Instructions
For the following questions answer them individually

Question 1
How many triangles are there in the following figure?

![Figure with triangles]

A 36
B 28
C 32
D 24

Answer: C

Explanation:

Count all the squares as shown in the figure.

Take the highest digit and multiply with 2

(8*2)+(8*2)= 16+16 =32

There are total 32 triangles present in the figure.

Question 2
Select the term that will come in the place of ?
7, 11, 19, 31, ?, 67

A 45
B 51
C 43
D 47

Answer: D

Explanation:

Find out the difference between the first number and second no
7, 11, 19, 31, ?
11 - 7 = 4
19 - 11 = 8
31 - 19 = 12
4 + 4 = 8, 8 + 4 = 12, 12 + 4 = 16
next term will be 31 + 16 = 47

Question 3
Three of the following four word pairs are alike in a certain way and one is different. Pick the odd word out.

A  Kitchen : Frying pan
B  Bathroom : Shower
C  Garden : Ladle
D  Study room : Table lamp

Answer: C

Explanation:
we have to find out the word which is different
1. kitchen : frying pan which is correct, we use frying pan in the kitchen
2. bathroom : shower which is correct, there is shower in the bathroom which we use in bathing
3. garden : ladle which is incorrect because we use ladle in the kitchen for serving the dishes
4. study room : table lamp which is correct we use table lamp in our study table for studying
we are seeing that in option 1, 2 and 4, first person is related to the second person in some manner but there is no relation in option 3 so it will be the different from rest of the options.

Question 4
Choose the set of numbers that is similar to the following set.
(6, 9, 18)

A  (14, 21, 42)
B  (10, 15, 35)
C  (18, 27, 56)
D  (8, 14, 24)

Answer: A

Explanation:
question is {6, 9, 18}
3 * 2 = 6, 3 * 3 = 9, 3 * 6 = 18 we are seeing that by multiplying by 2, 3 and 6 we get the desired numbers, we have to find out that particular set of numbers in which by multiplying by 2, 3 and 6 we get that set of numbers.
in option A {14, 21, 42} we get these set of numbers by; 7 * 2 = 14, 7 * 3 = 21, 7 * 6 = 42 hence our option A will be correct.

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Question 5
Three of the following four words are alike in a certain way and one is different. Pick the odd word out.

A  Intermission
Question 6

A square paper is folded and cut as shown below. How will it appear when unfolded?

A

Answer: A

Explanation: If we see the figure from last then we observes that figure of option A will appear when unfolded.
Question 7

Arrange the following words in a logical and meaningful order.
1. Cloud
2. Rainbow
3. Devastation
4. Rain
5. LowPressure
6. Flood

A  5,1,2,4,6,3
B  5,4,1,2,3,6
C  5,1,4,2,6,3
D  1,5,4,2,6,3

Answer: C

Explanation:
we have to arrange the order of the given words, For this type of questions we have to understand the particular process or particular method of which it is talking about.it is the process of RAINFALL AND AFTER EFFECTS so we have to arrange it step by step,
1. first step is low pressure in the atmosphere so it will be in first the first step
2. it will be clouds
3. then raining
4. after raining there will be a rainbow which is clear
5. heavy rainfall results in flood
6. and due to flood there will be destruction or devastation .so devastation will be the last

our correct arrangement will be 514263
we also solve this question by eliminating the options that it is clear that after raining there will be rainbow so 4 will be preceded by 1 and this is given on only option c so our correct answer will be C

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Question 8
Select the figure in which the given figure is embedded.
Question 9
Two rotated positions of a dice are given below. Which number will be at the top if the number 1 is on the bottom of the dice?

A 3
B 2
C 5
D 6

Answer: A
Explanation:
In the given dice there is one common face having digit 6, take 6 and rotate in clockwise direction in both the dice as like this
6-1-4
6-3-2
the number comes opposite to the face 1 is 3

Question 10
Select the option that is related to the third letter-cluster in the same way as the second letter-cluster is related to the first letter-cluster.
CDAF : XWZU :: DEFC : ?

A  WVUX
B  WVXU
C  VWXU
D  XWYV

Answer: A

Explanation:
Every letter corresponds to its reverse letter as per the alphabetical series.
For example, A is written as Z, B is written as Y, C is written as X and so on.
So, CDAF is written as XWZU
Similarly,
DEFC is written as WVUX in the same manner.

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Question 11
Select the word-pair in which the two words are related in the same way as the two words in the following word-pair.
Author : Book

A  Mother : Son
B  Reptile : Crawl
C  Doctor : Medicine
D  Spider : Web

Answer: D

Explanation:
Book is written by author in the same way web made by spider.
Question 12
Identify the mirror image of the following figure when the mirror is placed to the right of the figure.

