

Intelligence Bureau Assistant Central Intelligence Officer Grade-II/ Executive (Tier-I) Solved Paper - 2017

This Paper for “**Guide for Intelligence Bureau Assistant Central Intelligence Officer**” is taken from Book:



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INTELLIGENCE BUREAU (IB) ASSISTANT CENTRAL INTELLIGENCE OFFICER (ACIO) Grade-II (Executive) Tier-I Exam-2017

QUANTITATIVE APTITUDE

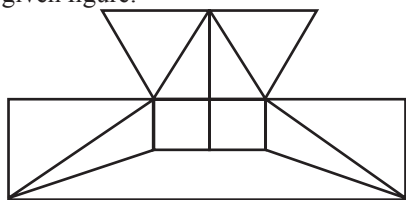
1. The average price of 80 mobile phones is ₹ 30,000. If the highest and lowest price mobile phones are sold out, then the average price of remaining 78 mobile phones is ₹ 29,500. The cost of the highest mobile is ₹ 80,000. The cost of lowest price mobile is :
(a) ₹ 18000 (b) ₹ 15000
(c) ₹ 19000 (d) Can't be determined
2. In a Company the average income of all the employees is ₹ 20000 per month. Recently the company announced increment of ₹ 2000 per month for all the employees. The new average income of all the employees is :
(a) ₹ 22,000 (b) ₹ 24,000
(c) ₹ 28,000 (d) ₹ 26,000
3. Pranav went to the bank at the speed of 60 kmph while returning for his home he covered the half of the distance at the speed of 10 kmph, but suddenly he realized that he was getting late so he increased the speed and reached the home by covering rest half of the distance at the speed of 30 kmph. The average speed of the Pranav in the whole length of journey is :
(a) 24 kmph (b) 14 kmph
(c) 16 kmph (d) 10 kmph
4. The average expenditure of Mr. Sharma for the January to June is ₹ 4200 and he spent ₹ 1200 in January and ₹ 1500 in July. The average expenditure for the months of February to July is :
(a) ₹ 2750 (b) ₹ 3250
(c) ₹ 4250 (d) ₹ 4500
5. At the end of a business conference the ten people present all shake hands with each other once. How many handshakes will there be altogether?
(a) 20 (b) 45 (c) 55 (d) 90
6. The average presence of students of a class in a College on Monday, Tuesday and Wednesday is 32 and on the Wednesday, Thursday, Friday and Saturday is 30. If the average number of students on all the six days is 26, then the number of students who attended the class on Wednesday is?
(a) 50 (b) 40 (c) 60 (d) 70
7. Suresh started his journey from P to Q by his bike at the speed of 40 kmph and then, the same distance he travelled on his foot at the speed of 10 kmph from Q to R . Then he returned from R to P via Q at the speed of 24 kmph. The average speed of the whole trip is :
(a) 18.5 kmph (b) 19.8 kmph
(c) 18.2 kmph (d) 19.2 kmph
8. Ramesh walked 6 km to reach the station from his house, then he boarded a train whose average speed was 60 kmph and thus he reached his destination. In this way he took a total time of 3 hours. If the average speed of the entire journey was 32 kmph, then the average speed of walking is :
(a) 5 kmph (b) 8 kmph
(c) 2 kmph (d) 4 kmph
9. Bala travels first one-third of the total distance at the speed of 10 kmph and the next one-third distance at the speed of 20 kmph and the last one-third distance at the speed of 60 kmph. What is the average speed of Bala?
(a) 18 kmph (b) 19 kmph
(c) 16 kmph (d) 12 kmph
10. The distance of the school and house of Suresh is 80 km. One day he was late by 1 hour than the normal time to leave for the college, so he increased his speed by 4 kmph and thus he reached to college at the normal time. What is the changed speed of Suresh?
(a) 28 kmph (b) 25 kmph
(c) 20 kmph (d) 24 kmph
11. Anita goes to college at 20 kmph and reaches college 4 minutes late. Next time she goes at 25 kmph and reaches the college 2 minutes earlier than the scheduled time. What is the distance of her college?
(a) 16 km (b) 12 km (c) 15 km (d) 10 km
12. Two places R and S are 800 km apart from each other. Two persons start from R towards S at an interval of 2 hours. Whereas A leaves R for S before B . The speeds of A and B are 40 kmph and 60 kmph respectively. B overtakes A at M , which is on the way from R to S . What is the ratio of time taken by A and B to meet at M ?
(a) 1 : 3 (b) 1 : 2 (c) 1 : 4 (d) 3 : 2
13. Two places R and S are 800 km apart from each other. Two persons start from R towards S at an interval of 2 hours. Whereas A leaves R for S before B . The speeds of A and B are 40 kmph and 60 kmph respectively. B overtakes A at M , which is on the way from R to S . What is the distance from R , where B overtakes A ?
(a) 260 km (b) 235 km
(c) 240 km (d) 300 km
14. Ajay covers certain distance with his own speed but when he reduces his speed by 10 kmph, his time duration for the journey increases by 40 hours while if; he increases his speed by 5 kmph from his original speed, he takes 10 hours less than the original time taken. Find the distance covered by him.
(a) 1000 km (b) 1200 km
(c) 1500 km (d) 1800 km
15. The driver of an ambulance sees a bus 40 m ahead of him after 20 seconds, the bus is 60 meter behind. If the speed of the ambulance is 30 kmph, what is the speed of the bus?
(a) 10 kmph (b) 12 kmph
(c) 15 kmph (d) 22 kmph
16. Two rabbits start running towards each other, one from A to B and another from B to A . They cross each other after one hour and the first rabbit reaches B , $5/6$ hour before the second rabbit reaches A . If the distance between A and B is 50 km. What is the speed of the slower rabbit?

