

SSC CHSL 3 Feb 2017 Morning Shift

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Reasoning

Instructions

For the following questions answer them individually

Question 1

Select the related word/letters/number from the given alternatives. Five Point Someone : Chetan Bhagat : : Swami and Friends : ?

- A William Shakespeare
- B R.K. Narayan
- C Charles Dickens
- D Rabindra Nath Tagore

Answer: B

Explanation:

Chetan Bhagat is the author of book 'Five Point Someone', similarly 'Swami and Friends' is written by *R.K. Narayan*

=> Ans - (B)

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Question 2

Select the related word/letters/number from the given alternatives. EFG: OPQ::?:STU

- A GHI
- **B** LMN
- C JKL
- D IJK

Answer: D

Explanation:

Expression = EFG: OPQ::?:STU

The pattern followed is:

E	F	G
(+10)	(+10)	(+10)
0	Р	Q

Similarly, IJK: STU

I	J	К
(+10)	(+10)	(+10)
S	Т	U

=> Ans - (D)

Question 3

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

?: GA:: QR: JI

- A KN
- **B** RS
- C NQ
- D TZ

Answer: D

Explanation:

Expression = ?: GA:: QR: JI

Alphabets at the corresponding position from the reverse end are written.



Similarly, TZ: GA

=> Ans - (D)

Question 4

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

14:30::16:?

- **A** 68
- **B** 36
- **C** 34
- **D** 56

Answer: C

Explanation:

Expression = 14:30::16:?

The pattern followed is = x:2(x+1)

 $\operatorname{Eg}:14:2(14+1)=14:30$

Similarly, 2 imes (16+1) = 2 imes 17 = 34

=> Ans - (C)

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Question 5

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

- **A** Singareni
- **B** Raniganj
- **C** Jharia
- **D** Narora

Answer: D

Explanation:

Except Narora other three are coalfields, hence Narora is the odd one out.

=> Ans - (D)

Question 6

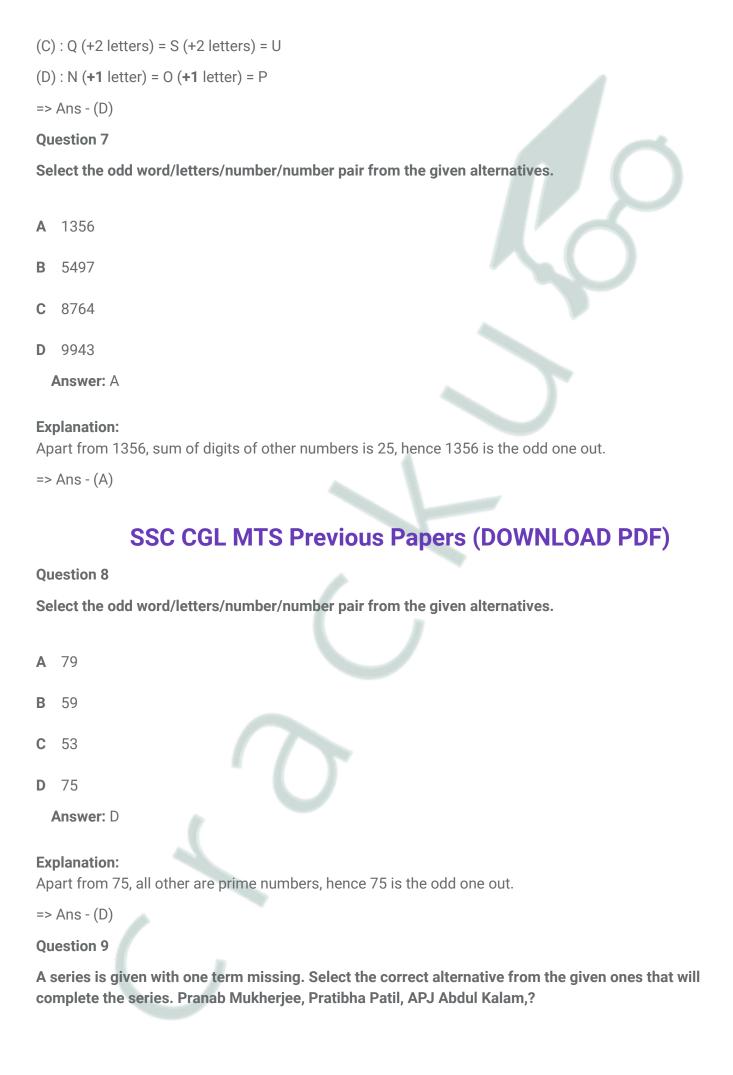
Select the odd word/letters/number/number pair from the given alternatives.

- A ZBD
- **B** JLN
- C QSU
- **D** NOP

Answer: D

Explanation:

- (A): Z (+2 letters) = B (+2 letters) = D
- (B): J (+2 letters) = L (+2 letters) = N



- A Rajendra Prasad
- **B** K.R.Narayanan
- C Shankar Dyal Sharma
- D V.V.Giri

Answer: B

Explanation:

The successive series of presidents of India.

- = Pranab Mukherjee -> Pratibha Patil -> APJ Abdul Kalam -> K.R.Narayanan
- => Ans (B)

Question 10

A series is given with one term missing. Select the correct alternative from the given ones that will complete the series. DE, HI, LM,?

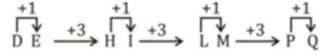
- A QA
- **B** PR
- C PQ
- **D** PU

Answer: C

Explanation:

Expression: DE, HI, LM,?

The pattern followed is:



Thus, missing term = PQ

=> Ans - (C)

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Question 11

A series is given with one term missing. Select the correct alternative from the given ones that will complete the series. PR, VX, BD, ?

