

Reasoning & Aptitude

Practice Set for GATE

Level-1

after service of one year. He served only 9 months for which he received the gift and ₹ 65. The value (in ₹) of gift is

- after service of one year. He served only 9 months for which he received the gift and ₹ 65. The value (in ₹) of gift is

 - 10
 - 12
 - 15
 - None of these

14. If $\log_{10}3 + \log_{10}(4x + 1) = \log_{10}(x + 1) + 1$, then x equals _____

 - $\frac{2}{7}$
 - $\frac{7}{2}$
 - $\frac{9}{2}$
 - None of these

15. The unit's digit in the product of $(197)^{443} \times (296)^{1076} \times (273)^{4513} \times (2379)^{2194} \times (3125)^{773}$ is

 - 7
 - 6
 - 3
 - 0

16. The remainder when $7^{74} - 5^{74}$ is divided by 4 is

 - 2
 - 3
 - 1
 - 0

17. Ramesh starts working on a job and works on it for 12 days and completes 40% of the work. Then he employs Ravish and they together finish the remaining work in 12 days. The percent more efficient is Ramesh than Ravish is

 - 200%
 - 150%
 - 100%
 - 50%

18. Rohit and Manish are running with respective speeds of 10 m/s and 15 m/s along a circular track of circumference 300 m. They started running from a common point in opposite directions, they will meet for the first time after

 - 50 sec
 - 40 sec
 - 30 sec
 - 12 sec

19. If the roots of the equation, $(p - 2)x^2 + (p - 3)x - (p + 1) = 0$, are real and have same magnitude but opposite sign, then p is equal to

 - 0
 - 2
 - 3
 - 1

20. Two shirts are bought at a common cost price of ₹ 200 each. If one is sold at a profit of 6%

 - another at a loss of 6%. Then effective gain or loss during the entire transaction is
 - 60% loss
 - 36% loss
 - 12% gain
 - 0% loss

21. $7^{6n} - 6^{6n}$, where 'n' is an integer greater than 0, is divisible by

 - 13
 - 127
 - 559
 - All of these

22. Red light flashes 3 times per minute and Green light flashes 5 times in every two minutes. If both light start flashing at the same time, then how many times do they flash together in each hour?

 - 30
 - 24
 - 20
 - 60

23. $\log_2[\log_7(x^2 - x + 37)] = 1$, then x equals

 - 2
 - 5
 - 4
 - 6

24. The price of Paruti car per unit rises by 30%, while number of cars sold came down by 20%. Then the total percentage change in revenue is

 - 4
 - 2
 - +4
 - None of these

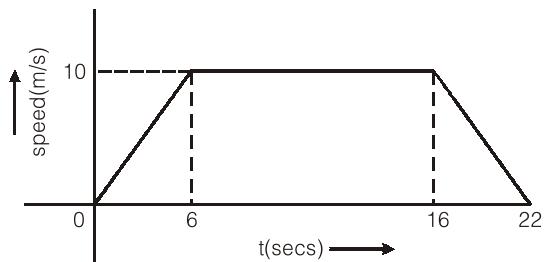
25. The numbers that can be made with digits 0, 7, 8 which are greater than 0 and less than a million are

 - 496
 - 486
 - 728
 - 1084

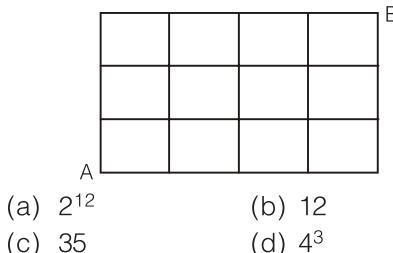
26. Five digit numbers are formed using only 0, 1, 2, 3, 4 without repeating. The difference between largest and smallest number that can be formed is

 - 39276
 - 32976
 - 37926
 - 32796

27. A beaker full with pure cola, Mohit withdraws 25% of cola and replaces it with water. He again withdraws 25% of mixture of cola and again replace it with water and the process was repeated two more times till he find 567 ml of pure cola left in mixture. Then the actual initial quantity (in ml) of cola was



