No improvement
82. The coach was quite sure that none of them were aware of the rule of the game.  
1) were aware from              2) had aware of              3) was aware of              4) No improvement

**Direction:** In Question nos. 83 to 90, in the following question, out of the four alternatives, choose the one which can be substituted for the given sentence.

83. A very large, upright piece of stone.  
1) monument              2) momentous              3) monolith              4) modest
84. Making insulting, unfair, and damaging remarks about one's opponents  
1) mouth-eating              2) mud-slinging              3) back-bitching              4) mollifying
85. A person who writes beautiful writing  
1) Curator              2) Calligraphist              3) Sculptor              4) Usurer
86. One who lends money at very high rates  
1) Usurer              2) Anchor              3) Lender              4) Almanac
87. A home sickness and memories of the past  
1) Nostalgia              2) Platonic              3) Interregnum              4) Facsimile
88. Animals which live in a flock  
1) Fauna              2) Flora              3) Gregarious              4) Mammal
89. A place for the sick to recover health  
1) Reservoir              2) Sanatorium              3) Lair              4) Den
90. Murder of king or queen  
1) Parricide              2) Regicide              3) Suicide              4) Sororicide

**Directions (Q.91 – 100):** In these questions you have two brief passages with five questions following the passage. Read the passage carefully and choose the best answer to each question out of the four alternatives.

**PASSAGE – I**

India has always been an utmost inspiration for the world at large for her fabulous wealth, both material and economic prosperity as well as her spiritual excellence. It brought here both traders and invaders along with preachers and seekers in search of truth and salvation. All of them came through land routes by undertaking long and hazardous journeys which put a lot of stress and strain on their physique and nerves. Thus, the troops of Alexander mutinied and refused to march beyond Beas because of their weariness and fatigue in fighting and homesickness. They had, therefore, to be perforce despatched back. Many invading tribes like Kushans, Huns and Sakas in the ancient era and the Turks and Mughals during the medieval age, however, chose to make this land their own home and absorbed themselves in the stream of her life. They attempted their best to bring more and more lustre to her glory and enriched her culture, heritage and tradition.

91. The passage speaks voluably of .....
- 1) India's past glory                              2) invaders who attacked India  
3) India's fabulous wealth                      4) India as a home for foreigners



92. What in India attracted traders, invaders and preachers?

- 1) Its material and economic prosperity
- 2) Its material and spiritual wealth
- 3) The knowledge of truth and salvation
- 4) Its fabulous wealth and glory

93. What exerted the foreigners who came to India?

- 1) India's immense riches
- 2) India's land routes
- 3) Tiresome and risky journeys to India
- 4) Fighting with natives

94. What forced Alexander to move back to his country?

- 1) The resistance of the natives
- 2) The revolt of his armymen
- 3) Sickness in his troops
- 4) Lack of fighting spirit in his people

95. What good did Mughals bring to this country?

- 1) They absorbed themselves into the stream of her life.
- 2) They made India their homeland.
- 3) They enriched its glory.
- 4) They increased its wealth.

#### PASSAGE – II

In most Western countries, it is required that every young man, when his education is complete, shall give three, four or five years to military service. He goes into barracks, is regimented and drilled, makes a unit in the standing army and passes out usually when his term is ended, becomes an efficient soldier, to remain for the rest of his life ready at any moment to join in the armed defence of his country.

96. In the passage, the author opines that

- 1) military training is more important than general education.
- 2) military training should precede college education since it builds up one's mental and physical abilities.
- 3) military training is as important as general training.
- 4) military training must be included in the curricula of schools and colleges

97. Military training is as important as mental training because

- 1) otherwise young men are useless.
- 2) it is good that every scholar should also be an efficient soldier and be available for the country's defence.
- 3) one gets a chance to live in barracks.
- 4) war has become a daily affair.

98. Every young man has to undergo military training because he can
- 1) get a job after such training
  - 2) supplement his general education according to his wish
  - 3) join the army whenever his country needs to be defended in war
  - 4) learn and practice discipline
99. Talking about turbulent Eastern, countries like India, military training of students should be made compulsory
- 1) to fight the anti-social elements in every village or town
  - 2) to make youth serve the nation during times of war and peace
  - 3) as it can solve the unemployment problem by providing more jobs
  - 4) to repress communal riots
100. The author, writing in the early part of twentieth century, does not seem to talk about the need of military training for women because
- 1) women's education was a new thing then.
  - 2) she thinks women are not physically strong enough to undergo military training.
  - 3) women taking part in military service is only a recent phenomenon.
  - 4) according to her, women should remain indoors.