A

B

C

D

Answer: D

Explanation:
If mirror is placed at the right of the figure then left will becomes right and right becomes left. But top and bottom will remain same.

Question 13
Select the option that is related to the third term in the same way as the second term is related to the first term.
LAMP : PALM :: MALE : ______

A ELAM
B LAME
C EAML
D MEAL

Answer: C

Explanation:
Question 14
Three of the following four letter-clusters are alike in a certain way and one is different. Pick the odd one out.

A  GKRV  
B  BFMQ  
C  DGKL  
D  JNUY  

Answer: C

Explanation:
Alphabettal differences between the letters are same in each option except option C.

Question 15
'Room' is related to 'Ceiling' in the same way as 'Mouth' is related to:

A  Teeth  
B  Throat  
C  Lip  
D  Palate

Answer: D

Explanation:
Ceiling is the top part of inside room in the same way palate is the top part of inside mouth.

Question 16
What will be the value of the following equation if ‘+’ means addition’, ‘-’ means ‘subtraction’, ’×’ means ‘multiplication’ and ‘÷’ means ‘division’?

72 × 9 − 3 ÷ 8 + 2 = ?

A  25  
B  40  
C  30  
D  35

Answer: C

Explanation:
72 × 9 − 3 ÷ 8 + 2 = ?
Now, according to new symbols,
72 ÷ 9 × 3 + 8 − 2 = ?
Question 17
Select the figure that will come next in the following figure series.

\[
\begin{array}{cccc}
A & B & C & D \\
\end{array}
\]

Answer: C

Question 18
Select the number pair in which the two numbers are related in the same way as the two numbers of the pair given below. 35 : 6

\[
\begin{array}{cccc}
A & 120 : 11 \\
B & 64 : 8 \\
C & 85 : 9 \\
D & 26 : 5 \\
\end{array}
\]

Answer: A
Explanation:
(35, 6) pattern is $6 \times 6 - 1 = 35$

In the same way (120, 11) is following the same pattern.

Question 19
A letter series is given below in which some letters are missing. Select the option that gives the letters that can fill these blanks in that order.

a_ca_bab_ad_abc_db

A  bdcba
B  bedba
C  bddac
D  bdeab

Answer: A

Explanation:
Total 18 letters are there in the series divide it in 3 equal group and fill the gap with the given option one by one and check the sequence.

Option B and D we will not check because it have letter 'e' and series doesn't have letter 'e'.

If we fill the gap by option A then it will complete the series

abcadb abcadb abcadb

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Question 20
Find the next number in the given series.
3, 13, 31, ?, 91

A  57
B  48
C  69
D  63

Answer: A

Explanation:

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>13</td>
<td>31</td>
<td>57</td>
<td>91</td>
</tr>
<tr>
<td>10</td>
<td>18</td>
<td>26</td>
<td>34</td>
<td></td>
</tr>
</tbody>
</table>

Question 21
Two statements are followed by three conclusions numbered I, II and III. Assuming the statements to be true, even if they do not conform to real-world knowledge, decide which of the conclusion(s) logically follow/s from the statements.

Statements:
All ponds are pools.
Some wells are ponds.

Conclusions:
I. Some ponds are not wells.
II. Some wells are pools.
III. All pools are wells.
A Only conclusion I follows
B None of the conclusions follow
C Only conclusion II follows
D Only conclusion III follows

Answer: C

Explanation:
Some Ponds not being Wells is a possibility but cannot be concluded.
Some Wells are Pools is true.
All pools being Wells can be possible but cannot be concluded.
Hence, Only Conclusion II follows.

Question 22
Choose the Venn diagram that best illustrates the relationship among the following classes:
Women, Entrepreneurs, Engineers

A
B
C
D

Answer: C

Explanation:
Some womens may be entreprenuers and engineers. So option C is correct.
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Question 23

In a code language, SEDATIVE is coded as ATDESEVI. How would PERSONAL be coded in that language?

A  SOERPANL
B  OSREPLAN
C  SOREPLAN
D  SOPERLAN

Answer: C

Explanation:

<table>
<thead>
<tr>
<th>SED</th>
<th>AT</th>
<th>IV</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT</td>
<td>DE</td>
<td>EV</td>
<td>I</td>
</tr>
</tbody>
</table>

Question 24

Three of the following four letter-clusters are alike in a certain way and one is different. Pick the odd one out.

A  ABOP
B  CDQR
C  EFST
D  GHTV

Answer: D

Explanation:
The pattern of all the four letters of cluster is first two and last two is in consecutive form. While in option D first two letters are in consecutive form but last two is not. So option D is correct.

Question 25

In a code language if VERY is written as UDQX, then in the same language how will you write the word URGENT?

