



Your Personal Exams Guide



NDA



CDS



SSC CGL



CBSE UGC NET



IAS



SSC CHSL



CTET



MPSC



AFCAT



CSIR UDC NET



IBPS PO



UP POLICE



SSC MTS



SBI PO



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UP TET



IBPS RRB



IBPS CLERK



IES



UPSC CAPF



SSC Stenogr..



RRB NTPC



SSC GD



RBI GRADE B



RBI Assistant



DSSSB

SSC CHSL 2017 (Tier-I) Previous Year Paper (23-Mar-2018) (Shift 3)

Total Time: 1 Hour

Total Marks: 200

Instructions

Sl No.	Section Name	No. of Question	Maximum Marks	Negative Marks	Positive Marks
1	English Language	25	50	0.5	2
2	General Intelligence	25	50	0.5	2
3	Quantitative Aptitude	25	50	0.5	2
4	General Awareness	25	50	0.5	2

- 1.) A total of 60 minutes is allotted for the examination.
- 2.) The server will set your clock for you. In the top right corner of your screen, a countdown timer will display the remaining time for you to complete the exam. Once the timer reaches zero, the examination will end automatically. The paper need not be submitted when your timer reaches zero.
- 3.) There will, however, be sectional timing for this exam. You will have to complete each section within the specified time limit. Before moving on to the next section, you must complete the current one within the time limits.

English Language

1. Rearrange the parts of the sentence in correct order.

(+2, -0.5)

What makes this "victory"

P-even more surprising was

Q-the complete asymmetry of

R-the two sides involved

a. QRP

b. RPQ

c. PRQ

d. PQR

2. 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'.

(+2, -0.5)

He has seen (A)/ some bad days (B) / but now he is well off. (C)/ No error(D)

a. 1

b. 2

c. 3

d. 4

3. In the following question, out of the four alternatives, select the alternative which is the best substitute of the phrase. (+2, -0.5)

Involving many carefully arranged parts or details; detailed and complicated in design and planning.

- a. labyrinthine
- b. facile
- c. elaborate
- d. prodigious

4. In the following question, out of the four alternatives, select the alternative which is the best substitute of the phrase. (+2, -0.5)

Respect and admiration.

- a. peccant
- b. culpable
- c. vicious
- d. esteem

5. In the following question, the sentence given with blank to be filled in with an appropriate word. Select the correct alternative out of the four and indicate it by selecting the appropriate option. (+2, -0.5)

A _____ education needs to include reading, writing, math, and a variety of other subjects.

- a. organic

- b. fundamental
- c. primitive
- d. radical

6. In the following question, the sentence given with blank to be filled in with an appropriate word. Select the correct alternative out of the four and indicate it by selecting the appropriate option. (+2, -0.5)

Each day, the price of gold will _____ on the market.

- a. fluctuate
- b. wave
- c. flutter
- d. vibrate

7. 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. (+2, -0.5)

Anita will arrange the dresses.

- a. The dresses would be arranged by Anita.
- b. The dresses would have been arranged by Anita.
- c. The dresses would have had been arranged by Anita.
- d. The dresses will be arranged by Anita.

8. Improve the bracketed part of the sentence.

(+2, -0.5)

My daughter (is loving) Glucose biscuits.

- a. has been loving
- b. loves to
- c. loves
- d. no improvement

9. 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.

(+2, -0.5)

_____ democracies, citizens have command
_____ who they want to be represented by as well as the
competence to define issues worthy of representation. Outside the domain
of often _____ party politics lies an entire terrain of
collective action _____ which citizens press their collective
will upon those _____ rule.

_____ democracies

- a. In
- b. Into
- c. Inside
- d. Inner

10. 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

(+2, -0.5)

the four alternatives.

_____ democracies, citizens have command
 _____ who they want to be represented by as well as the
 competence to define issues worthy of representation. Outside the
 domain of often _____ party politics lies an entire
 terrain of collective action _____ which citizens press their
 collective will upon those _____ rule.

citizens have command _____

- a. on
- b. about
- c. over
- d. with

11. 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. (+2, -0.5)

_____ democracies, citizens have command
 _____ who they want to be represented by as well as the
 competence to define issues worthy of representation. Outside the domain
 of often _____ party politics lies an entire terrain of
 collective action _____ which citizens press their collective
 will upon those _____ rule.

Outside the domain of often _____ party

- a. smelly
- b. obnoxious
- c. odourful

d. rancid

12. 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. (+2, -0.5)

_____ democracies, citizens have command
_____ who they want to be represented by as well as the
competence to define issues worthy of representation. Outside the
domain of often _____ party politics lies an entire
terrain of collective action _____ which citizens press their
collective will upon those _____ rule.

politics lies an entire terrain of collective action _____

- a. through
- b. to
- c. into
- d. for

13. 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. (+2, -0.5)

_____ democracies, citizens have command
_____ who they want to be represented by as well as the
competence to define issues worthy of representation. Outside the
domain of often _____ party politics lies an entire
terrain of collective action _____ which citizens press their
collective will upon those _____ rule.

which citizens press their collective will upon those
_____ rule.

- a. whom
- b. which
- c. whosoever
- d. who

14. Select the word with the correct spelling.

(+2, -0.5)

- a. Asyrian
- b. Apustate
- c. Marzipan
- d. Cucamber

15. In the following question, out of the four alternatives, select the alternative which best expresses the meaning of the idiom/phrase.

(+2, -0.5)

Hocus pocus

- a. walking in a zig-zag manner, especially under the influence of alcohol
- b. meaningless talk or activity, typically designed to trick someone
- c. rich people but who are shallow and greedy
- d. doing a job haphazardly

16. Improve the bracketed part of the sentence.

(+2, -0.5)

Your character depends on (your upbringing).

- a. how you were brought.
- b. your up bringing
- c. your way of upbringing.
- d. no improvement

17. Select the word with the correct spelling.

(+2, -0.5)

- a. Iminent
- b. Mouerning
- c. Laticed
- d. Neoplasm

18. Rearrange the parts of the sentence in correct order.

(+2, -0.5)

The current Indian

P-establishment's priorities

Q-independence of writers

R-do not include the

- a. RPQ
- b. QRP
- c. PRQ
- d. QPR

19. In the following question, out of the four alternatives, select the alternative which best expresses the meaning of the idiom/phrase. (+2, -0.5)

to hit the sack

- a. to prepare for sleep
 - b. to die
 - c. to take one's anger out
 - d. to hit where it hurts the most
-

20. Select the synonym of (+2, -0.5)

Blabber

- a. wary
 - b. nonsense
 - c. sophic
 - d. sapient
-

21. Select the synonym of (+2, -0.5)

to admonish

- a. to reprimand
- b. to rave
- c. to panegyryze
- d. to eulogise

22. Select the antonym of

(+2, -0.5)

divulgence

- a. testimony
- b. repudiation
- c. assent
- d. revelation

23. Select the antonym of

(+2, -0.5)

stratagem

- a. frankness
- b. ruse
- c. gimmick
- d. ploy

24. 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'. (+2, -0.5)

I don't think I shall(A)/ get through all(B)/ this work this afternoon.(C)/ No error(D)

- a. 1
- b. 2

c. 3

d. 4

-
25. In the following question, a sentence has been given in Direct/Indirect speech (+2, -0.5)
speech. Out of the four alternatives suggested, select the one, which best
express the same sentence in Indirect/Direct speech.

The tutor said, "The sun rises in the East".

- a. The tutor says the sun rises in the East.
- b. The tutor said that the sun rose in the East.
- c. The tutor said that the sun has been rising in the East.
- d. The tutor said that the sun rises in the East.

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General Intelligence

26. In the following question, select the related word pair from the given alternatives. (+2, -0.5)

Turtle : Reptile :: ? : ?

- a. Snake : Amphibian
- b. Frog : Bird
- c. Crow : Fly
- d. Elephant : Mammal

-
27. In the following question, select the related number pair from the given alternatives. (+2, -0.5)

16 : 48 :: ? : ?

- a. 25 : 75
- b. 11 : 32
- c. 25 : 64
- d. 49 : 72

-
28. In the following question, select the related letter/letters from the given alternatives. (+2, -0.5)

APR : BQS :: ETV : ?

- a. FVX

b. FUW

c. GUX

d. GVW

29. In the following question, select the odd word pair from the given alternatives. (+2, -0.5)

a. Pen - Ink

b. Pen - Writer

c. Book - Pages

d. Word - Letter

30. In the following question, four number pairs are given. The number on left side of (-) is related to the number on the right side of (-) with some Logic/Rule/Relation. Three are similar on basis of same Logic/Rule/Relation. Select the odd one out from the given alternatives. (+2, -0.5)

a. 7 - 14

b. 11 - 22

c. 5 - 10

d. 3 - 8

31. In the following question, select the odd letter/letters from the given alternatives. (+2, -0.5)

a. KRY

b. DKR

c. FMT

d. LVZ

32. From the given alternatives, according to dictionary, which word will come at SECOND position? (+2, -0.5)

1. Conservative 2. Cooker 3. Conflict 4. Congratulate 5. Cool

a. Conservative

b. Congratulate

c. Cooker

d. Conflict

33. In the following question, select the missing number from the given series. (+2, -0.5)

14, 19, 26, 37, 50, 67, ?

a. 83

b. 77

c. 86

d. 93

34. A series is given with one term missing. Select the correct alternative from the given ones that will complete the series. (+2, -0.5)

K, O, S, W, ?