**GENERAL AWARENESS**

101. Which of the following countries has launched a major expansion of the Suez Canal?
- 1) Syria
  - 2) Egypt
  - 3) Lebanon
  - 4) None of the above
102. Permanent Revenue Settlement of Bengal was introduced by
- 1) Clive
  - 2) Hastings
  - 3) Wellesley
  - 4) Cornwallis
103. Where was the first cotton Mill in India established?
- 1) Surat
  - 2) Bombay
  - 3) Ahmedabad
  - 4) Coimbatore
104. World Autism Awareness Day is observed on which of the following dates?
- 1) April 2<sup>nd</sup>
  - 2) March 30<sup>th</sup>
  - 3) April 3<sup>rd</sup>
  - 4) March 31<sup>st</sup>
105. Which one of the following dynasties built the Khajuraho temple?
- 1) Chandellas
  - 2) Chauhans
  - 3) Paramaras
  - 4) Tomars
106. The objective resolution was unanimously adopted by the constituent assembly on-
- 1) 1947, January 22<sup>nd</sup>
  - 2) 1946, November 26<sup>th</sup>
  - 3) 1948, October 1<sup>st</sup>
  - 4) None of these
107. Where is the oldest working refinery?
- 1) Bahamas
  - 2) Basra
  - 3) Digboi
  - 4) Texas
108. Who was the first female to win the top pritzker architecture prize?
- 1) Zaha Hadid
  - 2) Alejandro Aravena
  - 3) Ryue Nishizawa
  - 4) Kazuyo Sejima

109. Which are the two states (other than UP) having the highest representation in Lok Sabha?
- 1) Bihar and Madhya Pradesh
  - 2) Maharashtra and West Bengal
  - 3) Karnataka and Andhra Pradesh
  - 4) Tamilnadu and Rajasthan
110. The equator cuts through which of the following Islands?
- 1) Madagascar
  - 2) Tasmania
  - 3) Java
  - 4) Borneo
111. Which theory is generally included under micro economics?
- 1) Price Theory
  - 2) Income Theory
  - 3) Employment Theory
  - 4) None of the above
112. The Preamble of the Indian Constitution has been taken from-
- 1) British format constitution
  - 2) Irish P-24 constitution
  - 3) American constitution
  - 4) French constitution
113. The foreign traveller who visited India during the Mughal period and who left us an expert's description of the peacock Throne was-
- 1) Geronimo verroneo
  - 2) Omrah Danishmand Khan
  - 3) Travernier
  - 4) Austin of Bordeaux
114. Singhbhum District is famous for-
- 1) Coal
  - 2) Iron
  - 3) Copper
  - 4) Aluminium
115. Once elected for a full term, a judge serves on the international court of Justice for-
- 1) Five years
  - 2) Six years
  - 3) Nine years
  - 4) Ten years
116. When ice melts in a beaker of water, the level of water in beaker till-
- 1) increases
  - 2) decreases
  - 3) remains same
  - 4) first increases then decreases
117. What does SDLC mean in Networking protocol?
- 1) Software Data Link Control
  - 2) Synchronous Data Link Control
  - 3) Software Development Life Cycle
  - 4) Synchronous Data Development Cycle
118. A sprayer works on the principle of-
- 1) Newton
  - 2) Archimedes
  - 3) Boyle
  - 4) Pascal
119. The function of protem speaker is to-
- 1) conduct the proceeding of the house in the absence of speaker
  - 2) officiate as speaker when a speaker is unlikely to be elected
  - 3) swearing in members and hold charge till a regular speaker is elected
  - 4) check if the election certificates of members are in order

120. Cultivation of wheat requires-
- 1) moderate temperature and heavy rains
  - 2) humid temperature and heavy rains
  - 3) humid temperature and moderate rains
  - 4) moderate temperature and moderate rains
121. Which one of the following states produces the maximum manganese in India?
- 1) Madhya Pradesh
  - 2) Andhra Pradesh
  - 3) Uttar Pradesh
  - 4) Orissa
122. New Britain and New Ireland are parts of-
- 1) USA
  - 2) Canada
  - 3) Australia
  - 4) Papua New Guinea
123. Under the Constitution, the power to issue a Writ of Habeas Corpus is vested in-
- 1) High court alone
  - 2) Supreme court alone
  - 3) Both Supreme court and High court
  - 4) District court & all other courts above them
124. Chemical which causes bone cancer and degeneration of tissue is-
- 1) I - 131
  - 2) Ca - 40
  - 3) I - 127
  - 4) Sr - 90
125. Which of the following states was first to adopt the Panchayati Raj?
- 1) Andhra Pradesh
  - 2) Bihar
  - 3) Gujarat
  - 4) Rajasthan
126. Megaspore is equivalent to
- 1) Embryo sac
  - 2) Fruit
  - 3) Nucellus
  - 4) Ovule
127. Daranghati Wildlife Sanctuary is in-
- 1) Solan
  - 2) Shimla
  - 3) Sirmour
  - 4) Kullu
128. Chernobyl disaster was caused by a
- 1) Nuclear weapon accident
  - 2) Nuclear waste leak
  - 3) Nuclear reactor accident
  - 4) Nuclear test
129. Who has given scarcity definition of economics ?
- 1) Adam Smith
  - 2) Marshall
  - 3) Robbins
  - 4) Robertson
130. Diastase takes part in digestion of .....
- 1) Protein
  - 2) Starch
  - 3) Amino acids
  - 4) Fat
131. The most convenient colour combination that can be used for vehicles running day and night is-
- 1) orange and blue
  - 2) white and black
  - 3) red and green
  - 4) yellow and blue
132. Basement membrane is derived from .....
- 1) Ectoderm
  - 2) Endoderm
  - 3) Epidermis
  - 4) Epidermis and connective tissue

