



2013 RRB Allahabad

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Instructions

For the following questions answer them individually

Question 1

22 boys are standing in front of Kunal in a queue. 12 boys are standing to the back of Rohit in the same queue. If total number of boys is 30 then the number of boys standing in between Kunal and Rohit is

- A 3
- B 4
- C 6
- D 5

Answer: B

Explanation:

22 boys are standing in front of Kunal in a Queue 12 boys are standing to the back of Rohit

Total boys = 30.

So, rank of Kunal in the queue is $22+1 = 23$

Rank of Rohit in the queue is $30 - 12 = 18$

Hence, the number of boys between Rohit and Kunal in the queue is $23 - 18 - 1 = 4$

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Question 2

In the following sequence of alphabets

a b a b a a b a b a a b b a b b a a a

The number of a's in between 7th a from left and 7th a from right is

- A 1
- B 0
- C 3
- D 2

Answer: A

Explanation:

There is only one a between the 7th 'a' from the left and 7th 'a' from the right.

a b a b a a b a b a a b b a b b a a a

Question 3

If A stands for '+', B stands for '-', C stands for 'x' and D for '÷' then

$$\frac{1}{2} A \frac{1}{3} B \frac{1}{4} C \frac{1}{5} D \frac{1}{6} =$$

- A 0
- B $\frac{17}{30}$
- C $\frac{8}{15}$
- D $\frac{13}{15}$

Answer: C

Explanation:

A stands for '+', B stands for '-', C stands for 'x' and D for '÷' then

$$\begin{aligned} & \frac{1}{2} A \frac{1}{3} B \frac{1}{4} C \frac{1}{5} D \frac{1}{6} \\ & = \frac{1}{2} + \frac{1}{3} - \frac{1}{4} \times \frac{1}{5} \div \frac{1}{6} = \\ & = \frac{1}{2} + \frac{1}{3} - \frac{10}{30} \\ & = \frac{15}{30} + \frac{10}{30} - \frac{10}{30} \\ & = \frac{16}{30} = \frac{8}{15} \end{aligned}$$

Question 4

If 1st July, 1977 was a Friday then 1st July 1970 was a

- A Wednesday
- B Thursday
- C Sunday
- D Tuesday

Answer: A

Explanation:

There are 7 years between the two except two of them are leap years.

In a normal year, there are 365 days. 365 when divided by 7 leaves a remainder of 1. So, 1 July of a year and 1 July of the previous year are one weekday apart. If it is a leap year, 1 July of a year and 1 July of a previous year are separated by 2 weekdays. So, If July 1, 1977 was a Friday, 1st July 1976 is a Thursday and 1st July 1975-tuesday 1st July 1974-monday 1st July 1973-sunday 1st July 1972-saturday 1st July 1971-thursday 1st July 1970- wednesday

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Question 5

If "A+B" stands for 'A is the father of B'. 'A-B' stands for 'A is the wife of B' and 'A ÷ B' stands for 'A is the sister of B' then 'P + Q ÷ R' means

- A P may be father of R
- B R is sister of P
- C R may be father of P
- D P is sister of R

Answer: A

Explanation:

The given equation means P is the father of Q and Q is the sister of R. So, P maybe the father of R.

Question 6

In a certain code language 278 means 'run very fast' 853 means 'come back fast' and '376' means 'run and come' then 'back' may be represented by the digit

- A 3
- B 7
- C 5

D 6

Answer: C

Explanation:

In 278 and 853, 8 and fast are common.

In 853 and 376, 3 and come are common

So, back is represented by 5 in 853.

Question 7

If X is a player then X must be stout. This statement can be deduced from

- A only players are stout
- B none but the stout men are players
- C all stout men are players
- D some players are stout

Answer: B

Explanation:

The conclusion can be drawn from "none but stout men are players" since it implies that all players have to be stout.

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Question 8

Find the odd one out.

- A Kitchen
- B Psychology
- C Campaign
- D Utensil

Answer: C

Explanation:

Campaign is generally related to a military manoeuvre. Others are unrelated to military.

Question 9

Natural:Artificial:Spontaneous: ?

- A calculated
- B impromptu
- C instinctive
- D free of all

Answer: A

Explanation:

The opposite of Natural is artificial. The opposite of spontaneous is calculated.

