1) The difference between the local value and the face value of 7 in the numberal 32675149 is
a) 75142
b) 64851
c) 5149
d) 69993
e) None of these
2) A man purchased 2 articles at the same price. One he sold at $20 \%$. Profit, While other sold at the loss of, half of the 1 Profit. Finally what was the Profit percentage?
3) If the number 91876 * 2 is completely divisible by 8 , then the smallest whole number in place of $*$ will be :
a) 1
b) 2
c) 3
d) 4
e) None of these
4) The average monthly income of $P$ and $Q$ is Rs. 5050. The average monthly income of Q and R is Rs. 6250 and the average monthly income of P and R is Rs5200. The monthly income of $P$ is:
a) 3500
b) 4000
c) 4050
d) 5000
e) None of these
5) The average age of husband, wife and their child 3 years ago was 27 years and that of wife and the child 5 years ago was 20 years. The present age of the husband is:
a) 35 years
b) 40 years
d) Data inadequate
e) None of these
c) 50 years
6) A car owner buys petrol at Rs.7.50, Rs. 8 and Rs. 8.50 per liter for three successive years. What approximately is the average cost per liter of petrol if he spends Rs. 4000 each year?
a) Rs. 7.98
b) Rs. 8
c) Rs. 8.50
d) Rs. 9
e) None of these
7) The maximum numbers of students among them 1001 pens and 910 pencils can be distributed in such a way that each student gets the same number of pens and same number of pencils is
a) 91
b) 910
c) 1001
d) 1911
e) None of these
8) 252 can be expressed as a product of prime as
a) $2 \times 2 \times 3 \times 3 \times 7$
b) $2 \times 2 \times 2 \times 3 \times 7$
c) $3 \times 3 \times 3 \times 3 \times 7$
d) $2 \times 3 \times 3 \times 3 \times 7$
e) None of these
9) Three different containers contain 496 litres, 403 litres and 713 litres of mixtures of milk and water respectively. What biggest measure can measure all the different quantities exactly?
a) 1 litre
b) 7 litre
c) 31 litre
d) 41 litre
e) None of these
10) If $40 \%$ of a number is equal to two-third of another number, what is the ratio of first number to the second number?
a) $2: 5$
b) $3: 7$
c) $5: 3$
d) $7: 3$
e) None of these
11) An amount of Rs. 735 was divided between A, B and C. If each of them had received Rs. 25 less, their shares would have been in the ratio of $1: 3: 2$. The money received by C was :
a) Rs. 195
b) Rs. 200
c) Rs. 225
d) Rs. 245
e) None of these
12) The speeds of three cars are in the ratio $5: 4: 6$. The ratio between the time taken by them to travel the same distance is :
a) $5: 4: 6$
b) $6: 4: 5$
c) $10: 12: 15$
d) $12: 15: 10$
e) None of these
13) A, B and C started a shop by investing Rs.27,000, Rs. 72,000 and Rs. 81,000 respectively. At the end of the year, the profits were distributed among them. If C's share of profit be Rs. 36,000 , then the total profit was :
a) Rs. 80,000
b) Rs. 95,600
c) Rs. $1,08,000$
d) Rs. 1,16,000
e) None of these
14) A and B are partners in a business. A contributes $\frac{1}{4}$ of the capital for 15 months and B received $\frac{2}{3}$ of the profit. For how long B's money was used?
a) 6 months
b) 9 months
c) 10 months
d) 1 year
e) None of these
15) A, B, C enter into a partnership investing Rs.35,000, Rs. 45,000 and Rs. 55,000 respectively. The respective shares of A, B, C in an annual profit of Rs. 40,500 are :
a) Rs.10,500, Rs.13,500, Rs.16,500
b) Rs.11,500, Rs.13,000, Rs. 16,000
c) Rs.11,000, Rs.14,000, Rs.15,500
d) Rs.11,500, Rs.12,500, Rs.16,500
e) None of these
16) In how many ways can 21 books on English and 19 books on Hindu be placed in a row on a shelf so that two books on Hindi may not be together?
a) 3990
b) 1540
c) 1995
d) 3672
e) None of these
17) Two numbers $a$ and $b$ are chosen at random from the set of first 30 natural numbers. The probability that $a^{2}-b^{2}$ is divisible by 3 is:
a) $\frac{37}{87}$
b) $\frac{47}{87}$
c) $\frac{17}{29}$
d) Data inadequate
e) None of these
18) From a pack of 52 cards, two are drawn one by one without replacement. Find the probabilities that both of them are kings.
