

RRB ALLAHABAD ASSISTANT STATION MASTER EXAM
EXAM HELD ON: 13-06-2010

1. $42 : 56 :: 72 : ?$
(A) 96 (B) 92
(C) 100 (D) 51
2. $6 : 18 :: 4 : ?$
(A) 12 (B) 16
(C) 2 (D) 6
3. RESPONSIBLE : KHM0D :: SENSITIVE : USRD :: CLARIFICATION : ?
(A) KSEBSN (B) MHZHHZ
(C) NSBEQK (D) PUDGSM
4. COUNSEL : BITIRAK :: GUIDANCE : ?
(A) FPHZZKAB
(B) HOHYBJBA
(C) EOHYZKBB
(D) FOHYZJBB
5. Which of the following states came into existence on the basis of language ?
(A) West Bengal
(B) Andhra Pradesh
(C) Uttar Pradesh
(D) Bihar
6. Who among the following Presidents had been in office continuously for two terms ?
(A) Dr. Rajendra Prasad
(B) Dr. S. Radhakrishnan
(C) Dr. Zakir Hussain
(D) None of the above
7. Under which of the following conditions, the President can declare a state of Emergency ?
(A) In a state of external invasion or internal disturbance
(B) When the rule of laws breaks down in some state
(C) Instability in financial condition
(D) None of the above
8. Who among the following Prime Ministers did not face the Parliament during his term of office ?
(A) Chandrashekhar
(B) Atal Bihari Vajpayee
(C) Charan Singh
(D) B. P. Singh
9. 4 plates (50 cm × 5 cm) are arranged in such a way that they form a square. Calculate the area of the square.
(A) 1600 sq cm
(B) 1800 sq cm
(C) 2500 sq cm
(D) 2000 sq cm
10. One tap fills up a tank in two hours and the second tap empties it in 3 hours. How long will the tank take to get filled up if both the taps start functioning simultaneously ?
(A) 6.5 hrs
(B) 6 hrs
(C) 8 hrs
(D) None of the above
11. Difference between the length and breadth of a field is 48 metres and its perimeter is of 160 metres. What would be the length of a side of a square whose area is equal to this field ?
(A) 32 metre (B) 16 metre
(C) 64 metre (D) 48 metre
12. In a co-educational school there are 600 students. Average age of boys is 12 years and that of girls is 11 years. If the average age of all the students is 11 years 9 months, what would be the number of girls ?
(A) 150 (B) 350
(C) 450 (D) 250
13. Sittings of Supreme Court take place in New Delhi. Under some unavoidable circumstance, by whose permission can the Chief Justice shift the sitting place elsewhere ?
(A) President
(B) Parliament
(C) On request of Legislative Assembly
(D) On decision of majority of judges
14. First of all, the hypothesis of formation of constitution originated in which of the following countries ?
(A) France (B) Switzerland
(C) Britain (D) Japan
15. Who among the following is associated with Indian civilisation ?
(A) Sir Besant Smith
(B) D. D. Goswami
(C) Sir Alexandar Wingham
(D) Martemer Campbell
16. Which of the following diseases spreads due to virus ?
(A) Diphtheria (B) Influenza
(C) Typhoid (D) Cholera
17. Marked price of an article is Rs. 500. The shopkeeper sells the article at successive discounts of 15% and 10%. Another shopkeeper sells the same article and gives the successive discounts of 9% and 16%. From which shopkeeper the customer will get more benefit ?
(A) First
(B) Second
(C) Equal from both
(D) None of the above
18. There is a copper wire of 1 cm diameter and 8 cm length. It is moulded in a wire of 18 cm length. What would be the diameter of this new wire ?
(A) $\frac{1}{30}$ cm (B) $\frac{2}{15}$ cm
(C) $\frac{2}{3}$ cm (D) $\frac{1}{15}$ cm
19. $\left(1 - \frac{1}{2}\right) \left(1 - \frac{1}{3}\right) \left(1 - \frac{1}{4}\right) \dots \dots \left(1 - \frac{1}{40}\right) = ?$
(A) $\frac{1}{40}$ (B) $\frac{1}{20}$
(C) Countless (D) Zero
20. Foodgrains for 220 soldiers have been stored in a fort. Foodgrains will be consumed in 16 weeks, if each soldier is given 45 gm per day. The same foodgrains will last