- a. A
- b. Z
- c. Y
- d. D

35. From a hospital J, Pritam walked 49 metres to the south, then after turning to right he walked 49 metres. He again turned right and walked another 34 metres and finally turned to right and walked 49 metres. At what distance (in metres) and in which direction is he from the hospital J now? (+2, -0.5)

- a. 15, North
- b. $22\sqrt{3}$, North
- c. 15, South
- d. $22\sqrt{3}$, South

36. From the given alternatives, select the word which CANNOT be formed using the letters of the given word. (+2, -0.5)

GRAMOPHONE

- a. Game
- b. Norm
- c. Ram
- d. Move

37. In a certain code language, "Sun is hot" is written as "fi lat muk", "milk is sour" is written as "muk ti mu" and "milk makes sour" is written as "ti mu fa". What is the code for "is" in that code language? (+2, -0.5)

- a. ti
- b. fa
- c. muk
- d. mu

38. A series is given with one term missing. Select the correct alternative from the given ones that will complete the series. (+2, -0.5)

PCO, QDP, REQ, ?, TGS

- a. TGS
- b. SGR
- c. SFR
- d. TFS

39. In the following question, select the missing number from the given series. (+2, -0.5)

133, 136, 139, 142, ?, 148

- a. 146
- b. 145
- c. 144

d. 147

-
40. In the following question, four groups of three numbers are given. In each group the second and third number are related to the first number by a Logic/Rule/Relation. Three are similar on basis of same Logic/Rule/Relation. Select the odd one out from the given alternatives. (+2, -0.5)

- a. (57, 61, 65)
- b. (92, 96, 100)
- c. (63, 67, 71)
- d. (64, 68, 70)

-
41. In a certain code language, '-' represents '+', '+' represents 'x', 'x' represents '÷' and '÷' represents '-'. Find out the answer to the following question. (+2, -0.5)

$$20 + 6 \times 5 \div 20 - 14 = ?$$

- a. 45
- b. 26
- c. 18
- d. 12

-
42. The following equation is incorrect. Which two signs should be interchanged to correct the equation? (+2, -0.5)

$$19 - 16 + 5 \div 10 \times 2 = 28$$

- a. x and -

b. $\div$ and $-$

c. $\div$ and $\times$

d. and $+$

43. If $1\&7 = 80$, $4\&5 = 90$ and $6\&8 = 140$, then find the value of $5\&5 = ?$ (+2, -0.5)

a. 40

b. 100

c. 20

d. 90

44. Which of the following terms follows the trend of the given list? (+2, -0.5)

$XyXYXYXY$, $XYxYXYXY$, $XYXyXYXY$, $XYXYxYXY$, $XYXYXyXY$, -----.

a. $xYXYXYXY$

b. $XYXYXYxY$

c. $XyXYXYXY$

d. $XYxYXYXY$

45. Two cruisers start from the same port. Cruiser A sails 50 miles South, then it turns right and sails 60 miles. In the meanwhile, cruiser B sails 105 miles West, then it turns left and sails 50 miles, then it turns West and sails 45 miles. Where is cruiser A with respect to cruiser B? (+2, -0.5)

a. 210 miles East

- b. 90 miles East
- c. 90 miles West
- d. 210 miles West

-
46. In the question, two statements are given, followed by two conclusions, I and II. You have to consider the statements to be true even if it seems to be at variance from commonly known facts. You have to decide which of the given conclusions, if any, follows from the given statements. (+2, -0.5)

Statement I: All doors are windows.

Statement II: No openings are windows.

Conclusion I: All windows are openings.

Conclusion II: No openings are doors.

- a. Only conclusion I follows
- b. Only conclusion II follows
- c. Both conclusions I and II follow
- d. Neither conclusion I nor conclusion II follows

-
47. In the following figure, rectangle represents Reporters circle represents Dancers, triangle represents Playwrights and square represents Boxers. Which set of letters represents Boxers who are Playwrights? (+2, -0.5)



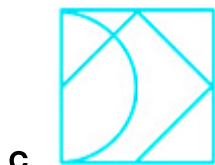
M | 



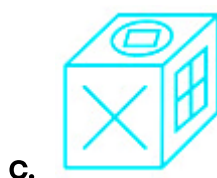
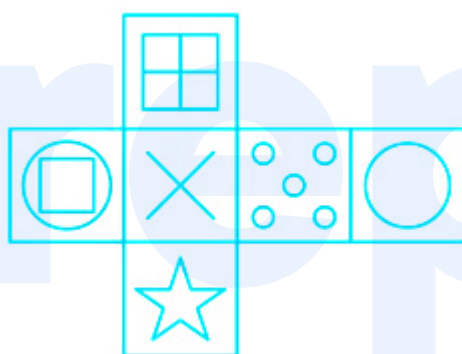
- a. 



- b. 



49. Which of the following cube in the answer figure cannot be made based on the unfolded cube in the question figure? (+2, -0.5)





d.

50. A word is represented by only 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 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 'D' can be represented by 30, 42 etc and 'T' can be represented by 67, 78 etc. Similarly, you have to identify the set for the word 'HIND'. (+2, -0.5)

Matrix-I						Matrix-II					
	0	1	2	3	4		5	6	7	8	9
0	G	L	H	D	I	5	Y	W	U	X	U
1	D	D	A	F	J	6	Q	S	T	N	Q
2	F	F	D	K	F	7	N	T	P	T	Q
3	D	B	A	J	I	8	Z	V	Y	X	Y
4	F	E	D	F	H	9	Q	Z	P	W	X

- a. 44,34,68,10
- b. 11,89,13,77
- c. 20,88,11,86
- d. 42,67,12,89

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Quantitative Aptitude

51. The difference between 66% of a number and 44% of the same number is 275. What is the 64% of that number? (+2, -0.5)

- a. 800
- b. 840
- c. 760
- d. 600

52. Calculate the value of $(5^{1/4} - 1)(5^{3/4} + 5^{1/2} + 5^{1/4} + 1)$ (+2, -0.5)

- a. 5
- b. 4
- c. 10
- d. 25

53. If $\sqrt{(2 + 7x)} = \sqrt{(3x + 4)}$ then find the value of x. (+2, -0.5)

- a. 0.5
- b. 1
- c. 1.5
- d. 2

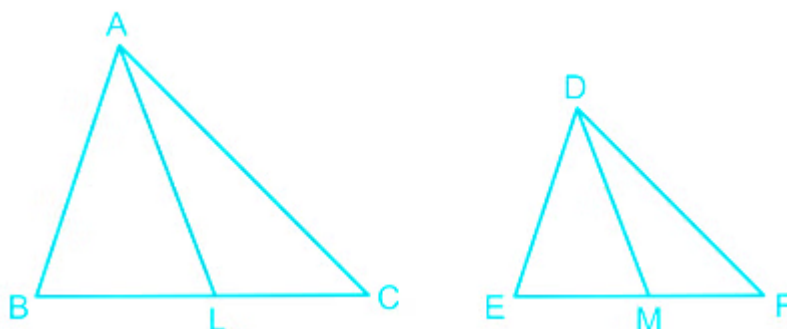
54. The product of two even consecutive numbers is 168. Find the sum of numbers. (+2, -0.5)

- a. 20
- b. 22
- c. 24
- d. 26

55. A line DE parallel to the side BC intersects the other two sides of triangle at point D and E such that $AD = \frac{1}{6} AB$ and $AE = \frac{1}{6} AC$. If the value of BC is 18 cm then calculate the value of DE (in cm). (+2, -0.5)

- a. 2
- b. 3
- c. 6
- d. 8

56. Consider the two equiangular triangles ABC and DEF having medians as AL and DM respectively as shown in figure below. (+2, -0.5)



a. $\frac{BC}{EF} = \frac{DM}{AL}$

b. $\frac{BC}{EF} = \frac{AL}{DM}$

c. $\frac{EF}{BC} = \frac{AL}{DM}$

d. All options are correct

57. The value of a car depreciates at the rate of 15% per annum. If its present value is Rs. 433500, then what was the value (in Rs) of the car before 2 years? (+2, -0.5)

a. 594200

b. 620000

c. 563550

d. 600000

58. If $A : B : C = 2 : 3 : 5$ and $C : D = 2 : 5$, then what is $A : D$? (+2, -0.5)

a. 4 : 25

b. 8 : 21

c. 6 : 25

d. 12 : 35

59. In a mixture of 35 litres, the ratio of water and acid is 6 : 1. If 5 litres of acid is added to the mixture, then what will be the ratio of water and acid in the new mixture? (+2, -0.5)

- a. 5 : 2
- b. 4 : 1
- c. 3 : 1
- d. 6 : 5

60. The average savings of Champak in 5 days is Rs. 160. If his savings for the first 4 days is Rs. 155, Rs. 170, Rs. 134 and Rs. 168 respectively, then what is his saving (in Rs) of the 5th day? (+2, -0.5)

- a. 161
- b. 163
- c. 169
- d. 173

61. A sum of Rs. 6000 is borrowed at compound interest at the rate of 8% per annum. What will be the amount (in Rs) after 2 years? (+2, -0.5)

- a. 6998.4
- b. 6960
- c. 6784.4
- d. 6869.4

62. Cost price of an article is Rs. 122. If profit percentage is 56%, then what is the selling price (in Rs) of the article? (+2, -0.5)

- a. 277.27
- b. 217.85
- c. 175.68
- d. 190.32

63. On selling a watch at $\frac{4}{5}$ th of the marked price, there is a loss of 4%. What will be the ratio between the marked price and cost price of the watch? (+2, -0.5)

