SSC CHSL 15 November 2015 Morning Shift

Reasoning

Instructions

Select the related word/letters/number from the given alternatives.

Question 1

School : Teacher :: Bank : ?

A Cashier

B Manager

C Banker

D Peon

Answer: C

Explanation:
Teachers are the focal point of a school, similarly bankers are the main part of a bank.

=> Ans - (C)

Question 2

Exercise : Gym : Eating : ?

A Dieting

B Restaurant

C Food

D Fitness

Answer: B

Explanation:
We do exercise in a gym and eat in a restaurant.

=> Ans - (B)

Question 3

JKPO : LMNM :: PQJI : ?

A RGHS

B GRHS

C SHRG

D RSHG

Answer: D

Explanation:
Expression = JKPO : LMNM :: PQJI : ?

The pattern followed is :

J	K	P	O
(+2)	(+2)	(-2)	(-2)
L	M	N	M

Similarly, for PQJI :

P	Q	J	I
(+2)	(+2)	(-2)	(-2)
R	S	H	G

=> Ans - (D)

Question 4

7: 42 :: 8 : ?

A 48

B 49

C 56

D 50

Answer: C

Explanation:
Expression = 7: 42 :: 8 : ?

The pattern followed is = $n : n^2 - n$

Eg :- $7 : (7^2 - 7) = 7 : 42$

Similarly, $(8)^2 - 8 = 64 - 8 = 56$

=> Ans - (C)

Question 5

49 : 343 :: 64 : ?

A 514

B 634

C 486

D 512

Answer: D

Explanation:
Expression = 49 : 343 :: 64 : ?

The pattern followed is = $n^2 : n^3$

Eg :- $7^2 : 7^3 = 49 : 343$

Similarly, $64 = 8^2$

=> $(8)^3 = 512$

=> Ans - (D)

Question 6

Patient : Flower bed :: ?

A Necklace : Adornment

B Trophy : Achievement

C Bady : Cradle

D Certificate : Merit

Answer: C

Explanation:
A patient lies in a flower bed, similarly a baby in a cradle.

=> Ans - (C)

Question 7

VVXY : RRTU :: FFHI : ?

A UUVZ

B XXYB

C SSUV

D CCDF

Answer: C

Explanation:
VV (+2 letters) = X (+1 letter) = Y

RR (+2 letters) = T (+1 letter) = U

FF (+2 letters) = H (+1 letter) = I

Similarly, SS (+2 letters) = U (+1 letter) = V

=> Ans - (C)

Question 8

QPOR : XWVY : LKJM : ?

A SRQT

B CBAD

C FHGI

D DEGF

Answer: A

Explanation:
Expression = QPOR : XWVY : LKJM : ?

The pattern followed is :

Q	P	O	R
(+7)	(+7)	(+7)	(+7)
X	W	V	Y

Similarly, for LKJM :

L	K	J	M
(+7)	(+7)	(+7)	(+7)
S	R	Q	T

=> Ans - (A)

Question 9

7 : 77 :: ?

A 3 : 81

B 11 : 143

C 6 : 24

D 8 : 64

Answer: B

Explanation:
Expression = 7 : 77 :: ?

As, $7 \times 11 = 77$

Product of 2 consecutive prime numbers.

Similarly, $11 \times 13 = 143$

=> Ans - (B)

Instructions

Find the odd word/number/letters/number pair from the given alternatives.

Question 10

A IK

B PN

C BD

D SU

Answer: B

Explanation:
(A) : I (+2 letters) = K

(B) : P (**-2** letters) = N

(C) : B (+2 letters) = D

(D) : S (+2 letters) = U

=> Ans - (B)

Question 11

A RIM

B NOKIA

C BSNL

D MTS

Answer: B

Explanation:
Nokia is the manufacturer of mobile phones, while all others are telecommunication service providers.

=> Ans - (B)

Question 12

A 6578

B 7689

C 3245

D 4367

Answer: D

Explanation:
Difference between first half and second half of the numbers :

(A) : 6578 $\equiv 78 - 65 = 13$

(B) : 7689 $\equiv 89 - 76 = 13$

(C) : 3245 $\equiv 45 - 32 = 13$

(D) : 4367 $\equiv 67 - 43 = 24$

=> Ans - (D)

Question 13

A 16 : 128

B 13 : 117

C 12 : 96

D 15 : 120

Answer: B

Explanation:
When second number is divided by first, we get :

(A) : $\frac{128}{16} = 8$

(B) : $\frac{117}{13} = 9$

(C) : $\frac{96}{12} = 8$

(D) : $\frac{120}{15} = 8$

=> Ans - (B)

Question 14

A Helicopter

B Aero plane

C Sub-marine

D Rocket

Answer: C

Explanation:
Only submarine is operated under water, other three fly in the air.

=> Ans - (C)

Question 15

A Gear

B Engine

C Fuel

D Horn

Answer: C

Explanation:
Fuel is necessary to run an engine. Engine, gear and horn are parts of a vehicle.

=> Ans - (C)

Question 16

A 81 : 9

B 42 : 2

C 24 : 6

D 54 : 17

Answer: D

Explanation:
Except in the pair 54-17, in all other pairs, the first number is multiple of second number.

=> Ans - (D)

Question 17

A KNXY

B CNPT

C DKRY

D FBJL

Answer: C

Explanation:
(A) : K (+3 letters) = N (+10 letters) = X (+1 letter) = Y

(B) : C (+11 letters) = N (+2 letters) = P (+4 letters) = T

(C) : D (**+7** letters) = K (**+7** letters) = R (**+7** letters) = Y

(D) : F (-4 letters) = B (+8 letters) = J (+2 letters) = L

=> Ans - (C)

Question 18

A UXeN

B FoMY

C DkUZ

D LPuB

Answer: A

Explanation:
Except in the letter group UXeN, in all others, there is only one vowel. In UXeN, there are 2 vowels.

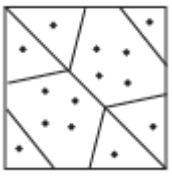
=> Ans - (A)

Instructions
For the following questions answer them individually

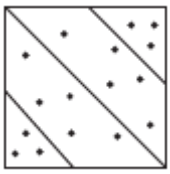
Question 19

A piece of paper is folded and punched as shown below in the question figures, From the given answer figures, indicate how it will appear when opened.

A



B



C

D

Answer: E

Instructions

A series is given, with one from missing, Choose the correct alternative from the given ones that will complete the series.

Question 20

OTE, PUF, QVG, RWH, ?

A SXI

B TXI

C SYJ

D SXJ

Answer: A

Explanation:
Series : OTE, PUF, QVG, RWH, ?

The pattern followed in each letter of the terms is :

1st letter : O (+1 letter) = P (+1 letter) = Q (+1 letter) = R (+1 letter) = S

2nd letter : T (+1 letter) = U (+1 letter) = V (+1 letter) = W (+1 letter) = X

3rd letter : E (+1 letter) = F (+1 letter) = G (+1 letter) = H (+1 letter) = I

Thus, missing term = **SXI**

=> Ans - (A)

Question 21

16, 61, 25, 52, 36, 63, 49, ?

A 36

B 94

C 72

D 46

Answer: B

Explanation:
Series : 16, 61, 25, 52, 36, 63, 49, ?

In pairs of two, square of natural numbers and their reverse is written.

Eg :- 16 and 61, 25 and 52, 36 and 63

Similarly, reverse of 49 = **94**

=> Ans - (B)

Question 22

7, 18, 40, 73, 117, ?

A 172

B 150

C 161

D 183

Answer: A

Explanation:
Multiples of 11 are added.

7 + 11 = 18

18 + 22 = 40

40 + 33 = 73

73 + 44 = 117

117 + 55 = **172**

=> Ans - (A)

Question 23

AFKPU, BGLQV, CHMRW, ??

A DINSX

B VQLGB

C KLMNO

D UVWXY

Answer: A

Explanation:
Series : AFKPU, BGLQV, CHMRW, ??

The pattern followed in each letter of the terms is :

1st letter : A (+1 letter) = B (+1 letter) = C (+1 letter) = D

2nd letter : F (+1 letter) = G (+1 letter) = H (+1 letter) = I

3rd letter : K (+1 letter) = L (+1 letter) = M (+1 letter) = N

4th letter : P (+1 letter) = Q (+1 letter) = R (+1 letter) = S

5th letter : U (+1 letter) = V (+1 letter) = W (+1 letter) = X

Thus, missing term = **DINSX**

=> Ans - (A)

Question 24

3, 5, 9, 15, 23, 33, 45, 59, ?

A 81

B 72

C 60

D 75

Answer: D

Explanation:
Multiples of 2 are added.

3 + 2 = 5

5 + 4 = 9

9 + 6 = 15

15 + 8 = 23

23 + 10 = 33

33 + 12 = 45

45 + 14 = 59

59 + 16 = **75**

=> Ans - (D)

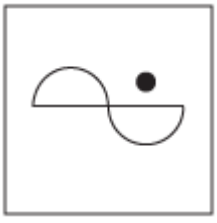
Instructions
For the following questions answer them individually

Question 25

Find water image of:

A

B



C 

D 

Answer: E

Question 26

If the given interchanges are made in signs and numbers, which one of the following equation is true ? (Signs : ÷ and +, Number : 6 and 5)

A $90 + 5 \div 6 = 8.6$

B $18 + 6 \div 5 = 9.6$

C $26 \div 5 + 6 = 6.4$

D $5 \div 6 + 80 = 5.8$

Answer: B

Explanation:
(A) : $90 + 5 \div 6 = 8.6$

$\equiv 90 \div 6 + 5 = 8.6$

L.H.S. = $15 + 5 = 20 \neq 8.6$

(B) : $18 + 6 \div 5 = 9.6$

$\equiv 18 \div 5 + 6 = 9.6$

L.H.S. = $3.6 + 6 = 9.6 =$ R.H.S.

=> Ans - (B)

Instructions

From the given alternatives words, select the word which cannot be formed using the letters of the given word:

Question 27

METAPHYSICS

A TEAMS

B HEATS

C PESTS

D SEEMS

Answer: D

Explanation:
The word 'METAPHYSICS' contains only '1 E', thus the word *seems* cannot be formed.

=> Ans - (D)

Question 28

RAILWAYSTATION

A NOTARY

B STORY

C OSTITIS

D STAIR

Answer: C

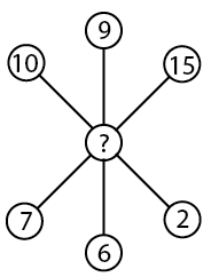
Explanation:
The word 'RAILWAYSTATION' contains only '1 S', thus the word *ostitis* cannot be formed.

=> Ans - (C)

Instructions

A series is given, with one term missing. Choose the correct alternative from the given ones that will complete the series.

Question 29



A 5

B 3

C 2

D 4

Answer: C

Explanation:
Sum of numbers in the vertical line is same.

10 + 7 = 17 and 15 + 2 = 17

Similarly, $9 + x + 6 = 17$

=> $x = 17 - 15 = 2$

=> Ans - (C)

Question 30

65	77	87
21	?	21
44	55	66

A 21

B 23

C 22

D 20

Answer: C

Explanation:
In each column, the first number is equal to the sum of remaining two numbers.

Eg :- $21 + 44 = 65$

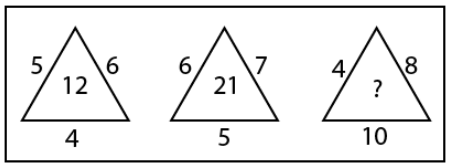
and $21 + 66 = 87$

Similarly, $55 + x = 77$

=> $x = 77 - 55 = 22$

=> Ans - (C)

Question 31



A 22

B 14

C 320

D 32

Answer: D

Explanation:
Numbers on the edges of the triangle are multiplied and then divided by 10.

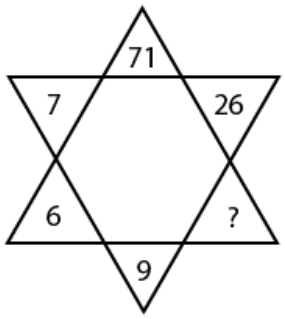
Eg :- $5 \times 6 \times 4 = 120 \div 10 = 12$

and $6 \times 7 \times 5 = 210 \div 10 = 21$

Similarly, $4 \times 8 \times 10 = 320 \div 10 = 32$

=> Ans - (D)

Question 32



A 35

B 42

C 39

D 49

Answer: C

Explanation:

The pattern on diagonal elements followed is :

$(9)^2 - 10 = 81 - 10 = 71$

and $(6)^2 - 10 = 36 - 10 = 26$

Similarly, $(7)^2 - 10 = 49 - 10 = 39$

=> Ans - (C)

Instructions
For the following questions answer them individually

Question 33

Which one set of letters when sequentially placed at the gaps in the given letter series shall complete it ?
__aabb__a__ab__b

A b a b a

B b b a a

C a b a b

D a b b b

Answer: C

Explanation:
Expression : __aabb__a__ab__b

The pattern followed is that in set of 3, the terms 'aaa' and 'bbb' are alternatively repeated.

= **a**aa bb**b** a**a**a b**b**b

=> Ans - (C)

Question 34

In a certain code MISCHIEF is written as NKVGMOLN, then how is RELIEVED written in that code ?

A SFMJFWFE

B SEOIJVLD

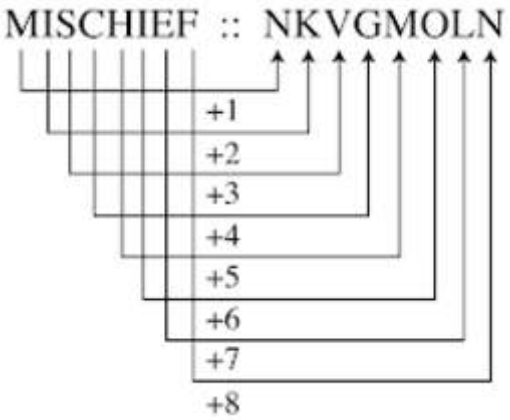
C SGOMJBLL

D SGOMJVED

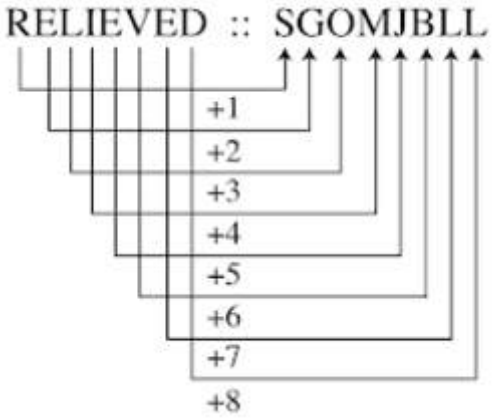
Answer: C

Explanation:
MISCHIEF is written as NKVGMOLN

The pattern followed is :



Similarly, for RELIEVED : **SGOMJBLL**



=> Ans - (C)

Question 35

Arrange the following words as per their order in Dictionary.
1. Cinnabar
2. Cinder
3. Cinema
4. Cinnamon
5. Cinchoina

A 4, 1, 5, 2, 3

B 5, 2, 1, 4, 3

C 2, 3, 5, 4, 1

D 5, 2, 3, 1, 4

Answer: D

Explanation:
As per the order of dictionary :

= Cinchoina -> Cinder -> Cinema -> Cinnabar -> Cinnamon

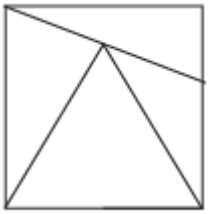
$\equiv$ 5, 2, 3, 1, 4

=> Ans - (D)

Question 36

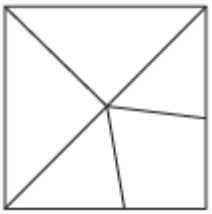
Identify the answer figure from which the pieces given in the question figure have been cut.

A

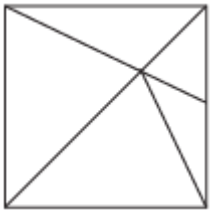


B

C



D

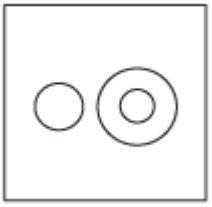


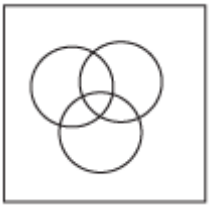
Answer: E

Question 37

Which one set of the following diagrams best depicts the relationship among :
Plant, Animal, Deer

A 

B 

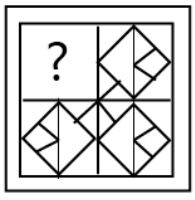
C 

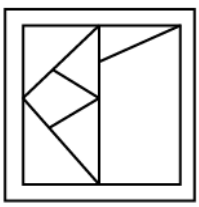
D 

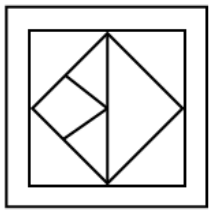
Answer: E

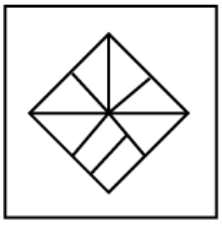
Question 38

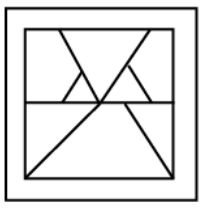
Which answer figure will complete the pattern in the question figure ?



A 

B 

C 

D 

Answer: E

Question 39

If two day back it was 9^{th} November 2014 and it was a Sunday, then tomorrow will be ?

A 12^{th} November 2014, Tuesday

B 12^{th} November 2014, Thursday

C 13^{th} November 2014, Wednesday

D 12^{th} November 2014, Wednesday

Answer: D

Explanation:
If two days back it was 9th November 2014 and it was Sunday.

Then, today is 11th November = Tuesday.

So, tomorrow will be on 12th November = Wednesday.

=> Ans - (D)

Question 40

On arranging Atomic Age, Metallic Age, Stone Age, Alloy Age in a meaningful order (starting from the earliest) which would appear in the 3rd position ?

A Stone Age

B Metallic Age

C Alloy Age

D Atomic Age

Answer: C

Explanation:
The meaningful order is :

= Stone Age -> Metallic Age -> Alloy Age -> Atomic Age

Thus, *alloy age* would appear in the 3rd position.

=> Ans - (C)

Instructions

One/Two statements is/are given each followed by two assumption. I and II. Yes have to consider the statement to be true even if they seem to be at variance from commonly known facts. You have to decide which of the assumptions, if any, follows from the given statements.

Question 41

Statement:
"There is very heavy traffic on the road between 5-7 p.m. We need to have a flower in this area." A planning engineer said in a meeting.
Assumption:
I-Heavy traffic should be regulated
II-Previous planning engineer did not do much about heavy traffic.

A Only assumption I is implicit

B Only assumption II is implicit

C Both I & II are implicit

D Neither I nor II are implicit

Answer: A

Explanation:
The given statement indicates about the heavy traffic and that it should be controlled, hence only assumption I is implicit. Regulation of traffic is required to ensure smooth traffic. We cannot assume the plans of previous engineers.

=> Ans - (A)

Question 42

Statement: The impact of economics sanctiob on economy, that is already so weak could be devasting.

Assumption:

I. Economics sanctions impact only a weak economy.

II.The impact of economic sanctions varies from economy to economy.

A Neither I nor II are implicit.

B Both I and II are implicit.

C Only II is implicit

D Only I is implicit

Answer: E

Instructions
For the following questions answer them individually

Question 43

No Question

A Latex1

B Latex2

C Latex3

D Latex4

Answer: E

Question 44

No Question

A Latex1

B Latex2

C Latex3

D Latex4

Answer: E

Question 45

No Question

A Latex1

B Latex2

C Latex3

D Latex4

Answer: E

Question 46

No Question

A Latex1

B Latex2

C Latex3

D Latex4

Answer: E

Question 47

No Question

A Latex1

B Latex2

C Latex3

D Latex4

Answer: E

Question 48

No Question

A Latex1

B Latex2

C Latex3

D Latex4

Answer: E

Question 49

No Question

A Latex1

B Latex2

C Latex3

D Latex4

Answer: E

Question 50

A word is represented by only one set of numbers as given in any one of the the alternatives. The sets of numbers given in the alternatives are represented by two classes of alphabets as in two matrices given below. The columns and rows of Matrix-I are numbered from 0 to 4 and that of Matrix II are numbered from 5 to 9. A letter from these matrices can be represented first by its row and next by its column, e.g., 'A' can be represented by 03, 12 etc., and 'N' can be represented by 56, 65 etc., Similarly you have to identify the set for the word 'DRAW'.