133. The logo of eco-mark in India is,  
1) Rising Sun                      2) Earthen Pot                      3) Lion                      4) Wheatear
134. A small mesophytic twig with green leaves is dipped into water in a big beaker under sunlight. It demonstrates-  
1) Photosynthesis                      2) Respiration                      3) Transpiration                      4) None of these
135. The Phylogenetic system of classification was put forth by  
1) Theophrastus  
2) George Bentham and Joseph Dalton Hooker  
3) Carolus Linnaeus  
4) Adolf Engler and Karl Prantl
136. Which among the following Five Year Plans could not start on its due time?  
1) 12<sup>th</sup>                      2) 11<sup>th</sup>                      3) 9<sup>th</sup>                      4) 8<sup>th</sup>
137. The M.K.S unit of charge is .....  
1) Volt                      2) Ampere                      3) Watt                      4) Coulomb
138. The anti knock agent added to unleaded petrol is  
1) Tetraethyl lead                      2) Tetramethyl lead  
3) Dibromoethane                      4) Methyl tertiary butyl ether
139. The first shore based, modern integrated steel plant in India is at .....  
1) Salem                      2) Haldia                      3) Mangalore                      4) Vishakhapatnam
140. Normal adult male has .....  
1) 10 gm haemoglobin/100 gm blood  
2) 14 gm haemoglobin/100 gm blood  
3) 18 gm haemoglobin/100 gm blood  
4) 24 gm haemoglobin/100 gm blood
141. In which one of the following cities is the Global Automotive Research Center being set up?  
1) Chennai                      2) Hyderabad                      3) Pune                      4) Gurgaon
142. DNA replication takes place during  
1) S – phase                      2) G<sub>2</sub> – phase                      3) G<sub>1</sub> – phase                      4) Prophase
143. Who started the first english newspaper in India?  
1) Bal Gangadhar Tilak                      2) Raja Rammohan Roy  
3) J.A. Hickey                      4) Lord William Bentinck
144. Which one among the following is not a good source of nutritional calcium?  
1) Rice                      2) Ragi                      3) Skimmed milk                      4) Egg
145. During 18<sup>th</sup> century who among the following philosophers said these famous words?  
"Man is born free but is every where in chains".  
1) Voltaire                      2) Jacques Derrida  
3) Jean Jacques Rausseau                      4) Montesquieu

146. According to Marshall, the basis of consumer surplus is .....
- 1) Law of diminishing marginal utility                      2) Law of equi-marginal utility  
3) Law of proportions    4) All of the above
147. Kalhana's well-known work 'Rajatarangini' is an important source material for the study of which one of the following?
- 1) Ancient Kamarupa    2) Post Mauryan Magadha  
3) Medieval Rajasthan    4) Early medieval Kashmir
148. The excess of fertilizers in water bodies results in-
- 1) Silt    2) Death of hydrophytes  
3) Eutrophication    4) Growth of fish
149. At point of satiety, marginal utility of any commodity is .....
- 1) Zero    2) Positive                      3) Maximum                      4) Negative
150. Which of the following is handy to carry and can store large amounts of data?
- 1) Floppy Disk                      2) Hard Disk                      3) CDROM                      4) Zip Disk

**KEY**

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

**EXPLANATIONS**

1. Student follows the teacher and disciple follows the religious leader.

2.            182            342            210            380

              ↓                ↓                ↓                ↓

$13^2 + 13$      $18^2 + 18$      $14^2 + 14$      $19^2 + 19$

            └──────────┘              └──────────┘

                              5    5

3. As, A    D    H    M

      ↓    ↓    ↓    ↓    opposite

      Z    W    S    N

Similarly,

      C    F    J    O

      ↓    ↓    ↓    ↓    opposite

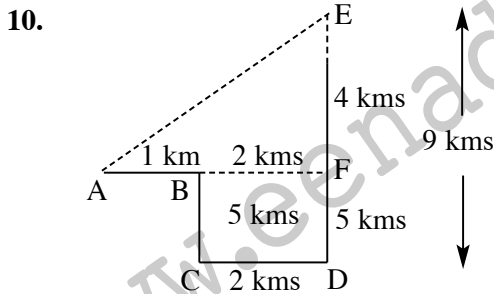
      X    U    Q    L

4. As smoke results pollution similarly battle results Destruction.  
 5. Except Kohima, others are states.

6.  $117 \xrightarrow{\times 9} 13$      $162 \xrightarrow{\times 9} 18$      $171 \xrightarrow{\times 9} 19$      $304 \xrightarrow{\times 19} 16$

7.  $A \xrightarrow{+2} C \xrightarrow{+2} D \xrightarrow{+1} F \xrightarrow{+1} T \xrightarrow{+1} U \xrightarrow{+1} O \xrightarrow{+1} P$   
 $H \xrightarrow{+1} I \xrightarrow{+1} V \xrightarrow{+1} W \xrightarrow{+1} F \xrightarrow{+1} G \xrightarrow{+1} I \xrightarrow{+1} J$

8. Narmada falls in Arabian Sea where as the rest three falls in Bay of Bengal.  
 9. The region which represents all three i.e., owner, broker and worker is 'T'.