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- for 24 weeks if each soldier is given 33 gms per day and some soldiers are removed. How many soldiers should be removed ?
 (A) 44 (B) 160
 (C) 20 (D) 52
21. Headquarters of North-Eastern Railway is located at which of the following cities ?
 (A) Guwahati
 (B) Gorakhpur
 (C) Kolkata
 (D) Bhubaneswar
22. In 1866, Dadabhai Naoroji had founded East India Association in the following city—
 (A) Paris (B) London
 (C) New York (D) Tokyo
23. In which of the following sessions did Indian National Congress split into Moderate Party and Extremist Party ?
 (A) Nagpur (B) Allahabad
 (C) Surat (D) Kolkata
24. Who among the following was the first Governor-General of India ?
 (A) Lord Amherst
 (B) Lord William Bentinck
 (C) Sir Metcalfe
 (D) Robert Clive
25. After 1957, who among the following had declared, in a court in Allahabad, about transfer of India's administration to the British crown ?
 (A) Lord Canning
 (B) Sir John Lawrence
 (C) Lord Mayo
 (D) Lord Northbrook
26. 6 : 1 is the ratio of the age of Amar and that of Ajay. After 7 years, this ratio becomes 7 : 2. What is present age of Ajay ?
 (A) 9 years (B) 7 years
 (C) 5 years (D) 11 years
27. Some amount of money has to be distributed among A, B and C in the ratio 8 : 7 : 6. Rs. 2700 is the difference between the shares of A and B. The share of C will be—
 (A) Rs. 4050 (B) Rs. 3900
 (C) Rs. 4200 (D) Rs. 4500
28. If the selling price of bananas falls by 20%, we get 5 more bananas for Rs. 10. What was the previous price of one banana ?
 (A) 30 paise (B) 50 paise
 (C) 40 paise (D) 60 paise
29. If all the vowels of the word COMPUTER are taken together, the letters of the word COMPUTER can be arranged in how many different ways ?
 (A) 4320 (B) 7220
 (C) 15370 (D) 2880
30. In a queue of boys, Mahesh is at 10th place from right side and Suresh at 10th place from left side. If both change their places mutually, Suresh comes at 27th place from left side. What would be the place of Mahesh from right side ?
 (A) 25th (B) 29th
 (C) 26th (D) 10th
31. In some code language, STATION is written as URCRKMP. How can BRING be written in the same code language ?
 (A) DSKPH (B) DTKLH
 (C) DSGLH (D) DPKLI
32. Who is the author of the book 'Shane Warne's Century' ?
 (A) Harsha Bhogle
 (B) Shane Warne
 (C) Duglus Hense
 (D) None of these
33. Who was honoured with Lal Bahadur Shastri National Award, 2008 ?
 (A) E. Shridharan
 (B) Ratan Tata
 (C) Sarthak Bahuria
 (D) M. Damodaran
34. Term of the Inter-Governmental Commission for Indo-Russian Military Cooperation has been extended up till which of the following years ?
 (A) 2010 (B) 2019
 (C) 2020 (D) 2025
35. What age-limit has been fixed for child-artists by the National Children-rights Protection Commission ?
 (A) 14 years (B) 10 years
 (C) 18 years (D) 12 years
36. What is the full form of IRSMI.
 (A) International Railway Strategic Manager Institute
 (B) International Radio Station Managers Institute
 (C) Indian Remote Sensing Management Institute
 (D) Indian Remote Sensing Manufacturing Industry
37. Pointing to an old man, Kunal said, "His son is my son's uncle" How is the old man related to Kunal ?
 (A) Grandfather (B) Brother
 (C) Father (D) Uncle
38. A girl introduced a boy as the son of the daughter of the father of her uncle. The boy is girl's ?
 (A) Uncle (B) Nephew
 (C) Son (D) Brother
39. A man is facing North-west. He turns 90 degrees in the clockwise direction and then 135 degrees in the anti-clockwise direction. Which direction is he facing now ?
 (A) West (B) South-West
 (C) North-East (D) South-East
40. Unscramble the letters in the words given in the question and find the odd one out—
 (A) RIQA (B) AIRYS
 (C) AAPJN (D) RNAI
41. TRADE : UQBCF :: PLATE : ?
 (A) QMBUF (B) QKBSF
 (C) QKBUF (D) QMZUD
42. Find the odd one out—
 (A) Valley : Depth
 (B) High : Low
 (C) Good : Bad
 (D) Black : White
43. Find I and II in the relationship—
 I : Needle :: Chef : II
 I – (E) Thread (F) Cloth
 (G) Doctor (H) Tailor
 II – (P) Food (Q) Knife
 (R) Chicken (S) Oven
 (A) GP (B) HQ
 (C) EQ (D) FR
44. Find the odd one out—
 (A) SATURDAY
 (B) MONDAY
 (C) TUESDAY
 (D) THURSDAY