Matrix - I

	0	1	2	3	4
0	D	O	B	A	I
1	O	B	A	I	D
2	B	A	I	D	O
3	A	I	D	O	B
4	I	D	O	B	A

Matrix - II

	5	6	7	8	9
5	W	N	R	M	L
6	N	R	M	L	W
7	R	M	L	W	N
8	M	L	W	N	R
9	L	W	N	R	M

A 32, 75, 44, 76

B 14, 89, 12, 78

C 23, 57, 30, 68

D 41, 66, 23, 55

Answer: B

Explanation:

(A) : 32, 75, 44, 76 = DRAM

(B) : 14, 89, 12, 78 = **DRAW**

(C) : 23, 57, 30, 68 = DRAL

(D) : 41, 66, 23, 55 = DRDW

=> Ans - (B)

English

Instructions

The 1st and the last part of sentence are numbered 1 and 6. The rest of the sentence is split into ur parts and named. P.Q.R, and S. These four parts are not given in their proper order. Read the sentence and find out which of the four combinations is correct. Then find the correct answer and indicate it in the answer Sheet.

Question 51

1. Right from
P. have been used as a measure of time
Q. prehistories times
R. and have formed the basis of
S. the phases of the moon
6. the earliest calendar

A QRSP

B QSPR

C SRQP

D PRSQ

Answer: E

Question 52

1. The internet is
P. a world wide network
Q. that should not be
R. regulated or censored
S. by any one country
6. Howsoever strong the temptation.

A PRSQ

B PQRS

C PRQS

D PSQR

Answer: E

Question 53

1. Without water
P. and consequently
Q. the oxygen content in the atmosphere
R. which carry out photosynthesis and release oxygen
S. there would be no animals or plants
6. would go down.

A SPRQ

B SRPQ

C SPQR

D PRQS

Answer: E

Question 54

1. In recent years
P. primarily because purchasing
Q. has grown more intense
R. price competition is most industries
S. managers now exert much influence
6. over suppliers.

A SPRQ

B RQPS

C SRPQ

D RSPQ

Answer: E

Instructions

In the following passage some of the words have been left out. Read the passage carefully and choose the correct answer to each question out of the four alternative and fill in the blanks.

If you _____(I)_____ to be free from all physical aches and points, and enjoy perfect physical harmony, then put your mind in order and _____(II)_____ your thoughts. Think joyful thoughts: think loving thoughts. Let the _____(III)_____ of goodwill _____(IV)_____ through your veins, and you will need no other medicine. _____(V)_____ your jealousies, your suspicious, your worries, your hatred, your selfish sickness, your _____(VI)_____ and _____(VII)_____, If you will _____(VIII)_____ clinging to these _____(IX)_____ and demoralizing habits of minds, then do not complain when your body is _____(X)_____ sickness.

Question 55

A (I) want

B (I) will

C (I) can

D (I) would

Answer: E

Question 56

A (II) regularize

B (II) co-ordinate

C (II) harmorize

D (II) regulate

Answer: E

Question 57

A (III) sweetness

B (III) potion

C (III) elixir

D (III) generosity

Answer: E

Question 58

A (IV) gather

B (IV) course

C (IV) run

D (IV) race

Answer: E

Question 59

A (V) diseard

B (V) east away

C (V) ignore

D (V) throw off

Answer: E

Question 60

A (VI) confidence

B (VI) worries

C (VI) nervousness

D (VI) happiness

Answer: E

Question 61

A (VII) mercy

B (VII) joy

C (VII) despair

D (VII) paining

Answer: E

Question 62

A (VIII) persisting

B (VIII) eare to

C (VIII) continue to

D (VII) indulge in

Answer: E

Question 63

A (IX) good

B (IX) unhealthy

C (IX) worse

D (IX) unruly

Answer: E

Question 64

A (X) lying with

B (X) affected to

C (X) laid low with

D (X) laid up with

Answer: E

Instructions

Sentence given with blanks to be filled in with an appropriate word(s). Four alternatives are suggested for each question. Choose the correct alternative out of the four and indicate it by blackening the appropriate circle in the Answer Sheet.

Question 65

He agreed _____ my business proposal.

A at

B on

C to

D for

Answer: E

Question 66

All of us are devoted _____ one another.

A of

B at

C for

D to

Answer: E

Question 67

_____ is the way to the zoo ?

A what

B when

C where

D which

Answer: E

Question 68

This area suffers from _____

A drafts

B droaghts

C drought

D draughts

Answer: E

Instructions

Choose the word opposite in meaning to the given word and mark it in the Answer Sheet.

Question 69

Grieve

A Moan

B Rejoice

C Sadness

D Agony

Answer: E

Question 70

Enduring

A Unwavering

B Transient

C Abiding

D Transitory

Answer: E

Question 71

Flawless

A Deficient

B Sick

C Defective

D Seconds

Answer: E

Question 72

Obscure

A Enigma

B Distinguish

C Vague

D District

Answer: E

Instructions

Out of the four alternatives, choose the one which best expresses the meaning of the given word and mark it in the Answer Sheet.

Question 73

Consort

A Convoy

B Guide

C Protect

D Partner

Answer: E

Question 74

Revenue

A Return

B Income

C Disaster

D Regain

Answer: E

Question 75

Genuine

A Concem

B Local

C Clever

D Authentic

Answer: E

Question 76

Accuracy

A Cleveness

B Attachment

C Precision

D Agreement

Answer: E

Instructions

A sentence has been given in Direct/Indirect. Out of the four alternatives suggested, select the one which best expresses the same sentence in Indirect/Direct and mark your answer in the Answer Sheet.

Question 77

The teacher said, "The Earth moves round the sun."

A The teacher said that the Earth moves round the sun

B The teacher told that the Earth moved round the sun

C The teacher told that the Earth has moved round the sun

D The teacher asked that the Earth moves round the sun

Answer: E

Question 78

Ashok said to me, “Your parents are waiting for you”.

A Ashok told me that his parents are waiting for him

B Ashok told me that his parents were waiting for him

C Ashok told me that my parents were waiting for me

D Ashok told to me that my parents were waiting for me

Answer: E

Instructions

Four words are given in each question, out of which only one word is correctly spelt. Find the correctly spelt word and mark your answer in the Answer Sheet.

Question 79

A Revarberation

B Reverberation

C Revirberation

D Riverberation

Answer: E

Question 80

A Remarkable

B Remarkeble

C Remarkabl

D Remarkebel

Answer: E

Question 81

A Preferrence

B Prefference

C Preference

D Preferennce

Answer: E

Question 82

A Advertice

B Adverties

C Adveretise

D Advertise

Answer: E

Instructions

A sentence / a part of the sentence is underlined. Below are given alternatives to the underlined part which may improve the sentence choose the correct alternative. In case no improvement needed choose “No Improvement”.

Question 83

How many country are there in Europe ?

A country are there on

B countries are their in

C No improvement

D countries are there in

Answer: E

Question 84

The Sutlej has changed its path

A course

B line

C No improvement

D journey

Answer: E

Question 85

The medicine must be take by you

A takes

B No Improvement

C taken

D taking

Answer: E

Question 86

We stayed in Mumbai in five days

A for

B with

C No Improvement

D at

Answer: E

Instructions

Out of the four alternatives, choose the one which can be substituted for the given words/sentences and indicate it by blackening the appropriate circle in the Answer Sheet.

Question 87

Animals living in water.

A gregarious

B mammals

C aquatic

D amphibian

Answer: E

Question 88

Someone not fit to be chosen.

A non-eligible

B uneligible

C imeligible

D ineligible

Answer: E

Question 89

One who compiles a dictionary

A lexicon

B lexicographer

C lexical

D lexicography

Answer: E

Question 90

A person who steals the writing of others

A nepotism

B plagiarist

C plagiarism

D popular

Answer: E

Instructions

Four alternatives are given for the Idiom/Phrase underlined. Choose the alternative which best expresses the meaning of the Idiom/Phrase and mark it in the Answer Sheet.

Question 91

To call in a day

A decide to finish working

B put off work for another day

C give the day a name

D the day was marvellous

Answer: E

Question 92

I was in two minds whether to buy a new television or a new computer

A to be undecided

B to lose one's mind

C to take two decisions

D to be firm

Answer: E

Question 93

My brother puts by a little money every month.

A spends carefully

B saves

C gives away

D loses

Answer: E

Question 94

Ramesh was <u>on cloud nine</u> when she heard that the has won the lottery.

A frustrated

B very happy

C confused

D shocked

Answer: E

Instructions

A sentence has been given in Active/Passive voice. Out of the four alternatives suggested, select the one which best expresses the same sentence in Passive/Active voice and mark your answer

Question 95

People say that he is a spy

A He is spy was said by people

B A spy that he is said the people

C It has been said by the people that he is a spy

D It is said that he is a spy

Answer: E

Question 96

Has be completed the assignments ?

A Has the assignments been completed by him ?

B Has the assignments being completed by him ?

C Have the assignments completed by him ?

D Have the assignments been completed by him ?

Answer: E

Instructions

Some parts of the sentences have errors and some are correct. Find out which part of a sentence has an error and blacken the circle corresponding to the appropriate correct option. If a sentence is free from error, blacken the circle corresponding to 'No Error' option in the Answer Sheet.

Question 97

I will have both the blue or the black pen

A No error

B I will have

C both the blue

D or the black pen

Answer: E

Question 98

My wife, having finish her work rushed to meet me at the event

A My wife, having finish her work

B at the event

C rushed to meet me

D No error

Answer: E

Question 99

Electronic mail or E-mail are a method of exchanging digital messages

A No error1

B digital messages

C Electronics mail or E-mail

D No error2

Answer: E

Question 100

You must abide on the terms of this government.

A the terms of

B You must abide on

C this government

D No error

Answer: E

Quant

Instructions
For the following questions answer them individually

Question 101

A milkman mixed the water with milk to gain 25% by selling the mixture at cost price. The ratio of water and milk is:

A 4:5

B 1:4

C 1:5

D 5:4

Answer: B

Explanation:
Profit % gained by the milk man = 25%

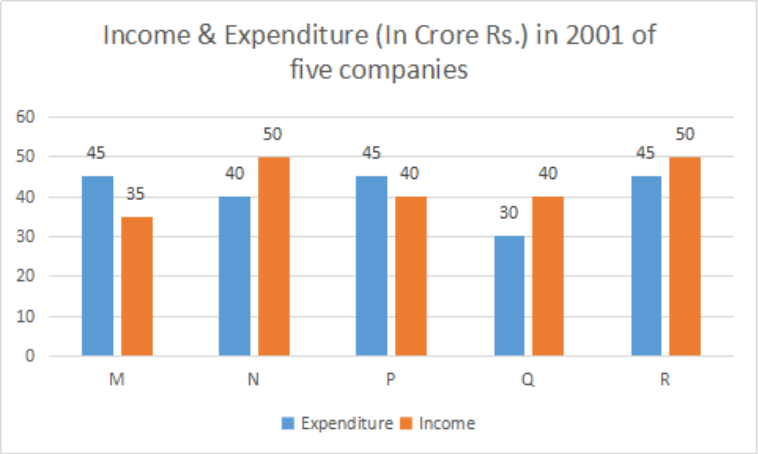
= $\frac{25}{100} = \frac{1}{4}$

=> Required ratio of water and milk = $1 : 4$

=> Ans - (B)

Instructions

Study the bar chart & answer the questions.



Question 102

The company earning the maximum percentage of profit in the year 2001 is:

A N

B Q

C M

D P

Answer: B

Explanation:

Profit % = $\frac{(Income - Expenditure)}{Expenditure} \times 100$

(A) : N = $\frac{(50-40)}{40} \times 100 = 25\%$

(B) : Q = $\frac{(40-30)}{30} \times 100 = 33.3\%$ **[MAX]**

(C) : M = Expenditure is more than income, thus company bears a loss

(D) : P = Expenditure is more than income, thus company bears a loss

=> Ans - (B)

Question 103

If the income of company Q in 2001 was 10% more than 2000 and the company had earned a profit of 20% in 2000, then its expenditure in 2000 (in crores) was:

A 30.30

B 29.09

C 34.34

D 28.28

Answer: A

Explanation:
Income of company Q in 2001 (in crores) = Rs. 40

=> Income of company Q in 2000 (in crores) = $\frac{40}{(100+10)} \times 100 = Rs.\ 36.36$

Profit % in 2000 = 20%

=> Expenditure of company Q in 2000 (in crores) = $\frac{36.36}{(100+20)} \times 100 = Rs.\ 30.30$

=> Ans - (A)

Question 104

In 2001, the approximate percentage of profit/loss of all the five companies taken together is equal to:

A 4.87% profit

B 6.48% profit

C 6.88% loss

D 4% loss

Answer: A

Explanation:
Total income of all companies (in Rs. crores) = 35 + 50 + 40 + 40 + 50 = 215

Total expenditure of all companies (in Rs. crores) = 45 + 40 + 45 + 30 + 45 = 205

=> *Profit %* = $\frac{(215-205)}{205} \times 100$

= $\frac{1000}{205} \approx= 4.87\%$

=> Ans - (A)

Question 105

For company R, if the expenditure has increased by 20% in the year 2001 from the year 2000 and the company had earned profit of 10% in 2000, the company's income in 2000 was ? (in crore)

A 38.5

B 37.25

C 41.25

D 35.75

Answer: C

Explanation:
Expenditure of company R in 2001 (in crores) = Rs. 45

=> Expenditure of company R in 2000 (in crores) = $\frac{45}{(100+20)} \times 100 = Rs.\ 37.5$

Profit % in 2000 = 10%

=> Income of company R in 2000 (in crores) = $\frac{(100+10)}{100} \times 37.5 = Rs.\ 41.25$

=> Ans - (C)

Question 106

The companies M and N together had a percentage of profit/loss of :

A 10% profit

B No loss and No profit

C 10% loss

D 12% loss

Answer: B

Explanation:
Total income of companies M and N together (in Rs. crores) = 35 + 50 = 85

Total expenditure of companies M and N together (in Rs. crores) = 45 + 40 = 85

Since, both income and expenditure are same, thus no profit/loss.

=> Ans - (B)

Instructions
For the following questions answer them individually

Question 107

If $x - \frac{1}{x} = 2$, then the value of following is: $x^3 - \frac{1}{x^3} = ?$

A 2

B 14

C 11

D 15

Answer: C

Explanation:
Given : $x - \frac{1}{x} = 2$

Cubing both sides, we get :

=> $(x - \frac{1}{x})^3 = (2)^3$

=> $x^3 - \frac{1}{x^3} - 3(x)(\frac{1}{x}) = 8$

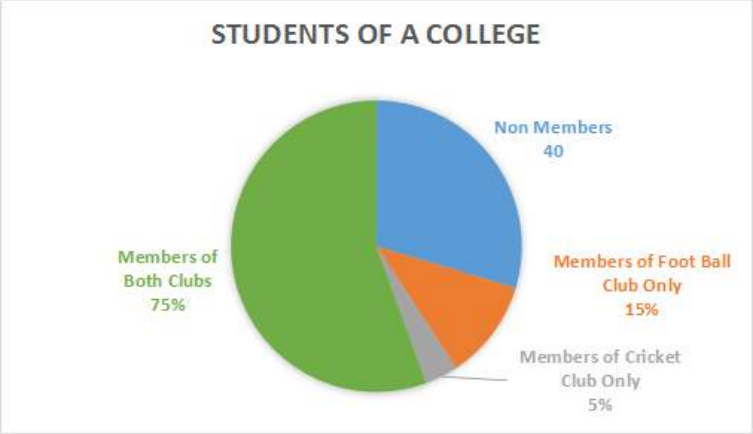
=> $x^3 - \frac{1}{x^3} - 3 = 8$

=> $x^3 - \frac{1}{x^3} = 8 + 3 = 11$

=> Ans - (C)

Instructions

Study the Pie chart carefully and answer the questions.



Question 108

Number of students who are members of cricket club only ?

A 40

B 42

C 41

D 35

Answer: A

Explanation:

Percent of non members = $100 - (75 + 5 + 15) = 5\%$

Now, number of non members = $5\% \equiv 40$

=> $100\% = \frac{40}{5} \times 100 = 800$

Thus, total number of students = 800

Number of students who are members of cricket club only = $\frac{5}{100} \times 800$

= $5 \times 8 = 40$

=> Ans - (A)

Question 109

Number of students who are members of both the clubs is:

A 500

B 650

C 600

D 550

Answer: C

Explanation:
Percent of non members = $100 - (75 + 5 + 15) = 5\%$

Now, number of non members = $5\% \equiv 40$

=> $100\% = \frac{40}{5} \times 100 = 800$

Thus, total number of students = 800

Number of students who are members of both the clubs = $\frac{75}{100} \times 800$

= $75 \times 8 = 600$

=> Ans - (C)

Question 110

Ratio of members of cricket club only and football club only is:

A 3 : 1

B 1 : 3

C 1 : 2

D 2 : 1

Answer: B

Explanation:
Percent of members of cricket club only = 5%

Percent of members of football club only = 15%

=> Required ratio = $\frac{5}{15} = 1 : 3$

=> Ans - (B)

Question 111

Percentage of students who are not members of any club is:

A 8%

B 6%

C 10%

D 5%

Answer: D

Explanation:
Percent of students who are members of any club = $(75 + 5 + 15) = 95\%$

=> Percent of non members = $100 - 95 = 5\%$

=> Ans - (D)

Instructions
For the following questions answer them individually

Question 112

The total surface area of a right circular cylinder with radius of the base 7 cm and height 20 cm is:

A $1188cm^2$

B $1400cm^2$

C $900cm^2$

D $1000cm^2$

Answer: A

Explanation:
Radius of cylinder = 7 cm and height = 20 cm

=> Total surface area of a right circular cylinder = $2\pi r(r + h)$

= $2 \times \frac{22}{7} \times 7 \times (7 + 20)$

= $44 \times 27 = 1188\ cm^2$

=> Ans - (A)

Question 113

A car goes 20 metres in a second. Find its speed in Km/hr

A 18

B 72

C 20

D 36

Answer: B

Explanation:
Speed of car = 20 m/s

Speed (in km/hr) = $20 \times \frac{18}{5}$

= $4 \times 18 = 72$ km/hr

=> Ans - (B)

Question 114

The area of circle whose radius is the diagonal of a square whose area is 4 is:

A 16π

B 6π

C 4π

D 8π

Answer: D

Explanation:
Side of square whose area is 4 units = $\sqrt{4} = 2$ units

=> Radius of circle = Diagonal of square = $\sqrt{(2)^2 + (2)^2} = 2\sqrt{2}$ units

$\therefore$ Area of circle = πr^2

= $\pi(2\sqrt{2})^2 = 8\pi$

=> Ans - (D)

Question 115

An article is sold a profit of 25%. If the selling price is doubled, the profit will be:

A 100%

B 50%

C 200%

D 150%

Answer: D

Explanation:
Let cost price = Rs. 100

Profit % = 25%

=> Selling price = $100 + (\frac{25}{100} \times 100)$

= $100 + 25 = Rs. 125$

New selling price = $2 \times 125 = Rs. 250$

=> Profit % = $\frac{(250-100)}{100} \times 100 = 150\%$

=> Ans - (D)

Question 116

The angle of depression of a point situated at a distance of 70 m form the base of a tower is 60°. The height of tower is:

A $70\sqrt{3}m$

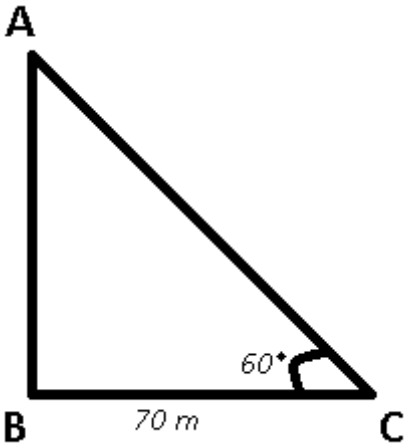
B $\frac{70\sqrt{3}}{3}m$

C $70m$

D $35\sqrt{3}m$

Answer: A

Explanation:



AB is the tower = h = ?