Question 10

The sum of all the natural numbers between 301 and 501 (including 301 and 501) which are divisible by 7 is

- A 11277
- B 12571
- C 15171
- D 11571

Answer: D

Explanation:

301 is divisible by 7 (43 times)

497 is also divisible by 7 (71 times)

So, the required sum is

$$7 (43 + 44 + \dots + 71)$$

$$= 7 \times (\text{sum of numbers upto 71} - \text{sum of numbers upto 42}) = 7 * [(71 \times 72 / 2) - (42 \times 43 / 2)]$$

$$= 11571$$

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Question 11

5 pencils and 4 erasers cost Rs 13 whereas 9 pencils and 5 erasers cost Rs 19 Then the price of 6 pencils and 3 erasers is

- A Rs 9
- B Rs 12
- C Rs 15
- D Rs 18

Answer: B

Explanation:

$$5p + 4e = 13$$

$$9p + 5e = 19$$

solving for p, we get $p = 1$

$$e = 2$$

So, 6 pencils and 3 erasers cost

$$6 \times 1 + 3 \times 2 = 12$$

Question 12

Let a_1, a_2, \dots, a_7 be arbitrary different positive integers taking one value at a time from 1, 2, ..., 7. The number $(a_1 - 1)(a_2 - 2) \dots (a_7 - 7)$

- A is odd if non zero
- B is necessarily 0
- C is even if non-zero

D is always ≤ 0

Answer: B

Explanation:

If a_1, a_2, \dots, a_7 are different positive integers taking one value at a time from 1, 2, ..., 7. The number $(a_1 - 1)(a_2 - 2) \dots (a_7 - 7)$ will always be zero as one of the numbers will be equal to 1, 2, 3, ..., 7.

Question 13

Consider the natural numbers 88935. Then the least natural number by which we can divide or multiply the number to make it a square number is

- A 3
- B 5
- C 15
- D None of these

Answer: C

Explanation:

88935 can be written as 5929×15

5929 is the square of 77

So, the answer is 15

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Question 14

There is a path 1 m wide outside a rectangular field of 16 m length and 11 m breadth then the total area of the path is

- A 58 sq.m
- B 68 sq.m
- C 36 sq.m
- D 28 sq.m

Answer: A

Explanation:

The area of the bigger rectangle is 18×13

The area of the smaller rectangle is 16×11

The required value is $18 \times 13 - 16 \times 11 = 58$ sq.m

Question 15

A two digit number is such that when it is divided by the largest single digit prime number leaves remainder 4. If the difference of the two digits is 4 then the number is

- A 73
- B 25
- C 53
- D 95

Answer: D

Explanation:

If the difference between the digits has to be 4, only 73 and 95 qualify. Of these 73 leaves a remainder of 3 and not 4 when divided by 7. So, the answer is 95.

Question 16

A train runs at the speed of 72 Km per hour The distance between any two stations is 42 km and the train stops at each stations for 5 minutes. Then the time taken by train to go 350 km is

- A 6 hours 31 minutes 40 seconds
- B 5 hours 31 minutes
- C 5 hours 31 minutes 40 seconds
- D 5 hours 30 minutes 40 seconds

Answer: C

Explanation:

-Number of stations in 350 kilometers = $350/42 = 50/6 = 8$ stations.

Time stopped at stations = $8 \times 5 = 2/3$ hrs

Time taken for travel = $350/72 + 2/3 = 5$ hours 31 minutes 40 seconds

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Question 17

The Parliament consists of the

- A Two houses of the parliament
- B Two houses of the parliament including elected and nominated members
- C Two houses of the parliament and speakers
- D None of these

Answer: D

Question 18

Ribosome's main activity is

- A Regulate cell division
- B Regulate cell function
- C Protein synthesis
- D Secretion of hormone

Answer: C

Question 19

Synovial fluid is found in the

- A Muscle

- B Kidney
- C Liver
- D Joints

Answer: D

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Question 20

The donor of AB blood group can donate to recipient of blood group

- A A
- B B
- C AB
- D O

Answer: C

Question 21

Filariasis is a disease caused by

- A worms
- B fungus
- C bacteria
- D protozoa

Answer: A

Question 22

Lack of vitamin B complex causes

- A Beriberi
- B Scurvy
- C Pellagra
- D Rickets

Answer: A

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Question 23

Leukaemia is a form of

- A deficiency disease

- B deformity of body
- C viral infection
- D cancer

Answer: D

Question 24

The National calendar based on the Saka era began on

- A AD 58
- B AD 376
- C AD 78
- D AD 606

Answer: C

Question 25

Udayagiri rock-cut-caves are located in

- A Assam
- B Chhattisgarh
- C Madhya Pradesh
- D Orissa

Answer: D

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Question 26

Li Keiqiang is the

- A Vice President of Communist Party of China
- B President of Taiwan
- C Prime Minister of China
- D None of these

Answer: C

Question 27

Abel Prize is given for major contribution in

- A Astrophysics
- B Mathematics
- C Genetics

D Architecture

Answer: B

Question 28

The King's Speech is

A a book

B an autobiography

C an award winning film

D None of these

Answer: C

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Question 29

The International Monetary Fund is located in

A Geneva

B New York

C London

D Washington

Answer: D

Question 30

Michael Phelps the Olympic Swimmer has secured ____ Olympic swimming medals.