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45. Which area of India receives the least rainfall ?
 (A) Eastern Rajasthan
 (B) Western Tamil Nadu
 (C) Western Ghats
 (D) Ladakh
46. Select the macro plant nutrients—
 I. Phosphorus
 II. Iron
 III. Carbon
 IV. Nitrogen
 (A) I and IV
 (B) I, II, III
 (C) I, III, IV
 (D) All of the above
47. A car engine coolant performs which of the following functions ?
 1. Raises the boiling point of water
 2. Lowers the freezing point of water
 3. Reduces rusting tendency
 4. Lubricates the water pump
 (A) 1, 2, 3 (B) 1, 3, 4
 (C) 1 & 3 only (D) 1, 2, 3, 4
48. Who amongst the following was the brother of Dhritrashtra ?
 (A) Dusshashan (B) Vidur
 (C) Dhruv (D) Jaydrath
49. Indira Krishnamurthy Nooyi is the CEO of which famous company ?
 (A) PepsiCo
 (B) Coca Cola
 (C) SAIL
 (D) General Electric
50. 8th March is celebrated as—
 (A) International Labour Day
 (B) Population Day
 (C) International Women's Day
 (D) Earth Day
51. March 21 is celebrated as—
 (A) World Forestry Day
 (B) International Environment Day
 (C) World Day
 (D) Meteorological Day
52. Who has been appointed as the first official ambassador of the Youth Olympic Games to be held in Singapore ?
 (A) Michael Phelps
 (B) Sania Mirza
 (C) Leander Paes
 (D) Gary Kirsten
53. RHEA and TETHYS are the names of—
 (A) Moons of Saturn
 (B) Space shuttles sent by USA
 (C) Sachin Tendulkar's pets
 (D) Greek Film Actors
54. In which of the following animal while walking, the fore and hind limbs of one side move together ?
 (A) Giraffe (B) Nilgai
 (C) Deer (D) Camel
55. A white woman marries a black man. They have 4 children, 2 sons 2 daughters. What proportion of these children is likely to be black ?
 (A) 25%
 (B) 50%
 (C) 100%
 (D) None of the above
56. The chief poisonous snakes in India are—
 (A) Sea snake, pit viper, krait, cobra, rat-snake
 (B) Russels viper, pit viper, cobra, krait, sea-snake
 (C) Python, pit viper, russel's viper, cobra, krait
 (D) Cobra, krait, wolf-snake, python
57. Sakshi gave away 20% of her stamp collection to Jyoti and 15% to Aruna. If she still has 520 stamps, then how many did she have initially ?
 (A) 700 (B) 600
 (C) 800 (D) 1000
58. If the ratio of boys to girls in a class is 5 : 3, then which of the following CANNOT be the number of children in that class ?
 (A) 40 (B) 96
 (C) 150 (D) 24
59. Which of the following is the arithmetic mean of $2x^2 - 10$, $30 - x^2$ and $-x^2 + 6x + 10$?
 (A) $3x + 15$ (B) $6x + 10$
 (C) $2x + 30$ (D) $2x + 10$
60. If $x + 2y = a$ and $x - 2y = b$, which of the following is an expression for xy ?
 (A) $(a + b)/2$ (B) $(a^2 - b^2)/4$
 (C) $(a^2 - b^2)/8$ (D) ab
61. Select the word which cannot be formed by taking letters from the word 'ADULTERATION'—
 (A) RELATION (B) RETURN
 (C) RETAIL (D) TOILET
62. Select the word which cannot be formed by taking letters from the word 'CARPENTER'—
 (A) CARPET (B) PAINTER
 (C) REPENT (D) NECTAR
63. Rohit is seventeenth from the left end of a row of 29 boys and Karan is seventeenth from the right end of the same row. How many boys are there between them in the row ?
 (A) 5 (B) 4
 (C) 6 (D) 3
64. Ajay ranked sixteenth from the top and twenty-ninth from the bottom among those who passed the examination. Six boys did not participate in the competition and five failed in it. How many boys were there in the class ?
 (A) 44 (B) 50
 (C) 40 (D) 55
65. Who first postulated that DNA has a structure of double-helix shape ?
 (A) Newton
 (B) Edward Jenner
 (C) Madame and Pierre Curie
 (D) Watson and Crick
66. Which is not an insectivorous plant ?
 (A) Pitcher plant
 (B) Bladderwort
 (C) Butterwort
 (D) Hornwort
67. 'Jhum' is—
 (A) A type of cultivation
 (B) The name of a river valley
 (C) Folk dance of Bihar
 (D) A tribe
68. Out of the given substances, the substance made only from carbon is—
 (A) Acetic acid (B) Graphite
 (C) Sugar (D) Methane
69. The smallest number to be added to 491395 to make the sum a perfect square is—
 (A) 4 (B) 6
 (C) 8 (D) 5