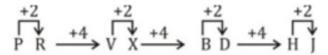
- A EF
- В Н
- C HJ
- D HK

Answer: C

Explanation:

Expression: PR, VX, BD,?

The pattern followed is:



Thus, missing term = **HJ**

=> Ans - (C)

Question 12

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

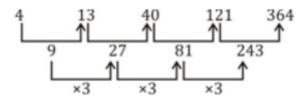
4, 13, 40, 121, ?

- **A** 350
- **B** 360
- C 364
- **D** 362

Answer: C

Explanation:

The pattern followed is:



Thus, missing number = 364

=> Ans - (C)

Ouestion 13

In the following question, two statements are given each followed by two conclusions I and II. You have to consider the statements to be true even if they seem to be at variance from commonly known facts. You have to decide which of the given conclusions, if any, follows from the given statements.

Statement:

- (I) 28 athletes are facing legal cases due to doping incidents.
- (II) The new wave of Olympic doping cases is based on evidences.

Conclusions:

- (I) The report of doping is based on the test that happen.
- (II) Doping practice is very common these days among athletes.
- A Only conclusion II follows
- B Conclusion I and II both follow
- C Neither I nor II follow
- D Only conclusion I follows

Answer: C

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Question 14

There are five boys Prem, Raju, Sundar, Hari and Ompal. Raju has more share of land than Sundar but lesser than Prem. Ompal has the least share and Hari has lesser share of land than Sundar. Who owns the highest share of land?

			-		
	O.		-1		
Δ	_ \ I	ın	$^{\circ}$	ลเ	r

B Raju

C Hari

D Prem

Answer: D

Explanation:

Raju has more share of land than Sundar but lesser than Prem, => Prem > Raju > Sundar.

Hari has lesser share of land than Sundar, => Sundar > Hari.

Also, Ompal has the least share.

Combining above statements, we get: Prem > Raju > Sundar > Hari > Ompal

... Prem owns the highest share of land.

=> Ans - (D)
Question 15
Arrange the given words in the sequence in which they occur in the dictionary.
i. Permanence ii. Permanent iii. Permafrost iv. Permeability
A ii, iii, iv, i B iii, ii, i, iv
c iv, ii, i, iii
D iii, i, ii, iv
Answer: D
Explanation: As per the order of dictionary:
= Permafrost -> Permanence -> Permanent -> Permeability
\equiv iii, i, ii, iv
=> Ans - (D)
Question 16
In a certain code language, "TOAST" is written as "03210" and "RIGID" is written as "45759". How is "DOOR written in that code language?
A 9331
B 9334
c 3390
D 1314
Answer: B
Explanation: The codes for each letter is given:
D -> 9 O -> 3 O -> 3 R -> 4
Thus, DOOR: 9334

=> Ans - (B)

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Question 17

Find the missing Number from the given Table

3	12	24
4	5	7
5	13	?

- **A** 17
- **B** 18
- **C** 22
- **D** 25

Answer: D

Question 18

If "+" means "minus", "x" means "divided by", " \div " means "plus" and "-" means "multiplied by", then $81 \times 9 + 10 - 6 \div 5 = ?$

- **A** 46
- **B** -46
- **C** -47
- **D** -74

Answer: B

Explanation:

Expression: $81 \times 9 + 10 - 6 \div 5 = ?$

$$\equiv 81 \div 9 - 10 \times 6 + 5$$

$$=9-60+5$$

$$=14-60=-46$$

Question 19

In the following question, which one set of letters when sequentially placed at	the g	aps in the	given l	etter
series shall complete it?				

a_c_e_b_de

Δ	202	ın

- B abcd
- C bdac
- **D** abdc

Answer: C

Explanation:

The pattern followed is that in groups of 5, the term 'abcde' is repeated.

- = abcde abcde
- => Ans (C)

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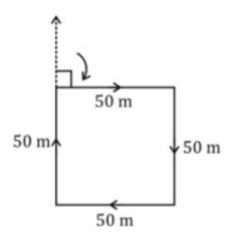
Question 20

Amit is facing north. He turns 90° right and walks for 50 m, then turns towards the south and walks 50 m, then turns right to walk for another 50 m and from there, he walks 50 m towards north. In which direction/position is he from his original position?

- A South-west
- B At the original position
- C North-east
- **D** North-west

Answer: B

Explanation:



Amit is facing north. He turns 90° right and walks for 50 m towards east, then turns towards the south and walks 50 m, then turns right to walk westwards for another 50 m and finally, he walks 50 m towards north.

Thus, he is at his original position.

Question 21

A word is represented by only one set of numbers as given in any one of the alternatives. The sets of numbers given in the alternatives are represented by two classes of alphabets as shown in the given two matrices. 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, for example, 'N' can be represented by 21, 43 etc. and 'R' can be represented by 66, 58 etc. Similarly, you have to identify the set for the word "HAIRY"

MATRIX 1

	0	1	2	3	4
0	Α	S	Е	Н	Α
1	Q	D	Н	L	S
2	W	N	Т	K	D
3	Н	D	Y	Α	F
4	R	G	Α	N	G

MATRIX 2

	5	6	7	8	9
5	Y	Т	-	R	F
6	G	R	Р	L	R
7	- 1	0	U	R	М
8	D	F	R	K	Q
9	S	R	W	D	Υ

A 03,33,57,77,99

B 03,33,57,78,96

C 03,33,57,78,99

D 03,33,75,79,99

Answer: C

Explanation:

(A): 03,33,57,77,99 = HAIUY

(B): 03,33,57,78,96 = HAIRR

(C): 03,33,57,78,99 = HAIRY

(D): 03,33,75,79,99 = HAIMY

=> Ans - (C)

Question 22

Introducing a boy, a girl says, "He is the son of the sister of my mother's brother." How is the boy related to the girl?