- a. 6 : 5
- b. 5 : 3
- c. 10 : 7
- d. 7 : 5

64. What is the positive square root of $[19 + 4\sqrt{21}]$? (+2, -0.5)

- a. $\sqrt{7} + 2\sqrt{3}$
- b. $\sqrt{3} + 2\sqrt{7}$
- c. $\sqrt{2} + 3\sqrt{7}$
- d. $\sqrt{7} + 3\sqrt{3}$

65. 18 men or 25 boys can complete a work in 25 days. How many days will 36 men and 10 boys will take to complete the work? (+2, -0.5)

- a. $\frac{112}{17}$

b. $125/12$

c. $115/12$

d. $125/17$

66. Vipin crosses a 450 metres wide road in 9 seconds. What is his speed (in km/hr)? (+2, -0.5)

a. 195

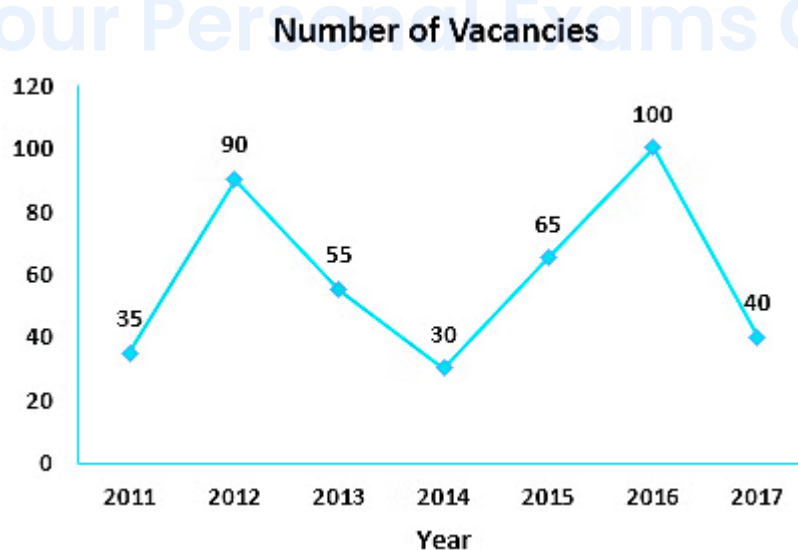
b. 150

c. 210

d. 180

67. **Directions:** The line graph shows the number of vacancies for executives in a certain company. Study the diagram and answer the following questions. (+2, -0.5)

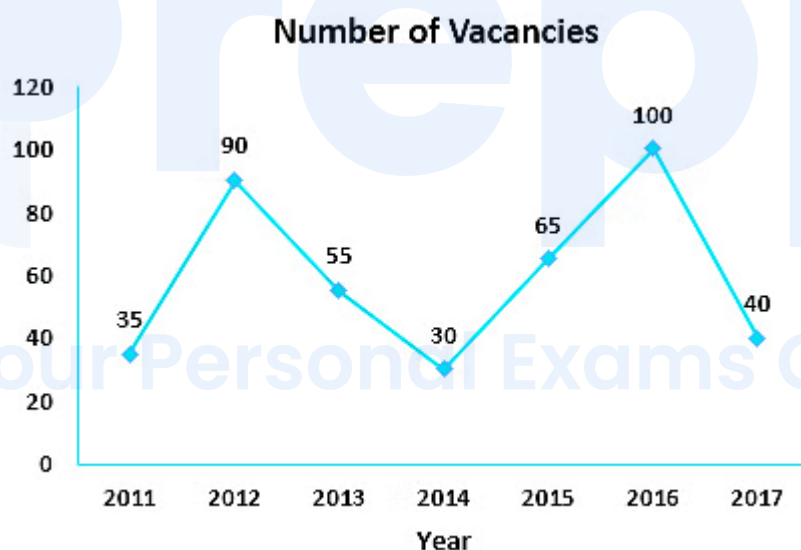
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In which year were the number of vacancies lesser than that of the previous year?

- a. 2015
- b. 2014
- c. 2016
- d. 2012

68. **Directions:** The line graph shows the number of vacancies for executives in a certain company. Study the diagram and answer the following questions. (+2, -0.5)

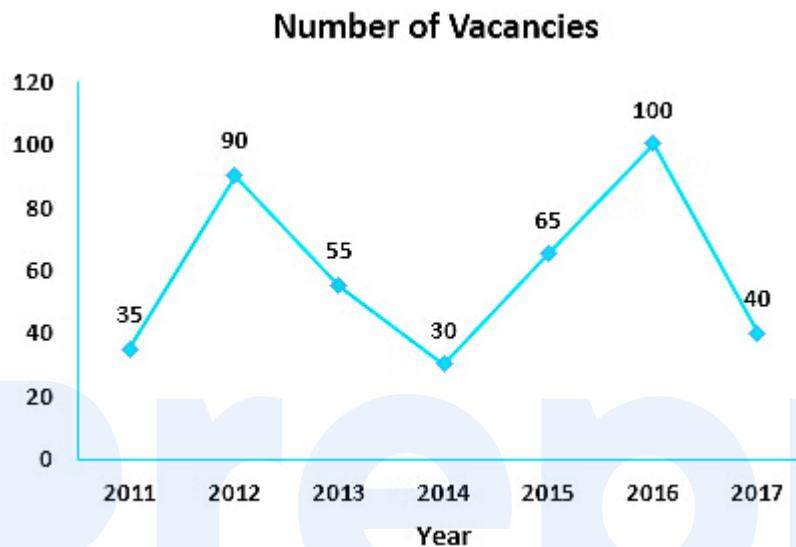


What was the difference in the number of vacancies between the years 2016 and 2014?

- a. 60
- b. 50
- c. 70

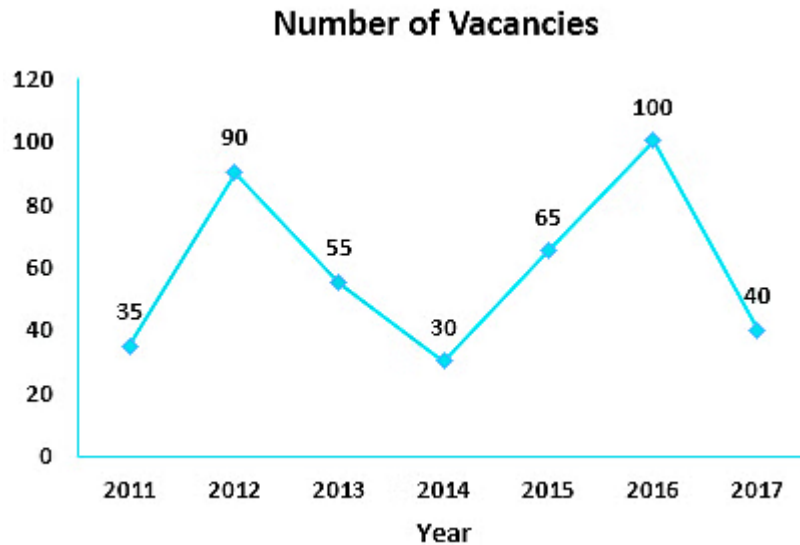
d. 40

69. **Directions:** The line graph shows the number of vacancies for executives in a certain company. Study the diagram and answer the following questions. (+2, -0.5)



The number of vacancies in 2014 were lesser than that in 2016 by -----.

- a. 1.167
- b. 0.7
- c. 0.6
- d. 2.333
70. **Directions:** The line graph shows the number of vacancies for executives in a certain company. Study the diagram and answer the following questions. (+2, -0.5)



The salary of an executive in the company is Rs 30,000, then what was the increase in the expense (in Rs lakhs) due to salaries that had to be paid when posts were filled for the vacancies in the year 2017?

- a. 3
- b. 6
- c. 9
- d. 12

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71. If the lengths of the two parallel sides of a trapezium are 8 cm and 10 cm and the distance between these parallel sides is 6 cm. Find its area (in cm^2). (+2, -0.5)

- a. 27
- b. 108
- c. 54
- d. 81

72. If the diameter of a circle is 7 cm, then what will be its circumference (in cm)? (+2, -0.5)

- a. 44
- b. 22
- c. 26
- d. 52

73. Find the volume (in cm^3) of a cube of side 6.5 cm. (+2, -0.5)

- a. 56.515
- b. 274.625
- c. 35.605
- d. 14.925

74. $\triangle DEF$ is right angled at E. If $m\angle D = 30^\circ$, then find the value of $(\cos F + \sqrt{3})$. (+2, -0.5)

- a. $7/2\sqrt{3}$
- b. $(1 + 2\sqrt{3})/2$
- c. $4/\sqrt{3}$
- d. $(\sqrt{3} + 4)/2$

75. $\triangle DEF$ is right angled at E. If $\sin D = 15/17$, then what is the value of $\cot F$? (+2, -0.5)

- a. 15/17
- b. 8/17
- c. 15/8
- d. 17/15

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General Awareness

76. Which movie has won the most number of Oscars? (+2, -0.5)

- a. Titanic
- b. Cabaret
- c. Jungle Book
- d. Avatar

77. Chittorgarh Fort is located in _____. (+2, -0.5)

- a. Rajasthan
- b. Bihar
- c. Uttar Pradesh
- d. Gujarat

78. Which organ is the main digester and absorber of food? (+2, -0.5)

- a. Stomach
- b. Liver
- c. Colon
- d. Small intestine

79. The bark of willow tree is a source of which medicine? (+2, -0.5)

- a. Paracetamol
 - b. Aspirin
 - c. Antacid
 - d. Antiseptic
-

80. Capra Hircus is the scientific name of _____. (+2, -0.5)

- a. Sheep
 - b. Cow
 - c. Horse
 - d. Goat
-

81. What does a positive catalyst do in a reaction? (+2, -0.5)

- a. A catalyst is nothing but the final product of a reaction
 - b. Does not alter the rate of reaction
 - c. Speeds up chemical reaction
 - d. Slows down chemical reaction
-

82. Atomic number of which of the following elements is greater than that of Bromine (+2, -0.5)

- a. Silver
- b. Copper

- c. Iron
- d. Chromium

83. Commonly used abbreviation GUI in computer science stands for? (+2, -0.5)

- a. Group User Interface
- b. Graphical User Interface
- c. Graphic User Integration
- d. Group User Integration

84. Tamil is the official language of _____. (+2, -0.5)

- a. Puducherry
- b. Dadra and Nagar Haveli
- c. Daman and Diu
- d. Delhi

85. A tyre tube manufacturer faces a -1.6 price elasticity of demand for its tubes. It is presently selling 24000 units/month. If it wants to increase quantity sold by 4%, it must lower its price by _____. (+2, -0.5)

- a. 2.5 percent
- b. 5.6 percent
- c. 2.4 percent

d. 6.4 percent

86. Consider the market for new two-wheelers. If the price of steel increases, (+2, -0.5)
then the equilibrium price of new two wheelers will _____ and the
equilibrium quantity will _____.