In $\triangle$ ABC,

=> $tan(60^\circ) = \frac{AB}{BC}$

=> $\sqrt{3} = \frac{h}{70}$

=> $h = 70\sqrt{3}$ m

=> Ans - (A)

Question 117

The sum of two numbers is 37 and the difference of their squares is 185, then the difference of the two numbers is

A 5

B 3

C 10

D 4

Answer: A

Explanation:
Let the numbers be x and $(37 - x)$

According to ques,

=> $(37 - x)^2 - (x)^2 = 185$

Using, $a^2 - b^2 = (a - b)(a + b)$

=> $(37 - x - x)(37 - x + x) = 185$

=> $(37 - 2x)(37) = 185$

=> $37 - 2x = \frac{185}{37} = 5$

=> $2x = 37 - 5 = 32$

=> $x = \frac{32}{2} = 16$

Thus, second number = $37 - 16 = 21$

$\therefore$ Difference of the two numbers = $21 - 16 = 5$

=> Ans - (A)

Question 118

A, B and C can complete a work in 10, 12 and 15 days respectively. A left the work 5 days before the work was completed and B left 2 days after A had left. Number of days required to complete the whole work are:

A $6\frac{2}{3}$

B $8\frac{2}{3}$

C 6

D 7

Answer: D

Explanation:

Let total work to be done = L.C.M. (10,12,15) = 60 units

=> A can complete the work in 10 days, => A's efficiency = $\frac{60}{10} = 6$ units/day

Similarly, B's efficiency = $\frac{60}{12} = 5$ units/day

and C's efficiency = $\frac{60}{15} = 4$ units/day

Let the work is completed in t days

Thus, A worked for $(t-5)$ days and B worked for $(t-3)$ days

=> $6(t-5)+5(t-3)+4(t)=60$

=> $(6t-30)+(5t-15)+(4t)=60$

=> $15t=60+30+15=105$

=> $t=\frac{105}{15}=7$ days

=> Ans - (D)

Question 119

The distance between the centers of two circles of radii 6 cm and 3 cm is 15 cm. The length of the transverse common tangent the circle is:

A $7\sqrt{6}cm$

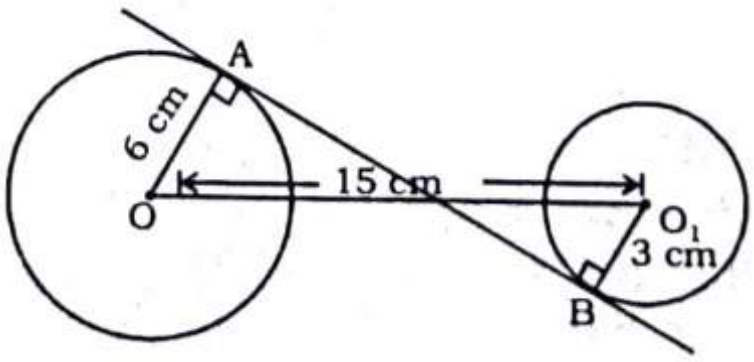
B $18cm$

C $6\sqrt{6}cm$

D $12cm$

Answer: D

Explanation:



Two circles having radii r_1 and r_2 and distance between them d

Length of transverse common tangent PQ = $\sqrt{d^2-(r_1+r_2)^2}$

= $\sqrt{(15)^2 - (6+3)^2}$

= $\sqrt{225 - 81} = \sqrt{144} = 12$ cm

=> Ans - (D)

Question 120

A rectangular carpet has an area of $120m^2$ and a perimeter of 46 meter. The length of its diagonal is:

A 21 metre

B 13 metre

C 23 metre

D 17 metre

Answer: D

Explanation:
Let length of rectangle = l m and breadth = b m

=> Diagonal of rectangle, $d = \sqrt{l^2 + b^2}$

=> Area = $lb = 120$ ----------(i)

and Perimeter = $2(l + b) = 46$

=> $l + b = \frac{46}{2} = 23$

Squaring both sides, we get

=> $(l + b)^2 = (23)^2$

=> $l^2 + b^2 + 2lb = 529$

=> $l^2 + b^2 + 2(120) = 529$ [Using equation (i)]

=> $l^2 + b^2 = 529 - 240 = 289$

Taking square root on both sides

=> $\sqrt{l^2 + b^2} = \sqrt{289} = 17$

$\therefore$ Length of diagonal = 17 m

=> Ans - (D)

Question 121

If $4Sin^2\theta - 1 = 0$ and angleθ is less than 90°. Then the value of $Cos^2\theta + tan^2\theta$ is:
Take $(0^0 < \theta < 90^0)$

A $\frac{12}{11}$

B $\frac{13}{12}$

C $\frac{17}{15}$

D $\frac{11}{9}$

Answer: B

Explanation:
Given : $4sin^2\theta - 1 = 0$

=> $4sin^2\theta = 1$

=> $sin^2\theta = \frac{1}{4}$

=> $sin\theta = \sqrt{\frac{1}{4}} = \frac{1}{2}$

=> $\theta = sin^{-1}(\frac{1}{2})$

=> $\theta = 30^\circ$

To find : $Cos^2\theta + tan^2\theta$

= $cos^2(30^\circ) + tan^2(30^\circ)$

= $(\frac{\sqrt{3}}{2})^2 + (\frac{1}{\sqrt{3}})^2$

= $\frac{3}{4} + \frac{1}{3} = \frac{13}{12}$

=> Ans - (B)

Question 122

The radius of base and curved surface area of a right cylinder is 'r' units and $4\pi rh$ square units respectively. The height of the cylinder is:

A $2h\ units$

B $4h\ units$

C $h\ units$

D $\frac{h}{2}\ units$

Answer: A

Explanation:
Let height of cylinder = H units

Curved surface area of cylinder = $2\pi rH$

According to ques, => $2\pi rH = 4\pi rh$

=> $H = \frac{4}{2}h$

=> $H = 2h$ units

=> Ans - (A)

Question 123

Out of 10 teachers of a school, one teacher retires and in place of him a new teacher 25 yrs of old joins. As a result of it average age of the teachers reduces by 3 years. Age of the retired teacher (in year) is:

A 55

B 58

C 60

D 56

Answer: A

Explanation:
Let initial average of the 10 teachers = x years and age of retired teacher = y years

=> Sum of ages of 10 teachers = $10x$ years

According to ques,

=> $\frac{10x-y+25}{10} = (x-3)$

=> $10x - y + 25 = 10x - 30$

=> $y = 25 + 30 = 55$

$\therefore$ Age of the retired teacher = 55 years

=> Ans - (A)

Question 124

The marked price is 10% higher than the cost price. A discount of 10% is given on the marked price. In this kind of sale, the seller

A gains 1%

B gains 2%

C bears no loss, no gain

D loses 1%

Answer: D

Explanation:
Let cost price = Rs. 100

Markup % = 10%

=> Marked price = $100 + (\frac{10}{100} \times 100)$

= $100 + 10 = Rs. 110$

After discount of 10%, Selling price = $110 - (\frac{10}{100} \times 110)$

= $110 - 11 = Rs. 99$

$\because$ C.P. > S.P., => *Loss %* = $\frac{(100-99)}{100} \times 100 = 1\%$

=> Ans - (D)

Question 125

A train passes two bridges of lengths 500m and 250m in 100 seconds and 60 seconds respectively. The length of the train is:

A 120 m

B 125 m

C 250 m

D 152 m

Answer: B

Explanation:
Let length of train = l m and speed = x m/s

Time taken to pass the first bridge (length = 500 m) = $100 = \frac{l+500}{x}$

=> $l + 500 = 100x$ ----------(i)

Similarly, $60 = \frac{l+250}{x}$

=> $l + 250 = 60x$ ----------(ii)

Dividing equation (i) by (ii), we get :

=> $\frac{l+500}{l+250} = \frac{100x}{60x}$

=> $\frac{l+500}{l+250} = \frac{5}{3}$

=> $3l + 1500 + 5l + 1250$

=> $5l - 3l = 1500 - 1250$

=> $2l = 250$

=> $l = \frac{250}{2} = 125$ m

=> Ans - (B)

Question 126

The amount on ₹ 25000 in 2 years at annually compound interest, if the rates for the successive years be 4% and 5% per annum respectively is:

A ₹26800

B ₹28500

C ₹27300

D ₹30000

Answer: C

Explanation:
Principal amount = Rs. 25,000 for 2 years

Interest for 1st year = 4% and for 2nd year = 5%

Amount after 2 years = $25,000(1+\frac{4}{100})(1+\frac{5}{100})$

= $25,000(\frac{26}{25})(\frac{21}{20})$

=> $50 \times 26 \times 21 = Rs.\ 27,300$

=> Ans - (C)

Question 127

If the angle of elevation of the sun changes from $45^0\ to\ 60^0$, then the length of the shadow of a pillar decreases by 10m. The height of the pillar is:

A $5(3-\sqrt{3})m$

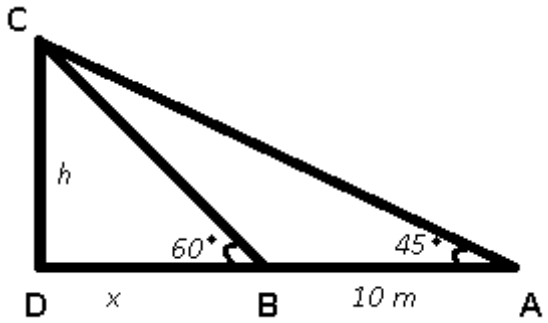
B $15(\sqrt{3}+1)m$

C $5(\sqrt{3}+1)m$

D $5(3+\sqrt{3})m$

Answer: D

Explanation:



Given : CD is the pillar and AB = 10 m

To find : Height of pillar = h = ?

Solution : In $\triangle$ ACD,

=> $tan(45^\circ) = \frac{CD}{AD}$

=> $1 = \frac{h}{x+10}$

=> $h = x + 10$ ----------(i)

Again, in $\triangle$ BCD,

=> $tan(60^\circ) = \frac{CD}{DB}$

=> $\sqrt{3} = \frac{h}{x}$

=> $h = x\sqrt{3}$

=> $h = (h - 10)\sqrt{3}$ [Using (i)]

=> $h = h\sqrt{3} - 10\sqrt{3}$

=> $h(\sqrt{3} - 1) = 10\sqrt{3}$

=> $h = \frac{10\sqrt{3}}{\sqrt{3}-1}$

Rationalizing the denominator, we get :

=> $h = \frac{10\sqrt{3}}{\sqrt{3}-1} \times \frac{(\sqrt{3}+1)}{(\sqrt{3}+1)}$

=> $h = \frac{10\sqrt{3}(\sqrt{3}+1)}{(3-1)}$

=> $h = 5\sqrt{3}(\sqrt{3} + 1)$

=> $h = 5(3 + \sqrt{3})$ m

=> Ans - (D)

Question 128

A Single discount equivalent to the series of discounts 20%, 10% and 5% is equal to:

A 30%

B 31.6%

C 30.7%

D 32%

Answer: B

Explanation:
Let Marked price = Rs. 100

After 1st discount of 20%, price = $100 - (\frac{20}{100} \times 100)$

= $100 - 20 = 80$

After 2nd discount of 10% (on changed price), selling price = $80 - (\frac{10}{100} \times 80)$

= $80 - 8 = 72$

After 3rd discount of 5% (on changed price), selling price = $72 - (\frac{5}{100} \times 72)$

= $72 - 3.6 = 68.4$

$\therefore$ Net discount % = $\frac{(100-68.4)}{100} \times 100 = 31.6\%$

=> Ans - (B)

Question 129

The sum of two numbers is 75 and their difference is 25. The product of the two numbers is:

A 1350

B 1250

C 1000

D 125

Answer: B

Explanation:
Let the numbers be x and y

=> Sum = $x + y = 75$ ----------(i)

and difference = $x - y = 25$ ----------(ii)

Adding both equations, we get : $2x = 75 + 25 = 100$

=> $x = \frac{100}{2} = 50$

Substituting it in equation (i), => $y = 75 - 50 = 25$

$\therefore$ Product = $50 \times 25 = 1250$

=> Ans - (B)

Question 130

The value of the following is:
$(2-\frac{1}{3})(2-\frac{3}{5})(2-\frac{5}{7})\ldots\ldots\ldots(2-\frac{997}{999})$

A $\frac{1001}{3}$

B $\frac{1001}{999}$

C $\frac{5}{999}$

D $\frac{1001}{5}$

Answer: A

Explanation:
Expression : $(2-\frac{1}{3})(2-\frac{3}{5})(2-\frac{5}{7})\ldots\ldots\ldots(2-\frac{997}{999})$

= $(\frac{5}{3})(\frac{7}{5})(\frac{9}{7})\ldots\ldots\ldots\ldots(\frac{999}{997})(\frac{1001}{999})$

(Now, numerator of each term will get cancelled by the denominator of the next term, and we are left with)

= $\frac{1001}{3}$

=> Ans - (A)

Question 131

E is the midpoint if the median AD of $\triangle ABC$. BE is joined and produced to meet AC at F. F divides AC in the ratio:

A 3 : 2

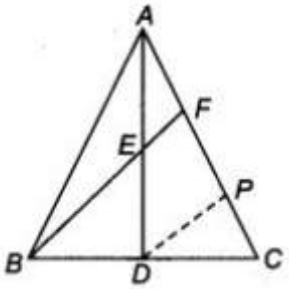
B 1 : 3

C 2 : 3

D 2 : 1

Answer: B

Explanation:



Given : In $\triangle$ ABC, AD is the median and E is the mid point of AD.

Construction : Draw DP parallel to EF

To find = AF : FC

Solution : in $\triangle$ ADP, E is the mid point of AD and EF$||$DP.

=> F is mid point of AP. [By converse of mid point theorem]

Similarly, in $\triangle$ FBC, D is the mid point of BC and EF$||$DP.

=> P is mid point of FC.

Thus, AF = FP = PC

$\therefore AF = \frac{1}{3}FC$

=> F divides AC in the ratio = $1:3$

=> Ans - (B)

Question 132

The sum of money which when given on compound interest at 18% per annum would fetch ₹960 more when the interest is payable half yearly than when it was payable annually for 2 years is:

A ₹30000

B ₹50000

C ₹40000

D ₹60000

Answer: B

Explanation:
Let principal amount = Rs. x and rate of interest = 18%

Compound interest when compounded annually = $P(1+\frac{R}{100})^T$

= $x(1+\frac{18}{100})^2 = (\frac{118}{100})^2 x$

= Rs. $1.3924x$

Compound interest when compounded half yearly = $P(1+\frac{R}{200})^{2T}$

= $x(1+\frac{18}{200})^4 = (\frac{109}{100})^4 x$

= Rs. $1.41158161x$

According to ques, => $(1.41158161x - 1.3924x) = 960$

=> $0.01918161x = 960$

=> $x = \frac{960}{0.01918161} \approx 50047.93$

$\therefore$ Sum of money given = **Rs. 50,000**

=> Ans - (B)

Question 133

Six numbers are arranged in decreasing order. The average of the first five numbers is 30 and the average of the last five numbers is 25. The differences of the first and the last numbers is:

A 20

B 5

C 25

D 30

Answer: C

Explanation:
Let the numbers (in decreasing order) be a, b, c, d, e, f

Average of first 5 = 30

=> Sum of first 5 numbers = 30×5

=> $(a + b + c + d + e) = 150$ ----------(i)

Similarly, sum of last 5 = 25×5

=> $(b + c + d + e + f) = 125$ ----------(ii)

Subtracting equation (ii) from equation (i),

=> $a - f = 150 - 125 = 25$

Thus, the differences of the first and the last numbers = **25**

=> Ans - (C)

Question 134

If bananas are bought at the rate of 4 for a rupee, how many must be sold for a rupee so as to gain $33\frac{1}{3}$%

A 3

B 2

C 2.5

D 4

Answer: A

Explanation:
Cost price of 1 banana = Rs. $\frac{1}{4}$

Profit % = $33\frac{1}{3} = \frac{100}{3}\%$

=> Selling price = $\frac{1}{4} + (\frac{100}{3 \times 100} \times \frac{1}{4})$

= $\frac{1}{4} + \frac{1}{12} = Rs.\ \frac{1}{3}$

$\therefore$ Number of bananas that must be sold for a rupee = $\frac{1}{\frac{1}{3}} = 3$

=> Ans - (A)

Question 135

20 liters of a mixture contains milk and water in the ratio 3 : 1. Then the amount of milk to be added to the mixture so as to have milk and water in the ratio 4 :1 is

A 6 liters

B 5 liters

C 4 liters

D 7 liters

Answer: B

Explanation:
Ratio of milk and water in 20 litres mixture = 3:1

=> Quantity of milk = $\frac{3}{(3+1)} \times 20 = 15$ litres

=> Quantity of water = $20 - 15 = 5$ litres

Let amount of milk added = x litres

According to ques,

=> $\frac{15+x}{5} = \frac{4}{1}$

=> $15 + x = 20$

=> $x = 20 - 15 = 5$

$\therefore$ The amount of milk to be added to the mixture so as to have milk and water in the ratio 4 :1 = **5 litres**

=> Ans - (B)

Question 136

ABCD is a cyclic trapezium whose sides AD and BC are parallel to each other, if $\angle ABC = 75^\circ$, then the measure of $\angle BCD$ is:

A 45°

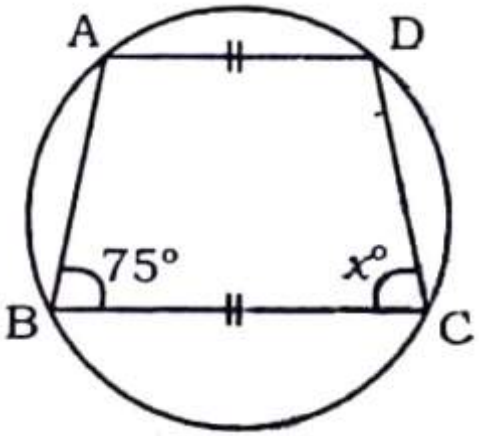
B 105°

C 75°

D 95°

Answer: C

Explanation:



Given : $\angle ABC = 75^\circ$ and AD$\|$BC

To find : $\angle$ BCD = ?

Solution : In a cyclic quadrilateral, sum of opposite angles is supplementary.