- (a) 20 kmph (b) 10 kmph
(c) 15 kmph (d) 25 kmph
17. Pranav walked at 5 kmph for certain part of the journey and then he took an auto for the remaining part of the journey travelling at 25 kmph. If he took 10 hours for the entire journey, what part of journey did he travelled by auto if the average speed of the entire journey be 17 kmph?
(a) 750 km (b) 100 km
(c) 150 km (d) 200 km
18. 5, 12, ?, 41, 87, 214
(a) 19 (b) 35 (c) 22 (d) 26
19. 14, ?, 13, 17.5, 21.75
(a) 10 (b) 12 (c) 12.5 (d) 13.25
20. 15, 5, 4.5, 5.8, 7.9, ?
(a) 9.6 (b) 11.42 (c) 12.23 (d) 10.74
21. Find the sum of first 30 natural numbers?
(a) 470 (b) 468 (c) 465 (d) 463
22. 56% of Y is 182. What is Y?
(a) 350 (b) 364 (c) 325 (d) 330
23. Which of the following two ratios is greater - 17 : 18 and 10 : 11?
(a) 17/18 (b) 10/11
(c) Both are same (d) Cannot determine
24. In a place, supplies are available for 27 days for only 75 people. 15 Guests arrive in the place for vacation on day 1 itself. For how many days will these supplies be sufficient for all these people?
(a) 90 days (b) 11.25 days
(c) 42 days (d) 22.5 days
25. If difference between the Compound Interest and Simple Interest on a certain sum of money for 2 years @5% p.a. is ₹ 122. Find the sum.
(a) ₹ 14,000 (b) ₹ 48,800
(c) ₹ 16,000 (d) ₹ 17,000

GENERAL AWARENESS

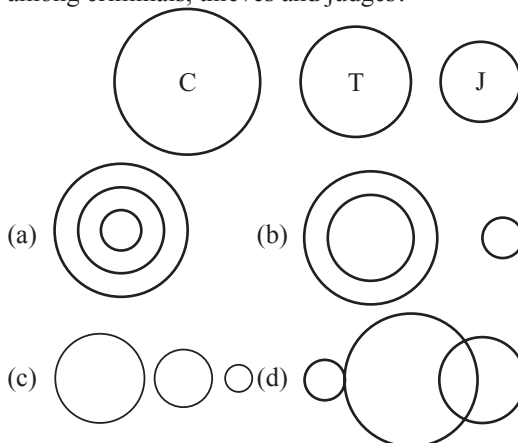
26. 2017 India-ASEAN Youth Summit was held from 14th-19th August, 2017 in :
(a) New Delhi (b) Mumbai
(c) Bhopal (d) Chennai
27. Under project 'Navika Sagar Parikrama', which will commence in September 2017, a team of women officers of the Indian Navy would circumnavigate the globe on an Indian-built sail boat named:
(a) INSV Durga (b) INSV Sindhu
(c) INSV Amba (d) INSV Tarini
28. On August 18, 2017, which Asian country launched its first cyber court specializing in handling Internet-related cases?
(a) Japan (b) China
(c) South Korea (d) Thailand
29. On August 18, 2017, Power Grid Corporation announced that it will get a loan of \$500 million from which international financial institution for its various projects?
(a) Asian Development Bank
(b) World Bank
(c) International Monetary Fund
(d) New Development Bank
30. Who among the following cricketer has continued to be the world's top-ranked One-day batsman in the latest ICC ODI rankings, released in Dubai on August 18, 2017?
(a) Virat Kohli (b) David Warner
(c) AB De Villiers (d) Joe Root
31. Who among the following has won a silver medal in the javelin throw at the first World Para Athletics Junior Championships in Nottwil, Switzerland?
(a) Prince Ahuja (b) Jatinder Singh
(c) Prakash Jaishankar (d) Rink Hooda
32. 'Requisitioning & Acquisition of Immovable Property (Amendment) Bill, 2017', a bill providing for amendment to the regulations governing compensation amount payable at the time of acquisition of immovable property by the central government was introduced in the Lok Sabha on July 18, 2017. This bill is an amendment to the original act that came into force in:
(a) 1952 (b) 1951 (c) 1950 (d) 1949
33. A bill providing for setting up of the Indian Institute of Petroleum and Energy in _____ was introduced in the Lok Sabha on July 18, 2017.
(a) Punjab (b) Haryana
(c) Telangana (d) Andhra Pradesh
34. The best example of the extinction of species due to man's intervention is
(a) Kiwi (b) Dodo
(c) Przewalski's horse (d) Bustard
35. Which of the following utilises sunlight in a direct fashion?
(a) Photo voltaic cell (b) Solar thermal cells
(c) Bio gas production (d) Both (a) and (b)
36. In Internet term WWW, the 4th W stands for :
(a) Web (b) Worm (c) Wreck (d) Wsjk
37. IPv6 addresses have a size of :
(a) 64 bits (b) 128 bits
(c) 256 bits (d) 512 bits
38. The Constitution of India recognizes :
(a) Only religious minorities
(b) Only linguistic minorities
(c) Religious and Linguistic minorities
(d) Religious, Linguistic & Ethnic minorities
39. During which of the following Mughal Emperor's rule, number of Hindus employees by Emperor's Administration was the highest?
(a) Humayun (b) Akbar
(c) Shahjahan (d) Aurangzeb
40. The Mansabdari system introduced by Akbar was borrowed from the system followed in :
(a) Afghanistan (b) Turkey
(c) Mongolia (d) Persia
41. Who among the following is said to have witnessed the reigns of eight Delhi Sultans?
(a) Ziauddin Barani (b) Shams-i-Siraj Afif
(c) Minhaj-us-Siraj (d) Amir Khusrau
42. The President of India referred the Ayodhya issue to the Supreme Court under which Article?
(a) 143 (b) 132 (c) 138 (d) 136
43. Right to privacy as a Fundamental Right is implied in :
(a) Right to Freedom
(b) Right to Life & Personal Liberty
(c) Right to Equality
(d) Right against Exploitation