41. How many routes are there from A to B? If moving only upward and rightward on straight lines are allowed



43. After allowing a discount of 25% on marked price a shopkeeper still manages to make a profit of 20%. By how much percentage is the marked price above the cost price

(a) 50% (b) 60%

(c) 45% (d) 35%

- 47.** LCM of $7!$, $11!$ and $13!$ equals
(a) $7 \times 11 \times 13!$ (b) $11! \times 13! \times 7!$
(c) $77 \times 13!$ (d) None of these

- 48.** On selling 12 oranges for one rupee, a vendor loses 20%. To make a profit of 20%, he must sell

 - (a) 1 orange for one rupee
 - (b) 5 oranges for one rupee
 - (c) 8 oranges for one rupee
 - (d) 10 oranges for one rupee

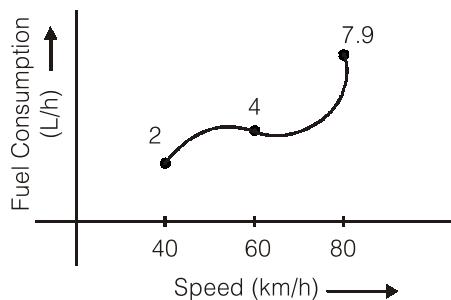
49. Length, width and height of a room are in the ratio $3 : 2 : 1$. If length is doubled and width, height both are halved then the area of walls of the room

 - (a) remains unchanged
 - (b) decrease by 13.64%
 - (c) decrease by 15%
 - (d) decrease by 30%

50. Rohan ordered four benches, ten stools and one fan for this newly opened shop and paid Rs 16450. Had he ordered only three benches seven stools and one fan he would have paid only Rs. 12000 Precisely, what is the total cost of one bench, one stool and one fan?

(a) 3100
(b) 4100
(c) 3150
(d) Can't be determined

53. Fuel consumption of the latest car 'Titios' at various speed is shown in graph.



Y axis represents fuel consumption in litre per hour and X axis shows speed in kilometer per hour.

Aadi makes a 100 km trip from Delhi to Panipath at a uniform speed of 60 km/hr. What is amount of fuel consumed during the entire trip.

- (a) 6.25 L
- (b) 8 L
- (c) 9.875 L
- (d) 6.67 L

54. In the expansion of $(1 + x)^{19}$. What is sum of coefficients of last ten terms
- (a) 2^{10}
 - (b) 2^{19}
 - (c) 2^{18}
 - (d) None of these

55. There are two light houses placed at a separation of 'a' metres. If the angle of elevation of the mid point of line joining their feet to their respective tops are complimentary. What is the height of taller pole, if height of the taller pole is twice that of shorter pole.

- (a) $\frac{a}{\sqrt{2}}$
- (b) $\frac{a}{2}$
- (c) $2\sqrt{2}a$
- (d) $\sqrt{2}a$

56. If a, b, c are in geometric progression and $a^x = b^y = c^z$, then which one of following is true

- (a) $\frac{1}{x} + \frac{1}{z} = \frac{2}{y}$
- (b) $\frac{1}{x} + \frac{1}{z} = \frac{-2}{y}$
- (c) $\frac{1}{x} + \frac{1}{y} = \frac{2}{z}$
- (d) $\frac{1}{x} + \frac{1}{y} = \frac{-2}{z}$

57. Manoj finishes 10 m ahead of Gautam in a 100 m race. But he decided to start from 10 m behind the starting line, though Gautam started from start line. Then what is true about them in a second similar 100m race

- (a) Reached simultaneously.
- (b) Manoj beats Gautam by 1 m.
- (c) Gautam beats Manoj by 1 m.
- (d) Gautam beats Manoj by 11 m.