AF = 3 kms, EF = 4 kms  
 AE:  $\sqrt{3^2 + 4^2} = \sqrt{9 + 16} = \sqrt{25} = 5$  kms

So, he is 5 kms away from the starting point.

11. Sunita's Grandfather's only son is his father and father's son is his brother.

12.  $As, P \xrightarrow{+2} R, A \xrightarrow{+2} C, S \xrightarrow{+2} U, S \xrightarrow{+2} U, P \xrightarrow{+2} R, O \xrightarrow{+2} Q, R \xrightarrow{+2} T, T \xrightarrow{+2} V$   
 So,  $B \xrightarrow{+2} D, O \xrightarrow{+2} Q, O \xrightarrow{+2} Q, K \xrightarrow{+2} M, L \xrightarrow{+2} N, E \xrightarrow{+2} G, T \xrightarrow{+2} V$

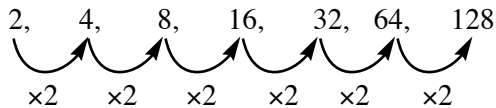
13.  $\frac{1}{2}, \frac{3}{4}, \frac{5}{8}, \frac{7}{16}, \frac{9}{32}, \frac{11}{64}, ?$

Here we have two series:

1<sup>st</sup> series:

$1, 3, 5, 7, 9, 11, 13$   
 $\xrightarrow{+2} \xrightarrow{+2} \xrightarrow{+2} \xrightarrow{+2} \xrightarrow{+2} \xrightarrow{+2}$

2<sup>nd</sup> series:



So next term is  $\frac{13}{128}$

14.  $Z = 52 = 2 \times (26)$

Actual position in English alphabet

$ACT = 2 \times (1 + 3 + 20)$

Actual position in English alphabet

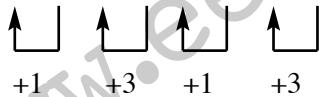
$= 2 \times 24 = 48$

$EAT = 2 \times (5 + 1 + 20)$

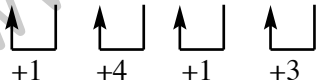
Actual position in English alphabet

$= 2 \times 26 = 52$

15. Q P N K A Z X U



U T R N S R P M

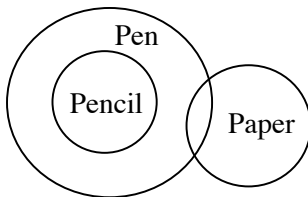


16. Number of people who know all three subjects = 100

Number of people who know only civics = 170

$\therefore$  Required Ratio =  $\frac{100}{170} = \frac{10}{17}$

17.

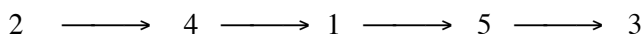


I. ✓ II. ✓

Both (I) & (II) follow.

18. The word 'COMMUNICATE' can't be formed from the word 'RECOMMENDATION' as we can't find the word 'U' in RECOMMENDATION.

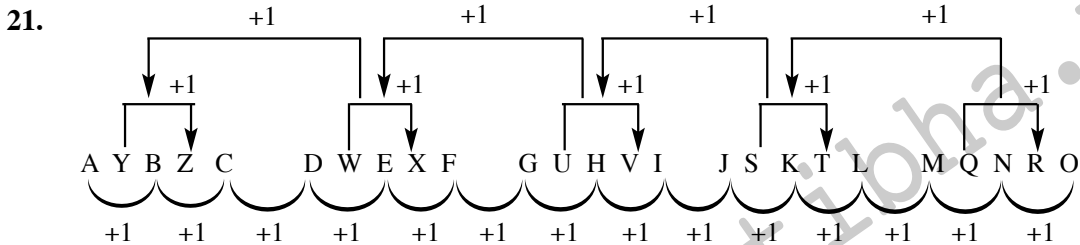
19. The correct order is-



Population Unemployment Poverty Disease Death



20.  $125 \quad 80 \quad 45 \quad 20 \quad 5$   
 $\swarrow \quad \swarrow \quad \swarrow \quad \swarrow$   
 $-45 \quad -35 \quad -25 \quad -15$   
 $\swarrow \quad \swarrow \quad \swarrow$   
 $+10 \quad +10 \quad +10$



22.