A  MSQTFD
B  QFTDMS
C  TMSQFD
D  TQFDMS

Answer: D

Explanation:

VERY = UDQX pattern is each letter of UDQX is -1 from VERY
In the same way,
URGENT = TQFDMS
Instructions
For the following questions answer them individually

Question 26
The Indian Passport was ranked _____ in the 'Global Passport Index Report 2019'.

A 67th
B 65th
C 56th
D 77th
Answer: A

Question 27
Minimum Support Price (MSP) is recommended by _____.

A The Food Safety and Standards Authority of India
B The Commission for Agricultural Costs and Prices
C The Commission for Weights and Measures
D The Farmers' Welfare Society
Answer: B

Question 28
The Pradhan Mantri Shram Yogi Mandhan Yojana was launched by _____.

A Ram Nath Kovind
B Smriti Zubin Irani
C Narendra Modi
D Arun Jaitley
Answer: C

Question 29
Ricket' is a disease associated with the deficiency of _________.

A Vitamin A
B Vitamin C
C Vitamin B
D Vitamin D
Answer: D
Rickets is a bone disorder caused by a deficiency of vitamin D, calcium, or phosphate. There are different bony abnormalities associated with rickets, but all are due to poor mineralisation with calcium and phosphate. The active form of vitamin D is synthesized by skin cells when exposed to sunlight.

Question 30
The highest railway station in India is located in the state of _____
A Sikkim
B West Bengal
C Uttar Pradesh
D Jammu & Kashmir
Answer: B

Question 31
_____ was the first and only Muslim woman to ever sit on the throne of Delhi
A Razia Begum
B Gevher Sultan
C Shajarat Al Durr
D Fatima Al Fihri
Answer: A

Question 32
_____ is the largest river island in the world
A Bahvani
B Munroe
C Umananda
D Majuli
Answer: D

Question 33
Bariatric surgery makes changes to a person's _____
A heart
B lungs
C nasal passage
Question 34
During photosynthesis, green plants use energy from sunlight to synthesise _____ from carbon dioxide and water

A fructose
B sucrose
C galactose
D glucose

Answer: D

Question 35
What is India's rank in 2019 World Happiness Report?

A 160th
B 130th
C 150th
D 140th

Answer: D

Question 36
_____ is the oldest golf course outside the United Kingdom.

A Royal Calcutta Golf Club, Kolkata
B Royal Springs Golf Course, Srinagar
C Classic Golf Resort, New Delhi
D Tollygunge Golf Club, Kolkata

Answer: A

Question 37
Article ____ of the Constitution of India gives the Election Commission the power to supervise elections to the Parliament and state legislatures.

A 341
B 342
C 314
D 324

Answer: D
Question 38
Who amongst the following succeeded the Mughal throne in the year 1556?

A  Shah Jahan  
B  Jehangir  
C  Akbar  
D  Sher Shah Suri  
Answer: C

Question 39
_____ is the oldest member of the 16th Lok Sabha.

A  Murli Manohar Joshi  
B  Lal Krishna Advani  
C  Farooq Abdullah  
D  Ram Jethmalani  
Answer: B

Question 40
Which one of the following was NOT a condition laid down in the Gandhi-Irwin Pact?

A  The Indian National Congress should stop the civil disobedience movement  
B  Withdrawal of tax on khadi production  
C  Participation in the Round Table Conference by the Indian National Congress  
D  Removal of salt tax; allowing to produce, trade and sell legally  
Answer: B

Question 41
The _____ was a group of seven Members of Parliament from the United Kingdom, constituted to suggest constitutional reforms for British India.

A  Simon Commission  
B  Sargent Commission  
C  Fraser Commission  
D  Hunter Commission  
Answer: A
Question 42
Which of the following is NOT a vocal form of Hindustani classical music?

A  Pakhawaj  
B  Drupad  
C  Dhamar  
D  Tarana  
Answer: A

Question 43
The Khajuraho Temples are located in the state of _____.

A  Madhya Pradesh  
B  Andhra Pradesh  
C  Uttar Pradesh  
D  Uttarakhand  
Answer: A

Question 44
The National Board for Micro, Small and Medium Enterprises meets once every ____ months in a year.

A  1.9  
B  2.3  
C  3.2  
D  4.6  
Answer: D

Question 45
Varkala, Chowara, Chavakkad and Nattika are beaches in the state of _____.

A  Tamil Nadu  
B  Maharashtra  
C  Karnataka  
D  Kerala  
Answer: D

Question 46
Who was the first woman judge of the Delhi High Court?
Question 47
Which of the following acid found in Apple?

A Formic Acid
B Sulphuric Acid
C Malic Acid
D Nitric Acid

Answer: C

Question 48
The Banking Regulation Act was passed in India in ____.

A 1974
B 1949
C 1951
D 1965

Answer: B

Question 49
Which of the following is NOT a symptom of Wilson's disease?