58. If $f(x) = 2x + 3$ and $g(x) = \frac{x-3}{2}$, then the value of $(gofogofogof)x$

- (a) x
- (b) $\frac{5x+3}{4x-1}$
- (c) 1
- (d) $\frac{1}{x}$

59. Forty percent of employees of a certain company are men and 75% of the men earn more than 25000 per year. What fraction of women employed by company earn more than 25000 per year if given that 45% of company's overall employees earn more than 25000 per year?

- (a) $2/11$
- (b) $1/4$
- (c) $1/3$
- (d) $3/4$

60. Mohandas a public contractor has 144 labours in his company at the end of year 2008. Hence forth every year he hired a% more employee in January and fired b% employees in december every year such that he ends with same number of employee at year end of 2012. Then which is true.

- (a) $a < b$
- (b) $a > b$
- (c) $a = b$
- (d) None of these.

61. If number of diagonals of a polygon is 3.5 times the number of sides of the polygon. Then the type of the polygon is

- (a) octagon
- (b) heptagon
- (c) do-decagon
- (d) decagon

62. A series is given by a, b, b, c, c, c, d, d, d, d, e, e, e, e, e.....

Then the 264th term of this series is

- (a) V
- (b) W
- (c) X
- (d) Y

63. a_n for any sequence is defined as

$$a_n = \frac{n}{n+2} \quad (n = 1, 2, 3 \dots)$$

Then the value of $a_3 \times a_4 \times a_5 \dots a_{53}$ equals

- (a) $\frac{2}{495}$ (b) $\frac{1}{1485}$
 (c) $\frac{1}{2970}$ (d) $\frac{12}{55}$

64. A $(a + 1, a)$, B (a, a) , C $(a, a + 1)$ are vertices of a triangle then its area equals.

- (a) $a(a + 1)$ (b) a^2
 (c) $(a + 1)^2$ (d) $\frac{1}{2}$

65. Line ' l ' has 6 points on it and line ' m ' has 5 points lying on it. If $l \parallel m$, then how many triangles can we get from these 11 points

- (a) 60 (b) 75
 (c) 135 (d) 125

Level-2

66. Find the periodicity ' p ' for $f(x)$ i.e. $f(x + p) = f(x)$.

Given that $f(x + 1) + f(x - 1) = f(x)$ for every natural number x . Then p equals

- (a) 3 (b) 4
 (c) 6 (d) 5

67. A polynomial $p(x)$ of degree 4 has only four

roots $\frac{1}{4}, 4, \frac{1}{2}$ and 2. If $p(1) = 1$, find $p(0)$

- (a) $\frac{9}{7}$ (b) $\frac{8}{9}$
 (c) $\frac{7}{9}$ (d) $\frac{3}{9}$

68. If ' A ' = $626! - 625!$. ' A ' ends with how many consecutive zeros.

- (a) 156 (b) 160
 (c) 1 (d) None of these

69. $2^{28} - 1$ is exactly divisible by two numbers between 120 and 130. The sum of these two numbers is equal to.

- (a) 250 (b) 256
 (c) 257 (d) None of these

70. Ravi and Guatam are athletes. Ravi covers a distance of 1 km in 5 minutes and 50 seconds, while Gautam covers the same distance in 6 minutes and 4 seconds. If both of them start together and run at uniform speeds, then the distance (in m) by which Ravi will win a 5 km mini marathon is

- (a) 152 (b) 202
 (c) 192 (d) 225

71. If first nine multiples of five are multiplied together, then the number of zeros at the end of the product are

- (a) 4 (b) 10
 (c) 9 (d) 7

72. In an examination of mathematics and physics, 60% students passed in mathematics and 70% passed in physics. Then minimum percentage of students failed in both subjects is

- (a) 0 (b) 30
 (c) 40 (d) 20

73. If $N!$ ends with 28 zeroes, then difference between the maximum and minimum value of N is

- (a) 2 (b) 1
 (c) 3 (d) None of these

74. $\frac{1}{(2^2 - 1)} + \frac{1}{(4^2 - 1)} + \frac{1}{(6^2 - 1)}$

$\frac{1}{(20^2 - 1)}$ is equal to

- (a) $\frac{9}{19}$ (b) $\frac{10}{19}$
 (c) $\frac{10}{21}$ (d) $\frac{11}{21}$