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70. Three different qualities of Sugar are in quantities 408 kg, 468 kg and 516 kg. These are to be packed into packets of equal size without mixing. What is the largest size of packet which can be used ?
 (A) 36 (B) 24
 (C) 50 (D) 12
71. A mixture of 45 litres of spirit and water contains 20% of water in it. How much water must be added to it to make the water 25% in the new mixture ?
 (A) 22 lit (B) 5 lit
 (C) 4 lit (D) 3 lit
72. Find the value of S :

$$\begin{array}{ccccccc} 3240 & 540 & 108 & 27 & & & \\ 3720 & P & Q & R & S & & \end{array}$$

 (A) 12:33 (B) 9:33
 (C) 10:33 (D) 11:33
73. Who won the women's gold medal for shooting in the Inter-shoot Shooting Championship held in Netherlands in Feb. 2010 ?
 (A) Avneet Kaur
 (B) Vidya Pillai
 (C) Suma Shirur
 (D) Suma Dixit
74. Jadranka Kosor, a politician and former journalist has been elected the first female Prime Minister of which country in 2009 ?
 (A) Croatia (B) Albania
 (C) Romania (D) Kazakhstan
75. Which male tennis player has recently achieved 15 Grand Slam titles ?
 (A) Pete Sampras
 (B) Roger Federer
 (C) Andy Roddick
 (D) Bjorn Borg
76. In which country was the 45th World Archery Championship organized in Sept. 2009 ?
 (A) Turkey (B) South Korea
 (C) Japan (D) USA
77. For how many positive integers a is it true that $a^2 \leq 2a$?
 (A) One (B) Two
 (C) Three (D) None
78. At 3 : 00 am the temperature was 13 degrees below zero. By noon it has risen to 32 degrees. What was the average hourly increase in temperature, in degrees ?
 (A) (19/9) (B) 5
 (C) (19/6) (D) 7.5
79. If $x \odot y$ represents the number of integers greater than x and less than y , what is the value of $-x \odot \sqrt{2}$?
 (A) 4 (B) 5
 (C) 2 (D) 3
80. If $\frac{A + 5B}{2B} = A - 2B$ then what is the value of A when $B = -1$?
 (A) 3 (B) 0.333
 (C) 0.222 (D) 2
81. Select the **bold** word/phrase of the sentence given below which contains an error.
 The major difficulty **confronting** the authorities **were** a reluctance of the people **to talk**; they had been warned not **to say anything** to the police.
 (A) confronting
 (B) were
 (C) to talk
 (D) to say anything
82. Select the **bold** word/phrase of the sentence given below which contains an error.
By order of the student council, the **wearing** of slacks by **us** girls in school **have been permitted**.
 (A) By order
 (B) wearing
 (C) us
 (D) have been permitted
83. What is the type of adverb used in the following sentence ?
 "He did not work hard, therefore he failed."
 (A) Adverb of manner
 (B) Adverb of comparison
 (C) Adverb of reason
 (D) Adverb of place
84. Choose the word which does not have a meaning similar to the word : STRANGE
 (A) Interesting (B) Odd
 (C) Peculiar (D) Unusual
85. Choose the word or phrase which does not have a meaning similar to the word : DESTITUTE
 (A) Homeless (B) Uncared for
 (C) Poor (D) Affluent
86. Choose the word or phrase which has a meaning opposite to the meaning of the word : IDLE
 (A) Efficient (B) Indolent
 (C) Lazy (D) Inactive
87. Choose the word or phrase which has a meaning opposite to the meaning of the word : UPRIGHT
 (A) Just (B) Honest
 (C) Slanted (D) Erect
88. Select the word that closely fits with the definition : "Government by one person"
 (A) Monarchy (B) Democracy
 (C) Oligarchy (D) Dictatorship
89. Select the word that closely fits with the definition : "a person living in foreign country".
 (A) Abroad (B) Native
 (C) Foreigner (D) Remote
90. Select the correct meaning of the **bold** phrase in the sentence given below—
 "You must **keep your head** whatever happens."
 (A) Be earnest
 (B) Remain calm
 (C) Concentrate
 (D) Be self-respecting
91. Select the correct meaning of the **bold** phrase in the sentence given below—
 "We are usually **taken in** by sweet talk"
 (A) Deceived (B) Influenced
 (C) Encouraged (D) Flattered
92. Fill in the blanks by using preposition(s)—
 "They were quarrelling something which I did not know."
 (A) about, of (B) for, on
 (C) about, in (D) on, for
93. Fill in the blanks with the word given below—
 Despite all it's, a term of enlistment in the Army can be both stirring and satisfying to a college graduate still undecided on a career.
 (A) adventures (B) reward
 (C) frustrations (D) renown