3	4	5	x2
6	8	10	
216	512	?	$\Rightarrow x^2 = 216, 512, 1000$

$x = 6, 8, 10$

So, ? = 1000

23. We can observe from the given diagram that number 3 represents indian professors who are also lawyers.

24. Given equation:

$$8 \times 2 + 3 - 5 = 21$$

let us change 'x' and '-' signs then we have

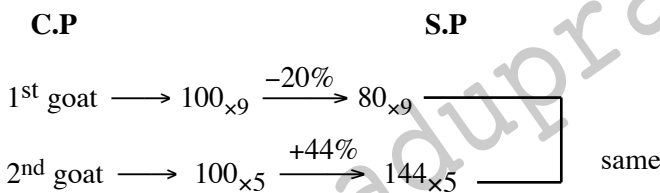
$$8 - 2 + 3 \times 5 = 8 - 2 + 15 = 23 - 2 = 21$$

So, (3) is the right option.

25. (3)

26. Selling price =  $60 \times \frac{115}{100} \times \frac{120}{100} = 82.8$

27. Let the cost price of each goat = 100



$\therefore$  cost price of 1<sup>st</sup> goat

$$= \frac{900}{1400} \times 1008 = 648$$

28. Let the time taken by 3 men = x days

Time taken by 9 women = x + 5 days

$$3m = x \text{ day}$$

$$2m = \frac{3x}{2} \text{ days}$$

Similarly,  $9w = x + 5$  days

$$3w = 3(x + 5) \text{ days}$$

ATQ,

$$\frac{2}{3x} + \frac{1}{3(x+5)} = \frac{1}{6} \Rightarrow \frac{2x + 10 + x}{3x(x+5)} = \frac{1}{6}$$

$$\Rightarrow 18x + 60 = 3x^2 + 15x \Rightarrow 3x^2 - 3x - 60 = 0$$

Time taken by 1 man =  $3x = 3 \times 5 = 15$  days

Time taken by 1 women =  $9(x + 5) = 90$  days

Required output = 6 times

**29.** Let the given number be x.

Then,

$$\left(x \times \frac{3}{2}\right) - \left(x \div \frac{3}{2}\right) = 10$$

$$\Rightarrow \frac{3}{2} \times x - \frac{2}{3} x = 10 \Rightarrow \frac{9x - 4x}{6} = 10$$

$$\Rightarrow 5x = 10 \Rightarrow x = 2$$

**30.** SI = (7200 - 6000) = 1200

$$\therefore \text{SI} = \frac{P \times R \times T}{100} \Rightarrow 1200 = \frac{6000 \times R \times 4}{100}$$

$$\Rightarrow R = \frac{1200 \times 100}{6000 \times 4} = 5\%$$

New rate of R =  $5 \times 1.5 = 7.5\%$

$$\text{Then, SI} = \frac{6000 \times 7.5 \times 5}{100} = 2250$$

$$\therefore \text{Amount} = (6000 + 2250) = 8250$$

**31.** Let the principal be x

$$\therefore \text{Principal SI} = \frac{7x}{4}$$

$$\therefore \text{SI} = \frac{7x}{4} - x = \frac{3x}{4}$$

$$\begin{aligned} \text{Rate} &= \frac{\text{SI} \times 100}{\text{Principal} \times \text{Time}} \\ &= \frac{\frac{3x}{4} \times 100}{4 \times x \times 4} = 18 \frac{3}{4} \% \end{aligned}$$

**32.** Average of 9 consecutive no. = n

$$\therefore \text{Fifth number} = n$$

$$\text{Tenth number} = n + 5$$

$$\text{Eleventh number} = n + 6$$

$$\text{New average} = \frac{9n + n + 5 + n + 6}{11}$$

$$= \frac{11n + 11}{11} = \frac{(n + 1) \times 11}{11} = n + 1$$

33. Pipe A can fill a tank = 20 minutes

Let the efficiency of pipe A = 100

Then the efficiency of 5 new pipes

$$= 100 \times \frac{20}{100} \times 5 = 100$$

$$M_1 D_1 = M_2 D_2$$

$$\Rightarrow 20 \times 100 = 100 \times D_2$$

$$\Rightarrow D_2 = 20 \text{ min}$$

34. Let the number be x.

Then,

$$x^2 = (75.15)^2 - (60.12)^2$$

$$= (75.15 + 60.12)(75.15 - 60.12)$$

$$= 135.27 \times 15.03 = 2033.1081$$

$$\therefore x = \sqrt{2033.1081} = 45.09$$

35.

Dog : Cat

Leap/ min                      5 : 4

Distance / leap                8m : 5m

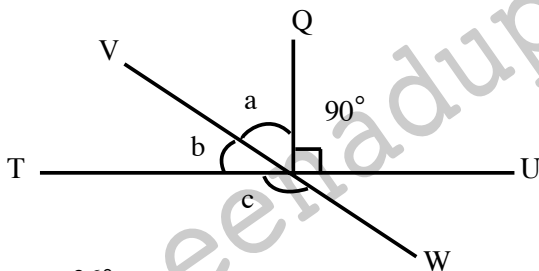
Speed-40 m/min                : 20 m / min

Actual distance b/w cat & dog =  $50 \times 8 = 400 \text{ m}$

Time taken by dog =  $\frac{400}{20} = 20 \text{ min}$

Distance travelled by dog =  $20 \times 40 = 800 \text{ m}$

36.