A Uncontrolled movements or muscle stiffness
B Problems with speech, swallowing or physical coordination
C Fluid build-up in the legs or abdomen
D Night blindness

Answer: D

Question 50
Who became the first Indian golfer to win on the 'Ladies European Tour' in 2016?

A Aditi Ashok
B Diksha Dagar
Instructions
For the following questions answer them individually

Question 51
The radii of three concentric circles are in the ratio of 4 : 5 : 7. What is the ratio of the area between the two inner circles to that between the two outer circles?

A 3:8
B 4:7
C 5:9
D 4:5

Answer: A

Explanation:
Step-by-step explanation:
The ratio of radii of the three concentric circles is 4 : 5 : 7
Let x be the common multiple. Then the radii of the three circles be 4x, 5x and 7x
Of these 4x and 5x radii circles lie in inner position and 5x and 7x radii circles lie in outer position.
Then the area between the inner circles is
\[= \pi (5x)^2 - \pi (4x)^2 \text{ unit}^2\]
\[= (25 - 16)\pi x^2 \text{ unit}^2\]
\[= 9\pi x^2 \text{ unit}^2\]
and the area between the outer circles is
\[= \pi (7x)^2 - \pi (5x)^2 \text{ unit}^2\]
\[= (49 - 25)\pi x^2 \text{ unit}^2\]
\[= 24\pi x^2 \text{ unit}^2\]
Therefore the ratio of the areas between the two inner circles to that between the two outer circles is
\[= \frac{9\pi x^2}{24\pi x^2}\]
\[= \frac{3}{8}\]

Question 52
If \((1 + \tan^2 \theta) + (1 + (\tan^2 \theta)^{-1}) = k\), then \(\sqrt{k} = ?\)

A \(\csc \theta \cos \theta\)
B \(\sin \theta \cos \theta\)
C cosec $\theta$ sec $\theta$

D sin $\theta$ sec $\theta$

Answer: C

Explanation:
$(1 + \tan^2 \theta) + (1 + (\tan^2 \theta)^{-1}) = k$

= where $\theta$ is replaced by $x$

use this identity to solve this problem $\tan x = \frac{\sin x}{\cos x}$

from the question

$\frac{\sin^2 x}{\cos^2 x} + \cos^2 x + \tan^2 x = k$

$= (\cos x + \sin^2 x) + (1 + \tan^2 x) = k$

$= \cos^2 x + \sin^2 x = k$

= use this trigonometric identity $\cos^2 \theta + \sin^2 \theta = 1$

where $\frac{\sin x}{\cos x} = \sec x$ AND $\frac{\cos x}{\sin x} = \csc x$ from the trigonometric inverse functions

Hence the solution is cosec $x$ sec $x$

Question 53
If $3\sqrt{3}x^3 - 2\sqrt{2}y^3 = (\sqrt{3}x - \sqrt{2}y)(Ax^2 + By^2 + Cxy)$, then the value of $(A \times B) \div C$ is:

A $6\sqrt{6}$

B $6\sqrt{3}$

C $\sqrt{3}$

D $\sqrt{6}$

Answer: D

Question 54
To do a certain work, the ratio of the efficiencies of A, B and C is 7 : 5 : 6. Working together, they can complete the same work in 35 days. B and C work together for 21 days. The remaining work will be completed by A alone in:

A 54 days
B 50 days
C 60 days
D 57 days

Answer: D

Explanation:
the ratio of the efficiencies of A, B and C is 7 : 5 : 6

\[(A+B+C)'s\ working\ together\ can\ complete\ the\ work\ in\ 35\ days\ is\]

\[\frac{1}{x}+\frac{1}{5}+\frac{1}{6} = \frac{1}{35}\]

\[\frac{7}{x} + \frac{5}{5} + \frac{6}{6} = \frac{1}{35}\]

\[18\ \frac{1}{x} = 35\]

\[x = 630\]

B work is \[\frac{5}{x} = \frac{5}{630} = \frac{1}{126}\]

C work is \[\frac{6}{x} = \frac{6}{630} = \frac{1}{105}\]

\[(B+C)'s\ 1\ days\ work\ =\ \frac{1}{126} + \frac{1}{105}\]

Take the orders of 105 and 126 is 630 hence

\[\frac{5+6}{x} = \frac{11}{630}\]

\[\frac{11}{630} = \frac{21}{30}\]

21 days work of \((B+C)\) = \[\frac{11}{30}\times21\]

\[= \frac{11}{30}\]

Remaining work = \[1 - \frac{11}{30}\]

Remaining work = \[\frac{19}{30}\]

A’s 1 days work = \[\frac{7}{x} = \frac{7}{630} = \frac{1}{90}\]

A’s 1 days work = \[\frac{1}{90}\]