94. Fill in the blanks with the words given below—

Although he had numerous films to his credit and a reputation for technical....., the movie maker lacked originality; all his films were sadly of the work of others.

- (A) competence, contradictory
(B) skill, independent
(C) expertise, derivative
(D) ability, unconscious

95. Fill in the blanks from the words given below—

Those interested in learning more about how genetics applies to trees will have to the excellent technical journals where most of the pertinent material is

- (A) suffer through, located
(B) resort to, found
(C) subscribe to, ignore
(D) rely on, unrepresented

96. Fill in the blanks from the words given below—

The number of turtles has because the encroachment of humans on their territory has caused them to their customary breeding places.

- (A) increased, locate
(B) multiplied, endured
(C) dwindled, shun
(D) diminished, accept

97. Fill in the blanks from the words given below—

The newspaper's former editors remembered him as man whose and exhaustive reporting was worth the trouble.

- (A) domineering, wearisome
(B) cantankerous, meticulous
(C) fastidious, garbled
(D) congenial, pretentious

98. Select the **bold** word/phrase of the sentence given below which contains an error.

The region has a climate **so severe** that plants **growing**

- (A) (B)

there rarely had been more than

- (C)

12 inches **high**.

- (D)

99. Select the **bold** word/phrase of the sentence given below which contains an error.

We were **all ready for leave to**

- (A) (B)

the amusement park when Ram's car **broke down; we were forced**

- (C) (D)

to postpone our outing.

100. Select the **bold** word/phrase of the sentence given below which contains an error.

Each one of the dogs in the (A)

show **require a special kind of**

- (B) (C) (D)

diet.

Answers with Hints

1. (A) ∴ 42 : 56 :: 72 : ?

$$\therefore ? = \frac{56 \times 72}{42} = 96$$

2. (A) ∴ 6 : 18 :: 4 : ?

$$\therefore ? = \frac{18 \times 4}{6} = 12$$

3. (C) A s, R E S P O N S I B L E

and S E N S I T I V E
U S R D

Similarly,

C L A R I F I C A T I O N
N S B E Q K

4. (D) C O U N S E L

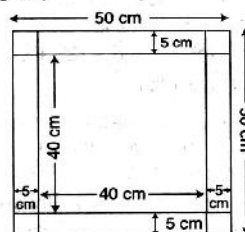
-1 | -6 | -1 | -5 | -1 | -4 | -1 | ∴
B I T I R A K

G U I D A N C E

-1 | -6 | -1 | -5 | -1 | -4 | -1 | -3 |
F O H Y Z J B B

5. (B) 6. (A) 7. (A) 8. (C)

9. (A) 4 plates (50 cm × 5 cm) are arranged in such a way, that they form a square (as shown in the figure)



∴ Area of this square

$$= (50 - 5 - 5) \times (50 - 5 - 5)$$

$$= 40 \times 40 \text{ sq cm}$$

$$= 1600 \text{ sq cm}$$

10. (B) ∴ Part of the tank filled by first tap in 1 hour = $\frac{1}{2}$

⇒ Part of the tank emptied by second tap in 1 hour = $\frac{1}{3}$

∴ Part of the tank filled by both pipes opened in 1 hour

$$= \frac{1}{2} - \frac{1}{3}$$

$$= \frac{3-2}{(2 \times 3)}$$

$$= \frac{1}{6}$$

∴ Time taken by both pipes to fill the tank = 6 hours

<p>Trick : Req. time = $\frac{3 \times 2}{3-2}$ = 6 hours</p>

11. (A) Let the length of the field = x metre

∴ Breadth of the field = (x - 48) metre

∴ Perimeter of the rectangular field

$$= 2 \times (\text{Length} \times \text{Breadth})$$

$$\Rightarrow 160 \text{ m} = 2 [x + (x - 48)]$$

$$\Rightarrow (2x - 48) = \frac{160}{2}$$

$$= 80 \text{ metre}$$

$$\therefore x = \frac{80 + 48}{2}$$

$$= 64 \text{ metre}$$

Let the length of one side of the square field be a metre.