- A Cousin
- **B** Brother-in-law
- C Father-in-law
- **D** Niece

Answer: A

Explanation:

Sister of the girl's mother's brother = girl's aunt

Now, the boy is son of girl's aunt.

- => Boy and girl are cousins.
- => Ans (A)

SSC Stenographer Previous Papers (Latest Pattern)

Question 23

If a mirror is placed on the line MN, then which of the answer figures is the right image of the given figure?











С



D



Answer: B

Explanation:

A vertical mirror is placed, so the object on the left will appear right in reverse position and vice-versa.

So the horizontal line (on top of vertical one) in the middle will be reversed, thus the last two options are eliminated.

Also, in the question figure, the tilted line pointing bottom left will face bottom right, hence second option is the right image.

=> Ans - (B)

Question 24

Identify the diagram that best represents the relationship among the given classes. Politician, Minister, Human

Α



R



C





Answer: B

Explanation:

All ministers are politicians and all politicians are humans.

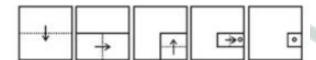
Thus, the venn diagram that best describes above relationship is:



=> Ans - (B)

Question 25

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











Answer: A

SSC GD Constable Free Mock Test (Latest Pattern) English

Instructions For the following questions answer them individually Question 26 Rearrange the parts of the sentence in correct order. This may be essential at P-where the market fails to deliver

A QRP

Q-swath of an economy R-times, but there is a wide

- **B** QPR
- C PRO
- **D** ROP

Answer: D

SSC MTS Free Mock Test (Latest Pattern)

Question 27

Improve the bracketed part of the sentence.

As management we are accountable (to) the Board of Directors.

- A towards
- B with
- C against
- D no improvement

Answer: D

Question 28

In the following question, out of the four alternatives, select the alternative which is the best substitute of the phrase.

A political leader who seeks support by appealing to popular desires and prejudices rather than by using rational argument.

- A rebel
- **B** radical

demagogue anarchistic Answer: C **Ouestion 29** In the following question, out of the four alternatives, select the alternative which best expresses the meaning of the idiom/phrase. to go for broke to risk everything in an all-out effort failure in relationship or partnership losing all money in an effort to revive a failing business to start again after failing in a business Answer: A SSC CPO Free Mock Test (Latest Pattern) **Ouestion 30** In the following question, a sentence has been given in Direct/Indirect speech. Out of the four alternatives suggested, select the one, which best express the same sentence in Indirect/Direct speech. Kunal said, "Tanu is coming this week." Kunal says that Tanu was coming that week. Kunal says that Tanu was coming this week. Kunal said that Tanu was going to be come this week. Kunal said that Tanu was coming that week.

Question 31

Answer: D

Select the word with the correct spelling.

- A paterns
- **B** smudeging

С	dissuade
D	fripery
4	Answer: C
Qu	estion 32
	prove the bracketed part of the sentence. ually the climate in the Northern parts of India is cooler (from) the Southern parts.
Α	as
В	to
С	than
D	no improvement
4	Answer: C
	25 SSC CHSL MOCKS 149
Qu	estion 33
СО	the following question, sentence given with blank is to be filled in with an appropriate word. Select the rrect alternative out of the four and indicate it by selecting the appropriate option. sbir has the of a movie star.
Α	jinx
В	charisma
С	flash
D	mysticism
4	Answer: B
Qu	estion 34
Se	lect the antonym of 'apocalypse'
Α	catastrophe
В	miracle

С	decimation
D	holocaust
4	Answer: B
Qu	estion 35
ha	the following question, some part of the sentence may have errors. Find out which part of the sentence is an error and select the appropriate option. If a sentence is free from error, select 'No Error'. e substitution of cream(A)/ instead of milk in the recipe (B)/makes for a rich dessert.(C)/No error(D)
A	A
В	В
С	C
D	D
1	Answer: C
	SSC CHSL Important Questions and Answers (Download PDF)
Qu	estion 36
Se	lect the antonym of 'to actuate'
Α	to retard
В	to spur
С	to impel
D	to propel
4	Answer: A
Qu	estion 37
We P-	arrange the parts of the sentence in correct order. e must urgently ethics that respects, and responds humanely to, the strangers in our cities and consciously develop a new
Α	RQP

- **B** PQR
- C RPO
- **D** QRP

Answer: C

Ouestion 38

In the following question, a sentence has been given in Active/Passive voice. Out of four alternatives suggested, select the one, which best expresses the same sentence in Passive/Active voice. I took the grinder yesterday.

- **A** The grinder was took by me yesterday.
- **B** The grinder was took by me the day before.
- C The grinder had been took by me the day before.
- **D** The grinder was taken by me yesterday.

Answer: D

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Question 39

Choose the correct meaning of the idiom/phrase: In the following question, out of the four alternatives, select the alternative which best expresses the meaning of the idiom/phrase. to go the extra mile

- A to get an unexpected bonus
- B to make a special effort to achieve something
- **C** to lose one's way and walk aimlessly
- D a vehicle which is very fuel efficient

Answer: B

Question 40

In the following question, some part of the sentence may have errors. Find out which part of the sentence has an error and select the appropriate option. If a sentence is free from error, select 'No Error'.