The remaining work will be completed by A alone in = \[\frac{19}{30} \times 90\]

y = 57 days

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Question 55
In a circle with center O and radius 10 cm, PQ and RS are two parallel chords of lengths x cm and 12 cm, respectively, and both the chords are on the opposite side of O. If the distance between PQ and RS is 14 cm, the value of x is:

A 16
B 15
C 20
D 18

Answer: A
Question 56

\[
\frac{1}{1+\sin^2 \theta} + \frac{1}{1+\csc^2 \theta} = \]

A \quad \csc^2 \theta \\
B \quad 2 \\
C \quad 1 \\
D \quad \sin^2 \theta

Answer: C

Explanation:

\[
\frac{1}{1+\sin^2 \theta} + \frac{1}{1+\csc^2 \theta} = \]

where \( \csc(t) = \frac{1}{\sin t} \) transform the expression

\[
= 1 + \sin^2 t + 1 + \left( \frac{1}{\sin^2 t} \right)
\]

\[
= 1 + \sin^2 t + (\sin^2 t + 1 + \sin^2 t)
\]

\[
= 1 + \sin^2 t + \sin^2 t + 1 \quad \text{take the orders of this then reduce simplification is}
\]

\[
1 + \sin^2 t
\]

\[
= 1
\]

Question 57

In \( \triangle ACE \), B and D are the points on side AC and CE, respectively, such that BD \( \parallel \) AE and AE = \( \frac{8}{3} \) BD. What is the ratio of the area of \( \triangle BDC \) to that of \( \triangle AEC \)?

A \quad 9 : 16 \\
B \quad 9 : 64
C \quad 3 : 8 \\
D \quad 8 : 11

Answer: B

Question 58

The value of \( \frac{\sin \theta}{1 + \csc^2 \theta} \) is:

A \quad 2 \\
B \quad 0 \\
C \quad -1 \\
D \quad 1

Answer: D

Explanation:
\[
\frac{1}{\sin \theta} - \frac{\cot^2 \theta}{1 + \csc \theta}
\]

where \( \theta \) is replaced by \( t \)

Using \( \cot(t) = \frac{1}{\tan(t)} \) and \( \csc(t) = \frac{1}{\sin(t)} \)

\[
\frac{\cos^2 t}{\sin^2 t}
\]

\[
\frac{1}{\sin t} - \frac{\sin t}{1 + \cot t}
\]

\[
\frac{1}{\sin t} - \frac{\cos^2 t \cdot \sin^2 t}{(\sin t + 1) \cdot \sin t}
\]

\[
\frac{\cos^2 t}{\sin^2 t} \times \sin t + 1
\]

\[
\frac{\cos^2 t}{\sin t} - \frac{\sin t}{\sin t + (\sin t + 1)}
\]

use this identity \( \cos^2 \theta + \sin^2 \theta = 1 \)

hence \( \frac{1}{\sin t} - \frac{1 - \sin^2 t}{\sin (\sin t + 1)} \)

Use this identity \( (a^2 - b^2) = (a+b)(a-b) \)

\[
\frac{1}{\sin t} - \frac{1 - \sin t}{\sin t}
\]

\[
\frac{1 - (1 - \sin t)}{\sin t}
\]

\[
\frac{1 - (1 + \sin t)}{\sin t}
\]

\[
\frac{\sin t}{\sin t}
\]

\[
= 1
\]

**Question 59**

The table shows the production of different types of cars (in thousands).

<table>
<thead>
<tr>
<th>Year</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
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<tbody>
<tr>
<td>Car</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>48</td>
<td>47</td>
<td>50</td>
<td>61</td>
<td>64</td>
</tr>
<tr>
<td>B</td>
<td>47</td>
<td>55</td>
<td>58</td>
<td>54</td>
<td>66</td>
</tr>
<tr>
<td>C</td>
<td>52</td>
<td>58</td>
<td>62</td>
<td>66</td>
<td>72</td>
</tr>
<tr>
<td>D</td>
<td>60</td>
<td>53</td>
<td>56</td>
<td>65</td>
<td>66</td>
</tr>
<tr>
<td>E</td>
<td>43</td>
<td>47</td>
<td>54</td>
<td>64</td>
<td>62</td>
</tr>
</tbody>
</table>

The total production of type B cars during 2013 to 2016 is approximately what percent less than the total production of cars in 2017?

A 38%

B 32%

C 40%

D 35%

Answer: D

**Explanation:**

The total production of type B cars during 2013 to 2016 is \( 47 + 55 + 58 + 54 = 214 \)

the total production of cars in 2017 \( = 64 + 66 + 72 + 66 + 62 = 330 \)

percent less than the total production is \( \frac{214}{330} \times 100 \)
Question 60
A train travelling at 44 km/h crosses a man walking with a speed of 8 km/h, in the same direction, in 15 seconds. If the train crosses a woman coming from the opposite direction in 10 seconds, then what is the speed (in km/h) of the woman?