a) $\frac{11}{21}$
b) $\frac{13}{121}$
c) $\frac{1}{221}$
d) $\frac{1}{121}$
e) None of these
19) Tickets numbered 1 to 20 are mixed up and then a ticket is drawn at random. What is the probability that the ticket drawn has a number which is a multiple of 3 or 5 ?
a) $1 / 2$
b) $2 / 5$
c) $8 / 15$
d) $9 / 20$
e) None of these
20) A bag contains 2 red, 3 green and 2 blue balls. Two balls are drawn at random. What is the probability that none of the balls drawn is blue?
a) $10 / 21$
b) $11 / 21$
c) $2 / 7$
d) $5 / 7$
e) None of these
21) In a box, there are 8 red, 7 blue and 6 green balls. One ball is picked up randomly. What is the probability that it is neither red nor green?
a) $1 / 3$
b) $3 / 4$
c) $7 / 19$
d) $8 / 21$
e) None of these
22) My brother is 3 years elder to me. My father was 28 years of age when my sister was born while my mother was 26 years of age when I was born. If my sister was 4 years of age when my brother was born, then, what was the age of my father and mother respectively when my brother was born?
a) 32 yrs., 23 yrs.
b) 32 yrs., 29 yrs .
c) $35 \mathrm{yrs} ., 29 \mathrm{yrs}$.
d) 35 yrs., 33 yrs.
e) None of these
23) A person was asked to state his age in years. His reply was, "Take my age three years hence, multiply it by 3 and then subtract three times my age three years ago and you will know how old I am." What was the age of the person?
a) 14 years
b) 18 years
c) 20 years
d) 32 years
e) None of these
24) A father said to his son, "I was as old as you are at present at the time of your birth." If the father's age is 38 years now, the son's age five years back was
a) 14 years
b) 19 years
c) 33 years
d) 38 years
e) None of these
25) I gain 70 paise on Rs.70. My gain percent is
a) $0.1 \%$
b) $1 \%$
c) $7 \%$
d) $10 \%$
e) None of these
26) A book was sold for Rs. 27.50 with a profit of $10 \%$. If it were sold for Rs.25.75, then what would have been the percentage of profit or loss?
a) $2 \%$
b) $3 \%$
c) $4 \%$
d) $5 \%$
e) None of these
27) A shopkeeper buys 100 eggs at Rs.1.20 per piece. Unfortunately 4 eggs got spoiled during transportation. The shopkeeper sells the remaining eggs at Rs. 15 a dozen. Find his profit or loss?
a) Rs. 120
b) 102
c) 201
d) 121
e) None of these
28) The sum of integers from 113 to 113113 which are divisible by 7 is :
a) 92358576
b) 913952088
c) 94501895
d) 912952066
e) None of these
29) Find the sum to $n$ terms of the series $3+6+10+16+\ldots$.
a) $\frac{n(n-1)}{2}-1$
b) $n(n+1)+2^{n}-1$
c) $n(n+2)+1$
d) $3(2 n+1)-2^{n}$
e) None of these
30) In an A.P. consisting of 23 terms, the sum of the three terms in the middle is 114 and that of the last three is 204 . Find the sum of first three terms :
a) 14
b) 42
c) 24
d) 69
e) None of these
31) An aero plane covers a certain distance at a speed of 240 kmph in 5 hours. To cover the same distance in $1 \times 2 / 3$ hours, it must travel at a speed of
a) 300 kmph
b) 360 kmph
c) 600 kmph
d) 720 kmph
e) None of these
32) A truck covers a distance of 550 meters in 1 minute whereas a bus covers a distance of 33 km in 45 minutes. The ratio of their speed is
a) $3: 4$
b) $4: 3$
c) $3: 5$
d) $5: 3$
e) None of these
33) A boy goes to his school from his house at a speed of $3 \mathrm{~km} . \mathrm{hr}$ and return at a speed of $2 \mathrm{~km} / \mathrm{hr}$. If he takes 5 hours in going and coming, the distance between his house and school is
a) 5 km
b) 5.5 km
c) 6 km
d) 6.5 km
e) None of these
34) A can do a work in 15 days and B in 20 days. If they work on it together for 4 days, then the fraction of the work that is left is:
a) $1 / 4$
b) $1 / 10$
c) $7 / 15$
d) $8 / 15$
e) None of these
35) A can lay railway track between two given stations in 16 days and $B$ can do the same job in 12 days, with help of C , they did the job in 4 days only. Then, C alone can do the job in:
a) $9 \frac{1}{5}$
b) $9 \frac{2}{5}$
c) $9 \frac{3}{5}$
d) 10
e) None of these