$$\angle a = 36^\circ$$

$$\angle b = 54^\circ$$

$$\therefore \text{value of } \angle c = 180^\circ - \angle 54$$

$$\Rightarrow \angle c = 126^\circ$$

37. Teacher's age

$$= 16 \times 10 - 19 \times 4 - 5 \times 10$$

$$= 160 - 76 - 50 = 34 \text{ years}$$

38. Let the numbers be x, y and z.

Then,

$$x : y = 2 : 3$$

$$y : z = 5 : 8$$

$$\therefore x : y : z = 2 \times 5 : 3 \times 5 : 3 \times 8 = 10 : 15 : 24$$

$$\text{Sum of the ratios} = 10 + 15 + 24 = 49$$

$$\therefore \text{The second number} = \frac{15}{49} \times 98 = 30$$

39. In 400 gm of alloy.

$$\text{Zinc} = \frac{5}{8} \times 400 = 250 \text{ gm}$$

$$\text{Copper} = \frac{3}{8} \times 400 = 150 \text{ gm}$$

x gm of copper be mixed, then

$$\frac{250}{150 + x} = \frac{5}{4} \Rightarrow 750 + 5x = 1000$$

$$\Rightarrow 5x = 1000 - 750 = 250 \Rightarrow x = 50 \text{ gm}$$

40. Given  $5N = 15R$

$$N : R = 3 : 1 \text{ \& } 10R = 20K$$

$$R : K = 2 : 1$$

$$N : R : K$$

$$3 : 1 \times 2$$

$$2 : 1$$

$$\hline 6 : 2 : 1$$

$$\begin{array}{l} | \times 2000 \\ \hline \end{array}$$

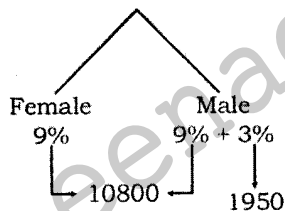
$$\begin{array}{l} \diagdown \times 2000 \\ \hline \end{array}$$

Nitya's income

$$\boxed{12000}$$

$$2000$$

41. Total population  $\rightarrow$  120000



Total Population of male = 65000

$$\therefore \text{No. of females} = 67750$$

$$\therefore \text{Required Diff.} = 2750$$

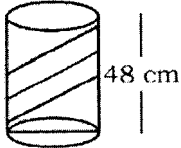
42.  $AB \parallel CD \parallel PQ$  (Given)

$$\text{Let } AB = a, PQ = b, CD = c$$

$$\therefore \frac{1}{b} = \frac{1}{a} + \frac{1}{c} \Rightarrow \frac{1}{b} = \frac{1}{12} + \frac{1}{8} \Rightarrow \frac{1}{b} = \frac{3+2}{36}$$

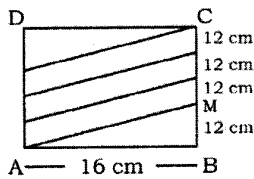
$$\Rightarrow \frac{1}{b} = \frac{5}{36} \Rightarrow b = \frac{36}{5} \text{ cm}$$

43.



$5 \frac{1}{11}$  cm

when we open it



the base circumference

$$= 2\pi r = 2 \times \frac{22}{7} \times \frac{56}{11} \times \frac{1}{2} = 16 \text{ cm}$$

$\therefore$  AM = length of one complete turn

$$= \sqrt{16^2 + 12^2} = 20 \text{ cm}$$

$\therefore$  total length =  $4 \times 20 = 80$  cm

44. Given  $\frac{P^2 - 4P + 4}{4P} = 8$

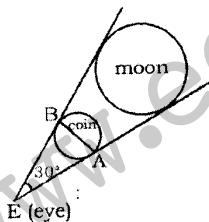
$$= \frac{P^2 - 4P + 4}{P} = 32$$

$$= \frac{P^2}{P} - \frac{4P}{P} + \frac{4}{P} = 32$$

$$\Rightarrow P - 4 + \frac{4}{P} = 32$$

$$\Rightarrow P + \frac{4}{P} = 36$$

45.



$$\theta = 30^\circ = \left(\frac{30}{60}\right)^\circ = \left(\frac{1}{2}\right)^\circ$$

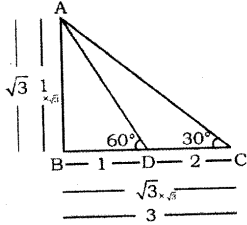
$$= \left(\frac{1}{2} \times \frac{\pi}{180}\right)^c = \left(\frac{\pi}{360}\right)^c$$

$$\theta = \frac{\text{Arc}}{\text{radius}} = \frac{\pi}{360} = \frac{4.4}{r}$$

$$\Rightarrow r = \frac{4.4 \times 360}{\pi} \text{ cm} = \frac{4.4 \times 360}{22} \times 7$$

$$r = 504 \text{ cm}$$

46.