75. In a survey, 78% people were in favour of atleast one of the proposals I, II or III. 50% people favoured I, 30% people favoured II, 20% people favoured III and 5% people favoured all the three proposal. The percentage people favoured more than one of the three proposals are

90. Three containers (C_1 , C_2 , C_3) having exactly same capacity are filled with mixtures of wine and water. The ratio of wine to water in C_1 , C_2 , C_3 were $3 : 4$, $4 : 5$, $5 : 6$ respectively. The content of C_1 , C_2 and C_3 are emptied into a large container C_4 . Then the ratio of wine and water in C_4 is
 (a) $920 : 1159$ (b) $1159 : 920$
 (c) $11 : 9$ (d) None of these
91. If $f(1) = 0$ and $f(n) = f(n - 1) + 2n - 1$ for all natural numbers $n > 0$, then $f(100)$ equals
 (a) 10001 (b) 999
 (c) 997 (d) None of these
92. Number of natural number triplets (a, b, c) satisfying the equation $(a^b)^c = 64$
 (a) 6 (b) 7
 (c) 8 (d) 9
93. From a 10 litre cask filled upto brim with sprite 2 litre is removed and filled with soda. Then 4 litre of solution is replaced with soda. Then 6 litres and further 8 litres were subsequently removed and replace with soda.
 Then the ratio of sprite and soda at the end of 4th operation is
 (a) $\frac{4!}{5^4}$ (b) $\frac{4!}{5^4 - 4!}$
 (c) $\frac{4!}{5!}$ (d) $\frac{5!}{5^4}$
94. Given that $f(1)+f(2)+f(3)\dots f(n) = n^2f(n)$ for every natural number 'n'. If $f(1) = 600$, then $f(5)$ equals
 (a) 100 (b) 60
 (c) 50 (d) 40
95. If $T_1 = 1$ and T_{n+1} is given by $T_{n+1}=3T_n+4n-2$ for every natural number n , then T_{100} is
 (a) $3^{99} + 200$ (b) $3^{100} + 200$
 (c) $3^{100} - 200$ (d) $3^{99} - 200$
96. Refer to the triangular percentage Graph given in figure (1) for demonstration. Graph (fig-1) shows that value of marks of physics is

maximum (100%) at vertex P and subsequently reduces in step of 25% as we recede from point P, i.e. value of Physics is 100% at vertex P and 0% at other two vertices. If Chemistry and Maths also varies in similar fashion. Then what is the difference in Aggregate % of marks scored in all three subjects by students 'A' and 'B' as shown/positioned in fig 2. Assume maximum marks in all three subjects (Physics, Chemistry and Maths) be same.

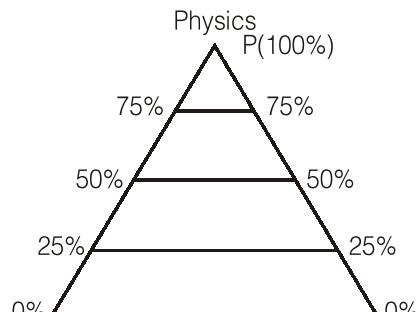
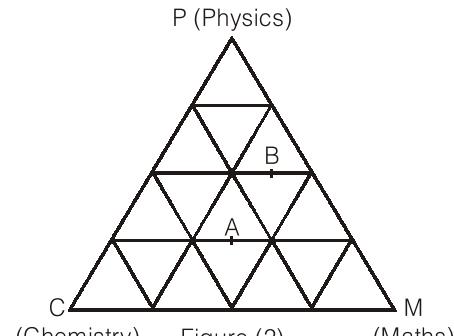


Figure (1)



P (Physics)
C (Chemistry) Figure (2) M (Maths)
(a) 12.5% (b) 37.5%
(c) 62.5% (d) 0