## Directions (Q. 36-39) Read the following passage carefully and answer the question given below it.

Six friends Abhishek, Deepak, Mridul, Pritam, Ranjan and Salil married within a year in the months of February, April, July, September, November and December and in the cities of Ahmedabad, Bengaluru, Chennai, Delhi, Mumbai and Kolkata but not necessarily following the above order. The brides names were Geetika, Jasmine, Hema, Brinda, Ipsita and veena, once again not following any order. The following are some facts about their weddings.
(i) Mridul's wedding took place in Chennai, however he was not married to Geetika or Veena
(ii) Abhishek's wedding took place in Ahmedabad and ranjan's in Delhi; however neither of them was married to Jasmine or Brinda
(iii) The wedding in Kolkata took place in February
(iv) Hema's wedding took place in April, but not in Ahmedabad
(v) Geetika and Ipsita got married in February and November and in Chennai and Kolkata but not following the above order
(vi) Pritam visited Bengaluru and Kolkata only after his marriage in December (vii) Salil was married to Jasmine to September

36 Hema's husband is
a) Abhishek
b) Deepak
c) Ranjan
d) Pritam
e) Mridul
37. Deepak's wedding took place in
a) Bengaluru
b) Mumbai
c) Kolkata
d) Delhi
e) Chennai
38. In Mumbai, the wedding of one of the friends took place in the month of
a) April
b) September
d) December
e) July
39. Salil's wedding was held in
a) Bengaluru
b) Chennai
c) Kolkata
d) Delhi
e) Mumbai
40. Step IV of an input is ' 62 sound 56 sleep roam present 3349 '. What will be the input definitely?
a) sound 62 sleep 56 roam present 3349
b) sleep sound 6256 roam present 3349
c) 62 sound sleep 56 roam present 3349
d) Cannot be determined
e) None of these
41. Which of the following will be the $t$ hird step for input 'jockey firm 3643 growth chart 2245 ?
a) 45 jockey 43 growth firm 36 chart 22
b) 45 jockey 43 firm growth 36 chart 22
c) 45 jockey 43 growth 36 firm chart 22
d) 45 jockey 43 firm 36 growth chart 22
e) None of these
42.Step II of an input is '53 window 4250 door lock key 36 '. How many more steps will be required to complete the arrangement?
a) Three
b) Four
c) Five
d) Six
e) None of these

Directions (Q. 43-47) In each question below is given a statement followed by two assumptions numbered I and II. An assumption is something supposed or taken for granted. You have to co nsider the statement and the following assumptions and decide which of the assumptions is implicit in the statement.

Give answer:
a) If only assumption I is implicit.
b) If only assumption II is implicit.
c) If either assumption I or II is implicit.
d) If neither assumption I nor II is implicit.
e) If both assumptions I and II are implicit.

## 43. Statement

The city transport corporation has introduced air-conditioned buses on various routes to attract people travelling to their work places by car and hence, reduce congestion on the roads.

Assumptions I. Majority of the people may still prefer to travel to their work places in their own cars.
II. Many people may now opt for these buses for travelling to their work places.

## 44. Statement

The state government has announced an amnesty scheme for all the housing societies defaulting on payment of municipal taxes asking these societies to pay upfront $6 \%$ of the dues and regularize their status without any penalty.

Assumptions: I. Most of the defaulting housing societies may now opt for amnesty scheme and pay up their dues.
II. Other housing societies which have been paying their taxes regularly may file case against the government for discriminatory practices.

## 45. Statement

Mr.X started at 9.00 am from his residence to attend a meeting sc heduled to be hed at 11.00 am and instructed his assistant to meet him at the venue of the meeting and hand over the relevant documents.

Assumptions:
I. Mr.X may arrive at the meeting place before 11.00 am .
II. Mr.X's assistant may be able to arrive at the venue before commencement of the meeting.
46. Statement

If you are a first class graduate with good communication skill and also have work experience of at least two years in the sales related activities, you are welcome in our organization - An employment advertisement.

Assumptions: I. Many with good communication skills may not respond to the advertisement.
II. All the first class graduates may posses good communication skills.

## 47. Statement

The railway authority has announced suspension of movements of train on the main track within the city limit for carrying out major reparir works during

Saturday and Sunday and advised the commuters to plan their journey accordingly.

Assumptions: I. The commuters may protest against the decision of the railway authority and may disrupt other transport services.
II. The municipal authority may be able to deploy additional buses during Saturday and Sunday to help the commuters.

## Directions (Q48-52) Study the following information to answer the given questions.

There are 9 friends A, B, C, D, E, F, G, H seated in a circle facing the centre.
ii) AC, DG, HE and FB are seated adjacent to each other. A is also seated adjacent to H .
iii) $B$ is $2^{\text {nd }}$ to the right of $H$.
iv) E is $3^{\text {rd }}$ to the right of C .
48. Who is $2^{\text {nd }}$ to the left of A?
a) D
b) G
c) F
d) Cannot be determined
e) None of these
49. Who is $3^{\text {rd }}$ to the left of C ?
a) G
b) D
c) $B$
d) Cannot be determined
e) None of these
50. What is C's position with reference to E?
a) $5^{\text {th }}$ to the right
b) $4^{\text {th }}$ to the left
c) $4^{\text {th }}$ to the right
d) $3^{\text {rd }}$ to the right
e) Cannot be determined
51. Who is $2^{\text {nd }}$ to the right of $A$ ?
a) $B$
b) E
c) F
d) Cannot be determined
e) None of these
52. Who among the following pairs may not be seated adjacent to each other?
a) AH
b) DC
c) EB
d) Cannot be determined
e) None of these

Directions (Q. 53-57) In each of the questions below are given four statements followed by three conclusions numbered I, II and III. You have to take the given statements to be true even if they seem to be at variance from commonly known facts. Read all the conclusions and then decide which of the given conclusions logically follows from the given statements disregarding commonly known facts.
53. Statements: All booklets are packets.