- a. increase; increase
 - b. decrease; decrease
 - c. increase; decrease
 - d. decrease; increase
-

87. Which type of pathogen causes the water-borne disease Ascariasis? (+2, -0.5)

- a. Viral
 - b. Protozoan
 - c. Bacterial
 - d. Parasitic
-

88. Which type of pathogen causes the water-borne disease dysentery? (+2, -0.5)

- a. Algal
 - b. Parasitic
 - c. Fungal
 - d. Bacterial
-

89. What is the major electricity generation power source in India? (+2, -0.5)

- a. Coal
- b. Gas
- c. Nuclear
- d. Hydro

90. A person, who draws or makes maps or charts, is called _____. (+2, -0.5)

- a. Hydrographer
- b. Cartographer
- c. Seismographer
- d. Lexicographer

91. Brihadeshwara Temple of Thanjavur was built by _____. (+2, -0.5)

- a. Raja Raja Chola I
- b. Rajendra Chola I
- c. Rajaraja II
- d. Rajendra III

92. Salt March also known as Dandi March was initiated by _____. (+2, -0.5)

- a. Raja Ram Mohan Roy

- b.** Mahatma Gandhi
 - c.** Avantikabai Gokhale
 - d.** Kasturba Gandhi
-

93. Chauri-Chaura incident took place in? (+2, -0.5)

- a.** 1902
 - b.** 1912
 - c.** 1922
 - d.** 1932
-

94. Who invented telephone? (+2, -0.5)

- a.** Alexander Graham Bell
 - b.** Thomas Edison
 - c.** Benjamin Franklin
 - d.** James Watt
-

95. Which instrument measures AF(Audio Frequency) signal level and noise? (+2, -0.5)

- a.** Vectorscope
- b.** VU meter
- c.** Q meter

d. Psophometer

96. If a physical quantity has the units - ampere meters per second squared, (+2, -0.5)
then what are it's dimensions?

a. $[I LT^{-2}]$

b. $[ALT^{-2}]$

c. $[I MS^{-2}]$

d. $[AMS^{-2}]$

97. The 42nd Amendment of the Constitution of India was enacted in the year (+2, -0.5)
-----.

a. 1947

b. 1976

c. 1991

d. 2016

98. The number of parliamentary seats (Rajya Sabha) of Chhattisgarh is (+2, -0.5)
-----.

a. 3

b. 5

c. 11

d. 16

99. Which country's 7 swimmers were banned from the Rio Olympics?

(+2, -0.5)

- a. Russia
- b. Japan
- c. China
- d. USA

100. Who is the author of "The Great Indian Novel"?

(+2, -0.5)

- a. Jawaharlal Nehru
- b. Shashi Tharoor
- c. Mahatma Gandhi
- d. Arun Shourie

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Answers

1. Answer: d

Explanation:

Correct option - 4

Clearly, a sentence does not end with a preposition or transitive verb (verb that requires object). Hence, option 4 is the correct answer.

2. Answer: a

Explanation:

Correct option - 1

Since, conjunction **but** is followed by "now", it means the main clause describes action related to past. Hence, replace **has** with **had**. Thus, option 1 is the correct answer.

3. Answer: c

Explanation:

The correct answer is "elaborate"

★ Key Points

- Let's find out the meaning of the following words:-
 - labyrinthine - a network like a labyrinth; irregular and twisting. or a complicated irregular network of passages or paths in which it is difficult to find one's way; a maze.

- facile – moving, acting, working, etc. with ease, sometimes with superficiality.
- elaborate – involving many carefully arranged parts or details; detailed and complicated in design and planning.
- prodigious – remarkably or impressively great in extent, size, or degree.

Clearly, option 3 is the appropriate substitute word.

4. Answer: d

Explanation:

Correct option – 4

Let's find out the meaning of the following words:-

peccant – having committed a fault or sin.

culpable – deserving blame.

vicious – deliberately cruel or violent.

esteem – respect and admiration.

Hence, **option 4** gives the appropriate substitute.

5. Answer: b

Explanation:

Correct option – 2

Clearly, option 1 is eliminated because the article 'a' is given.

Let's find out the meaning of the following words:-

fundamental –forming a necessary base or core; of central importance;
foundational.

primitive – relating to, denoting, or preserving the character of an early stage in the evolutionary or historical development of something.

radical – advocating or based on thorough or complete political or social change;
representing or supporting an extreme or progressive section of a political party;
thorough and complete

Here, the context explains that basic education needs to include reading, writing, etc.
So, option 2 gives an appropriate meaning to the sentence.

6. Answer: a

Explanation:

Correct option – 1

Let's find out the meaning of the following words:-

fluctuate –rise and fall irregularly in number or amount.

wave –move to and fro with a swaying motion while remaining fixed to one point.

flutter – a bird or other winged creature fly unsteadily or hover by flapping the wings quickly and lightly.

vibrate – move continuously and rapidly to and fro; quiver with a quality or emotion.

Here, the context explains that the price of gold will rise and fall irregularly. Hence,
option 1 is the correct answer.

7. Answer: d

Explanation:

Correct option - 4

Here, active voice is given, so we need to change it into passive voice. Since, simple future tense is used. Thus, following pattern will be used :-

Obj + will/shall + be + V3 + by + Sub.

Hence, **option 4** is the correct answer.

8. Answer: c

Explanation:

Correct option - 3

Here, an interest or liking is shown in the sentence. When such liking, habit, etc. is described, then simple past tense is used. So, option 3 is the correct answer.

9. Answer: c

Explanation:

Correct option - 3

On looking at the above passage, we observe that it is based upon role of citizens in democracy and how impactful it is. Since, preposition to be used in the blank, so let's find out the uses of following prepositions :-

In - used for static condition, permanent action, big place.

Into - form change, one place to another.

Inside - the inner part; the interior.

Inner - situated inside or further in; internal. It is used when compared between two parallel subjects.

The context explains the interior or the situation within different democracies. Hence, option 3 is apt.

We can't use option 4 since no comparison is done. And, different democracies are described, meaning the inner part of each of them.

10. Answer: d

Explanation:

Correct option - 4

Since, in democracies, the citizens have right to chose their own representatives. So, there is a relationship shown with them. Hence, preposition **with** is appropriate.

11. Answer: a

Explanation:

Correct option - 1

Let's find out the meaning of following words :-

obnoxious - extremely unpleasant.

odourful - having or emitting a characteristic smell or odour.

rancid - foods containing fat or oil that are smelling or tasting unpleasant as a result of being old and stale.

Here, dirty side of politics is shown. So, word 'smelly' is appropriate here.

12. Answer: b

Explanation:

Correct option – 2

Here, correct preposition to be used.

Let's find out the uses of following prepositions:-

through – moving in one side and out of the other side of (an opening, channel, or location).

to – approaching or reaching (a particular condition).

into – expressing movement or action with the result that someone or something makes physical contact with something else.

for – period of time; of relating to.

Here, an approach is shown, since outside the politics, there is a collective action taken by the citizens decide whom they are going to let rule. So, option 2 is appropriate.

13. Answer: d

Explanation:

Correct option – 4

Here, concept of relative pronoun is applied. Relative pronouns introduce relative clauses.

Let's find out the uses of following relative pronouns :-

who – used for people and sometimes pet animals

whom – object pronoun of 'who'.

which – animals and things

whosoever – formal term for whoever.

Here, representatives are people and it is a subject pronoun, means it performs the action(rule). So, option 4 i.e. **who** is apt for the blank.

14. Answer: c

Explanation:

The correct answer is marzipan

★ Key Points

- Here, the word "marzipan" is correctly spelled.
- **Marzipan:** a sweet yellow or white paste of ground almonds, sugar, and egg whites, used to coat cakes or to make confectionery.
- **The correct spelling of other words is as follows:-**
 - **Assyrian:**an inhabitant of ancient Assyria.
 - **Apostate:**a person who renounces a religious or political belief or principle
 - **Cucumber:**a long, green-skinned fruit with watery flesh, usually eaten raw in salads or pickled.

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15. Answer: b

Explanation:

Correct option – 2

Here, option 2 best expresses the given idiom. It is used to conceal or hide the truth.

16. Answer: d

Explanation:

Correct option - 4

The given phrase is correctly used.