∴ Area of the square field

$$= \text{Area of the rectangular field}$$

$$\Rightarrow a \times a = 64 \times (64 - 48)$$

$$\Rightarrow a^2 = 8^2 \times 4^2$$

$$\therefore a = 8 \times 4$$

$$= 32 \text{ metre}$$

12. (A) Let the number of girls in the school = x

Then, as per question,

$$\therefore (600 - x) \times 12 + x \times 11$$

$$= 600 \times 11 \frac{3}{4}$$

$$\Rightarrow 7200 - 12x + 11x$$

$$= 600 \times \frac{47}{4}$$

$$= 7050$$

$$\therefore x = 7200 - 7050$$

$$= 150$$

13. (A) 14. (D) 15. (C) 16. (B)
17. (B) As per question—

Equivalent discount of 2 successive discounts given by first shopkeeper

$$= \left[10 + 15 - \frac{10 \times 15}{100} \right] \%$$

$$= [25 - 1.5] \%$$

$$= 23.50\% \quad \dots(1)$$

Equivalent discount of two successive discounts given by the second shopkeeper

$$= \left[9 + 16 - \frac{9 \times 16}{100} \right] \%$$

$$= [25 - 1.44] \%$$

$$= 23.56\%$$

\therefore Difference between amount of discounts

$$= (23.56 - 23.50) \times \text{Rs. } 500$$

$$= \text{Rs. } (0.6 \times 500)$$

$$= \text{Rs. } 30$$

Hence, the customer will be more profitable, to purchase from the **second shopkeeper**.

18. (C) Let the diameter of the moulded wire = D cm.

Then, as per question—

$$\therefore 18 \times \pi \left(\frac{D}{2} \right)^2 = 8 \times \pi \left(\frac{1}{2} \right)^2$$

$$\Rightarrow D^2 = \frac{8}{18} = \frac{4}{9}$$

$$= \left(\frac{2}{3} \right)^2$$

$$\therefore D = \frac{2}{3} \text{ cm.}$$

19. (A)

$$? = \left(1 - \frac{1}{2} \right) \left(1 - \frac{1}{3} \right) \left(1 - \frac{1}{4} \right)$$

$$\left(1 - \frac{1}{39} \right) \left(1 - \frac{1}{40} \right)$$

$$= \frac{1}{2} \times \frac{2}{3} \times \frac{3}{4} \times \dots \times \frac{38}{39} \times \frac{39}{40}$$

$$= \frac{1}{40}$$

20. (C) \therefore At 45 gm per soldier per day the provision is 16 weeks for = 220 soldiers
 \Rightarrow 1 gm per soldier per day, the provision is for 1 week for = 220 \times 45 \times 16 soldiers

\therefore 33 gm per soldier per day the provision is for 24 weeks

$$= \frac{220 \times 45 \times 16}{33 \times 24}$$

$$= 200$$

\therefore Reqd. number of soldiers to go out

$$= 220 - 200$$

$$= 20$$

21. (B) 22. (B) 23. (C) 24. (B) 25. (A)

26. (B) Let the present ages of Amar and Ajay are 6x years and x years respectively. Then, as per question—