The prince and princess(A)/made their way(B)/through the cheering crowd.(C)/No error(D)

Α	A
В	В
С	C
D	D
4	Answer: D
Qu	estion 41
Se	lect the synonym of "shimmering"
Α	stolid
В	
Ь	glinting
С	daft
D	daffy
4	Answer: B
	SSC CHSL Syllabus
Qu	estion 42
In	the following question, sentence given with blank is to be filled in with an appropriate word. Select the
	rrect alternative out of the four and indicate it by selecting the appropriate option.
ın	e enzyme was the that triggered the chemical reaction.
Α	catalyst
В	support
С	encouragement
D	incitation
	Answer: A
Qu	uestion 43
Se	lect the word with the correct spelling.

A adendum

e of		
Question 45		
Select the synonym of "bounder"		
the		

A	A Give	
В	B Given	
С	C Giving	
D	D To give	
	Answer: B	
Qı	Question 47	
th in	In the following passage, some of the words have been left out. Read to correct answer for the given blank out of the four alternatives. the many existing cyber warfare scenarios, not excluding a coordinate infrastructure assets, erecting proper defences is. Anonymity and low disaffected groups — apart from hostile states and official agencies — coordinated cyber attack that sabotage multiple infrastructure assets	ed cyber attack that sabotage multiple of cost have meant that small
A	A would	
В	B should	
С	c could	
D	D will	
	Answer: C	
	SSC CHSL Study Mater	rial
Qı	Question 48	
th in	In the following passage, some of the words have been left out. Read to correct answer for the given blank out of the four alternatives. the many existing cyber warfare scenarios, not excluding a coordinate infrastructure assets, erecting proper defences is. Anonymity and low disaffected groups — apart from hostile states and official agencies — erecting proper defences is.	ed cyber attack that sabotage multiple or cost have meant that small
A	A vital	
В	B vitality	
С	C to vital	
D	D vitalness	

Answer: A

Question 49

In the following passage, some of the words have been left out. Read the passage carefully and select the correct answer for the given blank out of the four alternatives.

the many existing cyber warfare scenarios, not excluding a coordinated cyber attack that sabotage multiple infrastructure assets, erecting proper defences is . Anonymity and low cost have meant that small disaffected groups — apart from hostile states and official agencies — could to cyber techniques. Anonymity and low cost have meant that small disaffected groups

B not only

C even

D both

Answer: C

Question 50

In the following passage, some of the words have been left out. Read the passage carefully and select the correct answer for the given blank out of the four alternatives.

the many existing cyber warfare scenarios, not excluding a coordinated cyber attack that sabotage multiple infrastructure assets, erecting proper defences is . Anonymity and low cost have meant that small disaffected groups — apart from hostile states and official agencies — could to cyber techniques. hostile states and official agencies — could to cyber techniques.

Λ	- 1	\sim	m	r

B lodge

C park

D resort

Answer: D

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General Awareness

Instructions

For the following questions answer them individually

Question 51

Group of Monuments at Hampi is in .

- **A** Karnataka
- **B** Madhya Pradesh
- C Maharashtra
- **D** Rajasthan

Answer: A

SSC CHSL Free Mock Test

Question 52

Which movie has not won the National Film Award for Best Feature Film?

- A Court
- R Taare Zameen Par
- C Baahubali: The Beginning
- **D** Ship of Theseus

Answer: B

Question 53

Bambusa dendrocalmus is the scientific name of .

- A Banyan
- **B** Papaya
- **C** Bamboo
- **D** Pomegranate

Answer: C

Question 54

Acinonyx Jubatus is the scientific name of .

A Bear

В	Horse
С	Cheetah
D	Zebra
	Answer: C
	SSC CHSL Prevoius Papers (DOWNLOAD PDF)
Qu	estion 55
Ato	omic number of which of the following elements is greater than that of Zinc
A	Copper
В	Iron
С	Chromium
D	Bromine
1	Answer: D
Qu	estion 56
Со	mmonly used abbreviation SEO in computer science stands for?
Α	System Engine Optimization
В	Search Engine Optimization
С	Structured Engine Optimization
D	Single Engine Optimization
	Answer: B
Qu	estion 57
Ch	ang Lo is a folk dance of .
Α	Arunachal Pradesh
В	Punjab
С	Assam

D	Nagaland
	Answer: D

SSC CGL MTS Previous Papers (DOWNLOAD PDF)

Question 58

If one more cobbler is hired the output of a shoe making unit will increase from 50 pairs of shoes to 55 pairs per day, but then the shoe making unit will have to reduce the price of a pair of shoes from Rs 3200 to Rs 3000 per pair to sell the additional output, the marginal revenue product of the last cobbler is

A	Rs 1000
В	Rs 5000
С	Rs 4000
D	Rs 200
	Answer: B
Qu	estion 59
Th	e Law of Demand is based on the concept that people.
Α	buy more of a good as their income increases.
В	buy more of a good as the price of the good falls.
С	will spend all of their money on something.
D	want more of everything even if they have no money to buy anything.
	Answer: B
Qu	estion 60
Th	e ozone layer is mainly found in the lower portion of the .
Α	stratosphere
В	troposphere
С	mesosphere
D	thermosphere

SSC CGL GD Constable Previous Papers (DOWNLOAD PDF)

Question 61

Ra	nthambore Tiger Reserve is in which state?
A	Rajasthan
В	Andhra Pradesh
С	Arunachal Pradesh
D	Uttarakhand
1	Answer: A
Qu	estion 62
Но	w many Union Territories are there in India?
Α	6
В	7
С	8
D	9
4	Answer: B
Qu	estion 63
ΑI	nard coal containing little volatile matter is called .
A	Loess
В	Anthracite
С	Atoll
D	Lava
	Answer: B

SSC Stenographer Previous Papers (DOWNLOAD PDF)

Question 64 Port of Spain is the Capital City of . Saudi Arabia North Korea Czech Republic Trinidad and Tobago **Answer:** D **Question 65** Chanakya was the chief advisor of which king? Babur Chandragupta Maurya Akbar Kautilya **Answer:** B **Question 66** Battle of Haldighati in 1576 was fought between Akbar and . Sher Shah Maharana Pratap Hemu Vikramaditya **Nader Shah Answer:** B

SSC CGL Previous Papers (DOWNLOAD PDF)

Question 67

Who invented JavaScript the programming language?