$$\therefore AB = \sqrt{3} = 30 \text{ given}$$

$$\therefore CD = \frac{30}{\sqrt{3}} \times 2 = 20\sqrt{3}$$

47.  $\therefore x = \frac{1}{y}$

$$\therefore x + \frac{1}{x} = 4$$

ATQ,

$$\frac{x^2 + y^2}{x^3 + y^3} = \frac{x^2 + \frac{1}{x^2}}{x^3 + \frac{1}{x^3}} = \frac{14}{52} = \frac{7}{26}$$

48. Let  $a = b = c = 2$ , then  $2s = 6 \Rightarrow s = 3$

$$\begin{aligned} &\therefore (s-a)^3 + (s-b)^3 + 3(s-a)(s-b)c \\ &= (3-2)^3 + (3-2)^3 + 3(3-2)(3-2) \times 2 \\ &= 1 + 1 + 3 \times 2 = 8 = c^3 \end{aligned}$$

49. Formula:  $(B)^3 + 3(B)^2 - (B)^1 + (B)^2$

= B denotes base = 2

$$\begin{aligned} &= (2)^3 + 3(2)^2 - (2)^1 + (2)^2 \\ &= 8 + 12 - 2 + 4 = 22 + 26 \\ &= 48 \end{aligned}$$

50. Assume  $\theta = 45^\circ$

$$\text{then } 4m = 1 \times \left(1 + \frac{1}{\sqrt{2}}\right)$$

$$m = \frac{\sqrt{2}+1}{4\sqrt{2}} \text{ and } n = \frac{\sqrt{2}-1}{4\sqrt{2}}$$

$$\therefore m^2 - n^2 = \frac{1}{32} \left[ (\sqrt{2} + 1) - (\sqrt{2} - 1) \right]^2$$

$$= \left[ \frac{1}{32} (4\sqrt{2}) \right]$$

$$\Rightarrow (m^2 - n^2) = \frac{1}{32}$$

From options-

$$mn = \frac{\sqrt{2} + 1}{4\sqrt{2}} \cdot \frac{\sqrt{2} - 1}{4\sqrt{2}} = \frac{1}{32}$$

$$\therefore (m^2 - n^2) = mn$$

51. Since the noun 'The stories of maddening crowd' appears plural but is in fact singular in nature. Replace 'have' by 'has'.
52. Verb such as 'see, smell, feel etc. are followed by 'VI + ing'.  
Hence, this sentence should be as 'several people saw the thief snatching my purse'.
53. 'Suppose' and 'if' cannot come together. Use either of the two.
54. Since the sentence shows some usual or regular action hence use simple present tense. Change 'met' into 'meet'. Here pronoun 'they' must be used.
55. 'Pass' will not take 'in' after it. Thus, remove 'in'.
57. If a noun (here 'a topic') is followed by an infinitive (here 'to write'), the infinitive is followed by a suitable preposition.
58. If there is a choice to be made between two or more things, 'which' is used.
60. The part of the sentence which consists of 'until/ unless' does not have 'will or would'.
75. 'Send word' means 'to send someone to give another person a message'.
77. 'one of the' always takes a plural noun after it.
79. Since the action is still going on and not completed, present tense must come.
80. 'Bring something about' means 'to cause something' to take place.
81. Sentence starting with 'No sooner' should be in inverse form i.e. 'No sooner + did + sub + verb + .....!'
102. The Permanent Settlement (also Permanent Settlement of Bengal) was introduced by Lord Cornwallis in 1793. It was an agreement between the British East India Company and the Landlords of Bengal to settle the Land Revenue to be raised. Lord Cornwallis came to India as the Governor General.
103. The impetus towards the founding of a cotton industry came from Indian entrepreneurs. The first Indian cotton mill, "The Bombay Spinning Mill", was opened in 1854 in Bombay by Cowasji Nanabhai Davar.
104. World Autism Awareness Day is observed annually on April 2 to raise awareness about children with autism throughout the world.
105. The temples are famous for their Negara-style architectural symbolism and their erotic sculptures. Most Khajuraho temples were built between 950 A.D and 1050 A.D by the Chandela dynasty.
106. An Article 32 hearing is a proceeding under the United States Uniform Code of Military Justice, similar to that of a preliminary hearing in civilian law. Its name is derived from UCMJ section VII ("Trial Procedure") Article 32 (10 U.S.C. §832), which mandates the hearing. Article 32 provides the right to constitutional remedies which means that a person has the right to move to the Supreme Court for getting his fundamental rights protected.

107. Crude oil was discovered here in late 19th century. Digboi is known as the Oil City of Assam where the first oil well in Asia was drilled. The first refinery was started here as early as 1901. Digboi has the oldest oil well in operation.

108. Renowned Iraqi-British Architect Zaha Hadid was the first female winner of the top Pritzker Architecture Prize (2004). She passed away due to heart attack, at the age of 65.