A 28

B 18

C 15

D None of these

Answer: A

Question 31

Cairn India is known for the production of

A Milk products

B Information Technology related products

C Petroleum gas/oil

D Genetically modified cotton

Answer: C

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Instructions

Five students Ajit, Arjun, Chandrima, Debu Shashi have total five books on subjects Physics, Chemistry, Mathematics, Biology and Statistics written by authors Goyal Kapoor, Hansa Sen and Basu. Each student has only one book on one of five subjects and each author can write only one book. Goyal is the author of the Physics book which is not owned by Shashi or Ajit. Debu owns the book written by Basu. Chandrima owns the Mathematics book Shashi has the Statistics book which is not written by Kapoor. Biology book is written by Sen.

Question 32

Chemistry book is owned by

- A Debu
- B Arjun
- C Ajit
- D Debu or Arjun

Answer: A

Explanation:

Based on the information provided, the arrangement is as follows:

Ajit Biology Sen
Arjun Physics Goyal
Chandrika Maths Kapoor
Deb Chemistry Basu
Shashi Stats Hansa

Question 33

Mathematics book is written by

- A Hansa
- B Kapoor
- C Basu
- D Data inadequate

Answer: B

Explanation:

Based on the information provided, the arrangement is as follows:

Ajit Biology Sen
Arjun Physics Goyal
Chandrika Maths Kapoor
Deb Chemistry Basu
Shashi Stats Hansa

Question 34

Who is the owner of the book written by Hansa ?

- A Arjun
- B Shashi
- C Ajit
- D Chandrima

Answer: B

Explanation:

Based on the information provided, the arrangement is as follows:

Ajit Biology Sen

Arjun Physics Goyal

Chandrika Maths Kapoor

Deb Chemistry Basu

Shashi Stats Hansa

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Question 35

The correct combination of subject and author is

- A Chemistry-Basu
- B Statistics-Sen
- C Mathematics-Basu
- D Chemistry-Kapoor

Answer: A

Explanation:

Based on the information provided, the arrangement is as follows:

Ajit Biology Sen

Arjun Physics Goyal

Chandrika Maths Kapoor

Deb Chemistry Basu

Shashi Stats Hansa

Question 36

The incorrect combination of subject student and author is

- A Biology-Ajit-Sen
- B Statistics-Shashi-Hansa
- C Physics-Arjun-Goyal
- D Mathematics-Chandrima-Hansa

Answer: D

Explanation:

Based on the information provided, the arrangement is as follows:

Ajit Biology Sen

Arjun Physics Goyal

Chandrika Maths Kapoor

Deb Chemistry Basu

Shashi Stats Hansa

Instructions

For the following questions answer them individually

Question 37

If C is older than A but younger to B and D is younger to E but older than C then which of the following can definitely be concluded ?

- A E is the eldest of all
- B B is the eldest of all
- C D is older than B
- D A is the youngest of all

Answer: D

Explanation:

$B > C > A$

$E > D > C$

So, A is the youngest of all followed by C

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Question 38

A is 5 km to the south-west of B and B is 5 km to the south-east of C. If D is 3 km to the north of C then D is to the

- A north-east of A
- B south of A
- C north of A
- D north-west of A

Answer: C

Explanation:

A is to the south west of B and B is to the south east of C by the same distance 5 kms. So,

A is to the south of C. And C is to the south of D. So, A is to the south of D.