=> $\angle$ ABC + $\angle$ ADC = 180°

=> $\angle$ ADC = $180^\circ - 75^\circ = 105^\circ$

Also, $\angle$ ADC + $\angle$ BCD = 180° [Angles on the same side of transversal]

=> $\angle$ BCD = $180^\circ - 105^\circ = 75^\circ$

=> Ans - (C)

Question 137

If $\sqrt{7} = 2.646$, then the value of $\frac{1}{\sqrt{28}}$ up to the three places of decimal is:

A 0.189

B 0.183

C 0.185

D 0.187

Answer: A

Explanation:

Given : $\sqrt{7} = 2.646$

To find : $\frac{1}{\sqrt{28}}$

= $\frac{1}{\sqrt{7\times4}}$

= $\frac{1}{2\sqrt{7}} = \frac{1}{2\times2.646}$

= $\frac{1}{5.292} = 0.18896 \approx 0.189$

=> Ans - (A)

Question 138

If $a^2 + b^2 + c^2 - ab - bc - ca = 0$ then a:b:c is:

A 1 : 1 : 2

B 1 : 1 : 1

C 1 : 2 : 1

D 2 : 1 : 1

Answer: B

Explanation:
Given : $a^2 + b^2 + c^2 - ab - bc - ca = 0$

Multiplying both sides by 2, we get :

=> $2a^2 + 2b^2 + 2c^2 - 2ab - 2bc - 2ca = 0$

=> $(a^2 - 2ab + b^2) + (b^2 - 2bc + c^2) + (c^2 - 2ca + a^2) = 0$

=> $(a - b)^2 + (b - c)^2 + (c - a)^2 = 0$

$\because$ Sum of three positive sum is 0, then each term is equal to '0'

=> $(a - b) = (b - c) = (c - a) = 0$

=> $a = b = c$

$\therefore a : b : c = 1 : 1 : 1$

=> Ans - (B)

Question 139

X can do a piece of work in 24 days. When he had worked for 4 days, Y joined him. If complete work was finished in 16 days, Y can alone finish that work in:

A 36 days

B 42 days

C 18 days

D 27 days

Answer: A

Explanation:

Let total work to be done = L.C.M. (24,16) = 48 units

X can do a piece of work in 24 days, => X's efficiency = $\frac{48}{24} = 2$ units/day

Let Y's 1 day work = y units/day

Now, X worked for 16 days and Y worked for (16-4) = 12 days

=> $2(16) + y(12) = 48$

=> $32 + 12y = 48$

=> $12y = 48 - 32 = 16$

=> $y = \frac{16}{12} = \frac{4}{3}$

$\therefore$ Y can finish the work in = $\frac{48}{\frac{4}{3}}$

= $48 \times \frac{3}{4} = 36$ days

=> Ans - (A)

Question 140

A hemi-spherical bowl has 3.5 cm radius. It is to be painted inside as well as outside. The cost of painting it at the rate of ₹5 per 10 sq.cm will be:

A ₹77

B ₹100

C ₹50

D ₹175

Answer: A

Explanation:
Radius of hemispherical bowl = 3.5 cm

Curved surface area of the hemisphere = $2\pi r^2$

= $2 \times \frac{22}{7} \times (3.5)^2$

= $\frac{44}{7} \times 12.25 = 77\ cm^2$

As bowl is to be painted inside and outside, thus total surface to be painted = $2 \times 77 = 154\ cm^2$

Now, cost of painting $10\ cm^2$ = $Rs.\ 5$

$\therefore$ ost of painting $154\ cm^2$ = $\frac{5}{10} \times 154 = Rs.\ 77$

=> Ans - (A)

Question 141

The ratio of circumference and diameter of a circle is 22:7. If the circumference be $1\frac{4}{7}$m, then the radius of the circle is:

A 1m

B $\frac{1}{4}$m

C $\frac{1}{3}$m

D $\frac{1}{2}$m

Answer: B

Explanation:
Let radius of circle = r cm

According to ques, ratio of circumference and diameter :

=> $\frac{2\pi r}{2r} = \frac{22}{7}$

=> $\pi = \frac{22}{7}$ [It is a void statement]

Also, circumference $2\pi r = 1\frac{4}{7}$

=> $2 \times \frac{22}{7} \times r = \frac{11}{7}$

=> $44r = 11$

=> $r = \frac{11}{44} = \frac{1}{4}$ m

=> Ans - (B)

Question 142

If $a^2 + a + 1 = 0$, then the value of $a^4 + a^2 + 1$ is:

A 0

B $a + 1$

C 1

D a^2

Answer: A

Explanation:
Given : $a^2 + a + 1 = 0$

Dividing both sides by $'a'$, we get

=> $a + 1 + \frac{1}{a} = 0$

=> $a + \frac{1}{a} = -1$

Squaring both sides, we get :

=> $(a + \frac{1}{a})^2 = (-1)^2$

=> $a^2 + \frac{1}{a^2} + 2(a)(\frac{1}{a}) = 1$

=> $a^2 + \frac{1}{a^2} = 1 - 2 = -1$

=> $a^4 + a^2 + 1 = 0$

=> Ans - (A)

Question 143

The ratio of the length of a rod and its shadow is $1 : \sqrt{3}$. The angle of elevation of the sun is:

A 60°

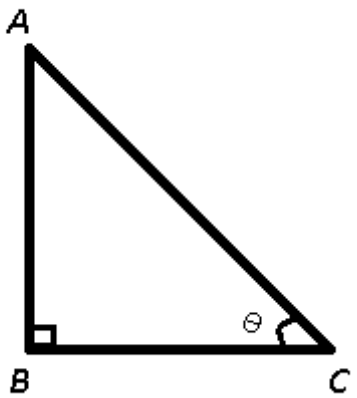
B 30°

C 90°

D 45°

Answer: B

Explanation:



AB is the rod and BC is its shadow. It is given that $\frac{AB}{BC} = \frac{1}{\sqrt{3}}$

Let angle of elevation of sun = $\angle$ ACB = θ

In $\triangle$ ABC,

=> $tan(\theta) = \frac{AB}{BC}$

=> $tan(\theta) = \frac{1}{\sqrt{3}}$

=> $tan(\theta) = tan(30^\circ)$

=> $\theta = 30^\circ$

=> Ans - (B)

Question 144

The exponential form of $\sqrt{\sqrt{2} \times \sqrt{3}}$ is:

A $6^{\frac{-1}{2}}$

B $6^{\frac{1}{2}}$

C 6

D $6^{\frac{1}{4}}$

Answer: B

Explanation:

Expression : $\sqrt{\sqrt{2} \times \sqrt{3}}$

= $\sqrt{\sqrt{2 \times 3}}$

= $\sqrt{6} = 6^{\frac{1}{2}}$

=> Ans - (B)

Question 145

A man bought some eggs of which 10% are rotten. He gives 80% of the remainder of his reighbours. Now he is left out with 36 eggs. How many eggs he bought?

A 100

B 72

C 40

D 200

Answer: D

Explanation:

Let the man bought $100x$ eggs

Eggs left after removing the rotten ones = $100x - (\frac{10}{100} \times 100x) = 90x$

Eggs given to neighbours = $\frac{80}{100} \times 90x = 72x$

Thus, eggs remaining = $90x - 72x = 36$

=> $18x = 36$

=> $x = \frac{36}{18} = 2$

$\therefore$ Number of eggs bought = $2 \times 100 = 200$

=> Ans - (D)

Question 146

If $\frac{x+1}{x-1} = \frac{a}{b}$ and $\frac{1-y}{1+y} = \frac{b}{a}$, then the value of $\frac{x-y}{1+xy}$ is:

A $\frac{a^2-b^2}{2ab}$

B $\frac{a^2+b^2}{2ab}$

C $\frac{2ab}{a^2-b^2}$

D $\frac{a^2-b^2}{ab}$

Answer: C

Explanation:

Given : $\frac{x+1}{x-1} = \frac{a}{b}$

=> $b(x+1) = a(x-1)$

=> $bx + b = ax - a$

=> $x(a-b) = a+b$

=> $x = \frac{a+b}{a-b}$

Similarly, $y = \frac{a-b}{a+b}$

To find : $\frac{x-y}{1+xy}$

= $[(\frac{a+b}{a-b}) - (\frac{a-b}{a+b})] \div [1 + (\frac{a+b}{a-b})(\frac{a-b}{a+b})]$

= $(\frac{(a+b)^2-(a-b)^2}{(a+b)(a-b)}) \div (1+1)$

= $(\frac{(a^2+b^2+2ab)-(a^2+b^2-2ab)}{a^2-b^2}) \times (\frac{1}{2})$

= $\frac{4ab}{2(a^2-b^2)}$

= $\frac{2ab}{a^2-b^2}$

=> Ans - (C)

Question 147

State electricity board gives 15% discount on electric bills if it is paid before due date. One person gets ₹54 discount. The amount of actual bill was:

A ₹359

B ₹361

C ₹360

D ₹362

Answer: C

Explanation:
Let amount of actual bill = Rs. $100x$

Discounted amount = $\frac{15}{100} \times 100x = 15x$

According to ques, => $15x = 54$

=> $x = \frac{54}{15} = 3.6$

$\therefore$ Amount of actual bill = $100 \times 3.6 = Rs.\ 360$

=> Ans - (C)

Question 148

In $\triangle ABC$, the external bisectors of the angles $\angle B$ and $\angle C$ meet at the point O. If $\angle A = 70^\circ$, then the measure of $\angle BOC$ is:

A 50°

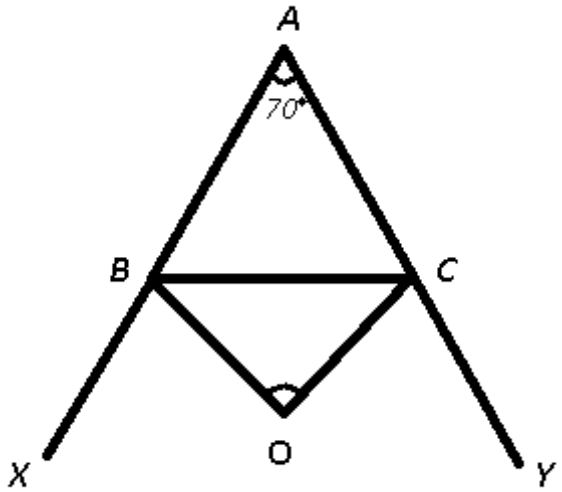
B 75°

C 60°

D 55°

Answer: D

Explanation:



Given : O is excentre of $\triangle$ ABC and $\angle A = 70^\circ$

To find : $\angle$ BOC = θ =?

Solution : Excentre of a triangle = $90^\circ - \frac{1}{2} \times$ (Angle opposite to it)

=> $\theta = 90^\circ - \frac{\angle A}{2}$

=> $\theta = 90^\circ - \frac{70^\circ}{2}$

=> $\theta = 90^\circ - 35^\circ = 55^\circ$

=> Ans - (D)

Question 149

If $0^0 < \theta < 90^0$ and $Cosec\theta = Cot^2\theta$, then the value of the expression $Cosec^4\theta - 2Cosec^3\theta + Cot^2\theta$ is equal to:

A 2

B 0

C 3

D 1

Answer: B

Explanation:
Given : $cosec\theta = cot^2\theta$

=> $cosec\theta = cosec^2\theta - 1$

=> $cosec^2\theta - cosec\theta - 1 = 0$ ----------(i)

Squaring both sides, we get :

=> $cosec^4\theta = (cosec\theta + 1)^2$

=> $cosec^4\theta = cosec^2\theta + 2cosec\theta + 1$ ----------(ii)

To find : $cosec^4\theta - 2cosec^3\theta + cot^2\theta$

= $(cosec^2\theta + 2cosec\theta + 1) - 2cosec^3\theta + (cosec^2\theta - 1)$ [Using equation (ii)]

= $-2cosec^3\theta + 2cosec^2\theta + 2cosec\theta$

= $-2cosec\theta(cosec^2\theta - cosec\theta - 1)$

Substituting value from equation (i),

= $-2cosec\theta \times (0) = 0$

=> Ans - (B)

Question 150

If $x + y + z = 6$ and $xy + yz + zx = 10$, then the value of $x^3 + y^3 + z^3 - 3xyz$ is:

A 48

B 40

C 42

D 36

Answer: D

Explanation:
Given : $x + y + z = 6$ and $xy + yz + zx = 10$ ----------(i)

Now, $(x + y + z)^2 = (6)^2$

=> $x^2 + y^2 + z^2 + 2(xy + yz + zx) = 36$

=> $x^2 + y^2 + z^2 + 2(10) = 36$

=> $x^2 + y^2 + z^2 = 36 - 20 = 16$ ----------(ii)

To find : $x^3 + y^3 + z^3 - 3xyz$

= $(x + y + z)(x^2 + y^2 + z^2 - xy - yz - zx)$

= $(6)(16 - 10)$

= $6 \times 6 = 36$

=> Ans - (D)

General Awareness

Instructions
For the following questions answer them individually

Question 151

The use of heat treatment of ore that includes smelting and roasting is termed:

A Cryometallurgy

B Hydrometallurgy

C Electrometallurgy

D Pyrometallurgy

Answer: E

Question 152

To conserve coral reefs the Govt. of India declared one of the following as Marine Park:

A Gulf of Kutch

B Lakshadweep Islands

C Andaman Islands

D Gulf of Mannar

Answer: E

Question 153

Damping off of seedlings is caused by:

A Pythium debaryanum

B Peronospora parasitica

C Phytophthora infestans

D Albugo candida

Answer: E

Question 154

Which of the following monuments is the oldest ?

A Ajanta Caves

B Taj Mahal

C Khajuraho

D Qutab Minar

Answer: E

Question 155

Richter scale is used for measuring:

A Humidity of air

B Velocity of wind

C Intensity of earthquake

D Density of liquid

Answer: E

Question 156

USB is _____ type of storage device

A Tertiary

B Secondary

C Primary

D Auxillary

Answer: E

Question 157

Which is best planned city in India ?

A Chandigarh

B Coimbatore

C Salem

D New Delhi

Answer: E

Question 158

In India, Dugong (Sea Cow) is found in the bioreserve site of?

A Nok rek

B Gulf of Mannar

C Manas

D Sundarban

Answer: E

Question 159

The phenomenon which causes mirage is:

A Total internal reflection

B Diffraction

C Polarisation

D Interference

Answer: E

Question 160

People with Down's syndrome invariably affected by:

A Huntington's disease

B Brain haemorrhage

C Meningitis

D Alzheimer's disease

Answer: E

Question 161

When was the railway system established in India ?

A 1969

B 1953

C 1753

D 1853

Answer: E

Question 162

The abbreviation LHC stands for which machine ?

A Large High Collider

B Large Hadron Collider

C Light Heat Collider

D Long Heavy Collider

Answer: E

Question 163

World Human Rights Day is observed on:

A Dec. 7

B Sep. 5

C Dec. 10

D April 8

Answer: E

Question 164

Which is bank is limited to the needs of agriculture and rural finance ?

A RBI

B SBI

C IFC

D NABARD

Answer: E

Question 165

The development process under capitalism has been described as “Creative Destruction” by:

A Schumpeter

B Hansen

C Karl Marx

D J.S.Mill

Answer: E

Question 166

Air is said to be saturated when

A it blows over the barren land

B it contains maximum content of water vapour

C its thickness is maximum

D its pressure is minimum

Answer: E

Question 167

The fastest, costlier and relatively small from of storage managed by computer system hardware is:

A Main memory

B Cache

C Flash Memory

D Disk

Answer: E

Question 168

To become a judge of the High court one must be a practicing advocate of the High court for at least-

A 10 years

B 5 years

C 15 years

D 20 years

Answer: E

Question 169

J.B. Say's Law of Market was not accepted by:

A Adam Smith

B Marshall

C David Ricardo

D Malthus

Answer: E

Question 170

Who advocated Nazism in Germany ?

A Fedrick William IV

B William III

C Adolf Hitler

D Bismark

Answer: E

Question 171

Atmos having the same number of protons but different number of neutrons are called:

A Cations

B Anions

C Isotops

D Higgs-boson

Answer: E

Question 172

The National Emblem of italy is:

A White engle

B White lily

C Lily

D Eagle

Answer: E

Question 173

Which amendment of the constitution lowered the voting age from 21 years to 18 years

A 61st amendment

B 64th amendment

C 63rd amendment

D 60th amendment

Answer: E

Question 174

Which of the following one of the characteristics of civil services in India ?

A Neutrality

B Temporary political

C Partism

D All of the given options

Answer: E

Question 175

Project Tiger was introduced in:

A 1973

B 2001

C 1995

D 1984

Answer: E

Question 176

Which of these travels in glass with minimum velocity ?

A Green light

B Red light

C Violet light

D Yellow light

Answer: E

Question 177

All vital atmospheric process leading to various climate & weather conditions take place in the:

A Stratosphere

B Troposphere

C Ionosphere

D Exosphere

Answer: E

Question 178

Ezra cup is associated with which sports ?

A Polo

B Hockey

C Football

D Rowing

Answer: E

Question 179

What is the name of Research Station established by Indian Govt. for conducting research at Antarctic ?

A Dakshin Gangotri

B Uttari Gangotri

C Yamunotri

D None of the options

Answer: E

Question 180

The 1st battle of Panipat was fought in the year-

A 1516

B 1761

C 1526

D 1556

Answer: E

Question 181

The deficiency of vitamin a causes ?

A Beri-beri

B Night blindness

C Rickets

D Pellagra

Answer: E

Question 182

Who invented the battery ?

A Faraday

B Volta

C Maxwell

D Roentgen

Answer: E

Question 183

Who was Akbar's guardian ?

A Bairam Khan

B Tansen

C Abul Fazl

D Amir Khusru

Answer: E

Question 184

Excretion in Hemichordates takes place by:

A Glomerulus

B Pronephron

C Mesonephron

D Metanephron

Answer: E

Question 185

The slogan "Garibi Hatao" was included in the:

A First plan

B Second plan

C Fifth plan

D Fourth plan

Answer: E

Question 186

Where do Bhagirathi and Alakananda join Ganga ?

A Karan prayag

B Dev prayag

C Rudra prayag

D Gangotri

Answer: E

Question 187

The Capital of Rawanda is:

A Libreville

B Kigali

C Copenhagen

D Bogota

Answer: E

Question 188

Which of the following is commonly used in preparing custard powder ?

A Raagi

B Maize

C Wheat

D Rice

Answer: E

Question 189

Indian Economy is a:

A Independent Economy

B Mixed Economy

C Communist Economy

D Capitalist Economy

Answer: E

Question 190

Who was the first Vijayanagar ruler to wrest the important fort of Goa from the Bahamanis ?

A Hari hara II

B Bukka I

C Hari hara I

D Rava Raya II

Answer: E

Question 191

January 15 is celebrated as:

A Republic day

B Makar Sankranti

C Army Day

D Labour Day

Answer: E

Question 192

Soap helps in better cleaning of clothes because:

A It reduces the surface tension of solution

B Soap acts like catalyst

C It absorbs the dirt

D It gives strength to solution

Answer: E

Question 193

Hari Prasad Chaurasia is a renowned player of:

A Shehnai

B Flute

C Sarod

D Tabla

Answer: E

Question 194

The name of the Laccadive, Minicoy and Amindivi islands was changed to Lakshadweep by an act of Parliament in

A 1973

B 1971

C 1970

D 1972

Answer: E

Question 195

Life originated by chemosynthesis was proved in the laboratory by

A Miller

B Aristotle

C Pasteur

D Sanger

Answer: E

Question 196

How many organs are there in U.N.O. ?

A 06

B 03

C 04

D 05

Answer: E

Question 197

The disease which has been eradicated ?

A Measles

B Mumps

C Small pox

D Chicken pox

Answer: E

Question 198

Normal blood pressure reading of an adult human:

A 80/120mmHg

B 120/80mmHg

C 130/90mmHg

D 160/95mmHg

Answer: E

Question 199

‘Madhu bani’ a style of folk painting is popular in which of the following states in India ?

A West Bengal

B Madhya Pradesh

C Uttar Pradesh

D Bihar

Answer: E

Question 200

Who is the author of the book “Magic seeds” ?

A Vikram Seth

B Jhumpa Lahiri

C Cyrus Mistry

D V.S. Naipaul

Answer: E

SSC CHSL 15 November 2015 Evening Shift

Reasoning

Instructions

In question numbers 1 and 2, arrange the following words as per order in the dictionary

Question 1

1. Necessary
2. Navigate
3. Nautical
4. Naval

A 3, 4, 2, 1

B 3, 2, 1, 1

C 2, 4, 3, 1

D 4, 3, 2, 1

Answer: A

Explanation:
As per the order of dictionary :

= Nautical -> Naval -> Navigate -> Necessary

$\equiv$ 3, 4, 2, 1

=> Ans - (A)

Question 2

1. Range
2. Rain
3. Rein
4. Ranger

A 2, 3, 4, 1

B 2, 1, 3, 4

C 2, 1, 4, 3

D 2, 4, 3, 1

Answer: C

Explanation:

As per the order of dictionary :

= Rain -> Range -> Ranger -> Rein

$\equiv$ 2, 1, 4, 3

=> Ans - (C)

Instructions
For the following questions answer them individually

Question 3

In the following series find 20th number
9, 5, 1, -3 -7, -11,.....

A -64

B -75

C -70

D -67

Answer: D

Explanation:
The given series is an arithmetic progression with first term $a = 9$ and common difference $d = -4$

n^{th} term in an A.P. = $A_n = a + (n-1)d$

=> $A_{20} = 9 + (20-1) \times (-4)$

= $9 + (19)(-4)$

= $9 - 76 = -67$

=> Ans - (D)

Question 4

Which one set of letters when sequentially placed at the gaps in the given letter serial shall complete it ?
_bam_amb_m_a_ba

A ambbm

B mabam

C abmab

D mbabm

Answer: D

Explanation:
Expression : _bam_amb_m_a_ba

The pattern followed is :

= **m**ba / m**b**a / mb**a**/ m**b**a / **m**ba

=> Ans - (D)

Question 5

If '-' stands for addition '+' for multiplication, '÷' for subtraction and 'x' for division, which one of the following equations is correct ?

A $5 + 2 \div 12 \times 6 \div 2 = 10$

B $5 \div 2 \div 12 \times 6 - 2 = 4$

C $5 - 2 \div 12 \times 6 \div 2 = 27$

D $5 + 2 - 12 \div 6 \times 2 = 13$

Answer: E

Question 6

If P denotes ÷, Q denotes X, R denotes + and S denotes -, then 16Q12P6R5S4= ?