Brendan Eich

Willem Einthoven George Eastman **Emil Erlenmeyer Answer:** A **Ouestion 68** of a material is defined as the minimum amount of the work necessary to remove a free electron from the surface of the material. The electro-repulsive force The coulomb factor The power factor The work function **Answer:** D **Question 69** Human beings' hearing range is . 50 to 50,000 Hz 40 to 40,000 Hz 30 to 30,000 Hz 20 to 20,000 Hz Answer: D **SSC CGL Free Mock Test (Latest Pattern) Question 70** Which State has the highest Lok Sabha seats in India? Maharashtra Madhya Pradesh

С	Uttar Pradesh
D	Bihar
	Answer: C
Qu	estion 71
Th	e number of parliamentary seats (Lok Sabha) of Andhra Pradesh is .
Α	2
В	13
С	20
D	25
	Answer: D
Qu	estion 72
Nu	mber of players in a Kabaddi team is .
A	3
В	12
С	5
D	9
4	Answer: B
	SSC Stenographer Previous Papers (Latest Pattern)
Qu	estion 73
Wł	no is the author of "India: From Midnight to the Millennium"?
A	Anuj Tiwari
В	Mitali Meelan
С	Shashi Tharoor
D	Jhumpa Lahiri

	Answer: C		
Qı	uestion 74		
De	cane has how many hydrogen atoms?		
A	22		
В	33		
С	11		
D	44		
	Answer: A		
Qı	uestion 75		
Th	e pale yellow colour of urine is due to the presence of which pigment?		
A	Urochrome		
В	Urophyll		
С	Chlorophyll		
D	Chloroplast		
	Answer: A		
	SSC GD Constable Free Mock Test (Latest Pattern)		
	Mathematics		
	structions r the following questions answer them individually		
	uestion 76		
	a class of 60 students there are 30 girls. The average weight of these girls is 58 Kg and average weight		
of	the full class is 63 kgs. What is the average weight of the boys of the class?		
A	67		
В	66		
С	68		

Explanation:

Total number of students = 60 and number of girls = 30

=> Number of boys in class = 60 - 30 = 30

Average weight of girls = 58 kg

=> Total weight of girls = 58 imes 30 = 1740 kg

Similarly, total weight of full class = $63 \times 60 = 3780 \ \mathrm{kg}$

=> Total weight of boys = 3780 - 1740 = 2040 kg

 \therefore Average weight of boys = $\frac{2040}{30} = 68 \text{ kg}$

=> Ans - C)

SSC MTS Free Mock Test (Latest Pattern)

Question 77

Two students appeared for an examination. One of them secured 21 marks more than the other and his marks were 80% of the sum of their marks. The marks obtained by them are

- **A** 88 and 67
- **B** 89 and 68
- **C** 28 and 7
- **D** 98 and 77

Answer: C

Explanation:

Let marks scored by 1st student = \boldsymbol{x}

=> Marks scored by another student = $\left(x+21
ight)$

According to question, => $(x+21)=rac{80}{100} imes(x+x+21)$

$$\Rightarrow x + 21 = \frac{4}{5} \times (2x + 21)$$

$$\Rightarrow 5x + 105 = 8x + 84$$

$$\Rightarrow 8x - 5x = 105 - 84 = 21$$

$$\Rightarrow x = \frac{21}{3} = 7$$

... Marks scored by other student = 7 + 21 = 28

=> Ans - (C)

Question 78

Pannalal has done 1/3rd of a job in 20 days, Saiprasad completes the rest of the job in 10 days. In how many days can they together do the job?

- A 12 days
- **B** 6 days
- C 3 days
- D 24 days

Answer: A

Explanation:

Let total work to be done = 60 units

Work done by Pannalal in 20 days = $\frac{1}{3} \times 60 = 20$ units

Pannalal's efficiency = $\frac{20}{20}=1$ unit/day

Remaining work = 60 - 20 = 40 units

Saiprasad completes 40 units in 10 days

=> Saiprasad's efficiency = $\frac{40}{10}=4$ units/day

(Pannalal + Saiprasad)'s 1 day's work = 1 + 4 = 5 units/day

. Time taken by them together to do the job = $\frac{60}{5}=12$ days

=> Ans - (A)

Question 79

If Giridhar's salary is 5/3 times of Hariraj's and Shaunak's is 2/3 times of Hariraj's, what is the ratio of Giridhar's salary to Shaunak's.

- **A** 9:10
- **B** 10:9
- **C** 5:2
- **D** 2:5

Answer: C

Explanation:

Let Hariraj's salary = 3x

- => Giridhar's salary = $\frac{5}{3} imes 3x = 5x$
- => Shaunak's salary = $rac{2}{3} imes 3x = 2x$
- \therefore Ratio of Giridhar's salary to Shaunak's = $\frac{5x}{2x}$
- = 5:2
- => Ans (C)

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Question 80

If $\sec -7\pi/4 = x$, then the value of x is

- **A** √2
- **B** -√2
- **C** -1/√3
- **D** -1

Answer: A

Explanation:

Expression : $\sec -7\pi/4 = x$

$$\because sec(-x) = sec(x)$$

=
$$sec(rac{-7\pi}{4})=sec(rac{7\pi}{4})$$

=
$$sec(2\pi - \frac{\pi}{4}) = sec(\frac{\pi}{4})$$

$$=\sqrt{2}$$

Question 81

What should be the missing digit so that the number 275_476 becomes exactly divisible by 11?