109. Indian states that have the highest number of Lok Sabha seats are -

S.No.	States	Lok Sabha Seats
1.	Uttar Pradesh	80
2.	Maharashtra	48
3.	West Bengal	42
4.	Andhra Pradesh	42
5.	Bihar	40

114. Singhbhum was a district of India during the British Raj, part of the Chota Nagpur Division of the Bengal Presidency. It was located in the present-day Indian state of Jharkhand. Chaibasa was the district headquarters. Noamundi is a census town in Pashchimi Singhbhum district in the Indian state of Jharkhand. The major produce of this mine is iron ore (including blue dust).

117. SDLC (Synchronous Data Link Control) is a transmission protocol developed by IBM in the 1970s as a replacement for its binary synchronous (BSC) protocol. SDLC is equivalent to layer 2 of the Open Systems Interconnection (OSI) model of network communication. This level of protocol makes sure that data units arrive successfully from one network point to the next and flow at the right pace.

119. Pro-tem Speaker performs the duties of the office of the Speaker from the commencement of the sitting of the new Lok Sabha till the election of the Speaker. Former Parliamentary Affairs Minister and senior Congress leader Kamal Nath has been appointed as the pro-tem Speaker in the new Lok Sabha.

122. New Ireland is a large island in Papua New Guinea, approximately 7,404 km<sup>2</sup> in area with ca. 120,000 people. It is the largest island of the New Ireland Province, lying northeast of the island of New Britain. Both islands are part of the Bismarck Archipelago, named after Otto von Bismarck, and they are separated by Saint George's Channel. The administrative centre of the island and of New Ireland province is the town of Kavieng located at the northern end of the island. While the island was part of German New Guinea, it was named Neumecklenburg ("New Mecklenburg").

126. Megasporangium is a spore sac that contains megaspores. In flowering plants, this is known as the ovule.

127. The Daranghati Sanctuary is located in Shimla District, Himachal Pradesh, India. It has undisturbed forest areas. Monal, Tragopan, Koklas and Kalij are the pheasants found here. Some of the common animals found here are Musk deer, Goral and Thar. Forest staff posted at Dofda and Sarahan is there for advice and guidance.

128. The Chernobyl disaster (also referred to as the Chernobyl accident or simply Chernobyl) was a catastrophic nuclear accident that occurred on 26th April 1986 at the Chernobyl Nuclear Power Plant in the town of Pripjat, in Ukraine (then officially the Ukrainian SSR), which was under the direct jurisdiction of the central authorities of the Soviet Union. An explosion and fire released large quantities of radioactive particles into the atmosphere, which spread over much of the western USSR and Europe.

134. Transpiration is the process by which moisture is carried through plants from roots to small pores on the underside of leaves, where it changes to vapour and is released to the atmosphere. Transpiration is essentially evaporation of water from plant leaves.



137. The SI derived unit of electric charge is the coulomb (C). In electrical engineering, it is also common to use the ampere-hour (Ah), and, in chemistry, it is common to use the elementary charge (e) as a unit. The symbol Q often denotes charge.
141. The Global Automotive Research Center (GARC) is situated in the SIPCOT Industrial Growth Center at Orgadam near Chennai in the close proximity of manufacturing facility of Indian and Global automotive giants.
142. DNA is replicated during Interphase. Interphase involves the cell cycle G1, S, G2. The cell grows during G1, replicates its DNA during S, and then prepares for mitosis during G2 (the second growth period). Note that DNA replication actually takes place before mitosis.
143. 'Hickey's Bengal Gazette' was an English newspaper published from Kolkata (then Calcutta), India. It was the first major newspaper in India, started in 1780. It was published for two years and was founded by James Augustus Hickey, a highly eccentric Irishman who had previously spent two years in Jail for debt.
145. Jean-Jacques Rousseau (28<sup>th</sup> June 1712 – 2<sup>nd</sup> July 1778) was a Francophone Genevan philosopher, writer, and composer of the 18<sup>th</sup> century. His political philosophy influenced the Enlightenment in France and across Europe, as well as aspects of the French Revolution and the overall development of modern political and educational thought.
146. The law of diminishing marginal utility is a law of economics stating that as a person increases consumption of a product, while keeping consumption of other products constant, there is a decline in the marginal utility that person derives from consuming each additional unit of that product.
147. Rajatarangini ("The River of Kings") is a metrical legendary and historical chronicle of the north-western Indian subcontinent, particularly the kings of Kashmir. It was written in Sanskrit by Kashmiri Brahman Kalhana in 12<sup>th</sup> century CE. The work consists of 7826 verses, which are divided into eight books called Taranga's ("waves"). The Rajatarangini provides the earliest source on Kashmir that can be labelled as a "historical" text on this region. Although inaccurate in its chronology, the book still provides an invaluable source of information about early Kashmir and its neighbours in the north western parts of the Indian subcontinent, and has been widely referenced by later historians and ethnographers.
148. Eutrophication is the ecosystem's response to the addition of artificial or natural nutrients, mainly phosphates, through detergents, fertilizers, or sewage, to an aquatic system.

(ఈ సమూహ ప్రశ్నపత్రాన్ని RACE సంస్థకు చెందిన నిపుణులు రూపొందించారు)