44. The interval between two sessions of parliament must not exceed :
- (a) 3 months (b) 6 months
(c) 4 months (d) 100 days
45. With reference to inflation in India, which of the following statements is correct?
- (a) Controlling the inflation in India is the responsibility of the Government of India only
(b) The Reserve Bank of India has no role in controlling the inflation
(c) Decreased money circulation helps in controlling the inflation
(d) Increased money circulation helps in controlling the inflation
46. Which of the following brings out the 'Consumer Price Index Number for Industrial Workers'?
- (a) The Reserve Bank of India
(b) The Department of Economic Affairs
(c) The Labour Bureau
(d) The Department of Personnel and Training
47. 'Golden Revolution' is related to
- (a) Precious minerals (b) Pulses
(c) Jute (d) Horticulture
48. A country is said to be in a debt trap if :
- (a) It has to abide by the conditionalities imposed by the International Monetary Fund
(b) It has to borrow to make interest payments on outstanding loans
(c) It has been refused loans or aid by creditors abroad
(d) The World Bank charges a very high rate of interest on outstanding and new loans
49. With respect to GST, consider following statements :
1. Reduces cascading effect.
 2. Is a comprehensive indirect tax
 3. Aimed at forging a common domestic market
 4. Alcohol and petroleum are exempted from GST
- (a) 1, 2, 3 are correct
(b) 2, 3 are correct
(c) 2, 3, 4 are correct
(d) All the above are correct
50. India's current account deficit in Balance of Trade is mainly due to :
- A. Increasing imports of oil and petroleum
B. Increasing imports of gold and silver
C. Increasing imports of foodgrains
D. Increasing imports of iron and steel
- (a) A, B and C (b) A and C
(c) A and B (d) A and D
51. Find the minimum number of straight lines required to make the given figure.

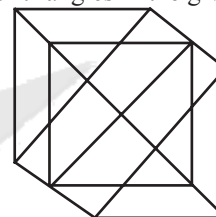


- (a) 16 (b) 17 (c) 18 (d) 19

52. Which of the following figures best depicts the relationship among criminals, thieves and judges?



53. Find the number of triangles in the given figure.



- (a) 18 (b) 20 (c) 24 (d) 27
54. Of the following two statements, both of which cannot be true but both can also be false. Which are these two statements?
- I. All machines make noise.
II. Some machines are noisy
III. No machine makes noise
IV. Some machines are not noisy
- (a) I & II (b) III & IV
(c) I & III (d) II & IV
55. Insert arithmetical signs in the equation for it to be correct $842 = 16$.
- (a) +, × (b) -, +
(c) ÷, + (d) +, ÷
56. If $84 \times 13 = 8$, $37 \times 13 = 6$, $26 \times 11 = 6$, then $56 \times 22 = ?$
- (a) 3 (b) 5 (c) 7 (d) 9
57. If + means divide, × means -, ÷ means multiply and - means plus, then find the value of $9 + 3 \div 4 - 8 \times 2$
- (a) 15 (b) 17 (c) 18 (d) 20
58. Find the next term of the sequence 1, 8, 4, 27, 9,
- (a) 8 (b) 9 (c) 64 (d) 16
59. David divides 78 by half and adds 11. What number he gets at the end?
- (a) 50 (b) $44\frac{1}{2}$ (c) 167 (d) $83\frac{1}{2}$
60. In a knockout football competition 23 teams participated. What was the least number of matches they needed to play to decide the winner?
- (a) 11 (b) 21 (c) 22 (d) 62
61. At half past 5 in the evening, the smaller angle between the hour & minute hands of a clock is:
- (a) 10° (b) 12° (c) 15° (d) 18°
62. Fill in the blanks :
BA__BA__BAC__ACB__CBAC
- (a) AACB (b) BBCA
(c) CCBA (d) CBAC

63. Angles of a given triangle are in the ratio of 2 : 3 : 4. What kind of triangle is the given triangle?
 (a) Right-angled (b) Obtuse angle
 (c) Isosceles (d) Acute angle
64. The houses of *A* and *B* face each other on a road going north-south, *A*'s being on the western side. *A* comes out of his house, turns left, travels 5 km, turns right, travels 5 km to the front of *D*'s house. *B* does exactly the same and reaches the front of *C*'s house. In this context, which one of the following statements is correct?
 (a) *C* and *D* live on the same street
 (b) *C*'s house faces south
 (c) Houses of *C* & *D* are less than 20 km apart
 (d) None of the above
65. BEH, DGJ, (?), EJO, GLQ, INS, ?
 (a) FLR (b) FIS (c) FKO (d) FIL
66. H, V, G, T, F, R, E, P, ?
 (a) K, L (b) D, N (c) C, D (d) L, K
67. 4.3 : 10 :: 8 : ?
 (a) 10 (b) 13 (c) 17 (d) 14
68. If TOUR is written as 1234, CLEAR is written as 56784 and SPARE is written as 90847, find the code for CARE:
 (a) 1247 (b) 4847 (c) 5247 (d) 5847
69. CALANDER is coded in a code as CLANAEDR. Find the code for CIRCULAR under the same rule,
 (a) LACANDER (b) CRUICALR
 (c) CLANADER (d) None of these
70. A. Either he is happy or he is poor.
 B. He is happy.
 Inference : He is poor.
 (a) The inference is definitely true
 (b) The inference is definitely false
 (c) The inference is probably false or true
 (d) The inference can not be drawn
71. A. Those who are honest are good teachers.
 B. Hard working people are honest.
 Inference : Hard work is the necessary quality of a good teacher.
 (a) The inference is definitely true
 (b) The inference is definitely false
 (c) The inference is probably false or true
 (d) The inference can not be drawn
72. Based on the following statements, which is the correct conclusion, drawn :
 Only gentlemen can become members of the club. Many of the members of the club are officers. Some of the officers have been invited for dinner.
 (a) All the members of the club have been invited for dinner
 (b) Some of the officers are not gentlemen
 (c) All gentlemen are members of the club
 (d) Only gentlemen have been invited for dinner
73. In a family there are husband, wife, two sons and two daughters. All the ladies were invited to a dinner. Both sons went out to play. Husband did not return from office. Who was at home?
 (a) Only wife was at home
 (b) All ladies were at home
 (c) Only sons were at home
 (d) Nobody was at home
74. If *A* is the son of *Q*, *Q* and *Y* are sisters, *Z* is the mother of *Y*, *P* is the son of *Z*, then which of the following statements is correct?
 (a) *P* is maternal uncle of *A*
 (b) *P* and *Y* are sisters
 (c) *A* and *P* are cousins
 (d) None of the above
75. There are 5 books *A*, *B*, *C*, *D* & *E* placed on a table. If *A* is placed below *E*, *C* is placed above *D*, *B* is placed below *A* and *D* is placed above *E*, then which of the following books touches the surface of the table?
 (a) *C* (b) *B* (c) *A* (d) *E*