Question 39

Amri a Harappan site is located in the province of

- A Punjab

B Rajasthan

C Gujarat

D Sindh

Answer: D

Question 40

The invasion of Alexander took place in north-west India in 326 B.C in the period of

A Ajata Shatru

B Nandas

C Chandra Gupta Maurya

D Shishunaga

Answer: B

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Question 41

The system of payment of salary to the troops was decreed by

A Ibrahim Lodi

B Iltutmish

C Alauddin Khalji

D Balban

Answer: D

Question 42

Lord William Bentinck was the governor general during the period

A 1848-56

B 1813-24

C 1828-35

D 1841-44

Answer: C

Question 43

The Montague-chelmsford reform was passed in the year

A 1908

B 1918

C 1919

D 1916

Answer: C

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Question 44

Clement Attlee's announcement proclaimed _____ in the parliament

- A Limited voting powers to Indians
- B Formation of Cabinet Mission
- C British decision to Quit India
- D None of these

Answer: C

Question 45

The Singalila National Park is located in the state of

- A West Bengal
- B Manipur
- C Sikkim
- D Orissa

Answer: A

Question 46

Muga variety of silk is native to the state of

- A Andhra Pradesh
- B Madhya Pradesh
- C Assam
- D Bihar

Answer: C

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Question 47

Large natural gas deposits have been recently discovered in the state of

- A West Bengal
- B Orissa
- C Gujarat
- D Rajasthan

Answer: D

Question 48

What is the least number which when increased by 13 is divisible by each of 42, 36 and 45 ?

- A 1273
- B 1247
- C 1207
- D 2507

Answer: B

Explanation:

The LCM of 42, 36 and 45 is 1260.

Subtracting 13 from 1260 gives 1247

Question 49

When 1 is added to to $\frac{13}{15}$ th part of $\frac{7}{8}$ then it is equal to n-th part of $\frac{13}{7}$ Then n=

- A $\frac{1560}{1477}$
- B $\frac{211}{1560}$
- C $\frac{1477}{1560}$
- D $\frac{7}{120}$

Answer: A

Explanation:

$$\frac{13}{15} \times \frac{7}{8} + 1 = \frac{1}{n} \times \frac{13}{7}$$

So, solving for n, n = 1560/1477

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Question 50

The ratio of the present age of a man and his wife is 4:3 and 4 years hence the ratio of their ages will be 9:7 If the ratio of their ages at the time of their marriage was 13:9, how many years ago were they married ?

- A 4
- B 8
- C 6
- D 9

Answer: C

Explanation:

Let the ages today be 4x and 3x. Ages four years from now are 4x + 4 and 3x + 4

$$\text{But } 4x+4:3x+4 = 9:7$$

So, x = 8

So, their current ages = 32 and 24

Let them be married for x years

Age at marriage = $32 - x$ and $24 - x$

But $32 - x : 24 - x = 13 : 9$

So $x = 6$ years.

Question 51

The average height of 35 students in a class is 4'2". Three students of average height moved to new section while 6 students of total height 33'4" joined the class. The average height of the student in the class is now

A 4'6"

B 5'

C 4'4"

D 4'8"

Answer: C

Explanation:

After the students left, there will be 32 students with the same average height. 4 ft and 2 inches

Total height = $32 \times 4.17 = 133.44$

Total height of 6 students is 33 ft and 4 inches. = 33.33

New total height = $133.44 + 33.33 = 166.77$

New average height = $166.77 / 38 = 4$ feet 4 inches

Question 52

If 16 sheep or 12 horses eat the grass of a field in 20 days then in how many days will 5 sheep and 4 horses eat it ?

A $30\frac{30}{31}$

B $3\frac{30}{31}$

C 31

D 29

Answer: A

Explanation:

16 sheep can feed in 20 days

So, 5 sheep can feed in $20 \times 16/5 = 64$ days

12 horses can feed in 20 days

So, 4 horses can feed in $20 \times 3 = 60$ days

Together they can feed in

$\frac{1}{60} + \frac{1}{64} = 30$ days approximately

So, answer is (a)

Question 53

The smallest positive integer n with 24 divisors considering 1 and n as divisors is

- A 420
- B 240
- C 360
- D 480

Answer: C

Explanation:

For any given number, that can be represented as $A^x \times B^y$, etc

The number of factors is denoted by $(x+1) \times (y+1)$, etc

$$360 = 2^3 \times 3^2 \times 5^1$$

So the number of factors = $(3+1) \times (2+1) \times (1+1) = 4 \times 3 \times 2 = 24$

For 240, it is $2^4 \times 3^1 \times 5^1$

Number of factors = $5 \times 2 \times 2 = 20$ only

Question 54

The diagonal of a rectangular field is 50 m and one of the sides is 48 m. If the cost of cutting the grass of the field is Rs 24 per square metre then the total cost of cutting all grass of the rectangular field is

- A Rs 8,420
- B Rs 16,128
- C Rs 16,218
- D Rs 15,128

Answer: B

Explanation:

The sides of the rectangle are 48 and 14 (by Pythagoras theorem)

Total cost of grass cutting is $48 \times 14 \times 24 = 16,128$

Question 55

The ratio of the ages of X and Y three years ago was 4:5 and that after three years will be 5:6. Then the sum of the ages of X and Y is

- A 60 years
- B 64 years
- C 72 years
- D 58 years

Answer: A

Explanation:

Let the ages of X and Y 3 years ago be $4x$ and $5x$. Ages 6 years from then are $4x+6$ and $5x+6$

But $4x+6 : 5x+6 = 5:6$

Solving we get the answer as $x = 6$

Sum of today's ages = $4x + 5x + 6 = 9x + 6 = 60$ years

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Question 56

What is the formula of Sodium Zincate ?

- A $NaZnO_2$
- B Na_2ZnO_2
- C $NaZn_2O_2$
- D Na_3ZnO_2

Answer: B

Question 57

Bronze is an alloy It's constituents are

- A Cu, Zn, Pb
- B Cu, Zn, Sn
- C Cu, Zn, Ni
- D Cu, Zn

Answer: B

Question 58

Which compound (given below) is not a peroxide ?

- A Na_2O_2
- B H_2O_2
- C BaO_2
- D PbO_2

Answer: D

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Question 59

In Bayer's process the Bauxite ore (for purification) is digested in

- A KOH
- B NaOH
- C H_2SO_4
- D Na_2CO_3

Answer: B

Question 60

The magnitude of a vector is never

- A Zero
- B Unity
- C Negative
- D Positive

Answer: C

Question 61

The force of attraction or repulsion between charges follows

- A Square law
- B Inverse square law
- C Both (1) and (2)
- D None of these

Answer: C

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Question 62

Ratio of mass of proton and electron will be

- A 1836
- B $\frac{1}{1836}$
- C 1
- D 0

Answer: A

Question 63

In a circuit containing inductance and resistance

- A e.m.f. leads the current
- B current leads the e.m.f
- C current and e.m.f
- D e.m.f lags the current

Answer: B

Question 64

A virus inside a human organ can triple itself at every second Then the ratio of the number of viruses at 28 seconds and 30 seconds is

- A 9:1
- B 1:3
- C 1:9
- D 14:15

Answer: C

Explanation:

Let the number of viruses at 28seconds be x.

At 29s, it will be 3x

At 30s, it will be 9x.

Hence, the ratio is 1:9

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Question 65

Look at the word APPROXIMATION. Which of the following words can be formed by using the alphabets in the given word

- A NATION
- B PAPER
- C PROXIMATE
- D TOXIN

Answer: D

Explanation:

Only TOXIN can be formed from the word APPROXIMATION as there are no Es and only one N in APPROXIMATION.

Question 66

In a certain language "Raja and Rani" is written as "ni mo chi" and Rani of Jhansi" is written as "mo ko lo" then "Raja of Jodhpur" may be coded as

- A chi ko so
- B chi mo so
- C ni ko lo
- D chi ni so

Answer: A

Explanation:

The common word in the first and second scripts is Rani which is therefore coded as mo. The second and third scripts have to have a common word in their codes (of) but not mo. So, option a is the right answer.

Question 67

There are 7 pentagons and hexagons in a chart If the total number of sides is 38 then the number of pentagons is

- A 3

- B 2
- C 5
- D 4



Answer: D

Explanation:

Let there be x pentagons and $7-x$ hexagons.

Total sides = $5x + 6(7-x) = 38$

Solving we get $x = 4$

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Question 68

Find the odd one out

- A Physiology
- B Analogy
- C Psychology
- D Sociology

Answer: B

Explanation:

Analogy is not a science. It means comparison.

Question 69

Grass:Lawn::Tree: ?

- A Field
- B Forest
- C Pasture
- D Farm

Answer: B

Explanation:

There is a lot of grass in the lawn and a lot of trees in the forest.

Question 70

If JRURLVDN represents HOSPITAL in a code language then DOCTOR is represented by

- A FREURT
- B FRDVRT
- C FREVRT
- D FRFVRT

Answer: C

Explanation:

The code language uses the letter + 2 to start and the letter + 3 in the second place, letter + 2 in the third spot and the letter +2 in the third from last spot and the letter + 3 in the last but one spot and the letter + 2 in the last place.

So, it is +2 +3 + 2 +2 +3 +2

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Question 71

Bimal is older than Chand but younger to Anil Dipak is younger to Emon but older than Chand.If Anil is younger to Emon then which of the following can definitely be concluded ?