A 32

B 33

C 30

D 31

Answer: B

Explanation:
Expression : 16Q12P6R5S4

$\equiv 16 \times 12 \div 6 + 5 - 4$

= $(16 \times 2) + 1$

= $32 + 1 = 33$

=> Ans - (B)

Question 7

If FADE is coded as 3854 then how can GAGE be coded ?

A 2834

B 2824

C 2814

D 1824

Answer: B

Explanation:
It is given that FADE : 3854

=> Code for A=8 and E=4

Now, for GAGE, first and third letters are same and thus have the same code as given in second option.

=> GAGE : **2824**

=> Ans - (B)

Question 8

The sum of ages of mother, daughter and son is 87 years. What will be the sum of their ages after 8 years ?

A 110

B 111

C 105

D 101

Answer: B

Explanation:
Let ages of mother, daughter and son are m, d, s respectively.

According to ques, => $(m + d + s) = 87$ ----------(i)

Now, sum of their ages after 8 years,

= $(m + 8) + (d + 8) + (s + 8)$

= $(m + d + s) + 24$

= $87 + 24 = 111$ years

=> Ans - (B)

Question 9

If SUNDAY = 18, MONSOON = 21, YEAR = 12, then THURSDAY = ?

A 26

B 42

C 28

D 24

Answer: D

Explanation:
The pattern followed is that the number given is equal to (no. of letters) $\times 3$

Eg :- Number of letters in SUNDAY = $6 \times 3 = 18$

and for MONSOON = $7 \times 3 = 21$

Similarly, for THURSDAY = $8 \times 3 = 24$

=> Ans - (D)

Question 10

After going 80 m from his house towards east, a person turns left and goes 20 m, then turns right and moves 100 m, then turns left and goes 60 m, then turns right and goes 120 m to reach the park. What is the distance between his house and the park ?

A 120 m

B 20 m

C 100 m

D 80 m

Answer: E

Question 11

Unscramble the following letters to frame a meaningful word. Then find out the correct numerical positions of the letters.
O T Y S R H I
1 2 3 4 5 6 7

A 6241375

B 6452173

C 6347125

D 6742153

Answer: D

Explanation:
O T Y S R H I
1 2 3 4 5 6 7

(A) : 6241375 = HTSOYIR

(B) : 6452173 = HSRTOIY

(C) : 6347125 = HYSIOTR

(D) : 6742153 = **HISTORY**

=> Ans - (D)

Question 12

If it is possible to form a word with the first, fourth, seventh and eleventh letters in the word 'SUPERFLUOUS' write the first letter of that word.

A O

B E

C S

D L

Answer: D

Explanation:
Word : 'SUPERFLUOUS'

1st, 4th, 7th and 11th letters = S, E, L, S

First letter of meaningful word formed = **L** (Less)

=> Ans - (D)

Question 13

Two statements are given, each followed by two conclusion/assumption, I and II. You have to consider the statement to be true even if they seem to be at variance from commonly known facts. You have to decide which of the given conclusion/assumptions, if any, follows from the given statements.
Statements:
(i) Some papers are pens
(ii) All the pencils are pens
Conclusions:
I. Some pens are pencils
II. Some pens are papers

A Either I or II follows

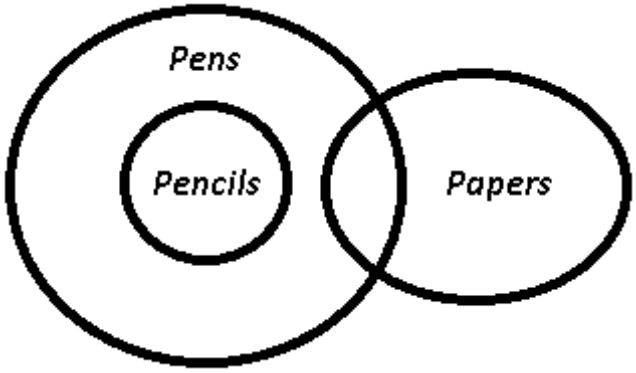
B Both I and II follows

C Only I conclusions follows

D Only II conclusion follows

Answer: B

Explanation:
The venn diagram for above statements is :



Conclusions:

I. Some pens are pencils = true
II. Some pens are papers = true

Thus, both I and II follows.

=> Ans - (B)

Question 14

Which conclusions is true with respect to the given statements ?
Statements:
(i) Roy studies History and Political Science
(ii) Roy studies in Oxford University
Conclusions:

A Roy does not study Political Science

B Roy studies History and Political Science in Oxford University

C Roy studies Social Science

D Roy does not study History

Answer: B

Explanation:
The statements indicates that Roy studies in Oxford University and he studies History and Political Science.

Thus, the first and last options are eliminated as they conclude completely opposite thing.

=> Ans - (B)

Question 15

If Ramya's rank is 22nd out of 46 students. What is her rank from the last ?

A 29

B 25

C 24

D 26

Answer: B

Explanation:
Total students = 46

Ramya's position from start = 22nd

=> Her rank from last = $(46 - 22) + 1 = 24 + 1 = 25$

=> Ans - (B)

Question 16

The mall is 250 meters north-west of the market. The school is 250 meters south-west of the market. In which direction is the school from the mall ?

A West

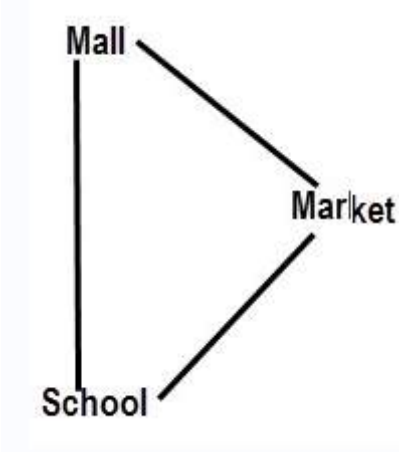
B South

C North

D East

Answer: B

Explanation:
The mall is 250 meters north-west of the market. The school is 250 meters south-west of the market.



Thus, the school is **South** of the mall.

=> Ans - (B)

Instructions

In question numbers 17 to 24, select the related word/letters/number from the given alternatives.

Question 17

SUMO : PRJL : : TAXI : ?

A WDXJ

B QXVF

C XQUF

D QXUF

Answer: D

Explanation:
Expression = SUMO : PRJL : : TAXI : ?

The pattern followed is :

S	U	M	O
(-3)	(-3)	(-3)	(-3)
P	R	J	L

Similarly, for TAXI :

T	A	X	I
(-3)	(-3)	(-3)	(-3)
Q	X	U	F

=> Ans - (D)

Question 18

Concord : Agreement :: Discord : ?

A Comparison

B Conflict

C Association

D Blended

Answer: B

Explanation:
Concord and agreement are synonyms meaning harmony, similarly discord and conflict means the same.

=> Ans - (B)

Question 19

Female : Feminine : : Male : ?

A Man

B Masculine

C Macho

D Manager

Answer: B

Explanation:
Feminine means having female qualities, similarly men qualities are represented by being masculine.

=> Ans - (B)

Question 20

42 : 20 :: 64 : ?

A 33

B 34

C 31

D 32

Answer: C

Explanation:
Expression = 42 : 20 :: 64 : ?

The pattern followed is = $n : \frac{n}{2} - 1$

Eg :- $42 : \frac{42}{2} - 1 = 42 : 20$

Similarly, $\frac{64}{2} - 1 = 32 - 1 = 31$

=> Ans - (C)

Question 21

PS : VY : : FI : ?

A VZ

B WZ

C LO

D UX

Answer: C

Explanation:
Expression = PS : VY : : FI : ?

The pattern followed is :

= P (+3 letters) = S (+3 letters) = V (+3 letters) = Y

=> F (+3 letters) = I (+3 letters) = L (+3 letters) = O

Thus, FI : **LO**

=> Ans - (C)

Question 22

Carpentry : Skill : : ? : Talent

A Singing

B Plumbing

C Driving

D Masonry

Answer: A

Explanation:
Carpentry is a kind of skill, similarly singing is a talent.

=> Ans - (A)

Question 23

$\frac{1}{4}$: $\frac{1}{8}$ :: $\frac{2}{3}$:**?**

A $\frac{1}{2}$

B 1

C $\frac{1}{4}$

D $\frac{1}{3}$

Answer: D

Explanation:
Expression = $\frac{1}{4}$: $\frac{1}{8}$ :: $\frac{2}{3}$:?

The pattern followed is = $n : \frac{n}{2}$

Eg :- $\frac{1}{4} : \frac{1}{4} \times \frac{1}{2} = \frac{1}{4} : \frac{1}{8}$

Similarly, $\frac{2}{3} \times \frac{1}{2} = \frac{1}{3}$

=> Ans - (D)

Question 24

KcaC : CacK :: XgmF: ?

A FmgX

B Gmef

C EmgF

D EgmX

Answer: A

Explanation:
Expression = KcaC : CacK

The above term is written in reverse order, i.e., first letter at last position, second at second last and so on. Also, the first and last alphabets in capital and the middle ones being small.

Similarly, reverse of XgmF : **FmgX**

=> Ans - (A)

Instructions
For the following questions answer them individually

Question 25

Choose the similar group of numbers on the basis of certain common properties they possess:
(72, 66, 96)

A (24, 69, 58)

B (55, 66, 77)

C (63, 70, 86)

D (54, 57, 78)

Answer: A

Instructions

In question numbers 26 to 34, find the odd word/letters/number/number pair from the given alternatives.

Question 26

A Tea : Beverages

B Legumes : Nodules

C Beans : Pulses

D Rice : Cereals

Answer: B

Explanation:
Except, Legumes - Nodules, in all other pairs the second denotes the class to which the first belongs.

=> Ans - (B)

Question 27

A SRQP

B LKJI

C HGFE

D UVWX

Answer: D

Explanation:
(A) : S (-1 letter) = R (-1 letter) = Q (-1 letter) = P

(B) : L (-1 letter) = K (-1 letter) = J (-1 letter) = I

(C) : H (-1 letter) = G (-1 letter) = F (-1 letter) = E

(D) : U (**+1** letter) = V (**+1** letter) = W (**+1** letter) = X

=> Ans - (D)

Question 28

A 66

B 76

C 56

D 36

Answer: D

Explanation:
Among the given numbers, only 36 is a perfect square, hence it is the odd one out.

=> Ans - (D)

Question 29

A SQOM

B WUSP

C MKIG

D ZXVT

Answer: B

Explanation:
(A) : S (-2 letters) = Q (-2 letters) = O (-2 letters) = M

(B) : W (-2 letters) = U (-2 letters) = S (**-3** letters) = P

(C) : M (-2 letters) = K (-2 letters) = I (-2 letters) = G

(D) : Z (-2 letters) = X (-2 letters) = V (-2 letters) = T

=> Ans - (B)

Question 30

A DAC

B UTV

C IFH

D NKM

Answer: B

Explanation:

(A) : D (-3 letters) = A (+2 letters) = C

(B) : U (**-1** letter) = T (+2 letters) = V

(C) : I (-3 letters) = F (+2 letters) = H

(D) : N (-3 letters) = K (+2 letters) = M

=> Ans - (B)

Question 31

A (36, 27)

B (23, 14)

C (82, 29)

D (45, 18)

Answer: C

Explanation:
Sum of digits in both the numbers : $3 + 6 = 9 = 2 + 7$

$2 + 3 = 5 = 1 + 4$

$8 + 2 = 10 \neq 2 + 9$

$4 + 5 = 9 = 1 + 8$

Hence (82, 29) is the odd one out.

=> Ans - (C)

Question 32

A Cone

B Rectangle

C Circle

D Triangle

Answer: A

Explanation:
Rectangle, circle and triangle are 2 dimensional figures, while cone is a 3-D figure, hence it is the odd one out.

=> Ans - (A)

Question 33

A Knock

B Wrong

C Psychology

D Fast

Answer: C

Explanation:
Psychology is a subject, hence it is odd among the given options.

=> Ans - (C)

Question 34

A 3249

B 2709

C 8314

D 4518

Answer: C

Explanation:
Sum of digits of all the numbers.

$3 + 2 + 4 + 9 = 18$

$2 + 7 + 0 + 9 = 18$

$8 + 3 + 1 + 4 = 16$

$4 + 5 + 1 + 8 = 18$

=> Ans - (C)

Instructions
For the following questions answer them individually

Question 35

Which one of the given responses would be a meaningful order of the following ?
1. India
2. Bangalore
3. Asia
4. Karnataka

A 3, 1, 4, 2

B 3, 1, 2, 4

C 1, 2, 3, 4

D 3, 4, 2, 1

Answer: A

Explanation:
Meaningful order :

= Asia -> India -> Karnataka -> Bangalore

$\equiv$ 3, 1, 4, 2

=> Ans - (A)

Instructions

In question numbers 36 to 39, a series is given, with one term missing. Choose the correct alternative from the given ones that will complete the series.

Question 36

Y, T, P, ?, K

A L

B O

C N

D M

Answer: D

Explanation:
The pattern followed is :

= Y (-5 letters) = T (-4 letters) = P (-3 letters) = M (-2 letters) = K

Thus, missing term = **M**

=> Ans - (D)

Question 37

4, 11, 17, 22, ?, 29, 31, 32

A 26

B 27

C 23

D 24

Answer: A

Explanation:
The pattern followed is :

4 + 7 = 11

11 + 6 = 17

17 + 5 = 22

22 + 4 = **26**

26 + 3 = 29

29 + 2 = 31

31 + 1 = 32

=> Ans - (A)

Question 38

6 + $\sqrt{216}; 7 + \sqrt{343}; 8 + \sqrt{512}; 9 + \sqrt{729};$ **?**

A 10 + $\sqrt{10000}$

B 10 + $\sqrt{10^5}$

C 10 + $\sqrt{100}$

D 10+ $\sqrt{1000}$

Answer: D

Explanation:
The pattern followed is = $n + \sqrt{n^3}$

Eg :- 6 + $\sqrt{216}; 7 + \sqrt{343}; 8 + \sqrt{512}; 9 + \sqrt{729};$

Now, $10^3 = 1000$

Thus, the next term = $10 + \sqrt{1000}$

=> Ans - (D)

Question 39

AZ, CX, FU, ?

A JQ

B KP

C IR

D IV

Answer: A

Explanation:
Expression : AZ, CX, FU, ?

The pattern followed in each letter of the terms is :

1st letter : A (+2 letters) = C (+3 letters) = F (+4 letters) = J

2nd letter : Z (-2 letters) = X (-3 letters) = U (-4 letters) = Q

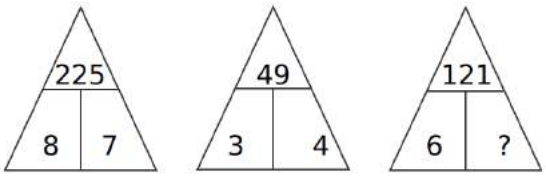
Thus, missing term = **JQ**

=> Ans - (A)

Instructions

In question numbers 40 to 43, select the missing number from the given responses.

Question 40



A 20

B 5

C 4

D 21

Answer: B

Explanation:
The number on the top is the square of sum of bottom 2 numbers.

Eg :- $(7+8)^2 = (15)^2 = 225$

and $(3+4)^2 = (7)^2 = 49$

Similarly, $(6+x)^2 = 121 = (11)^2$

=> $6 + x = 11$

=> $x = 11 - 6 = 5$

=> Ans - (B)

Question 41

4	8	16	32
5	15	?	135
6	24	96	384

A 45

B 80

C 30

D 32

Answer: A

Explanation:
In each row, the pattern followed is :

1st row : $4(\times 2) = 8(\times 2) = 16(\times 2) = 32$

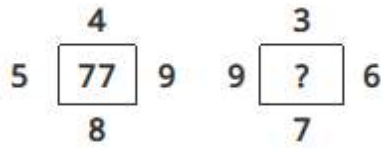
2nd row : $5(\times 3) = 15(\times 3) = 45(\times 3) = 135$

3rd row : $6(\times 4) = 24(\times 4) = 96(\times 4) = 384$

Thus, missing term = **45**

=> Ans - (A)

Question 42



A 79

B 73

C 75

D 77

Answer: C

Explanation:
Number in the middle is equal to the sum of product of diagonally opposite numbers.

Eg :- $(5 \times 9) + (4 \times 8) = 45 + 32 = 77$

Similarly, $(9 \times 6) + (3 \times 7) = 54 + 21 = 75$

=> Ans - (C)

Question 43

874		
1	3	5
2	4	6
3	1	9
1	7	?

A 6

B 8

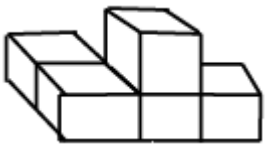
C 2

D 4

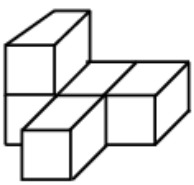
Answer: D

Instructions
For the following questions answer them individually

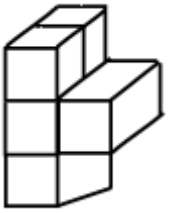
Question 44

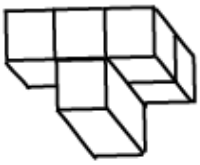


The solid so formed by joining unit cubes is rotated to obtain different positions, which of these cannot be the shape after it has turned ?

A 

B 

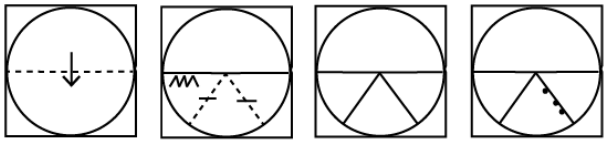
C 

D 

Answer: E

Question 45

A piece of paper is folded and cut as shown below in the question figures. From the given answer figures, indicate how it will appear when opened ?



A 

B 

C

D

Answer: E

Question 46

A word is represented by only one set of numbers as given in any one of the alternatives. The sets of numbers give in the alternatives are represented by two classes of alphabets as in two matrices given below. The column and rows of Matrix I are numbered from 0 to 4 and that of Matrix II are numbered from 5 to 9. A letter from these matrices can be represented first by 00, 14 etc., and 'N' can be represented by 59, 68 etc. Similarly, you have to identify the set for the word 'ROAD'

Matrix-I

	0	1	2	3	4
0	I	M	W	S	Q
1	M	W	S	Q	I
2	W	S	Q	I	M
3	S	Q	I	M	W
4	Q	I	M	W	S

Matrix-II

	5	6	7	8	9
5	O	A	D	R	N
6	A	D	R	N	O
7	D	R	N	O	A
8	R	N	O	A	D
9	N	O	A	D	R

A 56, 67, 57, 96

B 67, 57, 96, 56

C 96, 67, 56, 57

D 67, 96, 56, 57

Answer: D

Explanation:

(A) : 56, 67, 57, 96 = ARDO

(B) : 67, 57, 96, 56 = RDOA

(C) : 96, 67, 56, 57 = ORAD

(D) : 67, 96, 56, 57 = **ROAD**

=> Ans - (D)

Question 47

The image of a clock in a mirror is seen as 3.15. What is the right time ?

A 10.45

B 7.45

C 9.45

D 8.45

Answer: D

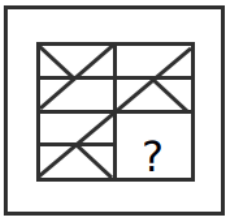
Explanation:
Time in actual clock = 3.15

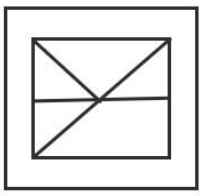
=> Time in mirror image will be = **8.45**

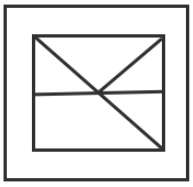
=> Ans - (D)

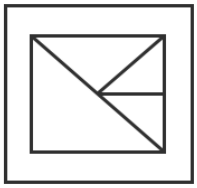
Question 48

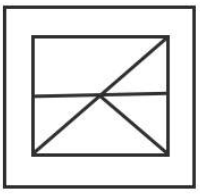
Which answer figure will complete the pattern in the question figure ?



A


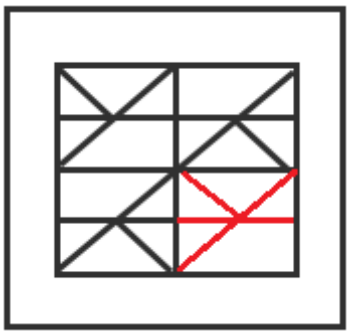
B


C


D 

Answer: A

Explanation:
When we complete the pattern in question figure, we get :

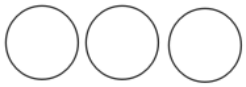


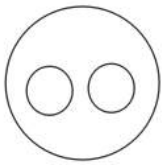
Thus, the first option matches the figure in red colour.