17. Answer: d

Explanation:

Correct option - 4

Here, the correct spelling given is **neoplasm**. It means a new and abnormal growth of tissue in a part of the body, especially as a characteristic of cancer.

The correct spellings of other words are imminent, mourning and latticed.

18. Answer: c

Explanation:

Correct option - 3

Firstly, a sentence does not end with an article. So, option 4 is eliminated. The starter ends with "Indian" that is a third person singular noun. Hence, verb "do" does not come with it. So, option 1 is eliminated. And, both 'Indian' and 'independence' are singular noun, they should be connected by something. Thus, option 2 is incorrect.

Hence, option 3 is the correct answer.

19. Answer: a

Explanation:

The correct answer is 'to prepare for sleep'

★ Key Points

- The meaning of the given phrase '**to hit the sack**' is '**go to bed**.'
 - Let's see an example of the given phrase-
 - I've got a busy day tomorrow, so I think I'll **hit the sack**.
-

20. Answer: b

Explanation:

Correct option - 2

Let's find out the meaning of following word 'blabber' :- talk foolishly, indiscreetly, or excessively.

Now, find the meaning of -

sophic - relating to, or full of wisdom; intellectual; sapient.

Hence, **option 2** i.e. nonsense is the most appropriate synonym for the given word.

21. Answer: a

Explanation:

Correct option - 1

Let's find out the meaning of following word 'to admonish' :-reprimand firmly.

Now, find the meaning of following words :-

reprimand - a formal expression of disapproval.

rave - address someone in an angry, uncontrolled way.

panegyrize - speak or write in praise of; eulogize.

Hence, **option 1** i.e. to reprimand is the most appropriate synonym for the given word.

22. Answer: b

Explanation:

Correct option – 2

Let's find out the meaning of following word 'divulgence' :- to make known something, such as a confidence or secret; The action of revealing/disclosing private or sensitive information; revelation.

Now, find the meaning of –

testimony – evidence or proof of something.

repudiation – denial of the truth or validity of something; rejection; refusal to fulfil or discharge an agreement, obligation, or debt.

assent – the expression of approval or agreement.

Hence, **option 2** i.e. repudiation is the most appropriate antonym for the given word.

23. Answer: a

Explanation:

Correct option – 1

Let's find out the meaning of following word "stratagem" :- a plan or scheme, especially one used to outwit an opponent or achieve an end; cunning.

Now, find the meaning of following words :-

frankness – the quality of being open, honest, and direct in speech or writing.

gimmick – a trick or device intended to attract attention, publicity, or trade; ruse; ploy.

Hence, **option 1** i.e. 'frankness' is the most appropriate antonym for the given word.

24. Answer: d

Explanation:

Correct option – 4

The above given sentence is free from errors.

25. Answer: d

Explanation:

Correct option – 4

Here, direct speech is given, so we change it into indirect speech. The reporting verb "said" remains same. So, option 1 is incorrect. Now, a universal truth is mentioned in the sentence, it means it remains same in past, present and future time. So, the tense used is always simple present tense. Hence, **option 4** is the correct answer.

26. Answer: d

Explanation:

'Turtle' belongs to the class 'Reptilia'. Similarly, 'Elephant' belongs to the class 'Mammals'.

Hence, answer is 'Elephant : Mammal'.

27. Answer: a

Explanation:

The logic followed here is:

$$16 \times 3 = 48$$

Similarly,

$$25 : 75 \rightarrow 25 \times 3 = 75$$

Hence, answer is '25 : 75'.

28. Answer: b

Explanation:

The logic followed here is:



Similarly,



Hence, answer is 'FUW'.

29. Answer: b

Explanation:

Here, the pattern of relation followed is:

- 1) Pen - Ink → Pen consists of ink
- 2) Pen - Writer → Writer using a pen.
- 3) Book - Pages → Book consists of pages
- 4) Word - Letter → Word consists of letter

Clearly, 'Pen - Writer' is the odd one out.

30. Answer: d

Explanation:

Here the pattern of relation followed is (Number - Number $\times$ 2)

Clearly, '3 - 8' → does not follows the above pattern of relation.

Hence, '3 - 8' is the odd one out.

31. Answer: d

Explanation:

The pattern/logic/rule followed here is:

$$\begin{array}{ccccc}
 K & \xrightarrow{+7} & R & \xrightarrow{+7} & Y \\
 D & \xrightarrow{+7} & K & \xrightarrow{+7} & R \\
 F & \xrightarrow{+7} & M & \xrightarrow{+7} & T \\
 L & \xrightarrow{+10} & V & \xrightarrow{+4} & Z
 \end{array}$$

Clearly, 'LVZ' is the odd one out.

32. Answer: b

Explanation:

3. Conf lict
4. Cong ratulate
1. Cons ervative
2. Cook er
5. Cool

Hence, 'Congratulate' will come at SECOND position.

33. Answer: c

Explanation:

The pattern followed here is:-

$$\begin{array}{ccccccc}
 14 & 19 & 26 & 37 & 50 & 67 & \boxed{86} \\
 \downarrow & \uparrow & \downarrow & \uparrow & \downarrow & \uparrow & \downarrow \\
 & +5 & & +7 & & +11 & & +13 & & +17 & & +19
 \end{array}$$

Hence, the correct answer is "86".

34. Answer: a

Explanation:

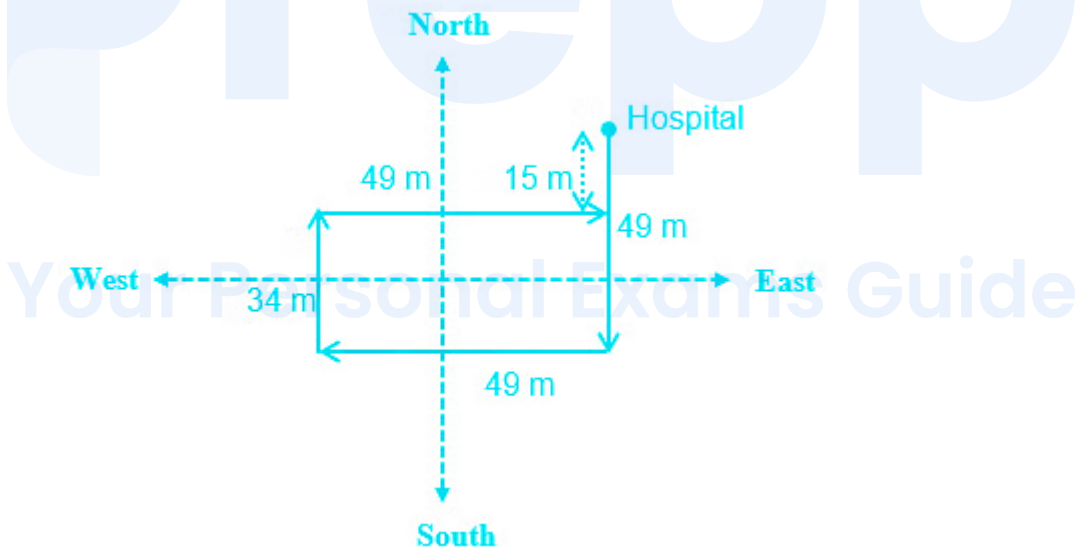
The pattern followed here is:

K $\xrightarrow{+4}$ O $\xrightarrow{+4}$ S $\xrightarrow{+4}$ W $\xrightarrow{+4}$ A

Hence, answer is 'A'.

35. Answer: c

Explanation:



Distance between final position and Hospital = $(49 - 34) \text{ m} \rightarrow 15 \text{ m}$

Hence, answer is '15 m'.

36. Answer: d

Explanation:

GAME: GR AM OPHON E: Can be formed

NORM: G RA MOPH ON E: Can be formed

RAM: G RAM OPHONE: Can be formed

MOVE: GRA MO PHONE: Cannot be formed as there is no 'V' in it.

Hence, 'Move' cannot be formed using words from the letters of 'Gramophone'.

37. Answer: c

Explanation:

Given:

sun (is) hot → fi lat (muk)
milk (is) sour → (muk) ti mu
milk makes sour → ti mu fa

Hence, "is" coded as "muk"

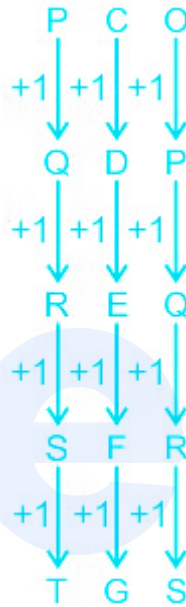
38. Answer: c

Explanation:

The table shows the place value of the alphabet.

Alphabets	A	B	C	D	E	F	G	H	I	J	K	L	M
Positional value	1	2	3	4	5	6	7	8	9	10	11	12	13
Positional value	26	25	24	23	22	21	20	19	18	17	16	15	14
Alphabets	Z	Y	X	W	V	U	T	S	R	Q	P	O	N

The pattern followed here is:



Hence, the correct answer is 'SFR'.

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39. Answer: b

Explanation:

The pattern/logic followed here is:



Hence, the correct answer is '145'.

40. Answer: d

Explanation:

The logic/rule/relation followed here is:

1) $(57, 61, 65) \rightarrow 57 + 4 = 61; 61 + 4 = 65$

2) $(92, 96, 100) \rightarrow 92 + 4 = 96; 96 + 4 = 100$

3) $(63, 67, 71) \rightarrow 63 + 4 = 67; 67 + 4 = 71$

4) $(64, 68, 70) \rightarrow 64 + 4 = 68; 68 + 2 = 70$

Clearly, $(64, 68, 70)$ is the odd one out.