All packets are bottles.
Some bottles are cans.
Some cans are pitchers.
Conclusions:
I. Some pitchers are bottles.
II. Some cans are packets.
III. Some bottles are booklets.
a) None follows
b) Only I follows
c) Only II follows
d) Only III follows
e) Only II and III follow
54. Statements:

Some ropes are walls.
Some walls are sticks.
All sticks are chairs.
All chairs are tables.
Conclusions:
I. Some tables are walls.
II. Some chairs are ropes.
III. Some sticks are ropes.
a) None follows
b) Only I follows
c) Only II follows
d) Only III follows
e) Only II and III follow
55. Statements:

Some rivers are jungles. Some jungles are horses.
Some horses are tents.
Some tents are buildings.

Conclusions:
I. Some buildings are horses.
II. Some tents are jungles.
III. Some horses are rivers.
a) None follows
b) Only I follows
c) Only II follows
d) Only III follows
e) Only I and II follow
56. Statements:

Some pens are knives.
All knives are pins.
Some pins are needles.
All needles are chains.
Conclusions:
I. Some chains are pins.
II. Some needles are knives.
III. Some pins are pens.
a) Only I follows
b) Only II follows
c) Only III follows
d) Only II and III follow
e) None of these
57. Statements: All fields are ponds. No pond is tree. Some trees are huts. All huts are goats.

## Conclusions:

I. Some goats are fields.
II. No goat is field.
III. Some goats are trees.
a) Only I follows
b) Only II follows
c) Only III follows
d) Only eithr I or II follows
e) Only either I or II and III follow
58. $R$ is sister of $M$ who is brother of $H$. $D$ is mother of $K$ who is brother of $M$. How is $R$ related to D ?
a) Sister
b) Daughter
c) Mother
d) Data inadequate
e) None of these
59. . K is brother of T . M is mother of $\mathrm{K} . \mathrm{W}$ is brother of M . How is W related to T ?
a) Maternal uncle
b) Paternal uncle
c) Grandfather
d) Data inadequate
e) None of these
60. Pointing to a woman, Nirmal said, "She is the daughter of my wife's grandfather's only child". How is the women releated to Nirmal?
a) Wife
b) Sister-in-law
c) Sister
d) Data inadequate
e) None of these
61. $D$ is brother of $K . M$ is sister of $K$. $T$ is father of $R$ who is brother of $M . F$ is mother of $K$. At least how many sons does $T$ and $F$ have?
a) Two
b) Three
c) Four
d) Data inadequate
e) None of these
(62.) What is the position of the one who likes Physics with respect to Gopi?

1) Second to the Left
2) Third to the right
3) Fourth to the left
4) Second to the right
5) Third to the left
(63.) Which of the following subjects does Dolly like?
6) Biology
7) Mathematics.
8) Hindi
9) Chemistry
10) English
64.) Who among the following likes Geography?
11) Baby
12) Faguni
13) Himani
14) Arti
15) Dolly

## 65.. Input: any hen 4924 far wide 3469

 Find the output.66. . After how many steps you can get output?
67.. How many more steps are required to complete the arrangement given below:
$\begin{array}{lllllll}\text { year } & 92 & \text { ultra } & 15 & 23 & \text { string house } 39\end{array}$
68 . Statement - The State Government has decided to appoint four thousand primary school teachers during the next financial year.

## Assumptions

I. There are enough schools in the state to accommodate four thousand additional primary school teachers.
II. The eligible candidates may not be interested to apply as the Government may not finally appoint such a large number of primary school teachers.
69. Statement - The school authority has decided to increase the number of students in each classroom to seventy from the next academic session to bridge the gap between income and expenditure to a larger extent.

## Assumptions

I. The income generated by way of fees of the additional students will be sufficient enough to bridge the gap.
II. The school will get all the additional students in each class from the next academic session.
70. Direction - The Government has made an appeal to all the citizens to honestly pay income tax and file returns reflecting the true income level to help the Government to carry out development activities.
Assumptions -
I. People may now start paying more taxes in response to the appeal.
II. The total income tax collection may considerably increase in the near future.

Directions (Q. 71-73) Choose the word which is most similar in meaning to the word/group of words printed in bold as used in the passage.
71. Rather
a) Regular
b) Quite
c) Instead
d) But
e) Known
72. Release
a) Free
b) Vacate
c) Vent
d) Let expire
e) Make public
73. Reverence
a) Respect
b) Detail
c) Astonishment
d) Hope
e) Remembrance

Directions: (Q.74-79) In the following questions, each word is followed by four options A, B, C and D select the option which best expresses the meaning of the given word.
74. ABSURD
(a) Foolish
(b) Simple
(c) Courageous
(d) Silly
75. ABDICATE
(a) Rude
(b) Soft
(c) Imperious
(d) Give up
76. BAFFLE
(a) Abet
(b) Enlighten
(c) Foil
(d) Taciturnity
77. After swallowing in the frog has become lethargic.
(a) Aggressive
(b) Dull
(c) Active
(d) Hungry
78. For the first time I saw him speaking rudely to her.
(a) Softly
(b) Gently
(c) Politely
(d) Slowly
79. He is a generous man.
(A) Stingy
(b) Uncharitable
(c) Selfish
(d) Ignoble