- A Emon is the eldest and Bimal is the youngest
- B Dipak is the youngest of all
- C Bimal is younger than Dipak
- D Chand is the youngest and Emon is the eldest

Answer: D

Explanation:

$A > B > C$ and $C < D < E$ and $A < E$,

So, C is the youngest and E is the oldest.

Question 72

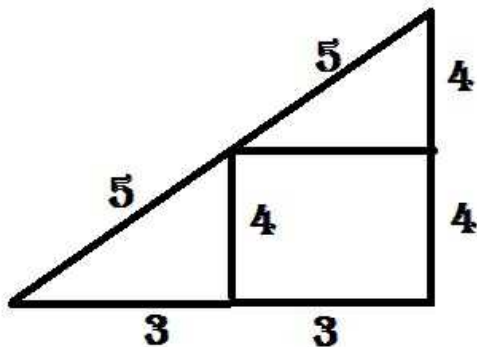
Starting from his house Arun moves 5 km to the north east and then 4 km towards south He now moves 3 km towards east and then move 8 km towards north to reach his friend's house. Then his friend's house is

- A 5 km north-east of Arun's house
- B 10 km south-east of Arun's house
- C 10 km north-east of Arun's house
- D 10 km north-west of Arun's house

Answer: C

Explanation:

The total distance of his friend's house from his house is 10 kilometers north-east. This can be obtained by using Pythagoras theorem where the distance is the sum of the squared distance of 3 and 4 which is 5 kilometers.



Question 73

32 boys are standing in front of X in a queue. Y is standing in the 19th position from the back in the same queue.If total number of boys is 45 then the number of boys standing in between X and Y is

- A 3
- B 5
- C 6
- D 4

Answer: B

Explanation:

There are 32 boys ahead of X and 26 ahead of Y. Since Y is also ahead of X, there are 31 other boys ahead of X. ie there are 5 boys between X and Y.

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Question 74

If '+' stands for \div , '-' stands for '+', 'x' for '+' and \div for 'x' then $4 + 4 \times 2 \div 2 - 8 =$

- A 0
- B 12
- C 13
- D 2

Answer: C

Explanation:

As per the given coding, it equals $4 / 4 + 2 \times 2 + 8 = 13$

Question 75

find the missing number in the following table

1	2	9
3	4	?
5	6	341

- A 19
- B 35
- C 91
- D 121

Answer: C

Explanation:

$$1^3 + 2^3 = 9$$

$$3^3 + 4^3 = 91$$

$$5^3 + 6^3 = 341$$

Question 76

A, B and C are statements such that if both A and B are true then C is false Further A is always true Then

- A B is always false

- B if C is true then B is false
- C C is always true
- D if C is false then B is true

Answer: D

Explanation:

Since A, B and C are statements such that if both A and B are true then C is false, if A is always true then B is true when C is false. hence (d) is the correct option.

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Question 77

The reverse order arrangement of the following words impromptu impudent improvise imprudent in a dictionary will be

- A impudent,imprudent,impromptu,improvise
- B imprudent,impudent,improvise,impromptu
- C impudent,improvise,imprudent,impromptu
- D impudent,imprudent,improvise,impromptu

Answer: D

Explanation:

"imp" is common in all the 4 words. In the next 3 letters, "rom" comes before "rov" which comes before "rud" and finally "ude" comes in the dictionary. The reverse order would be as mentioned in option (d). In a dictionary, impudent,imprudent,improvise,impromptu come in the reverse alphabetical order.

Question 78

If $(a + \frac{1}{a})^2 = 3$ then the value of $a^3 + \frac{1}{a^3}$ is

- A 0
- B 9
- C $3\sqrt{3}$
- D $\sqrt{3}$

Answer: A

Explanation:

$$a^3 + b^3 = (a + b)(a^2 + b^2 - ab)$$

Substituting $b = 1/a$, we get the answer as 0

Question 79

If $x^2 - 6x + 1 = 0$ then $x^2 + \frac{1}{x^2} =$

- A 0
- B 3
- C 4

D 34

Answer: D

Explanation:

The roots of a quadratic equation are given by $\frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

Hence, the roots are $= \frac{6 \pm \sqrt{36 - 4}}{2} = 3 \pm \sqrt{8}$

From the eqn, product of roots = $c/a = 1/1 = 1$

Hence, the roots are reciprocals.