41. Answer: c

Explanation:

Symbol	-	+	$\times$	$\div$
Meaning	+	$\times$	$\div$	-

Given equation: $20 + 6 \times 5 \div 20 - 14 = ?$

On replacing the symbol:

$20 \times 6 \div 5 - 20 + 14 = ?$

$\rightarrow 20 \times 1.2 - 20 + 14$

$\rightarrow 24 - 20 + 14$

$$\rightarrow 38 - 20$$

$$\rightarrow 18$$

Hence, answer is '18'.

42. Answer: c

Explanation:

Given equation:

$$19 - 16 + 5 \div 10 \times 2 = 28$$

After interchanging ' $\div$ ' and ' $\times$ ' we get:

$$19 - 16 + 5 \times 10 \div 2 = 28$$

L.H.S of equation: $19 - 16 + 5 \times 10 \div 2$

$$\rightarrow 19 - 16 + 5 \times 5$$

$$\rightarrow 3 + 25$$

$$\rightarrow 28 = \text{R.H.S}$$

Hence, answer is ' $\div$ ' and ' $\times$ '.

43. Answer: b

Explanation:

The logic/rule followed here is:

$$1\&7 = 80 \rightarrow (1 + 7) \times 10 = 80$$

$$4\&5 = 90 \rightarrow (4 + 5) \times 10 = 90$$

$$6\&8 = 140 \rightarrow (6 + 8) \times 10 = 140$$

Therefore,

$$5\&5 \rightarrow (5 + 5) \times 10 = 100$$

Hence, answer is '100'.

44. Answer: b

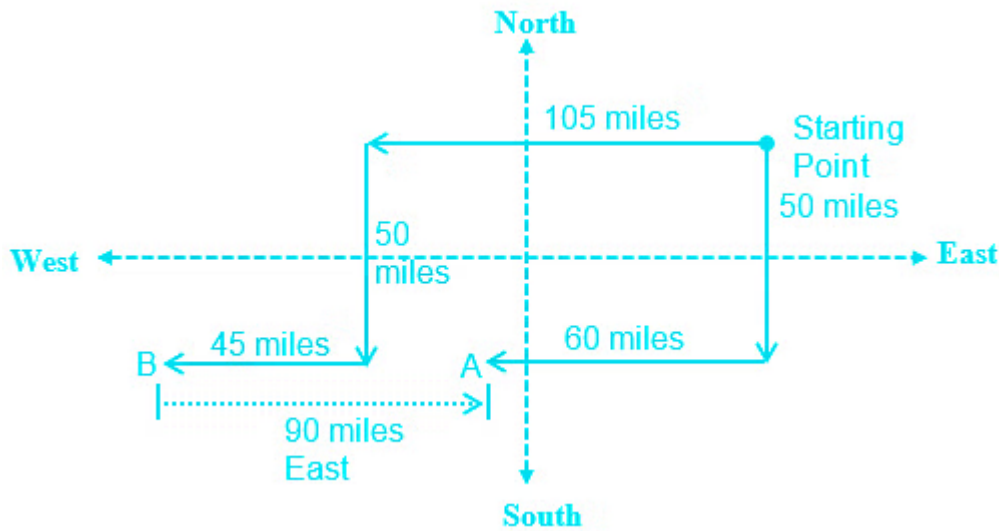
Explanation:

X	<u>Y</u>	X	Y	X	Y	X	Y
X	Y	<u>X</u>	Y	X	Y	X	Y
X	Y	X	<u>Y</u>	X	Y	X	Y
X	Y	X	Y	<u>X</u>	Y	X	Y
X	Y	X	Y	X	<u>Y</u>	X	Y
X	Y	X	Y	X	Y	<u>X</u>	Y

Hence, the correct answer is 'XYXYXYxY'.

45. Answer: b

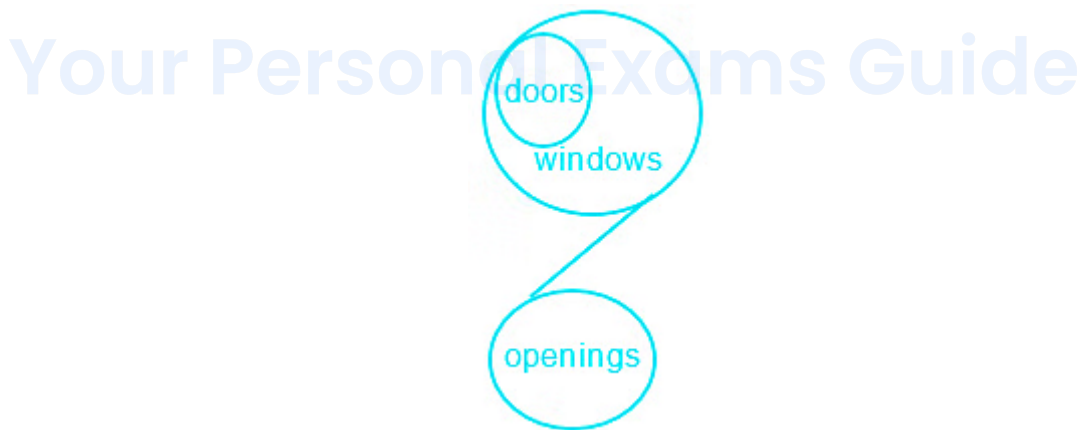
Explanation:



Hence, answer is '90 miles East'.

46. Answer: b

Explanation:



Conclusion I: All windows are openings → False (As all doors are windows and no openings are windows)

Conclusion II: No openings are doors → True (As all doors are windows and no openings are windows)

Hence, only conclusion II follows.

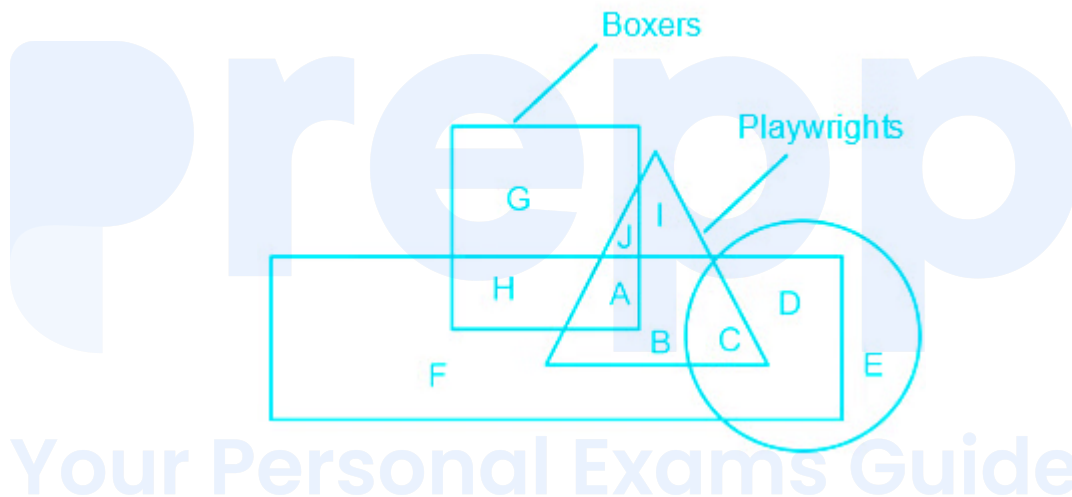
47. Answer: b

Explanation:

Rectangle represents Reporters, circle represents Dancers, triangle represents Playwrights and square represents Boxers.

we have to find the letters that represent Boxers who are Playwrights.

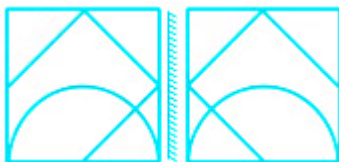
Means, we have to find the letters that are common in Square and Triangle.



Hence, answer is 'JA'.

48. Answer: d

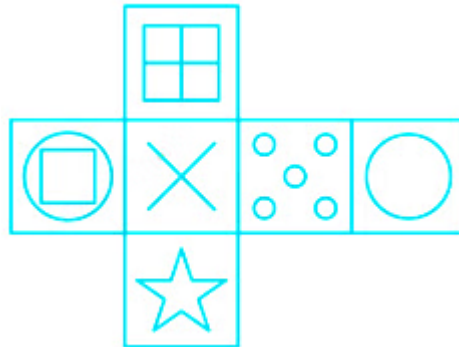
Explanation:



Hence, answer is option '4'.

49. Answer: a

Explanation:



From the figure we can conclude:

- 1) The face of dice with star will be opposite to the side with four squares.
- 2) The side with cross will be opposite the side with circle.
- 3) The side with circle and square will be opposite to the side with five small circles.



Here in the figure above side with four squares and the side with star are adjacent to each other. Hence, it cannot be made based on the unfolded cube in the question figure.

50. Answer: a

Explanation:

- 1) 44,34,68,10 → H, I, N, D
- 2) 11,89,13,77 → D, Y, F, P

$$3) 20,88,11,86 \rightarrow F, X, D, V$$

$$4) 42,67,12,89 \rightarrow D, T, A, Y$$

Hence, answer is '44,34,68,10'.