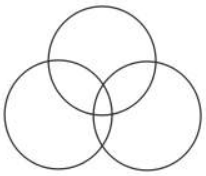
=> Ans - (A)

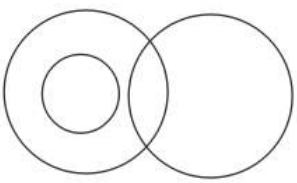
Question 49

Which figure will best represent the relationship amongst the three classes ?
Boy, Sportsman, Student

A 

B 

C 

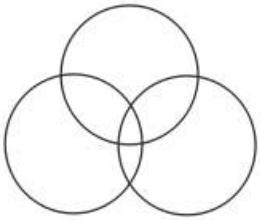
D 

Answer: C

Explanation:

A boy can be either a student or a sportsman. A student may or may not be a sportsman.

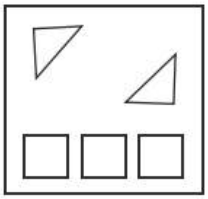
Thus, the diagram that best represent above relation is :



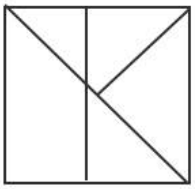
=> Ans - (C)

Question 50

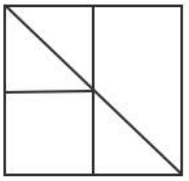
Identify the answer figure from which the pieces given in the question figure have been cut.



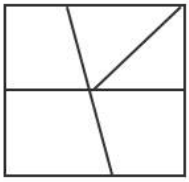
A



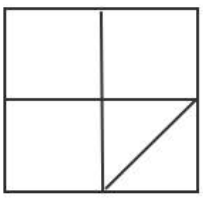
B



C



D



Answer: D

Explanation:
In the question figure, there are 3 square and 2 triangles.

There are no squares in the first and third figure, hence they are eliminated. Also, in the second option, there are 3 triangles, thus it is not possible.

In the last option, there are 3 squares and 2 triangles which is the requirement.

=> Ans - (D)

English

Instructions

Four alternatives are given for the Idiom/Phrase underlined. Choose the alternative which best expresses the meaning of the Idiom/Phrase and mark it in the Answer Sheet.

Question 51

To put in a nut-shell

A To state something very concisely

B To place something

C To be blunt about something

D To be long and exhaustive about something

Answer: E

Question 52

To make up one's mind

A To remember things clearly

B To remind oneself of something

C To think creatively

D To decide what to do

Answer: E

Question 53

Nowadays it has become a fashion to take French Leave.

A Saying goodbye in French style

B Absenting oneself without permission

C Taking leave to go to France

D Seeking permission from French Embassy

Answer: E

Question 54

International monetary affairs are governed by the gnomes of Zurich

A foreign leaders

B big international bankers

C guardians of treasure

D witcheraft of Zurich

Answer: E

Instructions

A part of the sentence is underlined. Below are given alternatives to the underlined part at (A), (B), (C) which may improve to the sentence. Choose the correct alternative. In case no improvement is needed your answer is (D). Mark your answer in the Answer Sheet.

Question 55

She had realized that she had seen him before.

A had been realized

B realized

C has realized

D No improvement

Answer: E

Question 56

Being ill, he came to work

A He came to work and fell ill

B Despite coming to work, he was ill

C Inspite of being ill, he came to work

D No improvement

Answer: E

Question 57

Hundreds of children are deaf born every year

A deaf are born every

B every born are deaf

C are born deaf every

D No improvement

Answer: E

Question 58

She is willing to help you

A wilful

B willingly

C wilfully

D No improvement

Answer: E

Instructions

Out of the four alternatives, choose the one which can be substituted for the given words/sentences and indicate it by blackening the appropriate circle in the Answer Sheet.

Question 59

Art of working with metals

A Metaphysis

B Metallurgy

C Metalloid

D Meteorite

Answer: E

Question 60

A place where birds are kept.

A Aviary

B Sanctuary

C Apiary

D Aquarium

Answer: E

Question 61

A gathering at a religious place

A Spectators

B Mob

C Audience

D Congregation

Answer: E

Question 62

One who compiles a dictionary

A Cartographer

B Bibliographer

C Lapidist

D Lexicographer

Answer: E

Instructions

Four words are given in each question, out of which only one word is correctly spelt. Find the correctly spelt word and mark your answer in the Answer Sheet.

Question 63

A laboratorry

B laboratery

C laborratory

D laboratory

Answer: E

Question 64

A Humein

B humaen

C humain

D humane

Answer: E

Question 65

A Equanamous

B Ecuanemous

C Ecuanimous

D Equanimous

Answer: E

Question 66

A Pedestrain

B Padestrain

C Pedistrain

D Pedestrean

Answer: E

Instructions

Some parts of the sentence have errors and some are correct. Find out which part of a sentence has an error and blacken the circle corresponding to the appropriate letter (A), (B), (C), If a sentence is free error, blacken the circle corresponding to (D) in the Answer Sheet.

Question 67

They came here in (a)/ the evening and begin making (b)/ further arrangements (c)/ No Error (d).

A a

B b

C c

D d

Answer: E

Question 68

One must (a)/ Obey one's (b)/ Teachers (c)/ No Error (d).

A a

B b

C c

D d

Answer: E

Question 69

She always fed (a)/ her children's (b)/ before she fed her dog (c)/ No Error (d).

A a

B b

C c

D d

Answer: E

Question 70

Make what you write (a)/ and say more (b)/ absorbed and engrossing (c)/ No error (d).

A a

B b

C c

D d

Answer: E

Instructions

Sentences are given with blanks to be filled in with an appropriate word (s). Four alternatives are suggested for each question. Choose the correct alternatives out of the four and indicate it by blackening the appropriate circle in the Answer Sheet.

Question 71

All orders must _____ the rules

A conform to

B conforms to

C conforming with

D conforms with

Answer: E

Question 72

She failed to _____ to her name

A line up

B shine up

C keep up

D rise up

Answer: E

Question 73

As the doctor _____ into the room, the nurse handed him the temperature chart of the patient.

A came

B was coming

C comes

D is coming

Answer: E

Question 74

The economic _____ has affected our sales temendously

A showdown

B slowdown

C crackdown

D touchdown

Answer: E

Instructions

Out of the four alternatives, choose the one which best expresses the meaning of the given word and mark it in the Answer Sheet.

Question 75

Pawn

A Scrounge

B Hire

C Pledge

D Sponge

Answer: E

Question 76

Maestro

A Admirer

B Employee

C Novice

D Genius

Answer: E

Question 77

Feeble

A Playful

B Pretty

C Small

D Weak

Answer: E

Question 78

Chastise

A Upbraid

B Monitor

C Chase

D Praise

Answer: E

Instructions

Choose the word opposite in meaning to the given word and mark it in the Answer Sheet.

Question 79

Bizarre

A Ridiculous

B Ordinary

C Comical

D Droll

Answer: E

Question 80

Guilty

A Honest

B Innocent

C Sorry

D Dubious

Answer: E

Question 81

Accusation

A Complaint

B Felicitation

C Exculpation

D Encouragement

Answer: E

Question 82

Appoint

A Reward

B Yield

C Disunite

D Dismiss

Answer: E

Instructions

The first and the last part of sentence are numbered 1 and 6. The rest of the sentence is split into four parts and named P, Q, R and S. These four parts are not given in their proper order. Read the sentence and find out which of the four combinations is correct. Then find the correct answer and indicate it in the Answer Sheet.

Question 83

1. The watchman
P. and found two thieves
Q. woke up when
R. with black masks
S. he heard the dog barking
6. Trying to get in

A QSRP

B PQRS

C QSPR

D SPQR

Answer: E

Question 84

1. The students
P. touched the
Q. arrived and
R. their teacher
S. feet of
6. With reverence

A RQSP

B QPSR

C QPRS

D QRSP

Answer: E

Question 85

1. This summer was the most
P. to believe that next
Q. and we have reason
R. scorching in living memory,
S. year and the year after
6. Will be hotter still

A SRPQ

B SPQR

C QSPR

D RQPS

Answer: E

Question 86

1. Falcons have sharp angular wings
P. to drive sharply
Q. and allow them
R. to chase their prey
S. that give them the speed
6. To capture their victims

A QPRS

B PRSQ

C SRQP

D SQPR

Answer: E

Instructions

A sentence has been given in Direct/Indirect. Out of the four alternatives suggested, select the one which best expresses the same sentence in Indirect/Direct and mark your answer in the Answer Sheet.

Question 87

The teacher said to the students, “March quietly to the ground.”

A The teacher instructed the students that they should march quietly to the ground

B The teacher instructed the students that they must march quietly to the ground

C The teacher instructed the students to march quietly to the ground

D The teacher said to the students that they should march quietly to the ground

Answer: E

Question 88

The policeman said to driver, “ Do you have a licence ?”

A The policeman asked the driver whether he had a licence

B The policeman asked the driver whether he had had a licence

C The policeman asked the driver whether he has a licence

D The policeman asked the driver whether he have a licence

Answer: E

Instructions

In the following passage some of the words have been left out. Read the passage carefully and choose the correct answer to each question out of the four alternatives and fill in the blanks.

In civilised life there is a rule _____89_____ violence, against taking the _____90_____ into our hands. It is a rule which ____91_____ of us observe so often, indeed, that a great _____(4)_____ of people go through life _____(5)_____ orderliness and non-violence as part as part of the scheme of nature. But when _____(6)_____ comes into their midst _____(7)_____ refuses to observe the current rules, and _____(8)_____ the simple rule that might is right, the law-abiding members _____(9)_____ society do not know what to do, and look on in _____(10)_____ bewildered confusion.

Question 89

(1)

A after

B at

C against

D upon

Answer: E

Question 90

(2)

A police

B people

C rule

D law

Answer: E

Question 91

(3)

A most

B none

C many

D every

Answer: E

Question 92

(4)

A amount

B number

C capacity

D sum

Answer: E

Question 93

(5)

A not expecting

B expecting

C not accepting

D accepting

Answer: E

Question 94

(6)

A no one

B any one

C none

D everyone

Answer: E

Question 95

(7)

A who

B how

C where

D whom

Answer: E

Question 96

(8)

A following

B followed

C follows

D follow

Answer: E

Question 97

(9)

A of

B at

C in

D on

Answer: E

Question 98

(10)

A helping

B helped

C helpless

D helpful

Answer: E

Instructions

A sentence has been given in Active/Passive voice. Out of the four alternatives suggested, select the one which best expresses the same sentence in Passive/Active Voice and mark your answer in the Answer Sheet.

Question 99

The boys were making kites.

A Kites were being made by the boys

B Kites are made by the boys

C The boys had made kites

D Kites are being made by the boys

Answer: E

Question 100

He will not use the computer

A The computer will not be used by him

B The use of the computer will not be by him

C The computer he will not use

D By him the computer will not be used

Answer: E

Quant

Instructions
For the following questions answer them individually

Question 101

The average of 12 numbers is 15 and the average of the first two is 14. What is the average of the rest ?

A $15\frac{1}{5}$

B 14

C $14\frac{1}{5}$

D 15

Answer: A

Explanation:
Average of 12 numbers = 15

=> Sum of 12 numbers = $15 \times 12 = 180$

Similarly, sum of first two = $14 \times 2 = 28$

Thus, sum of rest of the numbers = $180 - 28 = 152$

=> Average of 10 numbers = $\frac{152}{10} = \frac{76}{5} = 15\frac{1}{5}$

=> Ans - (A)

Question 102

The volume of a right circular cone which is obtained from a wooden cube of edge 4.2 dm wasting minimum amount of wood is:

A 194.04 cu.dm

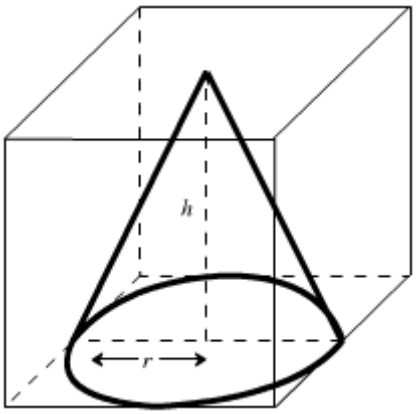
B 19.404 cm.dm

C 1940.4 cu.dm

D 19404 cu.dm

Answer: B

Explanation:



Height of largest circular cone = 4.2 dm and radius = $\frac{4.2}{2} = 2.1$ dm

Volume of cone = $\frac{1}{3}\pi r^2 h$

= $\frac{1}{3} \times \frac{22}{7} \times (2.1)^2 \times 4.2$

= $22 \times 4.41 \times 0.2 = 19.404\ dm^3$

=> Ans - (B)

Question 103

A man travels for 5 hours 15 minutes. If he covers the first half of the journey at 60 km/h and rest at 45 km/h. Find the total distance traveled by him

A $189km$

B $378km$

C $270km$

D $1028\frac{6}{7}km$

Answer: C

Explanation:
Let total distance travelled = $2d$ km and total time taken = 5 hr 15 min = $5\frac{1}{4}$ hrs

Half of the distance (i.e. d km) is travelled at 60 km/hr and remaining at 45 km/hr

Using, time = distance/speed

=> $(\frac{d}{60}) + (\frac{d}{45}) = 5\frac{1}{4}$

=> $\frac{d}{15}(\frac{1}{4} + \frac{1}{3}) = \frac{21}{4}$

=> $\frac{d}{15} \times (\frac{7}{12}) = \frac{21}{4}$

=> $d = \frac{21}{4} \times \frac{12}{7} \times 15$

=> $d = 9 \times 15 = 135$

$\therefore$ Total distance travelled = $2 \times 135 = 270$ km

=> Ans - (C)

Question 104

If A, B and C be the angles of a triangle, then out of the following, the incorrect relation is:

A $tan(\frac{A+B}{2}) = Sec\frac{c}{2}$

B $cot(\frac{A+B}{2}) = tan\frac{c}{2}$

C $sin(\frac{A+B}{2}) = cos\frac{c}{2}$

D $cos(\frac{A+B}{2}) = sin\frac{c}{2}$

Answer: A

Explanation:
If A, B and C be the angles of a triangle, then $\angle$ A + $\angle$ B + $\angle$ C = 180°

=> $\angle$ A + $\angle$ B = 180° - $\angle$ C

=> $\frac{\angle A+\angle B}{2} = 90^\circ - \frac{\angle C}{2}$ ----------(i)

(A) : $tan(\frac{A+B}{2}) = tan(90^\circ - \frac{\angle C}{2}) = cot(\frac{\angle C}{2}) \neq sec(\frac{\angle C}{2})$

(B) : $cot(\frac{A+B}{2}) = cot(90^\circ - \frac{\angle C}{2}) = tan(\frac{\angle C}{2})$

(C) : $sin(\frac{A+B}{2}) = sin(90^\circ - \frac{\angle C}{2}) = cos(\frac{\angle C}{2})$

(D) : $cos(\frac{A+B}{2}) = cos(90^\circ - \frac{\angle C}{2}) = sin(\frac{\angle C}{2})$

=> Ans - (A)

Question 105

Among the following statements, the statement which is not correct is:

A Every natural number is a real number

B Every real number is a rational number

C Every integer is a rational number

D Every natural number is an integer

Answer: B

Explanation:
The statement which is not correct is that every real number is a rational number.

Eg :- $\sqrt{2}$ is real but not rational.

=> Ans - (B)

Question 106

A plate on square base made of brass is of length $x\ cm$ and width 1 mm. The plate weight 4725 gm. If 1 cubic cm of brass weighs 8.4 gram, then the value of x is:

A 76

B 72

C 74

D 75

Answer: D

Explanation:
Thickness of brass plate = 1 mm = 0.1 cm

As the plate is in square shape, so the length and breath are same.

=> Length = Breadth = x cm

Volume = $(x \times x \times 0.1) = \frac{x^2}{10}\ cm^3$

Given that 1 cu cm of brass has weight = 8.4 g

Thus, total weight = $8.4 \times \frac{x^2}{10} = 0.84x^2$ gram

According to ques, => $0.84x^2 = 4725$

=> $x^2 = \frac{4725}{0.84} = 5625$

=> $x = \sqrt{5625} = 75$ cm

=> Ans - (D)

Question 107

$\angle A$ of $\triangle ABC$ is a right angle. AD is perpendicular on BC. If BC=14cm and BD=5cm, then measure of AD is:

A $\sqrt{5}$ cm

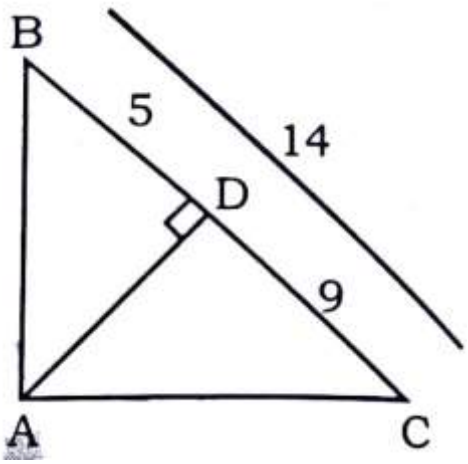
B $3\sqrt{5}$ cm

C $3.5\sqrt{5}$ cm

D $2\sqrt{5}$ cm

Answer: B

Explanation:



Given : BC = 14 cm and BD = 5 cm

=> CD = $14 - 5 = 9$ cm

Also, $(AD)^2 = BD \times CD$

=> $(AD)^2 = 5 \times 9 = 45$

=> $AD = \sqrt{45}$

=> $AD = 3\sqrt{5}$ cm

=> Ans - (B)

Question 108

A number x is divisible by 7. When this number is divided by 8, 12 and 16, it leaves a remainder 3 in each case. The least value of x is:

A 149

B 150

C 147

D 148

Answer: C

Explanation:
The number x is divisible by 7, => $x = 7k$

Now L.C.M. (8,12,16) = 48

Thus, the least number which is divided by 8, 12 and 16 and leaves a remainder 3 in each case = $48n + 3$

Now, $f(n) = (48n + 3)$ should be divisible by 7.

By putting $n = 1, 2, 3, ...$

$f(1) = 48(1) + 3 = 51$

$f(2) = 48(2) + 3 = 99$

$f(3) = 48(1) + 3 = 147$ which is divisible by 7.

=> Ans - (C)

Question 109

A candidate who gets 20% marks in an examination, fails by 30 marks. But if he gets 32% marks, he gets 42 marks more then the minimum pass marks. Find the pass percentage of marks.

A 20%

B 25%

C 12%

D 52%

Answer: B

Explanation:
Let maximum marks in the examination = $100x$ and passing marks = y

Marks secured by candidate = $\frac{20}{100} \times 100x = 20x$

Thus, $20x = y - 30$ ----------(i)

Similarly, $32x = y + 42$ ----------(ii)

Subtracting equation (i) from (ii), we get :

=> $32x - 20x = 42 + 30$

=> $12x = 72$

=> $x = \frac{72}{12} = 6$

Substituting it in equation (i), => $y = 20(6) + 30 = 120 + 30 = 150$

$\therefore$ Pass % = $\frac{y}{100x} \times 100 = \frac{y}{x}$

= $\frac{150}{6} = 25\%$

=> Ans - (B)

Question 110

The Vulgar fraction of 0.3939..... is:

A $\frac{11}{39}$

B $\frac{17}{39}$

C $\frac{13}{33}$

D $\frac{15}{33}$

Answer: C

Explanation:
Number = $0.\overline{39}$

Let $x = 0.\overline{39}$ ----------(i)

=> $100x = 39.\overline{39}$ ----------(ii)

Subtracting equation (i) from (ii),

=> $100x - x = 39.39 - 0.39$

=> $99x = 39$

=> $x = \frac{39}{99} = \frac{13}{33}$

=> Ans - (C)

Question 111

In a circle with center at O (0,0) and radius 5cm, AB is a chord of length 8 cm. If OM is perpendicular to AB, then the length of OM is:

A 3 cm

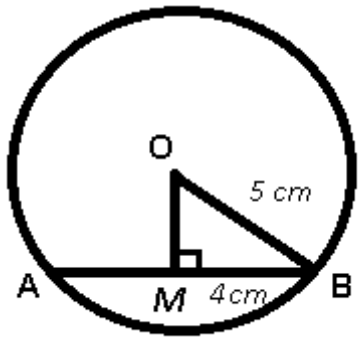
B 4 cm

C 1 cm

D 2.5 cm

Answer: A

Explanation:



Given : AB = 8 cm and OB = 5 cm

To find : OM = ?