A 10  
B 9  
C 8.5  
D 10.5  
Answer: A

Question 61
The average of eleven numbers is 54. The average of the first four numbers is 48 and that of the next four numbers is 25% more than the average of the first four. The ninth number is 8 greater than the 11th number and the tenth number is 4 greater than the 10th number. What is the average of the 9th and the 10th numbers?

A 52.6  
B 54  
C 56  
D 54.4  
Answer: C

Question 62
PQRS is a cyclic quadrilateral. If angle P is three times the angle R and angle S is five times the angle Q, then the sum of the angles Q and R is:

A 65°  
B 75°  
C 72°  
D 70°  
Answer: B

Explanation:
By the formation of cyclic quadrilateral we know the sum of opposite angles is 180.

P+R=180——<1>

So putting the value of P and R we get,
3x+x=180, i.e x=45 degree
and Q+S=180——<2>
then, 5y+y=180, i.e y=30 degree

So P=135 degree, Q=30 degree, R=45 degree, S=150 degree.
Q+R=45+30=75°

Question 63
Sudha saves 15% of her income. If her expenditure increases by 20% and savings increase by 60%, then by what percent has her income increased?

A 24
B 30
C 26
D 35
Answer: C

SSC CGL Important Questions PDF

Question 64
If \(a + b + c = 2\), \(a^2 + b^2 + c^2 = 26\), then the value of \(a^3 + b^3 + c^3 - 3abc\) is:

A 71
B 74
C 78
D 69
Answer: B

Explanation:
By using this formula we can solve
\[
(a + b + c)^2 = a^2 + b^2 + c^2 + 2(ab + bc + ca)
\]
by using given data we can write has
\[
2^2 = 26 + 2(ab + bc + ca)
\]
\[
4 - 26 = 2(ab + bc + ca)
\]
\[
-22 = 2(ab + bc + ca)
\]
\[
(ab + bc + ca) = -11
\]
\[
a^3 + b^3 + c^3 - 3abc = (a + b + c) (a^2 + b^2 + c^2 - ab - bc - ca)
\]
where \((a + b + c) = 2\)
\[
a^2 + b^2 + c^2 = 26
\]
and \((ab + bc + ca) = -11\)
Hence by applying to the formula
\[
= 2 \times (26 - (-11))
\]
\[
= 2 \times (26 + 11)
\]
\[
= 2 \times (37)
\]
\[
= 74
\]

Instructions
The table shows the production of different types of cars (in thousands).
Question 65

The total production of type B cars in 2015 and type C cars in 2013 is what percent more that the total production of type E cars in 2013 and 2014 ? (Correct to one decimal place)

A 23.4
B 24.8
C 25.6
D 22.2

Answer: D

Explanation:
The total production of type B cars in 2015 and type C cars in 2013 is = 58 + 52 = 110
the total production of type E cars in 2013 and 2014 = 43 + 47 = 90
hence use this formula Increase in percentage (%) = \( \frac{110 - 90}{90} \times 100 \)
= hence use this formula Increase in percentage (%) = \( \frac{20}{90} \times 100 \)
= 22.22%

Question 66

If the data related to the production of type D cars is represented by a pie-chart, then the central angle of the sector representing the production of the cars in 2016 will be:

A 78°
B 72°
C 79.2°
D 67.2°

Answer: A

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Instructions
For the following questions answer them individually

Question 67

If a 10-digit number 2094x843y2 is divisible by 88, then the value of (5x−7y) for the largest possible value of x, is:

A 3
B 5
The table shows the production of different types of cars (in thousands).  

<table>
<thead>
<tr>
<th>Year</th>
<th>Car</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>48</td>
<td>47</td>
<td>50</td>
<td>61</td>
<td>64</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>47</td>
<td>55</td>
<td>58</td>
<td>54</td>
<td>66</td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>52</td>
<td>58</td>
<td>62</td>
<td>66</td>
<td>72</td>
</tr>
<tr>
<td></td>
<td>D</td>
<td>60</td>
<td>53</td>
<td>56</td>
<td>65</td>
<td>66</td>
</tr>
<tr>
<td></td>
<td>E</td>
<td>43</td>
<td>47</td>
<td>54</td>
<td>64</td>
<td>62</td>
</tr>
</tbody>
</table>

The ratio of the total production of type A cars in 2017 and type D cars in 2015 to the total production of type B and type E cars in 2013 is:

A 7 : 8  
B 4 : 3  
C 8 : 7  
D 3 : 4  

Answer: B

Explanation:
The ratio of the total production of type A cars in 2017 and type D cars in 2015 to the total production of type B and type E cars in 2013 is: 

\[
\frac{2017(type\ A) + (2015type\ D)}{2013(type\ B) + 2013(type\ E)}
\]

\[
\frac{64 + 56}{47 + 43} = \frac{120}{90} = \frac{4}{3}
\]