51. Answer: a

Explanation:

Let the number be 'x'

$$\Rightarrow (66\% \text{ of } x) - (44\% \text{ of } x) = 275$$

$$\Rightarrow 0.66x - 0.44x = 275$$

$$\Rightarrow 0.22x = 275$$

$$\Rightarrow x = 275/0.22 = 1250$$

$$\therefore 64\% \text{ of the number} = 0.64 \times 1250 = 800$$

52. Answer: b

Explanation:

Laws of Indices:

$$1. a^m \times a^n = a^{m+n}$$

$$2. a^m \div a^n = a^{m-n}$$

$$3. (a^m)^n = a^{mn}$$

$$4. (a)^{-m} = 1/a^m$$

$$5. (a)^{m/n} = \sqrt[n]{a^m}$$

$$6. (a)^0 = 1$$

$$(5^{1/4} - 1)(5^{3/4} + 5^{1/2} + 5^{1/4} + 1)$$

$$\Rightarrow (5^{1/4} \times 5^{3/4}) + (5^{1/4} \times 5^{1/2}) + (5^{1/4} \times 5^{1/4}) + 5^{1/4} - 5^{3/4} - 5^{1/2} - 5^{1/4} - 1$$

$$\Rightarrow 5 + 5^{3/4} + 5^{1/2} + 5^{1/4} - 5^{3/4} - 5^{1/2} - 5^{1/4} - 1$$

$$\Rightarrow 5 - 1$$

$$\Rightarrow 4$$

53. Answer: a

Explanation:

Given, $\sqrt{(2 + 7x)} = \sqrt{(3x + 4)}$

Squaring both sides,

$$\Rightarrow 2 + 7x = 3x + 4$$

$$\Rightarrow 7x - 3x = 4 - 2$$

$$\Rightarrow 4x = 2$$

$$\Rightarrow x = 2/4 = 0.5$$

54. Answer: d

Explanation:

Let the consecutive even numbers be 'x' and '(x + 2)'

Product of numbers = 168

$$\Rightarrow x(x + 2) = 168$$

$$\Rightarrow x^2 + 2x - 168 = 0$$

$$\Rightarrow x^2 + 14x - 12x - 168 = 0$$

$$\Rightarrow x(x + 14) - 12(x + 14) = 0$$

$$\Rightarrow (x + 14)(x - 12) = 0$$

$$\Rightarrow x = -14, 12 \text{ (Neglecting negative values)}$$

$$\Rightarrow x + 2 = 12 + 2 = 14$$

$$\therefore \text{Sum of the numbers} = 12 + 14 = 26$$

★ Shortcut Trick

We will solve it using unit digit.

Unit digit of the number is 168.

The unit digits of two consecutive even numbers whose product of the digits is $8 = 2 \times 4$

Hence, the unit digits of the unknown numbers = 2 and 4

The sum of unit digits = $2 + 4 = 6$

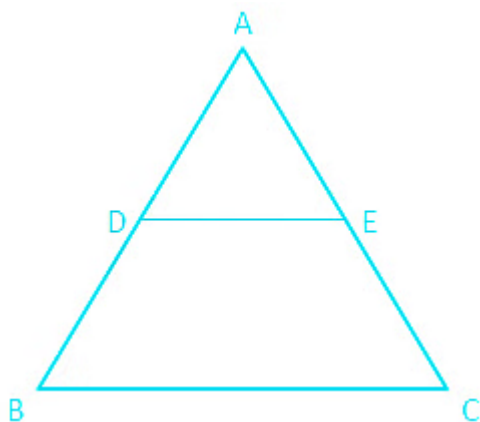
The unit digit of our answer must be equal to 6.

$\therefore$ The sum is 26.

55. Answer: b

Explanation:

The given triangle can be drawn as:



Considering similar triangles $\triangle ABC$ and $\triangle ADE$,

$\therefore$ Their corresponding sides are in proportion,

$$\Rightarrow AB/AD = BC/DE$$

Given, $AD = (1/6)AB$ and $BC = 18$ cm

$$\Rightarrow AB/(1/6)AB = 18/DE$$

$$\Rightarrow 6 = 18/DE$$

$$\therefore DE = 18/6 = 3 \text{ cm}$$

56. Answer: b

Explanation:

$\therefore$ Triangles $\triangle ABC$ and $\triangle DEF$ are similar and equiangular triangles and their corresponding sides are in proportion,

$$\Rightarrow AB/DE = BC/EF$$

Similarly, $\triangle ABL$ and $\triangle DEM$ are also similar and equiangular triangles and their corresponding sides are in proportion,

$$\Rightarrow AB/DE = AL/DM$$

Equating the above relations, we get,

$$\Rightarrow BC/EF = AL/DM$$

57. Answer: d

Explanation:

GIVEN:

Rate of Depreciation = 15%

Present value = Rs. 433500

FORMULA USED:

Value n years ago = $P / [(1 - R/100)^n]$

CALCULATION:

If the present value of an article is Rs. P and it depreciates at a rate of R% per annum, then,

Its value n years ago = $P / [(1 - R/100)^n]$

Given, P = Rs. 433500, R = 15%, n = 2 years

$\therefore$ Its value 2 years ago = $433500 / [(1 - 15/100)^2] = 433500 / 0.7225 = \text{Rs. } 600000$

★ Alternate Method

Formula used: $a + b - \frac{ab}{100}$ Equivalent rate of depreciation for two years = $15 + 15 - \frac{(15 \times 15)}{100}$

$$\Rightarrow 30 - 2.25 = 27.75\%$$

Let the current value is 100.

The value before 2 years = $100 - 27.75 = 72.25$

72.25 units = 433500

1 unit = 6000

100 units = 600000

$\therefore$ Current value is 600000.

58. Answer: a

Explanation:

Given, $A : B : C = 2 : 3 : 5$

Multiplying by 2,

$\Rightarrow A : B : C = 4 : 6 : 10$

Also, $C : D = 2 : 5$

Multiplying by 5,

$\Rightarrow C : D = 10 : 25$

$\therefore A : D = 4 : 25$

59. Answer: c

Explanation:

Given: In a mixture of 35 litres, the ratio of water and acid is 6 : 1. If 5 litres of acid is added to the mixture, Ratio of water and acid in initial mixture = 6 : 1

Calculation:

Sum of ratios = $6 + 1 = 7$

Quantity of acid in 35 litres of initial mixture = $(1/7) \times 35 = 5$ litres

When 5 litres of acid is added in 35 litres of initial mixture,

Quantity of new mixture = $35 + 5 = 40$ litres

Quantity of acid in new mixture = $5 + 5 = 10$ litres

Quantity of water in new mixture = $40 - 10 = 30$ litres

$\therefore$ Water-acid ratio in new mixture = $30 : 10 = 3 : 1$

60. Answer: d

Explanation:

Total savings in five days = $5 \times 160 = \text{Rs. } 800$

Total savings in first 4 days = $155 + 170 + 134 + 168 = \text{Rs. } 627$

$\therefore$ Saving of 5th day = $800 - 627 = \text{Rs. } 173$

61. Answer: a

Explanation:

When the interest is compounded annually on a sum of Rs. P at R% per annum, then

Amount after n years = $P[(1 + R/100)^n]$

Hence, when P = Rs. 6000, R = 8%

$\therefore$ Amount after 2 years = $6000 \times [(1 + 8/100)^2] = 6000 \times 1.1664 = \text{Rs. } 6998.4$

62. Answer: d

Explanation:

Cost price = Rs. 122

Profit % = 56%

$\therefore$ Selling price = Cost price + Profit

$\therefore$ Selling price of article = $122 + 56\% \text{ of } 122 = 122 + 68.32 = \text{Rs. } 190.32$

63. Answer: a

Explanation:

Let the Marked price be Rs. 'x'

Selling price = $(4/5)x$

If there is a loss of 4%, then, Cost price - loss = Selling price

$\Rightarrow \text{CP} - 4\% \text{ of CP} = (4/5)x$

$\Rightarrow 96\% \text{ of CP} = (4/5)x$

$\Rightarrow (24/25) \text{ CP} = (4/5)x$

$\Rightarrow \text{CP} = (5/6)x$

$\therefore$ Ratio of Marked price to Cost price = $x : (5/6)x = 6 : 5$

64. Answer: a

Explanation:

Let $\sqrt{19 + 4\sqrt{21}} = \sqrt{x} + \sqrt{y}$

Squaring both sides, we get,

$\Rightarrow 19 + 4\sqrt{21} = x + y + 2\sqrt{xy}$

$\Rightarrow 19 + 2\sqrt{(4 \times 21)} = x + y + 2\sqrt{xy}$

Hence on comparing,

$$\Rightarrow x + y = 19 \quad \text{-----(1)}$$

$$\Rightarrow xy = 21 \times 4 = 84 \quad \text{-----(2)}$$

Substituting (1) in (2), we get,

$$\Rightarrow x(19 - x) = 84$$

$$\Rightarrow x^2 - 19x + 84 = 0$$

$$\Rightarrow x^2 - 7x - 12x + 84 = 0$$

$$\Rightarrow x(x - 7) - 12(x - 7) = 0$$

$$\Rightarrow (x - 7)(x - 12) = 0$$

$$\Rightarrow x = 7, 12$$

$$\Rightarrow y = 12, 7$$

$$\therefore \text{Positive square root of } [19 + 4\sqrt{21}] = \sqrt{7} + \sqrt{12} = \sqrt{7} + 2\sqrt{3}$$