$$\therefore \frac{6x+7}{x+7} = \frac{7}{2}$$

$$\Rightarrow 12x + 14 = 7x + 49$$

$$\Rightarrow (12 - 7)x = 49 - 14$$

$$= 35$$

$$\therefore x = \frac{35}{5}$$

$$= 7 \text{ years}$$

27. (A) Let the amount to be distributed among A, B and C be Rs. x

As per question,

$$\text{Share of A} = \frac{3}{(3+7+6)} \times x$$

$$= \text{Rs. } \frac{3x}{16}$$

$$\text{Share of B} = \frac{7}{(3+7+6)} \times x$$

$$= \text{Rs. } \frac{7x}{16}$$

\therefore Difference between the shares of A and B = 2700

$$\Rightarrow \frac{7x}{16} - \frac{3x}{16} = 2700$$

$$\Rightarrow \frac{(7-3)x}{16} = \text{Rs. } 2700$$

$$\therefore x = 4 \times 2700$$

$$= \text{Rs. } 10800$$

\therefore Reqd. share of C

$$= \frac{6}{(3+6+7)} \times 10800$$

$$= \frac{6}{16} \times 10800$$

$$= \text{Rs. } 4050$$

28. (B) Let the original price of 1 banana = Rs. x

After 20% reduction in price,

Price of 1 banana

$$= \frac{(100 - 20)}{100} \times x$$

$$= \text{Rs. } \frac{4}{5} x$$

As per question,

$$\therefore \frac{10}{\left(\frac{4}{5} x \right)} - \frac{10}{x} = 5$$

$$\Rightarrow \frac{5}{2x} - \frac{2}{x} = 1$$

$$\Rightarrow \frac{(5-4)}{2x} = 1$$

$$\therefore x = \text{Rs. } \frac{1}{2}$$

$$= 50 \text{ paise}$$

29. (A) Total number of letters in word 'COMPUTER' = 8

Total number of vowels in word 'COMPUTER' = (O, U, E) = 3

If all the vowels takes as 1 letter, the number of letters = (1 + 5) = 6

\therefore Required number of different arrangements

$$= {}^6P_6 \times {}^3P_3$$

$$= [6 \times 3]$$

$$= 720 \times 6$$

$$= 4320$$

30. (C) When Suresh and Mahesh interchange their positions, then Suresh will be 27th from left and 10th from right end.

\therefore Total number of boys in the line

$$= 27 + 10 - 1$$

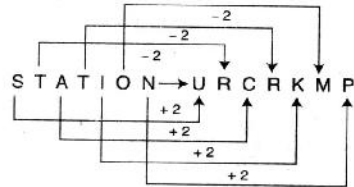
$$= 36$$

\therefore Position of Mahesh in the line from right end

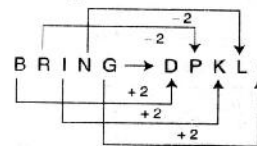
$$= (36 - 10)$$

$$= 26\text{th}$$

31. (D) As,



Similarly,



32. (B) 33. (A) 34. (A) 35. (A) 36. (C)
37. (C) 38. (D) 39. (A) 40. (C) 41. (B)
42. (A) 43. (A) 44. (B) 45. (D) 46. (D)
47. (D) 48. (B) 49. (A) 50. (C) 51. (A)
52. (A) 53. (A) 54. (D) 55. (B) 56. (C)

57. (C) Let the total number of stamps, Sakshi have initially be x . Then,

$$\therefore (100 - 20 - 15)\% \text{ of } x = 520$$

$$\Rightarrow \frac{65}{100} \times x = 520$$

$$\therefore x = \frac{520 \times 100}{65} = 800$$

58. (C) \therefore The ratio of boys to girls in a class

$$= 5 : 3$$

$$\Rightarrow \text{Sum of ratio} = 5 + 3 = 8$$

Only number = 150 is not exactly divisible by 8.

\therefore Required number CANNOT be the number of children in that class = 150

59. (D) Required arithmetic mean

$$= \frac{1}{3} [(2x^2 - 10) + (30 - x^2) + (-x^2 + 6x + 10)]$$

$$= \frac{1}{3} [30 + 6x]$$

$$= 2x + 10$$

60. (B) $\therefore a = x + 2y$

$$\text{and } b = x - 2y$$

$$\therefore \frac{(a^2 - b^2)}{4} = \frac{1}{4} [(x + 2y)^2 - (x - 2y)^2]$$

$$= \frac{1}{4} [(x^2 + 4y^2 + 4xy) - (x^2 + 4y^2 - 4xy)]$$

$$= \frac{1}{4} [8xy]$$

$$= 2xy$$

(an expression for xy)

61. (B) Required word which cannot be formed by taking letters from the word 'ADULTERATION'

$$= \text{RETURN}$$

\therefore It has two letters of R)

62. (B) Required word which cannot be formed by taking letters from the word 'CARPENTER'

$$= \text{PAINTER}$$

\therefore It has one letter I)

63. (D) \therefore Rohit is 17th from the left end and Karan is 17th from the right end of the same row of 29 boys.