97. Equal sized four small squares are removed from corner of a large square sheet of size 12 units. The four projections are folded vertically so as to form an open box of largest volume. Then, the volume of the box in cubic units
 (a) 64 (b) 128
 (c) 100 (d) 96
98. If $(a^2 + b^2 + c^2)p^2 - 2(ab + bc + cd)p + (b^2 + c^2 + d^2) \leq 0$ then a, b, c, d are in
 (a) A.P. (b) G.P.
 (c) H.P. (d) None of these

99. A, B, C, D, E, F are neighbours. Among them there are two house wives, one architect, one accountant, one lawyer and one lecturer each. No female in group is either an architect or an accountant. Among them there are only two married couples. C, the accountant is married to F, who is a lecturer. A is married to D and E is not a housewife. The lawyer is married to D, who is a housewife. Then what is E's profession.

(a) Lawyer (b) Architect
(c) Lecturer (d) Accountant

- 100.** A fair dice is rolled thrice. What is the probability that the number appearing on the dice follows an ascending order ($a < b < c$). Given a, b, c are numbers appearing during first, second and third trials respectively

$$(a) \frac{5}{54} \quad (b) \frac{1}{36}$$

(c) $\frac{5}{9}$ (d) $\frac{4}{9}$

- 101.** Table below shows salary range and age details of 30 people. The minimum and maximum age of people are given in brackets against their salary range.

Annual salary	Male	Female	Total
Less than 5 Lakhs	1(38,38)	5(34,40)	6
5 - 10 Lakhs	1(32,32)	8(35,57)	9
10 - 15 Lakhs	8(21,65)	3 (37,63)	11
More than 15 Lakhs	2(32,33)	2(27,40)	4
Total	12	18	30

For example, In salary range (5 - 10 Lakhs) there are eight females among them youngest one is 35 and oldest 57. Then, the percentage of people older than 35 years can be at most.

- 102.** If $T_1 = 1$ and $T_0 = 2$ and also $T_{n+1} = T_{n-1} - T_{n+1}$
 $\times T_{n-1}$. Then T_{1000} term equals

$$(a) \frac{1}{2000} \quad (b) \frac{1}{1000}$$

(c) $\frac{1}{500}$

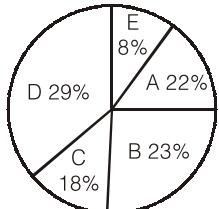
103. Table below shows salary range vs age details of 30 people. The minimum and maximum age of people are given in brackets against their salary range.

Annual salary	Male	Female	Total
0 - 5 Lakhs	1(38,38)	5(34,40)	6
5 - 10 Lakhs	1(32,32)	8(35,57)	9
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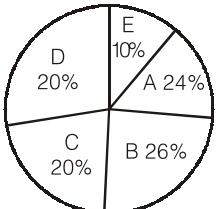
For eg, In salary range (5 - 10 Lakhs) there are eight females among them youngest one is 35 and oldest 57. Then percentage of people aged less than 40 years is at least.

- 106.** Refer to the following pie charts

Year - 2005
(Total number
of employees - 18000)



Year - 2006
(Total number
of employees - 20000)



In which department is the percentage change (from 2005 to 2006) in number of employees maximum?

- 108.** Samples P, Q, R, S, T, U, V, W, X and Y are available. Percentage of milk in each sample is as tabulated.

P	Q	R	S	T	U	V	W	X	Y
78	57	82	84	98	66	34	87	79	71

If two samples are mixed from above given samples so as to form a new sample having more than 80% of milk. Then on maximum, How many distinct pairs of samples will never give the desired composition of more than 80% of milk?

- 109.** $f(x) = \frac{1}{1+x}$ if x is non negative.

= 1 + x if x is negative

$$\text{and } f^n(x) = f(f^{n-1}(x)) \quad (\text{for } n = 2, 3 \dots)$$

What is value of product of $f(2) \cdot f^2(2) \cdot f^3(2) \cdot f^4(2) \cdot f^5(2)$?