ENGLISH LANGUAGE

76. 'To decamp' would mean :
 (a) To remove tent
 (b) To evict campers
 (c) To decrease pressure
 (d) To leave suddenly
77. Which pair is wrongly matched?
 (a) Discreet : Separate
 (b) Gamut : Whole
 (c) Exacerbated : Increased
 (d) Allude : Escape
78. Identify the correct pair.
 (a) Elude : Dodge (b) Allude : Escape
 (c) Forbear : Refrain (d) Latter : Afterwards
79. A devil's advocate would be:
 (a) An evil person
 (b) A counter argument presenter
 (c) Advocate of a criminal
 (d) Unregistered advocate
80. Satish heard it from the horse's mouth means:
 (a) From an authoritative source
 (b) From a close friend
 (c) From the closest family member
 (d) From his boss
81. Satish is seated _____ Sunita.
 (a) Besides (b) Beside
 (c) Clearly (d) Closest
82. Identify the incorrect pair :
 (a) Moot : Debatable
 (b) Singularly : Individually
 (c) Regimen : Prescription
 (d) Sever : Detach
83. 'I haven't studied a lot lately'. Here, 'lately' is a/an
 (a) Adverb (b) Adjective
 (c) Noun (d) Preposition
84. Which sentence of the following is correct?
 (a) The flowers was arranged carefully
 (b) The meeting start promptly at 11:00
 (c) Computers save time
 (d) Lightning strike indiscriminately
85. Identify the incorrect sentence :
 (a) None of the minutes was wasted
 (b) None of the time was wasted
 (c) Is any of the pizza left?
 (d) None of the above

86. Among the two statements :
- Either Satish or Sejal takes out the garbage
 - Each of these prescriptions have side effects.
- Both are correct
 - (i) is correct, (ii) is incorrect
 - (i) is incorrect, (ii) is correct
 - Both are incorrect
87. Choose the sentence that has incorrect form of words :
- When will you bring you're pictures to work?
 - It is your responsibility to go into details
 - If you're planning to attend, do let me know
 - None of above
88. I _____ her speak on Friday night about the advantages of organic gardening.
- will have heard
 - would hear
 - would have heard
 - will hear
89. Choose an incorrect/incomplete sentence :
- The children in the park, including all those on the swings
 - Sarita is an excellent school teacher
 - She couldn't believe the premise of the story
 - I saw Dr. Ghosh because Dr. Khan was on leave
90. What is not correct if 'nest is to bird'?
- Hangar is to aircraft
 - Vault is to money
 - Orchestra is to music
 - Wine is to bees
91. The exact opposite of 'Lascivious' would mean :
- Devoted
 - Chaste
 - Fluid
 - Manifest
92. 'Repercussion' would mean :
- Reaction
 - Concussion
 - Recollection
 - Clever reply
93. _____ to go out to an Italian restaurant tonight?
- Do you like
 - Are you liking
 - You like
 - Would you like
94. Excuse me, _____ time please?
- You have the
 - What is
 - Have you got the
 - What
95. He likes reading. He was a _____ reader. (Fill in the best fitting word)
- Anxious
 - Enthusiastic
 - Voracious
 - Fervent
96. I remember my sister taking me to the museum. (Choose the best fit among the alternatives)
- I remember I was taken to the museum
 - I remember being taken to the museum by my sister
 - I remember myself being taken to the museum by my sister
 - I remember taken to the museum by my sister
97. 'To make a clean breast of' means :
- To gain prominence
 - To praise oneself
 - To confess everything
 - To destroy everything
98. 'To be above board' means :
- To have a good height
 - To be honest
 - To have no debts
 - To be beautiful
99. That which cannot be corrected means :
- Unintelligible
 - Indelible
 - Illegible
 - Incorrigible
100. State in which the few govern the many is called :
- Monarchy
 - Oligarchy
 - Plutocracy
 - Autocracy