- **A** 6
- **B** 4
- **C** 2
- **D** 3

Answer: D

Explanation:

For a number to be divisible by 11, difference between the sum of digits at odd places and even places (starting from right to left) should be divisible by 11.

Let the number be = 275x476

Sum of digits at odd places = 6+4+5+2=17

Sum of digits at even places = 7 + x + 7 = (14 + x)

Difference = 17 - 14 - x = 3 - x

Now, for (3-x) to be divisible by 11, it should be equal to 11 or 0 but if it is equal to 11, then x will be negative, thus

$$=> 3 - x = 0$$

$$\Rightarrow x = 3 - 0 = 3$$

Ouestion 82

If tan(A/2) = x, then the value of x is

A
$$(1-cosA)/sinA$$

$$B (1 + cosA)/sinA$$

$$\int \sqrt{[(1-cosA)/sinA]}$$

$$\sqrt{[(1+\cos A)/\sin A]}$$

Answer: A

Explanation:

Using double angle formula, we know that $cos(2\theta) = cos^2\theta - sin^2\theta$

$$\Rightarrow cos(2\theta) = (1 - sin^2\theta) - sin^2\theta$$

$$\Rightarrow cos(2\theta) = 1 - 2sin^2\theta$$

Replacing θ by $\frac{A}{2}$, we get :

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

$$\Rightarrow 2sin^2(\frac{A}{2}) = 1 - cosA$$

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

=>
$$sin(\frac{A}{2}) = \sqrt{\frac{(1-cosA)}{2}}$$

Similarly, =>
$$cos(\frac{A}{2}) = \sqrt{\frac{(1+cosA)}{2}}$$

Now, to find : $tan(\frac{A}{2})$

$$= sin(\frac{A}{2}) \div cos(\frac{A}{2})$$

$$= \sqrt{\frac{(1-\cos A)}{2}} \cdot \sqrt{\frac{(1+\cos A)}{2}}$$

$$= \sqrt{\frac{(1-\cos A)}{2}} \times \sqrt{\frac{2}{(1+\cos A)}}$$

$$= \sqrt{\frac{1-\cos A}{1+\cos A}}$$

$$= \sqrt{\frac{1-\cos A}{1+\cos A}} \times \frac{1-\cos A}{1-\cos A}$$

$$= \sqrt{\frac{(1-\cos A)^2}{1-\cos^2 A}} = \sqrt{\frac{(1-\cos A)^2}{\sin^2 A}}$$

$$= \frac{1 - \cos A}{\sin A}$$

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Question 83

If $(secA-tanA)^2$ = x, then the value of x is

A
$$(1 + sinA)/(1 - sinA)$$

B
$$\sqrt{[(1-sinA)/(1+sinA)]}$$

$$(1 - sinA)/(1 + sinA)$$

D
$$\sqrt{[(1+sinA)/(1-sinA)]}$$

Answer: C

Explanation:

Expression : $(secA - tanA)^2$

$$= \left(\frac{1}{\cos A} - \frac{\sin A}{\cos A}\right)^2$$

=
$$\left(\frac{1-\sin A}{\cos A}\right)^2 = \frac{(1-\sin A)^2}{\cos^2 A}$$

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

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

$$= \frac{1 - sinA}{1 + sinA}$$

Question 84

If a cylinder of radius 4 cm and height 8 cm is melted and constructed into a cone of the same radius, what will be the height of this cone?

- **A** 48 cm
- **B** 24 cm
- **C** 8 cm
- **D** 12 cm

Answer: B

Explanation:

Radius of cylinder, $R=4\,\mathrm{cm}$ and height of cylinder, $H=8\,\mathrm{cm}$

Let height of cone = h cm and radius of cone, $r=4\,\mathrm{cm}$

According to ques, volume of cone = volume of cylinder

$$\Rightarrow \frac{1}{3}\pi r^2 h = \pi R^2 H$$

$$\Rightarrow \frac{1}{3} \times (4)^2 \times h = (4)^2 \times 8$$

=>
$$h=8 imes3=24\,\mathrm{cm}$$

=> Ans - (B)

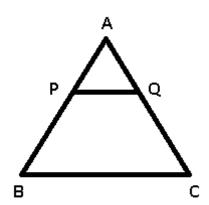
Question 85

Points P and Q lie on side AB and AC of triangle ABC respectively such that segment PQ is parallel to side BC. If the ratio of AP:PB is 2:3, and area of Δ APQ is 8 sq cm, what is the area of trapezium PQCB?

- **A** 50 sq cm
- **B** 18 sq cm
- **C** 14 sq cm
- **D** 42 sq cm

Answer: D

Explanation:



It is given that AP: PB = 2:3

Let AP = 2 cm and PB = 3 cm

Let area of trapezium PQCB = x sq cm

In \triangle APQ and \triangle ABC

$$\angle$$
 PAQ = \angle BAC (common)

$$\angle$$
 APQ = \angle ABC (Alternate interior angles)

=>
$$\triangle$$
 APQ \sim \triangle ABC

=> Ratio of Area of \triangle APQ : Area of \triangle ABC = Ratio of square of corresponding sides = $(AP)^2$: $(AB)^2$

$$=\frac{(2)^2}{(2+3)^2}=\frac{8}{(8+x)}$$

=>
$$\frac{8}{8+x} = \frac{4}{25}$$

=>
$$8 + x = \frac{25 \times 8}{4} = 50$$

$$\Rightarrow x = 50 - 8 = 42cm^2$$

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Question 86

Find equation of the perpendicular bisector of segment joining the points (2,-5) and (0,7)?