- (a) $\frac{1}{3}$ (b) 3
 (c) $\frac{1}{18}$ (d) None of these

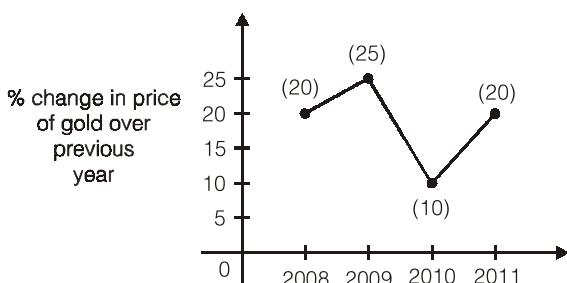
110. Arun is running along a circular track of length ' x ' km. He runs his first round at a speed of ' x ' km/hr, second at ' $x/2$ ' km/hr, third at a speed of ' $x/3$ ' km/hr and so on. After ' m ' rounds average speed of Arun was

- (a) $\frac{x}{m}$ (b) $\frac{2x}{m}$
 (c) $\frac{2x}{m+1}$ (d) $\frac{2x}{(m-1)}$

- 111.** If $|a - 6| = 11$ and $|2b - 12| = 8$. Then the minimum possible values of $\frac{b}{a}$?

- (a) $-\frac{2}{5}$ (b) $-\frac{2}{17}$
 (c) $\frac{2}{17}$ (d) None of these

- 112.** Following graph shows the values of the percentage change in price of gold over the previous year. Respective percentage values are marked above the respective years as shown in the bracket. If the price of gold in year 2007 was ₹ 8000 per 10 gm. Then what is the price per 10 gm of gold in 2011?



113. If $a = \sqrt{4 + \sqrt{4 - \sqrt{4 + \sqrt{4 - \dots \text{to infinity}}}}}$ then
 'a' equals

- (a) 3 (b) $\left(\frac{\sqrt{13}-1}{2}\right)$
 (c) $\sqrt{13}$ (d) $\left(\frac{\sqrt{13}+1}{2}\right)$

- 114.** Persons x, y, z and Q live in red, green, yellow or blue coloured houses placed in a sequence on a street. Z lives in a yellow house. Green house is adjacent to blue house. X does not live adjacent to Z. Yellow house is exactly between green and red houses. The colour of house in which X lives in is
- (a) Blue
(b) Green
(c) Red
(d) Not possible to determine
- 115.** Let $g(x)$ be a function satisfying $g(x) \times g(y) = g(xy)$ for natural numbers x, y. If $g(2) = 4$. Then $g\left(\frac{1}{2}\right)$ equals
- (a) 0
(b) $\frac{1}{4}$
(c) $\frac{1}{2}$
(d) 1
- Directions for Q.116-Q.118:**
Find the remainder in each of following:
- 116.** $4^{96} \div 6$
- (a) 2
(b) 3
(c) 4
(d) None of these
- 117.** $5^{625} \div 15$
- (a) 2
(b) 5
(c) 10
(d) 1
- 118.** $2^{2008} \div 15$
- (a) 1
(b) 5
(c) 10
(d) 8
- Directions for Q.119-Q.121:**
Find the number of real roots for the following equations.
- 119.** $|x|^2 + 5|x| + 6 = 0$
- (a) 1
(b) 2
(c) 4
(d) 0
- 120.** $|x|^2 - 5|x| + 6 = 0$
- (a) 1
(b) 2
(c) 4
(d) 0
- 121.** $|x|^2 - 2|x| - 3 = 0$
- (a) 1
(b) 2
(c) 3
(d) 0
- 122.** If $x, y, z > 3$ and $x + y + z = 35$ then Max $\{(x - 3)(y - 2)z\}$ equals
- (a) $\frac{995}{27}$
(b) $\frac{64}{27}$
(c) $\frac{35^3}{27}$
(d) None of these
- 123.** Two squares of sides x and y respectively are removed from opposite vertex of rectangle (as shown) such that $x + y = 50$ then the maximum value of remaining area
-
- (a) 3700
(b) 3750
(c) 3650
(d) 3800
- 124.** If $x, y, z > 0$ and $x \times y \times z = 4$ and $y - x = z - y$ then Min value of y
- (a) $2^{1/3}$
(b) $2^{2/3}$
(c) 2
(d) $2^{4/3}$
- 125.** If $x, y > 0$ and $x + y = 1$
- then Min $\left\{ \left(x + \frac{1}{x} \right)^2 + \left(y + \frac{1}{y} \right)^2 \right\}$
- (a) 4
(b) 8
(c) 16
(d) 12.5
- 126.** A positive whole number 'm' when written on base 2, 3 and 5 notations ends with 1, while in exactly 2 places leading digit is 1 as well. Then 'm' equals
- (a) 31
(b) 75
(c) 63
(d) 91