HINTS & EXPLANATIONS

1. (c) Total cost of 80 mobiles = $80 \times 30,000 = ₹24,00,000$
 Total cost of 78 mobiles = $29,500 \times 78 = ₹23,01,000$
 Sum of the cost of highest and lowest mobile
 = $24,00,000 - 23,01,000 = ₹99,000$
 Cost of highest mobile phone = ₹80,000 (given)
 \therefore Cost of lowest mobile phone
 = $99,000 - 80,000 = ₹19,000$.
2. (a) Let number of workers = n
 Total income of n workers = $20000 \times n$
 Increase in amount = 2000 per person
 \therefore Total amount increase = $2000 \times n$
 New total amount of n workers
 = $20000n + 2000n = 22000n$
 \therefore New average income = $\frac{22000n}{n} = ₹22000$.
- Hence, new average income = ₹22000.
3. (a) Let the distance between the Bank and Pranab's home is M Km.
 When he goes to the Bank, speed = 60 km/hr
 \therefore Time taken = $\frac{\text{Distance}}{\text{Speed}} = \frac{M}{60}$ hours

Again, when he returns back,

$$\text{Distance covered} = \frac{M}{2}$$

$$\text{Speed} = 10 \text{ km/hr}$$

$$\text{Time taken} = \frac{x}{2 \times 10} = \frac{x}{20} \text{ hours}$$

$$\text{Again, for another half distance} = \frac{x}{2}$$

$$\text{Speed} = 30 \text{ km/hr}$$

$$\text{Time taken} = \frac{x}{2 \times 30} = \frac{x}{60} \text{ hours}$$

$$\text{Average speed} = \frac{(\text{Total distance covered})}{(\text{Total time taken})}$$

$$= \frac{2x}{\frac{x}{60} + \frac{x}{20} + \frac{x}{60}} = \frac{2x}{x + 3x + x}$$

$$= \frac{2x}{5x} \times 60 = 24 \text{ km/hr.}$$

4. (c) Total expenditure for January to June
 $= 4200 \times 6 = 25200$
 Expenditure in January = ₹1200 (given)
 \therefore Total expenditure for February to June
 $= 25200 - 1200 = ₹24000$
 Expenditure in July = ₹1500 (given)
 \therefore Total expenditure for February to July
 $= 24000 + 1500 = ₹25500$
 \therefore Average expenditure from February to July
 $= \frac{25500}{6} = ₹4250.$

5. (b) Total handshakes on a group of n people = 1
 Here $n = 10$
 Total handshakes together

$$= {}^{10}C_2 = \frac{10!}{2! \times 8!} = \frac{10 \times 9 \times 8!}{2 \times 8!} = 45 \left[\because {}^n C_r = \frac{n!}{r!(n-r)!} \right]$$

6. (c) Number of students present on (Monday, Tuesday and Wednesday)
 $= \text{Average Number} \times 3 = 32 \times 3 = 96$
 Again, number of students present on (Wednesday, Thursday, Friday and Saturday)
 $= 30 \times 4 = 120$
 And, total number of students present on all the six days = $26 \times 6 = 156$
 \therefore Number of students present on Monday and Tuesday = $156 - 120 = 36.$
 \therefore Number of students present on Wednesday = $96 - 36 = 60.$

7. (d) Speed from P to $Q = 40$ kmph
 Speed from Q to $R = 10$ kmph
 \therefore Average speed from P to R
 $= \frac{2 \times 40 \times 10}{40 + 10} = \frac{2 \times 40 \times 10}{50} = 16$ km/hr

Again, speed from point R to $R = 24$ km/hr
 Required Average speed
 $= \frac{2 \times 16 \times 24}{16 + 24} = \frac{2 \times 16 \times 24}{40} = \frac{192}{10} = 19.2$ km/hr.

8. (d) Let the time taken to travel by the train is t hours.
 Then, total distance = $32 \times 3 = 6 + 60 \times t$
 $\Rightarrow 6 + 60t = 96 \Rightarrow 60t = 90$
 $\Rightarrow t = \frac{90}{60} = \frac{3}{2} = 1.5$ hours

Hence, average speed of walking
 $= \frac{6}{1.5} = \frac{6 \times 10}{15} = 4$ km/hr.

9. (a) Let total distance covered by Bala = K km
 ATQ,

$$\text{Total time} = \frac{6K + 3K + K}{180} = \frac{10K}{180} = \frac{K}{18} \text{ hours}$$

Average speed
 $= \frac{\text{Total distance}}{\text{Total time}} = \frac{K \times 18}{K} = 18$ km/hr.

10. (c) Let usual speed = x km/hr,
 then increased speed = $(x + 4)$ kmph
 Distance between school and house = 80 Km (given)

ATQ,
 $\frac{80}{x} - \frac{80}{x+4} = 1$
 $\Rightarrow \frac{80(x+4) - 80x}{x(x+4)} = 1$
 $\Rightarrow \frac{80x + 320 - 80x}{x^2 + 4x} = 1$

$$\Rightarrow x^2 + 4x - 320 = 0$$

$$\Rightarrow x^2 + 20x - 16x - 320 = 0$$

$$\Rightarrow x(x+20) - 16(x+20) = 0$$

$$\Rightarrow (x+20)(x-16) = 0 \Rightarrow x = 16$$

or $x = -20$ (which is not possible)
 Hence, changed speed = $16 + 4 = 20$ km/hr.

11. (d) Let distance of her college = K km
 ATQ,

$$\frac{K}{20} - \frac{4}{60} = \frac{K}{25} + \frac{2}{60}$$

$$\Rightarrow \frac{K}{20} - \frac{K}{25} = \frac{6}{60}$$

$$\Rightarrow \frac{5K - 4K}{100} = \frac{1}{10} \Rightarrow K = 10$$

Hence, the distance of her college = 10 km.

12. (d)

Let A meets B after t hours at M
 $\therefore 40 \times (t + 2) = 60(t)$
 $\Rightarrow 40t + 80 = 60t$
 $\Rightarrow 60t - 40t = 80$

$$\Rightarrow t = \frac{80}{20} = 4$$

\therefore Time taken by $A = (t + 2) = 6$ and $B = t = 4$
 \therefore Required ratio = $6 : 4 = 3 : 2.$

13. (c) Required distance = $60t = 60 \times 4 = 240$ km.