Directions (Q. 80-84): Rearrange the following six sentences (A), (B), (C), (D),
$(E)$ and $(F)$ in the proper sequence to form a meaningful paragraph and then answer the questions given below.
A. The researchers in these companies claim that they could do better by allowing their employees to doze off at work place.
B. The dreams, while at work, are thus helpful to solve crucial problems.
C. Would you believe that some UK based companies are arranging for bed at the work place?
D. The reason, they claim, could be that dreams produce creative solutions.
E. We only hope that these crucial problems in UK are different from those of ours.
F. But it is true and is considered as a step to improve quality of their products.
80. Which of the following should be the First sentence after rearrangement?
a) A
b) B
c) C
d) $D$
81. Which of the following should be the Third sentence after rearrangement?
a) A
b) B
c) C
d) $D$
82. Which of the following should be the Fourth sentence after rearrangement?
a) A
b) B
c) C
d) D
83. Which of the following should be the Fifth sentence after rearrangement?
a) A
b) B
c) C
d) $D$
84. Which of the following should be the Sixth sentence after rearrangement?
a) A
b) B
c) C
d) E

Directions (Q. 85-89) Read this sentence to find out whether there is any grammatical mistake/error in it. The error, if any, will be in one part of the sentence. Mark the part with the error as your answer. If there is no error, mark 'No error' as your answer. (Ignore the errors of punctuation if any).
85. (a) France is one of the wealthiest economy in the world, (b) home to leaders in aviation, insurance, banking, tourism (c) and retail and is known for its (d) fine cuisine and appellation-controlled wines. (e) No error
86. (a) The fashion is becoming a global game now, (b) where the label may originate in one country, (c) chief designer from another country, (d) the owner investor from third nation (e) No error
87. (a) In India, for over a decade now, (b) Ermenegildo Zegna has had a successful (c) run with its stand alone stores (d) In Delhi, Mumbai and Hyderabad. (e) No error
88. (a) The final outcome of India's first environmental referendum is not yet known (b) but the very fact that it is taking place (c) in the thick forested and remote region of Niyamgiri (d) provides a small glimmer of hope. (e) No error
89. (a) The court ordered the seizure of his properties (b) and gave him (c) an additional 10 years in jail (d) for misuse of power. (e) No error
90. A big cheese - an important or a powerful person in a group or family
91. A boon in disguise - a benefit in loss
92. A bull in a China shop - an awkward person
93. A but under the weather - falling ill
94. Exclusive possession of the trade in some commodity - Monopoly
95. A person who regards the whole World as his country - Cosmopolitan
96. One who believes in fate - Fatalist

Directions (Q97-100) In the following sentence, an idiomatic expression or a proverb is highlighted. Select the alternative which best describes its use in the sentence.
97. Mrs.Nayak opened the discussion on the alarming rate of poverty in India.
a) Started the discussion
b) Gave her opinion in the discussion
c) Did not agree on the discussion
d) Welcomed the people to the discussion
98. The course of events made it necessary for Joseph to start working.
a) Events that were planned
b) Long list of future events
c) A succession of unexpected events
d) Nature of events that followed after Joseph joined work
99. The new law on 'Right to Food Safety' will come into force next month.
a) Be forced upon the people
b) Be associated from next month onwards
c) Be implemented next month
d) Be withdrawn next month
100. When the girl wanted to stay out past midnight, her father put his foot down.
a) Gave in to her request
b) Walked away disapprovingly
c) Obstructed her from leaving the house
d) Requested her to be home on time

## Solution:

## 1. Option D

(Local value of 7) - (Face value of 7)

$$
=(70000-7)=69993
$$

2. one article c.p = 100, another article $c . p=100$
first article sold with $20 \%$ profit , so S.P = 120

Second article sold with $20 / 2 \%$ loss, so S.P $=90$
total C.P $=100+100=200$
total S.P $=120+90=210$
overall profit $\%=\left(10^{*} 100\right) / 200=5 \%$
3. Option C

The number $6 x^{2}$ must be divisible by 8 .
So, $x=3$, as 632 is divisible by 8 .
4. Option B

Let $\mathrm{P}, \mathrm{Q}$ and R represent their respective monthly incomes. Then, we have:

$$
\begin{align*}
& P+Q=(5050 \times 2)=10100  \tag{i}\\
& Q+R=(6250 \times 2)=12500  \tag{ii}\\
& P+R=(5200 \times 2)=10400 \tag{iii}
\end{align*}
$$

Adding (i), (ii) and (iii), we get: $2(\mathrm{P}+\mathrm{Q}+\mathrm{R})=33000$ or $\mathrm{P}+\mathrm{Q}+\mathrm{R}=16500$....
(iv)

Subtracting (ii) from (iv), we get $\mathrm{P}=4000$

## 5. Option B

Sum of the present ages of husband, wife and child $=(27 \times 3+3 \times 3)$ years $=90$ years.