- number is divided by 99

 - 0
 - 7
 - 18
 - 9

141. $(xyz)_{10}$ is a 3 digit whole number on base 10. This number becomes $(abc)_7$ and $(cba)_9$ respectively when converted on to base 7 and 9. How many such numbers $(xyz)_{10}$ are

 - 0
 - 1
 - 3
 - 4

142. If $|x| < 1$, then find the infinite sum of S.
 $S = 2 + 5x + 9x^2 + 14x^3 + 20x^4 \dots$
then S equals

$(a) \frac{2-x}{(1-x)^3}$ $(c) \frac{2+x}{(1-x)^3}$	$(b) \frac{2-x}{(1+x)^3}$ $(d) \frac{2+x}{(1+x)^3}$
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143. In a water tank, 3 inlet pipes of same filling rate were turned on. 2.5 hours later, 2 more pipes (having same filling rate but different than above filling rate) were also turned on. 1 hr later 15 m^3 of tank was still empty which required 1 more hour to get filled. Each of the two later added pipes can fill the tank in 40 hrs each. Then

 - Volume of the tank
 - 60 m^3
 - 45 m^3
 - 37.5 m^3
 - 15 m^3
 - How long will each of initial 3 pipes take in filling the tank alone
 - 15 hrs
 - 12.5 hrs
 - 7.5 hrs
 - None of these
 - Exactly, what time after the start was the tank exactly $(3/4)^{\text{th}}$ full
 - 3.5 hrs
 - 2.5 hrs
 - 3 hrs
 - None of these

144. Six runners with their speeds as first six natural numbers are running on a circular track. Exactly at how many distinct points on the track will any two of the runners meet

 - 10
 - 15
 - 6
 - 5

145. A convoy 10 km long had to travel a distance of 24 km. (i.e., each member of the convoy travels 24 km only). A military policeman in motorcycle started at the back of the convoy as convoy started, rode to the front to the convoy, return to the back of the convoy as the convoy grounded to halt. Assume constant speed of convoy as well as motorcyclist. How far did motorcyclist ride

 - 28
 - 40
 - 36
 - 32

146. N is a natural number. N lies in the interval $9 < N < 999$ such that $S_N + P_N = N$, where S_n denotes sum of the digits of the number and P_n product of the digits of the number N. How many such N exists

 - 9
 - 11
 - 7
 - 10

Directions for the Q.147-Q.149
In an island there are only two types of inhabitants α type and β type. α type people are people those who are eligible to ask only questions whose correct answer is 'yes' and β type are people those who are eligible to ask only questions whose correct answer is 'no'. Then answer the following questions

147. A native says "Am I type α ?" What type is he actually

 - α
 - β
 - Either α or β
 - Can't say such a thing

148. Another native says "Am I type β ?" What type is he actually

 - α
 - β
 - Either α or β
 - Can't say such a thing

149. Mr. John asked his wife "are we of different types?". What type is Mr. John

 - α
 - β
 - Either α or β
 - Can't say such a thing

150. N is a three digit number (abc). Such that (ab) is the perfect square and (bc) is also a perfect square. How many such numbers are there

 - 1
 - 2
 - 3
 - 4

Answers

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