14. (c) Let distance covered by Ajay is x Km.
 And usual speed of Ajay = y km/hr.

$$\frac{x}{y-10} - \frac{x}{y} = 40 \Rightarrow \frac{x(y-y+10)}{y(y-10)} = 40$$

$$\Rightarrow 10x = 40 \times y(y-10) \Rightarrow x = 4y(y-10) \dots(i)$$

Again, when he increases his speed by 5 kmph.

then, $\frac{x}{y} - \frac{x}{y+5} = 10$

$$\Rightarrow \frac{x(y+5-y)}{y(y+5)} = 10$$

$$\Rightarrow 5x = 10 \times y(y+5)$$

$$\Rightarrow x = 2y(y + 5)$$

$$2y(y + 5) = 4y(y - 10)$$

$$\Rightarrow 2y^2 + 10y = 4y^2 - 40y$$

$$\Rightarrow 2y^2 = 50y \Rightarrow y = 25$$

Putting the value of y in (ii),

$$x = 2 \times 25(25 + 5) = 50 \times 30 = 1500$$

Hence, distance covered by Ajay = 1500 km.

15. (b) Here, Relative speed

$$= \frac{\text{Total distance}}{\text{Total time}} = \frac{(40 + 60)}{20} \text{ m/s} = 5 \text{ m/s}$$

$$\text{Speed (in kmph)} = 5 \times \frac{18}{5} \text{ km/hr} = 18 \text{ km/hr}$$

Relative speed = Speed of ambulance - Speed of Bus

$$18 = 30 - \text{Bus's speed}$$

\therefore Bus's speed = $30 - 18 = 12$ kmph.

16. (a) Let second rabbit takes t hour with speed N .

\therefore First rabbit takes $\left(t - \frac{5}{6}\right)$ hour with speed M .

$$M = \frac{50}{t - \frac{5}{6}}, N = \frac{50}{t}$$

As they cross each other in 1 hour.

$$\text{Total speed} = M + N$$

$$\text{Now, time} = \frac{\text{Distance}}{\text{Speed}}$$

$$\Rightarrow 1 = \frac{50}{(M + N)} \Rightarrow (M + N) = 50$$

$$\Rightarrow \frac{50}{t - \frac{5}{6}} + \frac{50}{t} = 50$$

$$\Rightarrow \frac{50 \times 6}{6t - 5} + \frac{50}{t} = 50$$

$$\Rightarrow \frac{6}{6t - 5} + \frac{1}{t} = 1 \Rightarrow \frac{6t + 6t - 5}{t(6t - 5)} = 1$$

$$\Rightarrow 12t^2 - 5 = 6t^2 - 5t \Rightarrow 6t^2 - 17t + 5 = 0$$

$$\Rightarrow 6t^2 - 15t - 2t + 5 = 0 \Rightarrow 3t(2t - 5) - 1(2t - 5) = 0$$

$$\Rightarrow (2t - 5)(3t - 1) = 0 \Rightarrow 2t - 5 = 0 \text{ or } 3t - 1 = 0$$

$$\Rightarrow t = \frac{5}{2} \text{ or } t = \frac{1}{3}$$

Putting the value of $t = \frac{5}{2}$ in N .

$$N = \frac{50}{t} = \frac{50}{\frac{5}{2}} = \frac{50 \times 2}{5} = 20 \text{ km/hr.}$$

Hence, the speed of the slower rabbit = 20 km/hr.

17. (c) Average speed = 17 kmph

Total travel time = 10 hrs.

Total distance = $17 \times 10 = 170$ km

Let walking distance = x km

\therefore Distance travelled by auto = $(170 - x)$ km

$$\frac{x}{5} + \frac{170 - x}{25} = 10$$

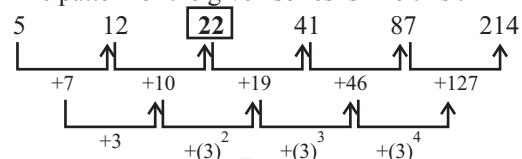
$$\Rightarrow \frac{5x + 170 - x}{25} = 10$$

$$\Rightarrow 4x + 170 = 250 \Rightarrow 4x = 80 \Rightarrow x = 20$$

Walking distance = 20 km.

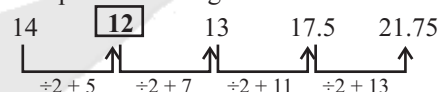
Hence, distance covered by auto = $170 - 20 = 150$ km.

18. (c) The pattern of the given series is like this :



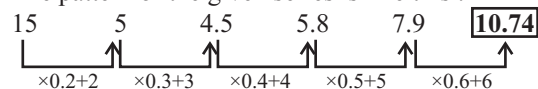
Hence, 22 will come at the place of question mark.

19. (b) The pattern of the given series is like this :



Hence, 12 will come at the place of question mark.

20. (d) The pattern of the given series is like this :



Hence, 10.74 will come at the place of question mark.

21. (c) From formula,

$$\text{Sum of first } n \text{ natural numbers} = \frac{n(n+1)}{2}$$

\therefore Sum of first - 30 natural numbers

$$= \frac{30 \times 31}{2} = 15 \times 31 = 465.$$

22. (c) As, 56% of $y = 182$

$$\Rightarrow \frac{56}{100} \times y = 182$$

$$\Rightarrow y = \frac{182 \times 100}{56} = 13 \times 25 = 325$$

Hence, $y = 325$.

23. (a) $\frac{17}{18}$ and $\frac{10}{11}$

$$17 \times 11 \text{ and } 18 \times 10$$

$$187 \text{ and } 180$$

Clearly, $187 > 180$

$$\therefore \frac{17}{18} > \frac{10}{11}$$

Hence, $\frac{17}{18}$ is greater than $\frac{10}{11}$.