Sum of the present ages of wife and child $=(20 \times 2+5 \times 2)$ years $=50$ years Husband's present age $=(90-50)$ years $=40$ years
6. Option A

Total quantity of petrol $\left[\frac{4000}{7.50}+\frac{4000}{8}+\frac{4000}{8.50}\right]$
consumer in 3 years $=4000 \quad\left[\frac{2}{15}+\frac{1}{8}+\frac{2}{17}\right]$ litres

$$
=\left[\frac{76700}{51}\right] \text { litres }
$$

Total amount spent $=$ Rs. $(3 \times 4000)=$ Rs. 12000
Average Cost $=$ Rs. $\left[\frac{12000 \times 51}{76700}\right]=$ Rs. $\frac{6120}{767}=7.98$

## 7. Option A

Required number of students $=$ HCF of 1001 and 910

$$
=91
$$

8. Option A

Clearly, $252=2 \times 2 \times 3 \times 3 \times 7$
9. Option C

Required measurement $=\operatorname{HCF}$ of $(496,403,713)$ litres

$$
=31 \text { litres }
$$

10. Option C

Let $40 \%$ of $\mathrm{A}=\frac{2}{3} \mathrm{~B}$. Then, $\frac{40 \mathrm{~A}}{100}=\frac{2 B}{3}$
$\frac{2 A}{5}=\frac{2 B}{3}$
$\frac{A}{B}=\left[\frac{2}{3} \times \frac{5}{2}\right]=\frac{5}{3}$
So, $A: B=5: 3$
11. Option C

Remainder $=$ Rs. $[735-(25 \times 3)]=$ Rs. 660
So money received by C = Rs. $\left[\left(660 \times \frac{2}{6}\right)+25\right]=$ Rs. 225
12. Option D

Ratio of time taken $\quad=\frac{1}{5}: \frac{1}{4}: \frac{1}{6}=12: 15: 10$
13. Option A

A: B:C=27000:72000:81000=3:8:9
So, C's share : total profit $=9: 20$
Let the total profit be Rs. x . Then, $\frac{9}{20}=\frac{36000}{x}$ or $\mathrm{x}=\frac{36000 \times 20}{9}=80000$
14.. Option C

Let the total profit be Rs. z. Then,
B's share $=$ Rs. $\frac{2 z}{3}$, A's share $=$ Rs. $\left[z-\frac{2 z}{3}\right]=$ Rs. $\frac{z}{3}$
So, $\mathrm{A}: \mathrm{B}=\frac{z}{3}: \frac{2 z}{3}=1: 2$
Let the total capital be Rs. x and suppose B's money was used for x months.
Then,
$\frac{\frac{1}{4} x \times 15}{\frac{3}{4} x \times y}=\frac{1}{2}$
$\mathrm{y}=\left[\frac{15 \times 2}{3}\right]=10$
Thus, B's money was used for 10 months.
15. Option A

A: B:C = 35000: 45000:55000=7:9:11
A's share $=$ Rs. $\left[40500 \times \frac{7}{27}\right]=$ Rs. 10500
B's share $=$ Rs. $\left[40500 \times \frac{9}{27}\right]=$ Rs. 13500
C's share $=$ Rs. $\left[40500 \times \frac{11}{27}\right]=$ Rs 16500
16. Option B

In order that two books on Hindi are never together, we must place all these books as under:

> X E X E X E X .... X E X

Where E denotes the position of an English book and X that of a Hindi book.
Since there are 21 books on English, the number of places marked X are therefore, 22

Now, 19 places out of 22 can be chosen in ${ }^{22} \mathrm{C}_{19}={ }^{22} \mathrm{C}_{3}=\frac{22 \times 21 \times 20}{3 \times 2 \times 1}=1540$ ways

Hence, the required number of ways $=1540$
17. Option B

Out of 30 numbers 2 numbers can be chosen in ${ }^{30} \mathrm{C}_{2}$ ways.
So, exhaustive number of cases $={ }^{30} \mathrm{C}_{2}=435$
Since $a^{2}-b^{2}$ is divisible by 3 if either a and b are divisible by 3 or none of a and b is divisible by 3 . Thus, the favourable numbers, of cases $={ }^{10} \mathrm{C}_{2}+{ }^{20} \mathrm{C}_{2}=235$

Hence, required probability $=\frac{235}{435}=\frac{47}{87}$
18. Option C

Required probability $=\frac{4}{52} \times \frac{3}{51}=\frac{1}{221}$
19. Option D

Here, $\mathrm{S}=\{1,2,3,4, \ldots ., 19,20\}$.
Let $E=$ event of getting a multiple of 3 or $5=\{3,6,9,12,15,18,5,10,20\}$.

$$
\mathrm{P}(\mathrm{E})=\frac{n(E)}{n(S)}=\frac{9}{20}
$$

## 20. Option A

Total number of balls $=(2+3+2)=7$
Let $S$ be the sample space.
Then, $n(S)=$ Number of ways of drawing 2 balls out of 7

$$
\begin{aligned}
& ={ }^{7} \mathrm{C}_{2} \\
& =\frac{(7 \times 6)}{(2 \times 1)} \\
& =21
\end{aligned}
$$