\therefore Required number of boys between them in the row

$$= (17 + 17 - 2 - 29)$$

$$= 34 - 31 = 3$$

(i.e. 18th, 19th and 20th from any end)

64. (D) As per question,

\therefore Ajay ranked 16th from the top and 29th from the bottom among those, who passed the examination.

\Rightarrow Total number of boys, who passed the examination

$$= 16 + 29 - 1 = 44$$

\Rightarrow Total number of boys, who did not participate exam

$$= 6$$

\Rightarrow Total number of failed boys

$$= 5$$

\therefore Total number of boys in the class

$$= 44 + 6 + 5 = 55$$

65. (D) 66. (D) 67. (A) 68. (B)

69. (B) $\therefore (700)^2 = 4,90,000$

$$\text{and } (701)^2 = 4,90,000 + (700 + 701)$$

$$= 4,91,401$$

\therefore Required smallest number

$$= 4,91,401 - 4,91,395 = 6$$

70. (D) $\therefore 408 = 2 \times 2 \times 2 \times 3 \times 17$

$$468 = 2 \times 2 \times 3 \times 3 \times 13$$

$$516 = 2 \times 2 \times 3 \times 43$$

Largest size of packet

$$= \text{H.C.F. of } 408, 468 \text{ and } 516$$

$$= 2 \times 2 \times 3$$

$$= 12 \text{ kg}$$

71. (D) Amount of water in the given mixture

$$= 20\% \text{ of } 45 \text{ litres}$$

$$= \frac{20}{100} \times 45$$

$$= 9 \text{ litres}$$

Let the amount of water to be added be x litres. Then, as per question—

$$\therefore \frac{(9 + x)}{(45 + x)} = 25\%$$

$$= \frac{25}{100} = \frac{1}{4}$$

$$\Rightarrow 36 + 4x = 45 + x$$

$$\Rightarrow 4x - x = 45 - 36$$

$$\therefore x = \frac{9}{3} = 3 \text{ litres}$$

72. (C) The order of the given number-series is as follows—

$$\begin{array}{ccccccc} 3240 & 540 & 108 & 27 \\ \uparrow & \uparrow & \uparrow & \uparrow \\ -6 & +5 & +4 & \end{array}$$

Similarly,

$$\begin{array}{r} 3720 \\ \uparrow +6 \\ P = 620 \\ \uparrow +5 \\ Q = 124 \\ \uparrow +4 \\ R = 31 \\ \uparrow +3 \\ S = 10 \cdot 33 \end{array}$$

$$\therefore S = \frac{31}{3} = 10 \cdot 33$$

73. (C) 74. (A) 75. (B) 76. (B)

77. (B) \therefore For any positive integer a , it is true

$$a^2 + 2a$$

\therefore Required positive integers

$$a = 1 \text{ and } 2 \text{ only}$$

\therefore Required number of positive integers

$$= \text{Two (2)}$$

78. (B) Reqd. average hourly increase in temperature

$$= \frac{\text{Total increase in temp.}}{\text{Time taken}}$$

$$= \frac{32^\circ - (-13^\circ)}{12 \text{ a.m.} - 3 \text{ a.m.}}$$

$$= \frac{45^\circ}{9 \text{ hours}}$$

$$= 5 \text{ degrees/hour}$$

79. (B) $\therefore x \otimes y$ represents the number of integers as follows—

$$x < \text{Integer} < y$$

$\therefore -\pi \otimes \sqrt{2}$ represents

$$\Rightarrow -\frac{22}{7} < \text{Integers} < \sqrt{2}$$

$$\Rightarrow -3 \cdot 14 < \text{Integers} < 1 \cdot 44$$

\Rightarrow Reqd. integers will be $(-3, -2, -1, 0, +1)$

\therefore Number of required integers = 5

$$80. (B) \therefore \frac{A + 5B}{2B} = A - 2B$$

$$\Rightarrow A + 5B = 2AB - 4B^2$$

If $B = -1$, then

$$\therefore A + 5(-1) = 2A(-1) - 4(-1)^2$$

$$\Rightarrow A - 5 = -2A - 4$$

$$\Rightarrow A + 2A = 5 - 4 = 1$$

$$\therefore A = \frac{1}{3} = 0 \cdot 333$$

81. (A) 82. (B) 83. (C) 84. (A) 85. (D)

86. (A) 87. (C) 88. (A) 89. (C) 90. (B)

91. (B) 92. (B) or (D) 93. (D) 94. (C)

95. (B) 96. (C) 97. (A) 98. (C) 99. (A)

100. (B)