Thus, $1/(3 + \sqrt{8}) = 3 - \sqrt{8}$

$x^2 + \frac{1}{x^2} = (3 + \sqrt{8})^2 + (3 - \sqrt{8})^2 = 9 + 8 + 6\sqrt{8} + 9 + 8 - 6\sqrt{8} = 34$

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Question 80

A fraction is such that when 5 is added to the numerator then its value is $1\frac{1}{2}$, again when 6 is added to the denominator then the value is

The fraction is

A $\frac{16}{21}$

B $\frac{13}{18}$

C $\frac{11}{16}$

D $\frac{18}{23}$

Answer: C

Explanation:

When 5 is added to the numerator, it becomes one. So, the numerator is 5 less than the denominator. When six is added to the denominator, it becomes double the numerator.

So, let the numerator be x, denominator = $x + 5$

$x + 5 + 6 = 2x$

So, $x = 11$

So, the fraction is $11/16$

Question 81

The two sequences 1,4,16,64,.....and 5,20,80,320,..... are used to form a new sequence as follows:
1,5,4,20,16,80,64,320,.....

Then the number immediately preceding the number 1048576 is the new sequence is

A 20480

B 1310720

C 130720

D 262144

Answer: B

Explanation:

In the series, there are numbers ending with a 0 and ones not ending with a 0. For numbers not ending with a 0, the number before is $5/4$ of the number. So, The number to come before 1048576 in the series is $1048576 \times 5/4 = 1310720$

Question 82

The volumes of three kinds of materials are in the ratio 3:4:7 and the weights of equal volumes of the three materials are in the ratio 5:2:6 If they are mixed to form a material of 65 kg then the weight of the 2nd material in the mixture is

- A 8 kg
- B 23 kg
- C 15 kg
- D 42 kg

Answer: A

Explanation:

Let the volumes of the 3 be: $3v$, $4v$ and $7v$

Densities of the three are $5d$, $2d$ and $6d$

So, the weights are $15dv + 8dv + 42dv = 65dv$

But that is 65 kilograms.

The second one's weight is $8dv = 8\text{ kgs}$

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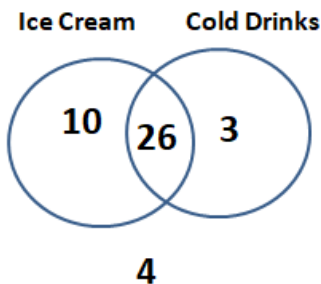
Question 83

In a class party arranged for 43 students 26 liked both icecream and cold drinks 7 disliked ice cream and 4 disliked both Then the number of students who liked ice-cream is

- A 26
- B 33
- C 36
- D 30

Answer: C

Explanation:



7 disliked ice creams meaning $(43 - 7)$ liked ice cream.

So, 36 liked ice cream

Question 84

A man swim at 5 km per hour velocity in still water He takes 75 minutes to swim from position A to the position B and back in a river when it is flowing at 1 km per hour The distance between A and B is

- A 6 km

- B 5 km
- C 2.5 km
- D 3 km

Answer: D

Explanation:

Let the distance be x

Relative speed when travelling upstream = $5 - 1 = 4$ kmph

Relative speed when travelling downstream = $5 + 1 = 6$ kmph

Time taken = 75 minutes = 1.25 hours

So, $x/4 + x/6 = 1.25$

So, $x = 3$ kms

Question 85

The Indian cricket team is to be selected out of fifteen players five of them are bowlers In how many ways the team can be selected so that the team contains at least three bowlers ?

- A 1260
- B 1620
- C 1250
- D 1200

Answer: A

Explanation:

To select a team of 11, there can be 5 bowlers and 6 batsmen or 4 bowlers and 7 batsmen or 3 bowlers and 8 batsmen. This can be done in $C_6^{10} + C_4^5 \times C_7^{10} + C_3^5 \times C_8^{10}$

= 1260

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Question 86

A invested Rs 10,000 for 9 months and B invested Rs 18,000 for some times in a business If the profits of A and B are equal then the period of time for which B's capital was invested is

- A 6 months
- B 5 months
- C 4 months
- D 3 months

Answer: B

Explanation:

A's profit = $10,000 \times 9 \times r/100$

B's profit = $18000 \times t \times r/100$

But the profits are same so,

$10,000 \times 9 \times r/100 = 18000 \times t \times r/100$

so, $t = 5$ months.