24. (d) $75 + 15 = 90$ people
 Since 75 people eat food in 27 days.
 $\therefore 90$ people eat food in $\frac{75 \times 27}{90}$ days
 $= \frac{135}{6} = 22.5$ days
25. (b) Let $P = ₹100$
 S.I. = $\frac{P \times r \times t}{100} = \frac{100 \times 5 \times 2}{100} = ₹ 10$
 $A = P \left(1 + \frac{r}{100}\right)^t = 100 \left(1 + \frac{5}{100}\right)^2$
 $= 100 \left(\frac{21}{20}\right)^2 = 100 \times \frac{21 \times 21}{20 \times 20} = \frac{441}{4}$
 C.I. = $A - P = \frac{441}{4} - 100 = \frac{441 - 400}{4} = \frac{41}{4}$
 $= \frac{41}{4} - 10 = \frac{41 - 40}{4} = \frac{1}{4}$
 When difference $\frac{1}{4}$, then $P = ₹ 100$
 When difference 122, then
 $P = 100 \times 4 \times 122 = ₹ 48800$
26. (c) The 2017 India-ASEAN Youth Summit will be held in Bhopal, Madhya Pradesh from August 14 to 19, 2017 with theme 'Shared values, common destiny'. This event is being organized in collaboration with the Association of Southeast Asian Nations (ASEAN) Secretariat and the India Foundation. Over 100 delegates from 10 ASEAN countries - Brunei, Cambodia, Lao PDR, Myanmar, Malaysia, Indonesia, the Philippines, Singapore, Thailand and Vietnam - will participate in the summit. This forum will enhance people-to-people contacts between India and ASEAN countries.
27. (d)
28. (b) **China launched its first cyber court** specializing in handling Internet-related cases in the **e-commerce hub of Hangzhou**. The Hangzhou Internet Court in Hangzhou will handle cases such as online trade disputes and copyright lawsuits. Hangzhou is home to many Internet companies, including e-commerce giant Alibaba.
29. (a)
30. (a)
31. (d) Rinku Hooda (18) from India has won silver in the F46 javelin throw event at the World U-20 Para Athletics Championships in Nottwil, Switzerland on August 7, 2017. He got disabled as a three-year old when his left arm got stuck in a paddysowing machine. He won his first national level medal in 2013 during a para nationals meet at the Rajiv Gandhi stadium in Rohtak.
32. (a) 33. (d) 34. (b) 35. (a)
36. (b) The **World-Wide Web Worm (WWW)** is claimed to be the first search engine for the World-Wide Web, though it was not released until March 1994, by which time a number of other search engines had been made publicly available. It was developed in September, 1993 by Oliver McBryan at the University of Colorado.
 The worm created a database of 300,000 multimedia objects which could be obtained or searched for keywords via the WWW. In contrast to present-day search engines, the WWW featured support for Perl regular expressions.
37. (b) Internet Protocol version 6 (IPv6) is the most recent version of the Internet Protocol (IP), the communications protocol that provides as identification and location system for computers on networks and routes traffic across the Internet. IPv6 was developed by the Internet Engineering Task Force (IETF) to deal with the long-anticipated problem of IPv4 address exhaustion. IPv6 is intended to replace IPv4. IPv6 became a Draft Standard in December 1998, and became an Internet Standard on 14 July, 2017. IPv6 uses a 128-bit address, theoretically allowing 2^{128} , or approximately 3.4×10^{38} addresses.
38. (c)
39. (d) Aurangzeb has been subject to controversy and criticism for his policies that abandoned his predecessors' legacy of pluralism and religious tolerance, citing his introduction of the Jizya tax, destruction of Hindu temples, execution or forced conversion of his non-Muslim subjects to Islam and execution of the ninth Sikh guru, Guru Tegh Bahadur. Various historians question the historicity of the claims of his critics, arguing that his destruction of temples has been exaggerated, and noting that he also built temples, paid for the maintenance of temples, employed significantly more Hindus in his imperial bureaucracy than his predecessors did, and opposed bigotry against Hindus and Shia Muslims.
40. (c) Mansabdar implies the generic term for the military-kind grading of all royal functionaries of the Mughal Empire. The Mansabdari system introduced by Akbar was borrowed from the system followed in Mongolia.
41. (d) Amir Khusrau (1253-1325). He is regarded as the "father of qawwali". He was an Indian musician, scholar and poet. He was an iconic figure in the cultural history of the Indian subcontinent. He is said to have witnessed the reigns of eight Delhi Sultans from 'Ghiyasuddin Balban to Sultan Muhammad bin Tughluq'.
42. (a) 43. (b) 44. (b) 45. (c)
46. (c) This index is the oldest among the CPI indices as its dissemination started as early as in 1946. The history of compilation and maintenance of Consumer Price Index for Industrial workers owes its origin to the deteriorating economic conditions of the workers post

first world war which resulted in sharp increase in prices. As a consequence of rise in prices and cost of living, the provincial governments started compiling Consumer Price Index. The estimates were however not satisfactory. In pursuance of the recommendation of Rau Court of enquiry, the work of compilation and maintenance was taken over by government in 1943. Since 1958-59, the compilation of CPI (IW) has been started by Labour Bureau, an attached office under Ministry of Labour & Employment.

47. (d) 48. (b) 49. (d) 50. (c) 51. (b)

52. (b) 53. (c) 54. (c)

55. (a) On inserting the arithmetical signs we get,
 $8\ 4\ 2 = 16$
 $\Rightarrow 8 + 4 \times 2 = 16$
 $\Rightarrow 8 + 8 = 16$

Hence, required sign = +, ×

56. (c) As, pattern follows by it,

$84 \times 13 = 8$
 $\therefore 12 - 4 = 8 \quad [(8 + 4) - (1 + 3)]$

Since $26 \times 11 = 6$

$\therefore 8 - 2 = 6$

Similarly, $56 \times 22 = 11 - 4 = 7$

Hence, 56×22 will be = 7.