Let $\mathrm{E}=$ Event of drawing 2 balls, none of which is blue.
$n(E)=$ Number of ways of drawing 2 balls out of $(2+3)$ balls.
$={ }^{5} \mathrm{C}_{2}$
$=\frac{(5 \times 4)}{(2 \times 1)}$
$=10$
$\mathrm{P}(\mathrm{E})=\frac{n(E)}{n(S)}=\frac{10}{21}$
21. Option A

Total number of balls $=(8+7+6)=21$
Let $\mathrm{E}=$ event that the ball drawn is neither red nor green
$=$ event that the ball draw is blue.
$\mathrm{n}(\mathrm{E})=7$
$\mathrm{P}(\mathrm{E})=\frac{n(E)}{n(S)}=\frac{7}{21}=\frac{1}{3}$

## 22. Option A

Clearly, my mother was born 3 years before I was born and 4 years after my sister was born.

So, father's age when $\quad=(28+4)$
Brother was born $=32$ years
Mother's age when brother was born $\quad=(26-3)$

$$
=23 \text { years }
$$

## 23. Option B

Let the present ages of the person be x years.
Then

$$
\begin{aligned}
& =3(x-3)-3(x-3) \\
& x=(3 x+9)-(3 x-9)
\end{aligned}
$$

$$
x=18
$$

## 24. Option A

Let the son's present age be x years.
Then

$$
\begin{aligned}
& (38-x)=x \\
& 2 x=38 \\
& x=19
\end{aligned}
$$

Therefore son's age 5 years back $=(19-5)$

$$
\text { = } 14 \text { years }
$$

25. Option B

Gain \% $\quad=\left[\frac{0.70}{70} \times 100\right] \%$

$$
=1 \%
$$

26. Option B
S.P. = Rs. 27.50

Then profit $=10 \%$
So, C.P. $=$ Rs. $\left[\frac{100}{110} \times 27.50\right]$

$$
=\text { Rs. } 25
$$

When S.P. = Rs. 25.75
Profit = Rs.(25.75-25)
= Rs.0.75

Profit $\quad=\left[\frac{0.75}{25} \times 100\right] \%$

$$
=3 \%
$$

27. Option A

Cost price of all eggs $\quad=$ Rs. $100 \times 1.2=$ Rs. 120
Selling price of one egg

$$
=\frac{15}{12}=1.25
$$

So, selling price of 96 eggs

$$
=96 \times \frac{15}{12}=\text { Rs. } 120
$$

28. Option B

Since 913952088 is divisible by 7

Alternatively:

$$
a=119
$$

$$
\begin{aligned}
& a+d=119+7=126 \\
& a+2 d=119+14=133
\end{aligned}
$$

So, the numbers which are divisible by 7 are $119,126,133$ 113113 ....
So, number of terms $=\left[\frac{113113-119}{7}\right]+1=16143$
$S_{16143}=\left[\frac{119+113113}{2}\right] \times 16143=913952088$
Hint: The unit digit will be 8 as $\left[\frac{9+3}{2}\right] \times 3$
$6 \times 3=8$
Hence, only choice (b) is appropriate.
29. Option B

Let $\mathrm{n}=2$, then

$$
S_{n}=3+6=9
$$

$$
S_{n}=2^{n}(3)+2^{2}-1=9
$$

at $\mathrm{n}=3$,
$S_{n}=19$
So,

$$
S_{n}^{n}=3 \times 4+2^{3}-1=19
$$

Hence choice (b) is correct

## Alternatively : <br> $3+6+10+16+\ldots$.

$$
\begin{aligned}
& =\quad(2+4+6+8+\ldots .)+(1+2+4+8+\ldots .) \\
& =\quad \mathrm{n}(\mathrm{n}+1)+\left(2^{n}-1\right)
\end{aligned}
$$

30. Option C

$$
\begin{align*}
& T_{11}+T_{12}+T_{13}=114 \\
& T_{12}=\frac{114}{3}=38 \\
& \mathrm{a}+11 \mathrm{~d}=38 \tag{i}
\end{align*}
$$

$$
\text { and } T_{21}+T_{22}+T_{23}=204
$$

$$
T_{22}=68
$$

$$
\begin{equation*}
a+21 d=68 \tag{ii}
\end{equation*}
$$

from equations (i) and (ii)

$$
\begin{aligned}
& 10 \mathrm{~d}=30 \\
& \mathrm{~d}=3
\end{aligned}
$$

So, $\mathrm{a}=5$
$T_{1}+T_{2}+T_{3}=5+8+11=24$
31. Option D

Distance
Required speed

$$
\text { = } 1200 \text { km. }
$$

$$
=\left[1200 \times \frac{3}{5}\right] \mathrm{km} . / \mathrm{hr}
$$

$$
\text { = } 720 \mathrm{~km} . / \mathrm{hr} .
$$

32. Option A

Ratio of speeds

$$
=\left[\frac{550}{60} \times \frac{18}{5}\right]:\left[\frac{33}{45} \times 60\right]
$$

$$
\begin{aligned}
& =33: 44 \\
& =3: 43: 4
\end{aligned}
$$

33. Option C

Average speed $\quad=\left[2 \times 3 \times \frac{2}{3}+2\right) \mathrm{km} . / \mathrm{hr}$.