= by simplifying we get 4 : 3

Question 69

If \(a + \frac{1}{a} = 3\), then \((a^4 + \frac{1}{a^4})\) is equal to:

A 81  
B 47  
C 27  
D 77

Answer: B

Explanation:
Given

\[a + \frac{1}{a} = 3\]
using the formula \((a + b)^2 = a^2 + b^2 + 2 \times a \times b\)
\((a + \frac{1}{a})^2 = (a^2 + \frac{1}{a^2}) + 2 \times a \times \frac{1}{a}\)
\(3^2 = (a^2 + \frac{1}{a^2}) + 2\)
\((a^2 + \frac{1}{a^2}) = 9 - 2\)
\((a^2 + \frac{1}{a^2}) = 7\)

again use the same formula to the above solutions we can get final answer
\((a + b)^2 = a^2 + b^2 + 2 \times a \times b\)
\((a^2 + \frac{1}{a^2})^2 = (a^4 + \frac{1}{a^4}) + 2 \times a^2 \times \frac{1}{a^2}\)
\(7^2 = (a^4 + \frac{1}{a^4}) + 2\)
\(49 - 2 = (a^4 + \frac{1}{a^4})\)
therefore \((a^4 + \frac{1}{a^4}) = 47\)

**General Science Notes for SSC CGL**

**Question 70**
If \(\cos \theta + \sin \theta = 4, 0^\circ < \theta < 90^\circ\), then the value of \(\tan \theta + \csc \theta\) is:

A \(\frac{5\sqrt{2}}{2}\)
B \(\frac{5\sqrt{2}}{3}\)
C \(\frac{5\sqrt{3}}{3}\)
D \(\frac{4\sqrt{3}}{3}\)

Answer: C

**Question 71**
The area of a \(\triangle ABC\) is one unit. DE is a straight line parallel to BC, joining the points D and E on AB and AC respectively such that AD : DB = 1 : 6. The ratio of the areas of the triangles ADE and ABC is:

A \(1 : 6\)
B \(1 : 36\)
C \(1 : 7\)
D \(1 : 49\)

Answer: D

**Question 72**
The value of \(16 ÷ 4 of 4 \times [3 ÷ 4 of \{4 ÷ 3 ÷ (3 + 3)\}] ÷ (2 ÷ 4 of 8)\) is:

A \(6\)
B \(48\)
C \(9\)
D \(16\)

Answer: A
Question 73
In \( \triangle ABC \), D is a point on AC such that \( AB = BD = DC \). If \( \angle BAD = 70^\circ \), then the measure of \( \angle B \) is:

A 75°  
B 82°  
C 80°  
D 70°  
Answer: A

Question 74
A person borrowed a certain sum at 10% p.a. for three years, interest being compounded annually. At the end of two years, he repaid a sum of ₹6,634 and at the end of the third year, he cleared off the debt by paying ₹13,200. What was the sum borrowed by him?

A ₹16,400  
B ₹15,600  
C ₹15,400  
D ₹16,500  
Answer: C

Question 75
Some fruits are bought at a rate of 11 for ₹100 and an equal number at a rate of 9 for ₹100. If all the fruits are sold at a rate of 10 for ₹100, then what is the gain or loss percent in the entire transaction?

A Gain, 1%  
B Loss, 5%  
C Gain, 5%  
D Loss, 1%  
Answer: D

Explanation:
We know that CP is cost price  
SP is selling price  
In first condition  
CP of 11 toffee=₹10  
CP of 1 fruits = ₹ \( \frac{10}{11} \)  
in second condition  
CP of 9 fruits= ₹10  
CP of fruits = ₹ \( \frac{10}{9} \)
therefore, CP of both fruits = ₹ \( \frac{10}{11} \times \frac{10}{9} \)
= ₹ \( \frac{200}{99} \)
so, cp of 1 = \( \frac{200}{99} \div 2 \)
Cost price = ₹ \( \frac{100}{99} \)
sp of 1 fruits = ₹ 1 (given)
loss = cost price - selling price
= \( \frac{100}{99} - 1 \)
Loss = ₹ \( \frac{1}{99} \)
loss percentage = \( \frac{loss}{cost\ price} \times 100 \)
loss (%) = \( \frac{1}{99} \div 99 \times 100 \)
loss percent = 1% loss
= 1 percent loss

Instructions

In the following passage some words have been deleted. Fill in the blanks with the help of the alternatives given. Select the most appropriate option for each blank.

Comprehension:
Canada is three times the size of India (1)_____ its population is only about 26 million. The average (2)_____ of population is less than three persons per square kilometer (3)_____ Canada. The distribution of population is highly (4)_____. Nearly 80 per cent of the people (5)_____ in a narrow belt less than 300 kilometer wide along the southern border. The rest of the country has a very sparse population due to excessive cold.