57. (c) According to the question

+ means ÷

× means -

÷ means ×

- means +

$9 + 3 \div 4 - 8 \times 2$

$= 9 \div 3 \times 4 + 8 - 2$

$= 3 \times 4 + 8 - 2 = 12 + 8 - 2 = 20 - 2 = 18.$

58. (c) Pattern follows by the series,

1 8 4 27 9 64

↓ ↓ ↓ ↓ ↓ ↓

1^2 2^3 2^2 3^3 3^2 4^3

Hence, next term of the sequence = 64.

59. (c) According to the question,

$$78 \div \frac{1}{2} + 11 = 78 \times 2 + 11 = 156 + 11 = 167$$

Hence, David gets the number at the end is = 167.

60. (c) According to the question,

In 30 minutes minute-hand makes angle
 $= 30 \times 6^\circ = 180^\circ$

In $\frac{11}{2}$ hours hour-hand makes angle

$$= \frac{11}{2} \times 30^\circ = 11 \times 15 = 165^\circ$$

The smallest angle between the hour hand and the minute hand = $180^\circ - 165^\circ = 15^\circ$.

61. (c) In a knockout competition, every team except the winner is defeated once and once only, so the number of matches is one less than the number of teams in this case $23 - 1 = 22$.

62. (c) BACBACBACBACBACBAC

Hence, CCBA will come at the blank space.

63. (d) Let, $\angle A = 2x$, $\angle B = 3x$ and $\angle C = 4x$

$$\angle A + \angle B + \angle C = 180^\circ$$

$$\Rightarrow 2x + 3x + 4x = 180^\circ$$

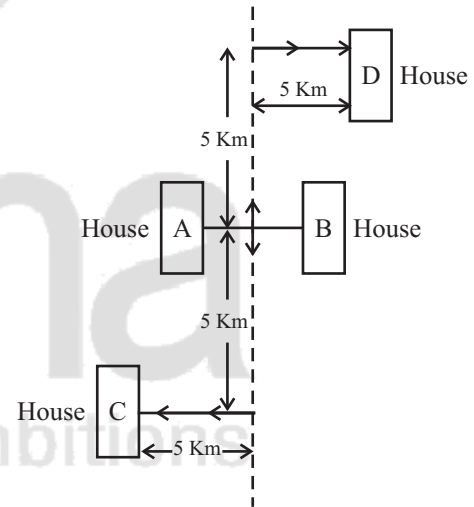
$$\Rightarrow 9x = 180^\circ \Rightarrow x = 20^\circ$$

$$\angle A = 40^\circ, \angle B = 60^\circ \text{ and } \angle C = 80^\circ$$

Hence, the given triangle is Acute angle.

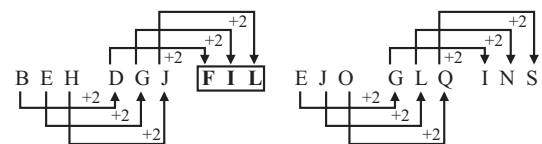
64. (c) According to the question,

Given information can be shown by diagram as,



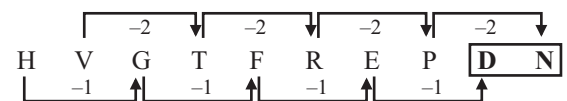
From the above diagram it is clear that the house (c) and (d) are less than 20 Km apart.

65. (d)



Hence, FIL will come at the place of question mark.

66. (b) Pattern follows by the series as,



Hence, DN will come at the place of question mark.

67. (c)

$$\frac{4.3}{10} = \frac{43}{100} = 0.43 \quad \left| \quad \frac{8}{10} = 0.80$$

$$\frac{8}{17} = 0.47 \quad \left| \quad \frac{8}{13} = 0.61$$

Hence, $\frac{4.3}{10} = \frac{8}{17} \quad \left| \quad \frac{8}{14} = 0.57$

68. (d) As,

T O U R is written as

↓ ↓ ↓ ↓

1 2 3 4

C L E A R is written as

↓ ↓ ↓ ↓ ↓

5 6 7 8 4

Similarly,

S P A R E is written as.

↓ ↓ ↓ ↓ ↓

9 0 8 4 7

Hence, the code of C A R E will be.

↓ ↓ ↓ ↓

5 8 4 7

69. (b) As,

C A L A N D E R

↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓

C L A N A E D R

is coded as.

Similarly,

C I R C U L A R

↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓

C R I U C A L R

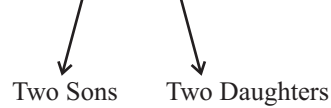
will be coded as.

70. (b)

71. (a)

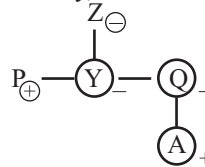
72. (b)

73. (d) In a family,
H ← → W

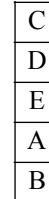


All the ladies were invited to a dinner.
Both Sons went out to play.
Husband did not return from office.
Hence, nobody was at home.

74. (a) Clearly, P is the maternal uncle of A.



75. (b) We have 5 books A, B, C, D, E placed on a table.



Clearly, B book touches the surface of the table.

76. (d)

78. (*) Incorrect Question/Option

79. (b)

80. (a)

81. (b)

82. (c)

83. (a)

84. (c)

85. (a)

86. (b)

87. (d)

88. (d)

89. (a)

90. (d)

91. (b)

92. (a)

93. (d)

94. (b)

95. (c)

96. (b)

97. (c)

98. (b)

99. (d)

100. (b)