Question 87

50 workers can complete a job in 6 days working 8 hours a day if 40 workers are employed to complete the job in 20 days then the number of hours they should be working per day is

- A 4
- B 8
- C 9
- D 3

Answer: D

Explanation:

50 workers can complete a job in 6 days working 8 hours a day

40 workers can complete the job in $6 * 50 / 40$ days working 8 hours a day

40 workers can complete the job in $6 * 5/4 * 8/20$ days working 20 hours a day = 3 days

Question 88

The marked price of television is Rs 24,000. A retailer bought it after getting successive discounts of 20 per cent and 10 per cent respectively. Then the retailer bought it at

- A Rs 17,280
- B Rs 18,280
- C Rs 12,780
- D Rs 19,280

Answer: A

Explanation:

Because of discount 1, the price comes down to $100\% - 20\% = 80\%$

Because of discount 2, the price comes down to $100\% - 10\% = 90\%$

Since these are applied successively, the retailer paid $24,000 * .8 * .9 = 17,280$ Rs. .

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Question 89

A man worked 14 hours a day for the first 2 days, 12 hours a day for the next 3 days but did not work on the sixth day. Then on the average how much did he work in the first six days ?

- A 10 hours 4 minutes
- B 9 hours 40 minutes
- C 10 hours 40 minutes
- D 15 hours 40 minutes

Answer: C

Explanation:

Total number of hours worked by the man = $14 * 2 + 12 * 3 = 64$ hours

So, the average in 6 days = $64/6 = 10$ hours and 40 mins

Question 90

The number of straight lines that can be drawn in a plane with 23 given points assuming that no three of them are collinear is

- A 253
- B 46
- C 223
- D 211

Answer: A

Explanation:

The number of ways of drawing straight lines from 23 points is C_2^{23}

solving, we get the number of ways = $\frac{23!}{2!21!}$
= 253

Question 91

In a mixture of syrup and water, there is 60 per cent syrup. If 5 litres of syrup is added then there is 35 per cent water in the mixture. The initial quantity of mixture was

- A 40 litres
- B 35 litres
- C 30 litres
- D 32 litres

Answer: B

Explanation:

Let the initial quantity of the mixture be x litres.

Syrup = .6x

Water = .4x

If 5 litres of syrup is added, syrup = .6x + 5

water = .4x

But $\frac{.4x}{x+5} = 35\%$

So, x = 35 litres

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Question 92

The number of four-digit number greater than or equal to 4321 that can be formed from the digit 0,1,2,3,4,5 allowing for repetition of digits is

- A 360
- B 310
- C 313
- D 311

Answer: D

Explanation:

If the number is in 5 thousands, there are $6 \times 6 \times 6$ ways of choosing it.

If the number is in 4 thousands 4 hundreds there are $2 \times 6 \times 6$ ways of choosing it.

If the number is in 4 thousand 3 hundreds, there are $3 \times 6 + 5$ ways of choosing it.

So, total ways = $6 \times 6 \times 6 + 2 \times 6 \times 6 + 3 \times 6 + 5 = 311$

Question 93

Which location does not have an oil refinery ?

- A Numaligarh
- B Kochi
- C Panipat
- D Agra

Answer: D

Explanation:

Numaligarh oil refinery is located in Assam.

BPCL Kochi oil refinery is located in Kerala.

Panipat oil refinery is located in Haryana.

In Agra, there is not any oil refinery.

Question 94

Gulbarga is located in the state of

- A Maharashtra
- B Andhra Pradesh
- C Karnataka
- D Madhya Pradesh

Answer: C

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Question 95

Black soil is not found in

- A Tamil Nadu
- B Maharashtra
- C West Bengal
- D Andhra Pradesh

Answer: C

Explanation:

Black soil found in Gujarat, Madhya Pradesh, Tamil Nadu, Andhra Pradesh, Karnataka and Maharashtra. Laterite soil found in West Bengal.

Question 96

Right to Equality of Opportunity in Employment is enshrined in which Article?

- A 17
- B 19
- C 15
- D 16

Answer: D

Question 97

The candidate for the office of the President must have qualification required for the

- A Lok Sabha
- B Member of Parliament
- C Raja Sabha
- D MLA

Answer: A

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Question 98

The term of the Governor of a state is

- A 4 years
- B 5 years
- C 6 years
- D None of these

Answer: B

Question 99

The Appropriation Act allows the Government to withdraw money from

- A Contingency Fund of India
- B Consolidated Fund of India
- C Reserve Bank of India
- D None of these

Answer: D

Question 100

The Supreme Court has original Jurisdiction of any dispute/decision between _____ and _____

- A Regarding clarification of constitution
- B About Constitutionality of a legislative act
- C Between government of India and one or more states
- D None of these

Answer: C

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