A
$$x - 6y = 5$$

B
$$x + 6y = -5$$

C
$$x - 6y = -5$$

D
$$x + 6y = 5$$

Answer: C

Explanation:

Let line l perpendicularly bisects line joining A(2,-5) and B(0,7) at C, thus C is the mid point of AB.

=> Coordinates of C =
$$(\frac{2+0}{2}, \frac{-5+7}{2})$$

$$=\left(\frac{2}{2},\frac{2}{2}\right)=(1,1)$$

Now, slope of AB =
$$\frac{y_2-y_1}{x_2-x_1} = \frac{(7+5)}{(0-2)}$$

$$= \frac{12}{-2} = -6$$

Let slope of line l=m

Product of slopes of two perpendicular lines = -1

$$=> m \times -6 = -1$$

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

Equation of a line passing through point (x_1,y_1) and having slope m is $(y-y_1)=m(x-x_1)$

 \therefore Equation of line l

$$\Rightarrow (y-1) = \frac{1}{6}(x-1)$$

$$=> 6y - 6 = x - 1$$

$$\Rightarrow x - 6y = 1 - 6 = -5$$

Question 87

Raghunandan sells a machine for Rs 45 lakhs at a loss. Had he sold it for Rs 55 lakh, his gain would have been 9 times the former loss. Find the cost price of the machine.

- A Rs 54 lakhs
- B Rs 46 lakhs
- C Rs 60 lakhs
- D Rs 38 lakhs

Answer: B

Explanation:

Let cost price of the machine = Rs. x lakhs

When selling price = Rs. 45 lakhs

=> Loss = Rs.
$$(x-45)$$
 lakhs

If selling price = Rs. 55 lakhs

=> Profit = Rs.
$$(55-x)$$
 lakhs

According to ques, Profit = $9 \times loss$

$$=> (55 - x) = 9 \times (x - 45)$$

$$=>55-x=9x-405$$

$$\Rightarrow 9x + x = 405 + 55 = 460$$

=>
$$x = \frac{460}{10} = \text{Rs. } 46 \text{ lakhs}$$

Question 88

What is the measure of an interior angle of a regular decagon?

- **A** 120°
- **B** 140°
- **C** 144°
- **D** 150°

Answer: C

Explanation:

Sum of all interior angles of a polygon having n sides = $(n-2) imes 180^\circ$

Number of sides of decagon, n=10

=> Sum of interior angles =
$$(10-2) imes 180^\circ$$

$$= 8 \times 180 = 1440^{\circ}$$

In a regular decagon, all sides are equal and thus all angles are equal.

. . Measure of each angle =
$$\frac{1440}{10} = 144^\circ$$

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Question 89

The circumference of a circle is 88 cm, find its area?

- **A** 616 sq cm
- **B** 308 sq cm
- C 154 sq cm
- **D** 77 sq cm

Answer: A

Explanation:

Let the radius of circle = r cm

Circumference of circle = $2\pi r = 88$

=>
$$2 imes rac{22}{7} imes r = 88$$

=>
$$r=rac{88 imes7}{44}=14~\mathrm{cm}$$

$$\therefore$$
 Area of circle = πr^2

$$=\frac{22}{7}\times(14)^2$$

=
$$22 imes 2 imes 14 = 616 cm^2$$

Question 90

At 15% discount the selling price of a microwave oven is Rs 34000, what is the selling price if the discount is 37.5%?

- **A** Rs 25000
- **B** Rs 15625
- C Rs 17968.75
- **D** Rs 29218.75

Answer: A

Explanation:

Let Marked Price of the oven = Rs.100x

If discount is 15%, Selling price =
$$rac{100-15}{100} imes 100x = 85x$$

According to ques, => 85x = 34000

$$\Rightarrow x = \frac{34000}{85} = 400$$

If discount is 37.5%, selling price = $rac{100-37.5}{100} imes100x=62.5x$

=
$$62.5 imes 400 = Rs.25,000$$

Question 91

Coefficient of x in (x + 9)(8 - 5x) is

- **A** 37
- **B** -53
- **C** -37
- **D** 53

Answer: C

Explanation:

A coefficient is a numerical or constant quantity placed before and multiplying the variable in an algebraic expression. Eg : In ax^2 , coefficient is a

Expression : (x+9)(8-5x)

$$=8x-5x^2+72-45x$$

$$=-5x^2-37x+72$$

$$\therefore$$
 Coefficient of $x = -37$

SSC CHSL Syllabus

Question 92

At what rate of compound interest per annum will a sum of Rs 10000 become Rs 12321 in 2 years?

- A 22 percent
- **B** 11 percent
- **c** 7 percent
- **D** 15 percent

Answer: B

Explanation:

Let rate of interest = r%

Sum under compound interest = Rs. 10,000 and time period = 2 years

=> Amount =
$$P(1+\frac{R}{100})^T=12,321$$

$$\Rightarrow 10,000(1+\frac{r}{100})^2=12,321$$

$$\Rightarrow (1 + \frac{r}{100})^2 = \frac{12321}{10000} = 1.2321$$

$$\Rightarrow 1 + \frac{r}{100} = \sqrt{1.2321} = 1.11$$

$$\Rightarrow \frac{r}{100} = 1.11 - 1 = 0.11$$

=>
$$r = 0.11 \times 100 = 11\%$$

Question 93

If x - y = -9 and xy = -20, then find $x^2 + y^2$

- **A** 61
- **B** 41
- **C** 85

Explanation:

Given:
$$(x-y) = -9$$
 and $xy = -20$

Using
$$(x - y)^2 = x^2 + y^2 - 2xy$$

$$=> (-9)^2 = (x^2 + y^2) - (2 \times -20)$$

$$=>(x^2+y^2)=81-40=41$$

Question 94

Two cars travel from city A to city B at a speed of 36 and 54 km/hr respectively. If one car takes 3.5 hours lesser time than the other car for the journey, then the distance between City A and City B is

- **A** 454 km
- **B** 567 km
- C 302 km
- **D** 378 km

Answer: D

Explanation:

Let the distance between City A and City B = d km

Speed of first car = 36 km/hr and speed of second car = 54 km/hr

Let time taken by first car = t hrs and time taken by second car = (t-3.5) hrs

Using, speed = distance/time for first car:

$$\Rightarrow \frac{d}{t} = 36$$

=>
$$d = 36t$$
 -----(i)

For second car, =>
$$\frac{d}{t-3.5}=54$$

Substituting value of \boldsymbol{d} from equation (i), we get :

$$=>36t=54t-189$$

$$\Rightarrow 54t - 36t = 18t = 189$$

$$=> t = \frac{189}{18} = \frac{21}{2} \text{ hrs}$$

From equation (i), => $d=36 imes rac{21}{2}=378$ km

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Ouestion 95

Product of digits of a 2-digit number is 72. If we add 9 to the number, the new number obtained is a number formed by interchange of the digits. Find the number.

- **A** 98
- **B** 89
- **C** 78
- **D** 87

Answer: B

Explanation:

Let the unit's digit of the number be y and ten's digit be x

$$\Rightarrow$$
 Number = $10x + y$

Product of digits = $x \times y = 72$ -----(i)

According to question, => 10x + y + 9 = 10y + x

$$=> 9y - 9x = 9$$

$$= y - x = \frac{9}{9} = 1 -$$
 (ii)

Solving equation (i) and (ii), we get : x=8 and y=9

- ∴ Number = 89
- => Ans (B)

Question 96

If 4x - 5(2x - 1) > 2x + 3 > 2 - 3x; then x can take which of the following values?

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

Answer: B

Explanation:

Expression 1: 2x + 3 > 2 - 3x

$$\Rightarrow 2x + 3x > 2 - 3$$

$$=> x > \frac{-1}{5}$$
 -----(i)

Expression 2 : 4x - 5(2x - 1) > 2x + 3

$$=> -6x + 5 > 2x + 3$$

$$\Rightarrow 2x + 6x < 5 - 3$$

$$\Rightarrow x < \frac{1}{4}$$
 -----(ii)

Combining inequalities (i) and (ii), we get : $\frac{-1}{5}$ < x < $\frac{1}{4}$

Thus, only value that x can take among the options = $\mathbf{0}$

Ouestion 97

Read data given in table and answer the Given Questions

What is the average bonus in rupees?

	No of Employees	Annual salary	Bonus Percent of salary
Mnager	1	16	60%
Executive	5	16	30%
Trainee	1	2	20%

- **A** 485714
- **B** 6039999
- **c** 260000
- **D** 412000

Answer: A

Explanation:

Total bonus of managers (in lakh) = $1 imes 16 imes rac{60}{100} = 9.6$ lakhs

Total bonus of executive (in lakh) = $5 imes 16 imes rac{30}{100} = 24$ lakhs

Total bonus of trainee (in lakh) = $1 imes 2 imes rac{20}{100} = 0.4$ lakhs

=> Average bonus in rupees = $\frac{(9.6+24+0.4)}{(1+5+1)}$

= $\frac{34}{7}$ = 4.85714 lakhs = 4,85,714

=> Ans - (A)

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Question 98

Read the Given Data in the table and answer the Given Questions

For which of the following pairs of Years the exports from the all the three companies are equal?

	2011	2012	2013	20114	2015
Company A	3000	4000	3000	3000	3000
Company B	2000	2000	1000	4000	2000
Company C	4000	3000	1000	3000	1000

A 2011 & 2013

B 2013 & 2015

C 2011 & 2012

D 2014 & 2015

Answer: C

Explanation:

Total exports from the three companies together in:

2011 = 3000 + 2000 + 4000 = 9000

2012 = 4000 + 2000 + 3000 = 9000

2013 = 3000 + 1000 + 1000 = 5000

2014 = 3000 + 4000 + 3000 = 10000

2015 = 3000 + 2000 + 1000 = 6000

Clearly, total exports in 2011 and 2012 are equal to 9000

=> Ans - (C)

Question 99

Read the following Data and answer the given Question

What was the total Profit or Loss of the Company over the five years?

Year	Profit/(-Loss) in Crores
2011	-25
2012	-20
2013	-5
2014	20
2015	-20

A Profit of Rs 50 crores

- B Loss of Rs 60 crores
- C Loss of Rs 50 crores
- **D** Loss of Rs 90 crores

Answer: C

Explanation:

Total profit or loss in Rs. crore in last 5 years

$$= 20 - 70 = -50$$

Since, it is negative, thus loss of Rs. 50 crore

Question 100

Read the data and answer the given questions

Jewellery is what percentage of the Total Exports?

India's Exports in 2015	Value in Million US \$	
Jewellery	1000	
Softyware	725	
Cotton	700	
Steel	700	
Electronics	700	

- A 28.64 percent
- B 31.14 percent
- C 23.64 percent
- D 26.14 percent

Answer: D

Explanation:

Value in millions of Jewelry = 1000

Total exports = 1000 + 725 + 700 + 700 + 700 = 3825

=> % of Jewelry in total exports =
$$\frac{1000}{3825} \times 100$$

=
$$\frac{4000}{153} pprox 26.14\%$$

=> Ans - (D)

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