Distance travelled

$$
=\frac{12}{5} \mathrm{~km} . / \mathrm{hr} .
$$

$\begin{aligned} &=12 \mathrm{~km} . \\ & \text { Distance between house and school }=\left[\frac{12}{2}\right] \mathrm{km}\end{aligned}$

$$
=6 \mathrm{~km} .
$$

## 34. Option D

$$
\begin{array}{ll}
\text { A's } 1 \text { day's work } & =\frac{1}{15} \\
\text { B's } 1 \text { day's work } & =\frac{1}{20}
\end{array}
$$

$(A+B)$ 's 1 day's work

$$
\begin{aligned}
& =\left[\frac{1}{15}+\frac{1}{20}\right]=\frac{7}{60} \\
& =\left[\frac{7}{60} \times 4\right]=\frac{7}{15}
\end{aligned}
$$

( $A+B$ )'s 4 day's work
Therefore, Remaining work $=\left[1-\frac{7}{15}\right]=\frac{8}{15}$
35. Option C

$$
(A+B+C) \text { 's } 1 \text { day's work } \quad=\frac{1}{4}
$$

A's 1 day's work $\quad=\frac{1}{16}$
B's 1 day's work $\quad=\frac{1}{12}$
C's 1 day's work $\quad=\frac{1}{4}-\left[\frac{1}{16}+\frac{1}{12}\right]=\left[\frac{1}{4}-\frac{7}{48}\right]=\frac{5}{48}$
So, C alone can do the work in $\frac{48}{5}=9 \frac{3}{5}$
36. Option C
37. Option C
38. Option D
39. Option A
40. Option D
41. Option A
42. Option B
43. Option C

Majority of people may prefer their own car due to privacy and comfort journey. Assumption (II) may also implicit.

## 44. Option A

Only (I) is implicit.
45. Option E

Only (I) and (II) are implicit.
46. Option D

Neither (I) nor (II) is implicit.
47. Option D

Neither (I) nor (II) is implicit because railway authority has already announce the postponement of transportation. So, people will not revolt and does not create problems in transportation service.
48. Option D
49. Option E
50. Option A
51. Option B
52. Option B
53. Option D


Only III follows.
54. Option B


Only I follows.
55. Option A


None follows
56. Option E


Only I and III follow.
57. Option E


Either I or II and III follow
58. Option B
59. Option A
60. Option A

Woman = daughter of Nirmal's wife's grandfather's only child = daughter of Nirmal's wife's father = Nirmal's wife
61. Option A
(62.) 5
(63) 1
(64.) 2
65. Answer:

Step I:
Step II: wide 69 any hen $49 \quad 24$ far 34
Step III: wide 69 hen any $49 \quad 24$ far 34
Step IV: wide 69 hen 49 any 24 far 34
Step V: wide 69 hen 49 far any 2434
Step VI: wide 69 hen 49 far 34 any 24

- It will consume much time. You don't have any need to write. Just from the output in question solve accordingly by this you can save your precious time during exam.

66. Answer: We don't have any need to solve step by step. Simply after observing the output we can give the answer of steps like diagram below


- Take one common point. Wide brought forward then numerical value 69 and so on as we see the pattern earlier. any and 24 does not show with arrows because they are automatically in their proper place after $\mathbf{3 4}$ brought forward.
- Number of Arrows = Number of Steps

67. Answer:

- year 92 ultra (these are already in arranged manner).
- Now take help of arrows

- Number of arrows are 4 that means 4 steps more required to complete the arrangement according to output.
- 68. Solution
- (Option A)
- Teachers can't be appointed in a vacuum and the reason Assumption I is a valid assumption. Assumption II is not valid as it is more of a presumption.


## 69. Solution

(Option E)
Assumption I is implicit because when a division is made, it is assumed to be effective. Further, Assumption II is also implicit as it is assumed that the stipulated target will be met.

## 70. Solution -

(Option E)
Assumption I and II both are implicit because both are imminent positive outcomes assumed.
71. Option C
72. Option A
73. Option A
74. Option D
75. Option D
76. Option D
77. Option C
78. Option C
79. Option A
80. Option C
81. Option A
82. Option D
83. Option B
84. Option D
85. Option A
86. Option D
87. Option E
88. Option C
89. Option D
90.A big cheese - an important or a powerful person in a group or family
91. A boon in disguise - a benefit in loss
92. A bull in a China shop - an awkward person
93.A but under the weather - falling ill
94. Exclusive possession of the trade in some commodity - Monopoly
95. A person who regards the whole World as his country - Cosmopolitan
96. One who believes in fate - Fatalist
97. Option A
98. Option C
99. Option C
100. Option C