Solution : The line from the centre of the circle to the chord bisects it at right angle.

=> AM = BM = $\frac{1}{2}$ AB

=> BM = $\frac{8}{2} = 4$ cm

In $\triangle$ OBM,

=> $(OM)^2 = (OB)^2 - (BM)^2$

=> $(OM)^2 = (5)^2 - (4)^2$

=> $(OM)^2 = 25 - 16 = 9$

=> $OM = \sqrt{9} = 3$ cm

=> Ans - (A)

Question 112

The numerical value of

$\frac{9}{cosec^2\theta} + 4\,cos^2\theta + \frac{5}{1+tan^2\theta}$

A 7

B 9

C 4

D 5

Answer: B

Explanation:

Expression : $\frac{9}{cosec^2\theta} + 4\,cos^2\theta + \frac{5}{1+tan^2\theta}$

= $9sin^2\theta + 4\,cos^2\theta + \frac{5}{sec^2\theta}$

= $9sin^2\theta + 4\ cos^2\theta + 5cos^2\theta$

= $9sin^2\theta + 9cos^2\theta$

= $9(sin^2\theta + cos^2\theta) = 9$

=> Ans - (B)

Question 113

Measure of each interior angle of a regular hexagon is:

A 60°

B 45°

C 120°

D 100°

Answer: C

Explanation:
Sum of each interior angle of a polygon with $'n'$ sides = $(n-2) \times 180^\circ$

=> Sum of interior angles of hexagon = $(6-2) \times 180^\circ$

= $4 \times 180^\circ = 720^\circ$

$\therefore$ Measure of each interior angle of a regular hexagon = $\frac{720}{6} = 120^\circ$

=> Ans - (C)

Question 114

Length of each edge of a regular tetrahedron is 1 cm. Its volume is:

A $\frac{1}{4}\sqrt{3}$ cu.cm

B $\frac{\sqrt{2}}{6}$ cu.cm

C $\frac{1}{12}\sqrt{2}$ cu.cm

D $\frac{\sqrt{3}}{12}$ cu.cm

Answer: C

Explanation:
Side of tetrahedron = 1 cm

Volume of tetrahedron = $\frac{\sqrt{2}}{12}a^3$

= $\frac{\sqrt{2}}{12}(1)^3$

= $\frac{1}{12}\sqrt{2}$ cu.cm

=> Ans - (C)

Question 115

If x=a(b-c), y=b(c-a), z=c(a-b), then the value of $(\frac{x}{a})^3 + (\frac{y}{b})^3 + (\frac{z}{c})^3$ is:

A $\frac{xyz}{abc}$

B 0

C $\frac{3xyz}{abc}$

D $\frac{2xyz}{abc}$

Answer: C

Explanation:

Given : $x = a(b-c)$, $y = b(c-a)$, $z = c(a-b)$

=> $\frac{x}{a} = (b-c)$ ----------(i)

and $\frac{y}{b} = (c-a)$ ----------(ii)

and $\frac{z}{c} = (a-b)$ ----------(iii)

Adding equations (i), (ii) and (iii), we get :

=> $\frac{x}{a} + \frac{y}{b} + \frac{z}{c} = (b-c) + (c-a) + (a-b)$

=> $\frac{x}{a} + \frac{y}{b} + \frac{z}{c} = 0$

Now, we know that if $(p+q+r) = 0$, then $p^3 + q^3 + r^3 = 3pqr$

$\therefore (\frac{x}{a})^3 + (\frac{y}{b})^3 + (\frac{z}{c})^3$

= $3 \times (\frac{x}{a}) \times (\frac{y}{b}) \times (\frac{z}{c})$

= $\frac{3xyz}{abc}$

=> Ans - (C)

Question 116

If cosθ = $\frac{P}{\sqrt{p^2+q^2}}$, then the value of tanθ is:

A $\frac{q}{p}$

B $\frac{P}{p^2+q^2}$

C $\frac{q}{\sqrt{p^2+q^2}}$

D $\frac{P}{\sqrt{p^2-q^2}}$

Answer: A

Explanation:
Expression : cosθ = $\frac{P}{\sqrt{p^2+q^2}}$ ----------(i)

=> $\frac{1}{cos\theta} = \frac{\sqrt{p^2+q^2}}{p}$

=> $sec\theta = \frac{\sqrt{p^2+q^2}}{p}$

Squaring both sides, we get :

=> $sec^2\theta = (\frac{\sqrt{p^2+q^2}}{p})^2$

=> $sec^2\theta = \frac{p^2+q^2}{p^2}$

Subtracting '1' from both sides,

=> $sec^2\theta - 1 = \frac{p^2+q^2}{p^2} - 1$

=> $tan^2\theta = \frac{(p^2+q^2)-p^2}{p^2}$

=> $tan^2\theta = \frac{q^2}{p^2}$

Taking square root on both sides, we get :

=> $\sqrt{tan^2\theta} = \sqrt{\frac{q^2}{p^2}}$

=> $tan\theta = \frac{q}{p}$

=> Ans - (A)

Question 117

If $\sqrt{y}$ = 4x, then $\frac{x^2}{y}$ is:

A $\frac{1}{16}$

B $\frac{1}{4}$

C 4

D 2

Answer: A

Explanation:
Given : $\sqrt{y} = 4x$

Squaring both sides, we get :

=> $y = 16x^2$

=> $\frac{x^2}{y} = \frac{1}{16}$

=> Ans - (A)

Question 118

If ABCD be a rhombus, AC is its smallest diagonal and $\angle$ ABC = 60°, find length of a side of the rhombus when AC = 6 cm.

A 3 cm

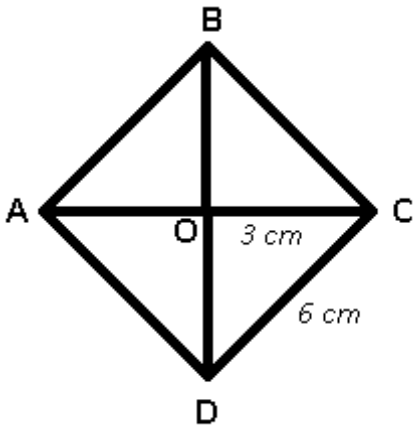
B $6\sqrt{2}$ cm

C $3\sqrt{3}$ cm

D 6 cm

Answer: D

Explanation:



Given : AC = 6 cm and $\angle$ ABC = 60°

Diagonals of a rhombus bisect each other at right angle and also bisects the opposite angles.

=> OC = $\frac{6}{2} = 3$ cm and $\angle$ OBC = $\frac{60}{2} = 30^\circ$

In $\triangle$ OBC,

=> $sin(\angle OBC) = \frac{OC}{BC}$

=> $sin(30^\circ) = \frac{3}{BC}$

=> $\frac{1}{2} = \frac{3}{BC}$

=> $BC = 2 \times 3 = 6$ cm

=> Ans - (D)

Question 119

Two trains start at the same time A and B and proceed toward each other at the speed of 75 km/hr and 50 km/hr respectively. When both meet at a point in between one train found to be travelled 175 km more than the other. Find the distance between A and B.

A 785 km

B 758 km

C 857 km

D 875 km

Answer: D

Explanation:
Speed of train A = 75 km/hr and speed of train B = 50 km/hr

Let distance travelled by train B = d km

=> Distance travelled by train A = $(d + 175)$ km

Time taken by both the trains is equal as they start at the same time.

Using, time = distance/speed

=> $\frac{d+175}{75} = \frac{d}{50}$

=> $\frac{d+175}{3} = \frac{d}{2}$

=> $2d + 350 = 3d$

=> $3d - 2d = d = 350$

$\therefore$ Distance between A and B = $d + (d + 175) = 2d + 175$

= $2(350) + 175 = 700 + 175 = 875$ km

=> Ans - (D)

Question 120

Successive discounts of 20% and 10% are equivalent to a single discount of:

A 28%

B 25%

C 30%

D 15%

Answer: A

Explanation:
Let Marked price = Rs. 100

After 1st discount of 20%, price = $100 - (\frac{20}{100} \times 100)$

= $100 - 20 = 80$

After 2nd discount of 10% (on changed price), selling price = $80 - (\frac{10}{100} \times 80)$

= $80 - 8 = 72$

$\therefore$ Net discount % = $\frac{(100-72)}{100} \times 100 = 28\%$

=> Ans - (A)

Question 121

If Rahim deposited the same amount of ₹ x in a bank at the beginning of successive 3 years and the bank pays simple interest of 5% per annum, then the amount at his credit at the end of 3rd year will be:

A ₹ $\frac{1261}{400}\ x$

B ₹ $\frac{21}{20}\ x$

C ₹ $\frac{26481}{8000}\ x$

D ₹ $\frac{861}{400}\ x$

Answer: C

Explanation:
Principal added after each year = Rs. x

Rate of interest = 5% and time period = 3 years

Simple interest after 1 year = $\frac{P \times R \times T}{100}$

= $\frac{x \times 5 \times 1}{100} = Rs.\ \frac{x}{20}$

Principal for 2nd year = $(2x + \frac{x}{20}) = Rs.\ \frac{41x}{20}$

S.I. after 2nd year = $\frac{41x}{20} \times \frac{5}{100}$

= Rs. $\frac{41x}{400}$

Principal for 3rd year = $(3x + \frac{41x}{400}) = Rs.\ \frac{1241x}{400}$

S.I. after 3rd year = $\frac{1241x}{400} \times \frac{5}{100}$

= Rs. $\frac{1241x}{8000}$

$\therefore$ Required amount = $(3x + \frac{1241x}{8000}) = Rs.\ \frac{25241x}{8000}$

=> Ans - (C)

Question 122

If tanθ + sec θ = 3, θ being acute, the value of 5 sinθ is:

A $\sqrt{\frac{3}{5}}$

B $\frac{5}{\sqrt{3}}$

C $\frac{4}{5}$

D $\frac{5}{2}$

Answer: C

Explanation:

Given : $tan\theta + sec\theta = 3$

=> $\frac{sin\theta}{cos\theta} + \frac{1}{cos\theta} = 3$

=> $sin\theta + 1 = 3cos\theta$

Squaring both sides, we get :

=> $sin^2\theta + 1 + 2sin\theta = 9cos^2\theta$

=> $sin^2\theta + 1 + 2sin\theta = 9(1 - sin^2\theta)$

=> $sin^2\theta + 1 + 2sin\theta = 9 - 9sin^2\theta$

=> $10sin^2\theta + 2sin\theta - 8 = 0$

Let $sin\theta = x$

=> $5x^2 + x - 4 = 0$

=> $5x^2 + 5x - 4x - 4 = 0$

=> $5x(x + 1) - 4(x + 1) = 0$

=> $(x + 1)(5x - 4) = 0$

=> $x = -1, \frac{4}{5}$

$\because \theta$ is acute, => $sin\theta \neq -1$

$\therefore sin\theta = \frac{4}{5}$

=> Ans - (C)

Question 123

How much $66\frac{2}{3}$% of ₹312 exceeds ₹200 ?

A ₹4

B ₹8

C ₹104

D ₹96

Answer: B

Explanation:
$66\frac{2}{3}$% of ₹312

= $\frac{200}{3} \times \frac{1}{100} \times 312$

= $2 \times 104 = 208$

Thus, required value = $208 - 200 = 8$

=> Ans - (B)

Question 124

A, B and C can complete a piece of work in 24, 5 and 12 days respectively. Working together, they will complete the same work in:

A $3\frac{3}{7}$ days

B 4 days

C $\frac{1}{24}$ days

D $\frac{7}{24}$ days

Answer: A

Explanation:
Let total work = L.C.M. (24,5,12) = 120 units

A can complete the work in 24 days, => A's efficiency = $\frac{120}{24} = 5$ units/day

Similarly, B's efficiency = $\frac{120}{5} = 24$ units/day

and C's efficiency = $\frac{120}{12} = 10$ units/day

Thus, working together, 1 day work of (A+B+C) = $5 + 24 + 10 = 39$ units

$\therefore$ Working together, they will complete the same work in = $\frac{120}{39}$

= $\frac{40}{13} = 3\frac{1}{13}$ days

=> Ans - (A)

Question 125

In $\triangle ABC, AD \perp BC$ and $AD^2 = BD \times DC$. Then measure of $\angle BAC$ is:

A 75°

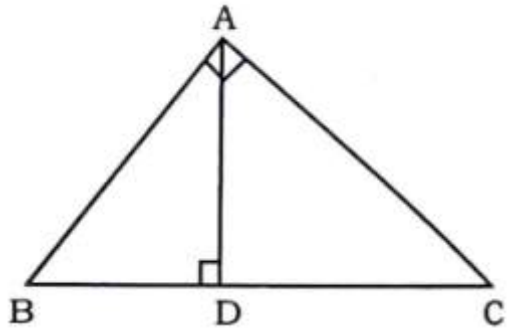
B 90°

C 45°

D 60°

Answer: B

Explanation:



Given : In $\triangle ABC$, $AD \perp BC$ and $AD^2 = BD \times DC$

To find : $\angle BAC$

Solution : In right $\triangle$ ADB and $\triangle$ ADC, if we apply Pythagoras Theorem,

=> $(AB)^2 = (AD)^2 + (BD)^2$ ----------(i)

and => $(AC)^2 = (AD)^2 + (DC)^2$ ----------(ii)

Adding equations (i) and (ii), we get :

=> $(AB)^2 + (AC)^2 = 2(AD)^2 + (BD)^2 + (DC)^2$

=> $(AB)^2 + (AC)^2 = 2(BD)(DC) + (BD)^2 + (DC)^2$ [Given]

=> $(AB)^2 + (AC)^2 = (BD + DC)^2$

=> $(AB)^2 + (AC)^2 = (BC)^2$

Hence, $\triangle$ ABC is a right triangle right angled at A.

$\therefore \angle$ BAC = 90°

=> Ans - (B)

Question 126

Let ABC be a triangle and AD be the perpendicular from the vertex A on the side BC such that AD^2 = BDxCD. Then measure of $\angle$ BAC is:

A 90°

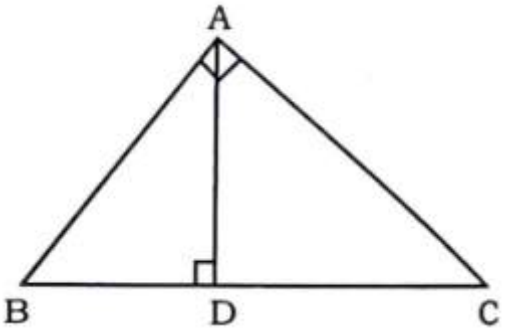
B 75°

C 120°

D 100°

Answer: A

Explanation:



Given : In $\triangle ABC, AD \perp BC$ and $AD^2 = BD \times DC$

To find : $\angle BAC$

Solution : In right $\triangle$ ADB and $\triangle$ ADC, if we apply Pythagoras Theorem,

=> $(AB)^2 = (AD)^2 + (BD)^2$ ----------(i)

and => $(AC)^2 = (AD)^2 + (DC)^2$ ----------(ii)

Adding equations (i) and (ii), we get :

=> $(AB)^2 + (AC)^2 = 2(AD)^2 + (BD)^2 + (DC)^2$

=> $(AB)^2 + (AC)^2 = 2(BD)(DC) + (BD)^2 + (DC)^2$ [Given]

=> $(AB)^2 + (AC)^2 = (BD + DC)^2$

=> $(AB)^2 + (AC)^2 = (BC)^2$

Hence, $\triangle$ ABC is a right triangle right angled at A.

$\therefore \angle$ BAC = 90°

=> Ans - (A)

Question 127

A can do in one day three times the work done by B in one day. They together finish $\frac{2}{5}$ of the work in 9 days. The number of days by which B can do the work alone is:

A 120 days

B 100 days

C 30 days

D 90 days

Answer: D

Explanation:

Let total work to be done = $5y$ units

Let B's efficiency = x units/day

=> A's efficiency = $3x$ units/day

Work done by (A+B) together in 1 day = $(x + 3x) = 4x$ units/day

=> Work done in 9 days = $9 \times 4x = 36x$ units ----------(i)

Also, according to ques, work done in 9 days = $\frac{2}{5} \times 5y = 2y$ units ----------(ii)

=> $36x = 2y$

=> $\frac{y}{x} = \frac{36}{2} = 18$ ----------(iii)

$\therefore$ Number of days by which B can do the work alone = $\frac{5y}{x}$

= $5 \times \frac{y}{x} = 5 \times 18 = 90$ days

=> Ans - (D)

Question 128

Base of a right prism is a rectangle, the ratio of whose length and breadth is 3 : 2. If the height of the prism is 12 cm and total surface area is 288 sq.cm, the volume of the prism is

A 288 cm^3

B 290 cm^3

C 286 cm^3

D 291 cm^3

Answer: A

Explanation:
Let length of rectangular base = $3x$ cm and breadth = $2x$ cm

Surface area of rectangular prism = $2(lb + bh + hl)$

=> $2[(3x \times 2x) + (2x \times 12) + (12 \times 3x)] = 288$

=> $6x^2 + 24x + 36x = \frac{288}{2} = 144$

=> $x^2 + 10x - 24 = 0$

=> $x^2 + 12x - 2x - 24 = 0$

=> $x(x + 12) - 2(x + 12) = 0$

=> $(x - 2)(x + 12) = 0$

=> $x = -12, 2$

$\because$ x cannot be negative, => $x = 2$

Thus, length = $3 \times 2 = 6$ cm and breadth = 4 cm

$\therefore$ Volume = lbh

= $6 \times 4 \times 12 = 288\ cm^3$

=> Ans - (A)

Question 129

If $\frac{x}{y} = \frac{a+2}{a-2}$, then the value of $\frac{x^2-y^2}{x^2+y^2}$ is:

A $\frac{2a}{a^2+2}$

B $\frac{4a}{a^2+4}$

C $\frac{2a}{a^2+4}$

D $\frac{4a}{a^2+2}$

Answer: B

Explanation:
Given : $\frac{x}{y} = \frac{a+2}{a-2}$

Squaring both sides, we get :

=> $\frac{x^2}{y^2} = \frac{(a+2)^2}{(a-2)^2}$

Using componendo and dividendo,

=> $\frac{x^2-y^2}{x^2+y^2} = \frac{(a+2)^2-(a-2)^2}{(a+2)^2+(a-2)^2}$

= $\frac{(a^2+4a+4)-(a^2-4a+4)}{(a^2+4a+4)+(a^2-4a+4)}$

= $\frac{8a}{2a^2+8}$

= $\frac{4a}{a^2+4}$

=> Ans - (B)

Question 130

A merchant has 1000 kg sugar, part of which he sells at 8% profit and the rest at 18% profit. He gains 14% on the whole. The quantity sold 8% profit is:

A 600 kg

B 640 kg

C 400 kg

D 560 kg

Answer: C

Explanation:
Let quantity sold at 8% profit = x kg

=> Quantity sold at 18% profit = $(1000 - x)$ kg

According to ques,

=> $8(x) + 18(1000 - x) = 14(1000)$

=> $8x + 18000 - 18x = 14000$

=> $10x = 18000 - 14000 = 4000$

=> $x = \frac{4000}{10} = 400$

$\therefore$ The quantity sold 8% profit = 400 kg

=> Ans - (C)

Question 131

The quotient when 10^{100} is divided by 5^{75} is:

A 10^{25}

B 2^{75}

C 2^{75} x 10^{25}

D 2^{25} x 10^{75}

Answer: C

Explanation:

10^{100} is divided by 5^{75}

= $(2^{100} \times 5^{100}) \div (5^{75})$

= $(2^{100} \times 5^{25} \times 5^{75}) \div (5^{75})$

= $2^{100} \times 5^{25}$

= $2^{75} \times 2^{25} \times 5^{25}$

= $2^{75} \times 10^{25}$

=> Ans - (C)

Question 132

The ratio of syrup and water in a mixture is 3 : 1, then the percentage of syrup in this mixture is:

A 25%

B 66 $\frac{2}{3}$%

C 33 $\frac{1}{3}$%

D 75%

Answer: A

Explanation:
Ratio of syrup and water in a mixture = 3 : 1

=> Percentage of syrup in this mixture = $\frac{1}{(3+1)} \times 100$

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

=> Ans - (A)

Question 133

If x=y=z, then $\frac{(x+y+z)^2}{x^2+y^2+z^2}$ is:

A 2

B 3

C 1

D 4

Answer: B

Explanation:
Given : $x = y = z$

Let $x = y = z = k$

To find : $\frac{(x+y+z)^2}{x^2+y^2+z^2}$

= $\frac{(k+k+k)^2}{k^2+k^2+k^2}$

= $\frac{(3k)^2}{3k^2}$

= $\frac{9k^2}{3k^2} = 3$

=> Ans - (B)

Question 134

A man purchased an article for ₹1500 and sold it at 25% above the cost price. If he has to pay ₹75 as tax on it, his net profit percentage will be:

A 25%

B 30%

C 15%

D 20%

Answer: D

Explanation:
Cost price = Rs. 1500

Markup % = 25%

=> Selling price = $1500 + (\frac{25}{100} \times 1500)$

= $1500 + 375 = Rs.\ 1875$

Total cost price (including tax) = $1500 + 75 = Rs.\ 1575$

$\therefore$ Profit % = $\frac{(1875-1575)}{1575} \times 100$

= $\frac{300}{15.75} \approx 20\%$

=> Ans - (D)

Question 135

If $\frac{a}{b} + \frac{b}{a} = 2$, then the value of a-b is:

A 2

B -1

C 0

D 1

Answer: C

Explanation:
Given : $\frac{a}{b} + \frac{b}{a} = 2$

=> $\frac{a^2+b^2}{ab} = 2$

=> $a^2 + b^2 = 2ab$

=> $a^2 + b^2 - 2ab = 0$

=> $(a-b)^2 = 0$

=> $a - b = 0$

=> Ans - (C)

Question 136

After allowing a discount of 20%, a radio is available for ₹1200. Its marked price was:

A ₹1500

B ₹1800

C ₹1400

D ₹1550

Answer: A

Explanation:
Selling price = Rs. 1200

Discount % = 20%

=> Marked price = $\frac{1200}{(100-20)} \times 100$

= $1200 \times \frac{5}{4} = Rs. 1500$

=> Ans - (A)

Question 137

The average expenditure of a man for the first five months is ₹1200 and for the next seven months is ₹1300. If he saves ₹2900 in that year, his monthly average income is:

A ₹1600

B ₹1700

C ₹1400

D ₹1500

Answer: D

Explanation:
Average expenditure for the first 5 months = Rs. 1200

=> Total expenditure in first 5 months = $5 \times 1200 = Rs. 6000$

Similarly, total expenditure in next 7 months = $7 \times 1300 = Rs. 9100$

Total savings = $Rs. 2900$

Thus, total annual income = $6000 + 9100 + 2900 = Rs. 18000$

∴ Monthly average income = $\frac{18000}{12} = Rs. 1500$

=> Ans - (D)

Question 138

At what rate of compound interest per annum will a sum of ₹1200 become ₹1348.32 in 2 years ?

A 6.5%

B 7%

C 6%

D 7.5%

Answer: C

Explanation:
Principal sum = Rs. 1200 and amount after 2 years = Rs. 1348.32

Let rate of interest = $r\%$

Amount when interest is compounded annually = $P(1 + \frac{R}{100})^T$

=> $1200(1 + \frac{r}{100})^2 = 1348.32$

=> $(1 + \frac{r}{100})^2 = \frac{1348.32}{1200}$

=> $(1 + \frac{r}{100})^2 = 1.1236$

=> $(1 + \frac{r}{100}) = \sqrt{1.1236} = 1.06$

=> $\frac{r}{100} = 1.06 - 1 = 0.06$

=> $r = 0.06 \times 100 = 6\%$

=> Ans - (C)

Question 139

If the ratio of principal and the simple interest of 5 years is 10 : 3, then the rate of interest is:

A 6%

B 8%

C 3%

D 5%

Answer: A

Explanation:
Let principal sum = Rs. 10 and simple interest = Rs. 3

Let rate of interest = $r\%$ and time period = 5 years

Simple interest = $\frac{P \times R \times T}{100}$

=> $\frac{10 \times r \times 5}{100} = 3$

= $\frac{r}{2} = 3$

=> $r = 3 \times 2 = 6\%$

=> Ans - (A)

Question 140

If $\triangle ABC, \angle B = 90^\circ$, AB = 8 cm and BC = 15 cm then Sin c = ?

A $\frac{8}{17}$

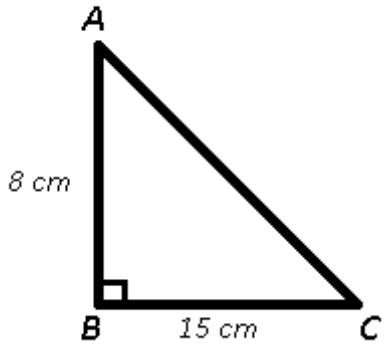
B $\frac{15}{8}$

C $\frac{8}{15}$

D $\frac{15}{17}$

Answer: C

Explanation:



Given : AB = 8 cm and BC = 15 cm

To find : $sin\ C = ?$

Solution : $sin\ C = \frac{AB}{BC}$

=> $sin\ C = \frac{8}{15}$

=> Ans - (C)

Question 141

If a man were to sell his hand-cart for ₹720, he would lose 25%. At what price must he sell it to gain 25% ?

A ₹960

B ₹1152

C ₹768

D ₹1200

Answer: D

Explanation:
Selling price = Rs. 720

Loss % = 25%

=> Cost price = $\frac{720}{(100-25)} \times 100$

= $720 \times \frac{4}{3} = Rs.\ 960$

Profit % = 25%

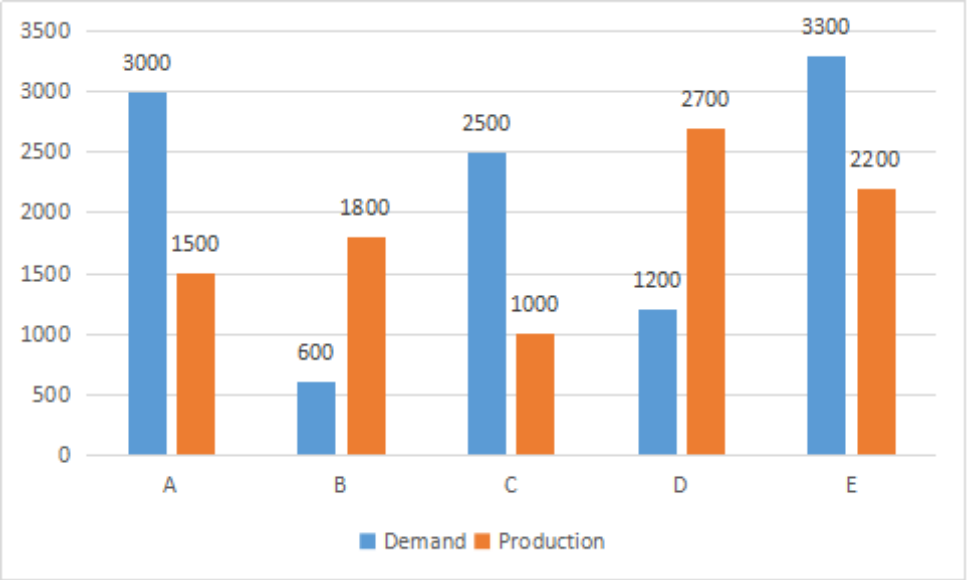
=> Selling price = $960 + (\frac{25}{100} \times 960)$

= $960 + 240 = Rs\ 1200$

=> Ans - (D)

Instructions

The following chart represents Demand and Production for 5 companies ABCDE.



On the basis of graph answer the question below given.

Question 142

The difference between average demand and average production of the five companies taken together is:

A 280

B 130

C 620

D 400

Answer: A

Explanation:
Total demand of five companies = 3000 + 600 + 2500 + 1200 + 3300 = 10,600

Total production of five companies = 1500 + 1800 + 1000 + 2700 + 2200 = 9,200

=> Difference = $10600 - 9200 = 1400$

$\therefore$ Required average difference = $\frac{1400}{5} = 280$

=> Ans - (A)

Question 143

If the production of company D is h times of the production of company A. Then h equals:

A 2.5

B 1.2

C 1.8

D 1.5

Answer: C

Explanation:
Production of company D = 2700

Production of company A = 1500

According to ques, => $2700 = h \times 1500$

=> $h = \frac{27}{15} = 1.8$

=> Ans - (C)

Question 144

If x% of demand for company C equals demand for company B, then x equals :

A 20

B 60

C 4

D 24

Answer: D

Explanation:
Demand for company C = 2500

Demand for company B = 600

According to ques, => $\frac{x}{100} \times 2500 = 600$

=> $25x = 600$

=> $x = \frac{600}{25} = 24$

=> Ans - (D)

Question 145

The ratio of the number of companies having more demand than production to those having more production than demand is:

A 2:2

B 3:2

C 2:3

D 4:1

Answer: B

Explanation:
Number of companies having more demand than production = 3 (A,C,E)

Number of companies having more production than demand = 2 (B,D)

=> Required ratio = 3 : 2

=> Ans - (B)

Question 146

If company A desires to meet the demand by purchasing surplus production of a company, then the most suitable company is:

A D

B E

C B

D C

Answer: A

Explanation:
To fulfill it demands, company A needs = $3000 - 1500 = 1500$

It cannot purchase productions from company C (since C has 1000 productions).

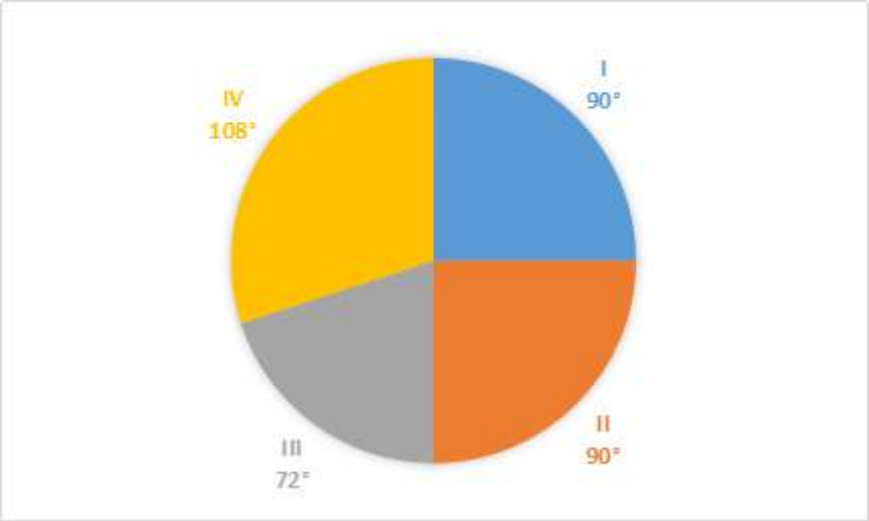
If company A purchase 1500 productions from company D, then D is left with = $2700 - 1500 = 1200$ productions, which is enough to fulfill D's demands.

Thus, the most suitable company is = **D**

=> Ans - (A)

Instructions

The total expenditure of a company for a particular month is ₹60000. The various heads of expenditure I to IV are indicated in a pie chart given below. These heads are:
I. Raw materials
II. Conveyance
III. Electricity
IV. Overhead expenses



Study the pie chart and answer Questions.

Question 147

What is the amount spent on overhead expenses ?

A ₹15,000

B ₹18,000

C ₹10,000

D ₹12,000

Answer: B

Explanation:
Total amount spent = Rs. 60,000

Amount spent on overhead expenses = $\frac{108}{360} \times 60,000$

= $3 \times 6000 = Rs.\ 18,000$

=> Ans - (B)

Question 148

Total expenditures on conveyance is:

A ₹15,000

B ₹20,000

C ₹10,000

D ₹12,000

Answer: A

Explanation:
Total amount spent = Rs. 60,000

Amount spent on overhead expenses = $\frac{90}{360} \times 60,000$

= $\frac{1}{4} \times 6000 = Rs.15,000$

=> Ans - (A)

Question 149

What percentage of total expenditure is on raw materials ?

A 30%

B 60%

C 23%

D 25%

Answer: D

Explanation:
Degree spent on raw materials = 90°

=> percentage of total expenditure on raw materials = $\frac{90}{360} \times 100$

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

=> Ans - (D)

Question 150

What percentage of total expenditure is on electricity ?

A 25%

B 30%

C 20%

D 23%

Answer: C

Explanation:
Degree spent on electricity = 72°

=> percentage of total expenditure on raw materials = $\frac{72}{360} \times 100$

= $\frac{1}{5} \times 100 = 20\%$

=> Ans - (C)

General Awareness

Instructions
For the following questions answer them individually

Question 151

The amount of matter in a ball of steel is its:

A Mass

B Density

C Volume

D Weight

Answer: E

Question 152

When price of a substitute of commodity ‘x’ falls, the demand for ‘x’:

A remains unchanged

B Increases at increasing rate

C rises

D falls

Answer: E

Question 153

Transpiration increases in:

A Hot, damp and windy condition

B Cool, damp and windy condition

C Cool, dry and still condition

D Hot, dry and windy condition

Answer: E

Question 154

If xylem and phloem are arranged in the same radius, such a vascular bundle is called :

A bicollateral

B concentric

C radial

D collateral

Answer: E

Question 155

Where did the Black-Hole tragedy took place ?

A Calcutta

B Murshidabad

C Dacca

D Monghyr

Answer: E

Question 156

What is Kyoto Protocol ?

A It is an agreement among countries to take steps for planting trees to control pollution

B It is an agreement among countries to start using nuclear energy

C It is agreement among countries to take steps for reducing global warming

D It is an agreement among countries to take steps for reducing acid rain

Answer: E

Question 157

Earth day is celebrated on:

A April 22

B September 17

C February 16

D April 4

Answer: E

Question 158

All forms of ROM are also known as _____

A Middleware

B Firmware

C Shareware

D Freeware

Answer: E

Question 159

What is the number of player on each side in Rugby Football ?

A 16

B 12

C 11

D 15

Answer: E

Question 160

Plank's constant has the dimensions of:

A linear momentum

B Angular momentum

C force

D energy

Answer: E

Question 161

Who discovered the link between electricity and magnetism ?

A Maxwell

B Diesel

C Michael Faraday

D Volta

Answer: E

Question 162

Which Article of the Indian Constitution deals with Election Commission ?

A Article 356

B Article 360

C Article 324

D Article 352

Answer: E

Question 163

The largest reservoir of fresh water is:

A Ground Water

B Ponds

C Lakes

D Glaciers

Answer: E

Question 164

Who built the famous Shiva temple at Ellora ?

A Mauryan Emperor Ashoka

B Gupta King Samudra Gupta

C Chalukyan King Pulikesi II

D Rashtrakuta Ruler Krishna I

Answer: E

Question 165

The most abundant element by number in the living system is:

A Hydrogen

B Oxygen

C Carbon

D NItrogen

Answer: E

Question 166

Which of the following phenomenon helps to conclude that light is a transverse wave ?

A diffraction

B polarisation

C refraction

D interference

Answer: E

Question 167

Which was the first linguistic state to be created ?

A Tamil Nadu

B Andhra Pradesh

C Maharashtra

D Kerala

Answer: E

Question 168

The headquarters of the Survey of India Dept. (department) is located at:

A Dehradun

B Hyderabad

C New Delhi

D Jaipur

Answer: E

Question 169

Among the following district of Tamil Nadu, which district is unfit for cultivation due to increased salinity :

A Tiruchirapalli

B Nagapattinam

C Ramanathapuram

D Coimbatore

Answer: E

Question 170

Mixed Economy means :

A Co-existence of public and private sectors

B Co-existence of rich and poor

C Co-existence of small and large Industries

D Promoting both agriculture and Industries in the economy

Answer: E

Question 171

Natural system of classification was proposed by _____ botanists

A German

B Swedish

C British

D Indian

Answer: E

Question 172

The Lalit Kala Akademi is devoted to the promotion of:

A Literature

B Music

C Dance and Drama

D Fine Arts

Answer: E

Question 173

India born Vijai Seshadri won the prestigious '2014 Pulitzer Prize in which of the following categories ?

A Poetry

B Drama

C Journalism

D Music

Answer: E

Question 174

World wild life fund was founded in:

A 1969

B 1992

C 1961

D 1965

Answer: E

Question 175

Arundhati Roy is the author of:

A Disgrace

B The Tin Drum

C My Childhood Days

D God of Small Things

Answer: E

Question 176

Minamata disease is caused by pollution of water by:

A tin

B methyl isocyanate

C mercury

D lead

Answer: E

Question 177

The “King of Metals” is:

A Silver

B Iron

C Aluminium

D Gold

Answer: E

Question 178

The first Bio-sphere Reserve in India has been established in:

A Nilgiri

B Nanda devi

C Hazaribag

D Kanha

Answer: E

Question 179

Who composed the Allahabad Pillar inscription ?

A Mahasena

B Veerasena

C Vishnusena

D Harisena

Answer: E

Question 180

Kimono is a dress style of which Asian Country ?

A Korea

B Laos

C China

D Japan

Answer: E

Question 181

By whom was the autonomous investment separated from induced investment ?

A Malthus

B Joan Robinson

C Adam Smith

D Schumpeter

Answer: E

Question 182

Amino acids are required for the synthesis of:

A Lipids

B Proteins

C Carbohydrates

D Alkaloids

Answer: E

Question 183

Dr. P. Rama Rao Committee is related to which of the following ?

A Defense

B Industry

C Agriculture

D Taxes

Answer: E

Question 184

A demand curve will not shift:

A When only prices of substitute products change

B When there is a change in advertisement expenditure

C When only price of the commodity changes

D When only income changes

Answer: E

Question 185

Kathakali is a dance prevalent in which state ?

A Andhra Pradesh

B Tamil Nadu

C Orissa

D Kerala

Answer: E

Question 186

How much of world's surface is covered by water ?

A 70%

B 80%

C 25%

D 55%

Answer: E

Question 187

Which of the following Scientist proved that the path of each planet around the Sun is elliptical ?

A Galileo

B Newton

C Copernicus

D Kepler

Answer: E

Question 188

Todar Mal, the brilliant revenue officer served under:

A Bhagwan Das

B Humayun

C Baz Bahadur

D Sher Shah

Answer: E

Question 189

The Simplest CPU - scheduling algorithm is _____

A Round - robin scheduling algorithm

B Multilevel scheduling algorithm

C FCFS Scheduling algorithm

D SJF Scheduling algorithm

Answer: E

Question 190

The most suitable unit for expressing nuclear radius is:

A fermi

B angstrom

C micron

D nanometre

Answer: E

Question 191

When was the League of Nations established ?

A In 1920

B In 1939

C In 1914

D In 1918

Answer: E

Question 192

In which of the Round Table Conference Mahatma Gandhi participated ?

A First Round Table Conference, 1930

B Second Round Table Conference, 1931

C Third Round Table Conference, 1932

D All of the above

Answer: E

Question 193

Blowing Air with open pipe is an example of:

A Isochoric process

B Isobaric process

C Adiabatic process

D Isothermal process

Answer: E

Question 194

Rand is the currency of:

A Iran

B Romania

C Norway

D Namibia

Answer: E

Question 195

Iron filling can be separated from a heterogeneous mixture using the technique of:

A Magnetization

B Sedimentation

C Evaporation

D Sublimation

Answer: E

Question 196

Christmas factor is involved in:

A Excretion

B Digestion

C Respiration

D Blood Coagulation

Answer: E

Question 197

If the President wants to resign, he shall address his letter of resignation to:

A Vice-President of India

B Speaker of Lok Sabha

C Cheif Justice of India

D Prime Minister of India

Answer: E

Question 198

Who is the author of the book “Romancing with Life” ?

A Dev Anand

B Shashi Tharoor

C Bill Clinton

D Kapil Dev

Answer: E

Question 199

The time element in price analysis was introduced by:

A Alfred Marshall

B J.S.Mill

C J.R. Hicks

D J.M.Keynes

Answer: E

Question 200

Which of the following rivers originates from Trans Himalayas ?

A Sindu

B Saraswathi

C Ganga

D Yamuna

Answer: E