Question 76
Select the most appropriate option for blank No. 1

A so
B because
C but
D until
Answer: C

Question 77
Select the most appropriate option for blank No. 2

A density
B frequency
C consistency
Question 78
Select the most appropriate option for blank No. 3

A on
B into
C at
D in
Answer: D

Question 79
Select the most appropriate option for blank No. 4

A rough
B differing
C uneven
D infrequent
Answer: C

Question 80
Select the most appropriate option for blank No. 5

A live
B survive
C subsist
D remain
Answer: A

Instructions
For the following questions answer them individually

Question 81
In the sentence identify the segment which contains the grammatical error.
We will rest for sometime when we will reach the top

A We will rest
B for sometime
C when we will

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Question 82
Select the wrongly spelt word.
A reminascant
B remnant
C remittance
D remembrance
Answer: A

Question 83
Select the most appropriate word to fill in the blank.
A painting competition was held in the colony and Kavya was _____ winner in the age group 3-5 years.
A described
B supposed
C declared
D publicized
Answer: C

Question 84
Select the most appropriate meaning of the given idiom.
butterflies in the stomach
A being excited
B being hungry
C being nervous
D being angry
Answer: C

Question 85
Select the most appropriate option to substitute the underlined segment in the given sentence. If no substitution is required, select No improvement.
They didn't see you, is it?
A wasn't it
B did they
C no improvement

Answer: A
Question 86
Select the most appropriate meaning of the given idiom.
out of the woods
A no longer in trouble
B no longer young
C no longer in sight
D no longer famous
Answer: A

Question 87
Select the word which means the same as the group of words given.
A person appointed by two parties to resolve a dispute
A arbitrator
B broker
C valuer
D auditor
Answer: A

Question 88
Select the synonym of the given word.
DRAG
A push
B rush
C rest
D pull
Answer: D

Question 89
In the sentence identify the segment which contains the grammatical error.
The river Yamuna has many non-native species like goldfish that is affecting its eco-system.
A that is affecting
B its eco-system
The river Yamuna has many non-native species.

Answer: A

Question 90

Given below are four jumbled sentences. Select the option that gives their correct order.
A. It is one of the highly developed countries of the world.
B. It stretches from the Atlantic Ocean in the east to the Pacific Ocean in the west.
C. The USA consists of 50 states including Alaska and Hawai.
D. The United States of America (USA) is the 4th largest country in the world.

A  ADCB
B  CBDA
C  DBCA
D  CBAD

Answer: C

Question 91

Given below are four jumbled sentences. Select the option that gives their correct order.
A. What was supposed to be a holiday of a lifetime turned into a dangerous experience for 1,300 passengers on a cruise ship off the coast of Norway.
B. The Norwegian Government decided to evacuate the passengers with the help of helicopters.
C. The ship broke down in rough seas and high-speed winds caused it to rock heavily from side to side.
D. From the first 371 evacuated passengers, 17 had to be taken to hospital.

A  ABCD
B  ACBD
C  CBDA
D  CABD

Answer: B

Question 92

Select the wrongly spelt word.
A  hazy
B  hazard
C  hasty
D  hasitate

Answer: D
Question 93
Select the synonym of the given word.
ENGULF
A  encroach
B  enshrine
C  entangle
D  envelop
Answer: D

Question 94
Select the antonym of the given word.
COMIC
A  awkward
B  amusing
C  tragic
D  absurd
Answer: C

Question 95
Select the word which means the same as the group of words given.
a family of young animals
A  brood
B  clutch
C  nest
D  offspring
Answer: A

Question 96
Select the correct passive form of the given sentence.
Show these visitors the butterfly farm.
A  These visitors should be showed the butterfly farm
B  Let these visitors be shown the butterfly farm
C  Let these visitors be showing the butterfly farm
D  You must show these visitors the butterfly farm
Answer: B
Question 97
Select the antonym of the given word.
GATHER
A disperse
B display
C dispute
D distract
Answer: A

Question 98
Select the most appropriate word to fill in the blank.
The National war memorial is _____ to our Armed Forces.
A devoted
B honoured
C dedicated
D inscribed
Answer: C

Question 99
Select the most appropriate option to substitute the underlined segment in the given sentence. If no substitution is required, select No improvement.
We had never seen so strong blizzard. The wind speed was 130 km per hour.
A no improvement
B such strong a blizzard
C such a strong blizzard
D so strong the blizzard
Answer: C

Question 100
Select the correct active form of the given sentence.
The injured were being removed to the hospital by the police
A The police was removing the injured to the hospital
B The police has been removing the injured to the hospital.
C The police removed the injured to the hospital
D The injured was removing the police to the hospital.
Answer: A
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