Alternate Solution:

$$(19 + 4\sqrt{21}) = \{12 + 7 + 2\sqrt{(4 \times 21)}\}$$

$$= \{(\sqrt{7})^2 + (\sqrt{12})^2 + 2\sqrt{(7 \times 12)}\}$$

$$= (\sqrt{7} + \sqrt{12})^2$$

$$\Rightarrow \sqrt{(19 + 4\sqrt{21})} = \sqrt{(\sqrt{7} + \sqrt{12})^2} = \sqrt{7} + \sqrt{12}$$

$$= \sqrt{7} + 2\sqrt{3}$$

65. Answer: b

Explanation:

$$18 \text{ men } 1 \text{ day work} = 1/25$$

$$1 \text{ men } 1 \text{ day work} = 1/(18 \times 25) = 1/450$$

$$36 \text{ men } 1 \text{ day work} = 36 \times 1/450 = 2/25$$

Similarly,

$$25 \text{ boys } 1 \text{ day work} = 1/25$$

$$1 \text{ boy } 1 \text{ day work} = 1/(25 \times 25) = 1/625$$

$$10 \text{ boys } 1 \text{ day work} = 10 \times 1/625 = 2/125$$

Hence,

$$1 \text{ day work of } 36 \text{ men and } 10 \text{ boys} = 2/25 + 2/125 = 12/125$$

$$\therefore 36 \text{ men and } 10 \text{ boys will complete the work in } 125/12 \text{ days}$$

★ Alternate Method

According to the question,

$$18 \times M = 25 \times B$$

$$\Rightarrow M/B = 25/18$$

$$\text{Total work} = 25 \times 25 \times 18$$

$$\text{Total efficiency} = 36 \times 25 + 10 \times 18$$

$$\Rightarrow 1080$$

$$\text{Required time} = (25 \times 25 \times 18)/1080$$

$$\Rightarrow 125/12 \text{ days}$$

66. Answer: d

Explanation:

Given:

Distance = 450 m

Time = 9 seconds

Formula used:

Speed = Distance/Time

Calculation:

Speed of Vipin = Distance travelled by Vipin/Time taken

$\Rightarrow 450/9 = 50 \text{ m/sec.}$

$\Rightarrow 50 \times (18/5) = 180 \text{ km/hr}$

67. Answer: b

Explanation:

In the year 2012, 2015 and 2016, the number of vacancies are more than their previous year

No. of vacancies in 2014 = 30

No. of vacancies in 2013 = 55

$\therefore$ The no. of vacancies are lesser than the previous year in 2014

68. Answer: c

Explanation:

No. of vacancies in 2016 = 100

No. of vacancies in 2014 = 30

$\therefore$ Required difference = $100 - 30 = 70$

69. Answer: b

Explanation:

No. of vacancies in 2016 = 100

No. of vacancies in 2014 = 30

$\therefore$ The number of vacancies in 2014 were lesser than that in 2016 by = $(100 - 30)/100$
= $70\% = 0.7$

70. Answer: d

Explanation:

Salary of an executive = Rs. 30000

No. of vacancies in 2017 = 40

$\therefore$ Increase in the expense = $30000 \times 40 = \text{Rs. } 1200000 = \text{Rs. } 12 \text{ lakhs}$

71. Answer: c

Explanation:

Calculation:

Area of a trapezium = $[(\text{sum of parallel sides}) \times (\text{height of trapezium})]/2$

Area of given trapezium = $[(10 + 8) \times 6]/2$

$$= 9 \times 6$$

$$= 54 \text{ cm}^2$$

$\therefore$ Area of given trapezium is 54 cm^2

72. Answer: b

Explanation:

Calculation:

Diameter (d) of circle = 7 cm

$\therefore$ Circumference of a circle = $2\pi(\text{radius}) = \pi d$

Using $\pi = 22/7$,

$\therefore$ Circumference of given circle = $(22/7) \times 7$

= 22 cm

73. Answer: b

Explanation:

$\therefore$ Volume of a cube = $(\text{side})^3$

$\therefore$ Volume of cube with side 6.5 cm = $(6.5)^3 = 274.625 \text{ cm}^3$

74. Answer: b

Explanation:

Given, in $\triangle DEF$, $\angle E = 90^\circ$ and $\angle D = 30^\circ$

Sum of angles of a triangle = 180°

$$\Rightarrow \angle D + \angle E + \angle F = 180^\circ$$

$$\Rightarrow 30^\circ + 90^\circ + \angle F = 180^\circ$$

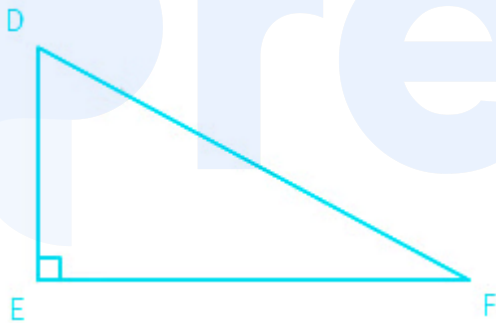
$$\Rightarrow \angle F = 180^\circ - 120^\circ = 60^\circ$$

$$\therefore (\cos F + \sqrt{3}) = \cos 60^\circ + \sqrt{3} = \frac{1}{2} + \sqrt{3} = \frac{(1 + 2\sqrt{3})}{2}$$

75. Answer: c

Explanation:

In the given $\triangle DEF$ shown below,



$$\sin D = \text{opposite/hypotenuse} = EF/DF = 15/17$$

$$\Rightarrow EF = 15 \text{ units and } DF = 17 \text{ units}$$

Using Pythagoras theorem,

$$\Rightarrow DE^2 = DF^2 - EF^2 = 17^2 - 15^2 = 289 - 225 = 64$$

$$\Rightarrow DE = \sqrt{64} = 8 \text{ units}$$

$$\therefore \cot F = \text{hypotenuse/opposite} = EF/DE = 15/8$$

76. Answer: a

Explanation:

Titanic movie has won the most number of Oscars.

- It is an American movie honoured with eleven Oscar Awards including Best Picture and Best Director on 23rd March 1998.
- Though the film was nominated for 14 awards but won in 11 categories only.
- James Cameron is the director of this movie.

77. Answer: a

Explanation:

- Chittorgarh Fort is located in the southern part of Rajasthan.
- Earlier the fort was the capital of Mewar district.
- It is one of the largest forts in India with 180 meters of height.
- It is also included in the list of UNESCO World Heritage Site.
- Rana Kumbha Palace is the oldest monument of this fort.

78. Answer: d

Explanation:

Key facts about small intestine:

- The small intestine is the main digester and absorber of the food.
- It consists of three parts namely - Duodenum, Jejunum and Ileum.

Duodenum - It is the first part of small intestine. It helps in the digestion of chyme in the food.

Jejunum - It is the second part of small intestine. Most of the nutrients take place in it.

Ileum – It is the third part of small intestine. It absorbs nutrients that did not get absorbed by the jejunum.

- Colon is the part of large intestine and Liver is the part of the digestive gland in the stomach.

79. Answer: b

Explanation:

The bark of the willow tree is a source of the medicine "Aspirin".

- It is a pain reliever medicine made up by the active ingredients of willow bark which is known as salicin.
- It is a herbal medicine tree grows all around the world besides Antarctica and Australia.
- Tea can also be made out of it to cure a headache and fever.

80. Answer: d

Explanation:

Capra Hircus is the scientific name of "Goat".

Animals	Scientific Name
Sheep	Ovis aries
Cow	Bos indicus
Horse	Equus caballus
Goat	Capra aegagrus hircus

81. Answer: c

Explanation:

Functions of a catalyst in a chemical reaction:

- A positive catalyst speeds up a chemical reaction.
- A catalyst lowers the activation energy to a chemical reaction for it to start and happen quickly.
- It accelerates the rate of reaction.
- Note: An Inhibitor slows down a reaction.

★ Key Points

- Inhibitor: An inhibitor is a substance that slows down or retard a chemical reaction. Example: Acetanilide slows down the decomposition of hydrogen peroxide. $2\text{H}_2\text{O}_2 \rightarrow 2\text{H}_2\text{O} + \text{O}_2$
- Promoter : A promoter is a substance which added with a catalyst to increase its activity or selectivity . Example: Traces of molybdenum is used as a

promoter in the Haber process (formation of ammonia) to increase the catalytic activity of iron

- Moderator: Moderators are used in nuclear reactors to slow down the fast-moving neutrons. Example: Graphite, heavy water(D 2O).

82. Answer: a

Explanation:

The correct answer is Silver.

Explanation:

- Silver atomic no is greater than Bromine.
- Silver has a higher atomic number when compared to Bromine.
- In the periodic table also Silver has an atomic number 47, whereas bromine has atomic number 35.

83. Answer: b

Explanation:

Commonly used abbreviation GUI in Computer Science stands for Graphical User Interface.

- A **Graphical User Interface** is a form of user interface that allows users to interact with electronic devices
- The GUI interacts with electronic devices through graphical icons and visual indicators such as secondary notation, instead of text-based user interfaces, typed command labels or text navigation.

84. Answer: a

Explanation:

Tamil is the official language of Puducherry.

Union Territotries	Official Language
Puducherry	Tamil
Dadra and Nagar Haveli	Marathi
Daman and Diu	Gujarati
Delhi	Hindi

85. Answer: a

Explanation:

Here percentage method (Ed) = -1.6

Percentage change in quantity demanded = 4

Percentage change in price = ?

So as per the formula,

The Elasticity of demand (Ed) = Percentage change in quantity demanded/Percentage change in price.

Percentage change in price = $-4/1.6 = -2.5$.

Hence the prices have to be reduced by 2.5 percent.

86. Answer: c

Explanation:

Here, are some facts about supply and demand of a quantity in economics:

- If the price of steel increases, then the equilibrium price of new two-wheelers will **increase** and the equilibrium quantity will **decrease**.
- If the price of steel increases, the supply curve for two-wheelers will shift to the left because the suppliers unable to bear high priced steel to make cars, it compels the suppliers to produce less.
- The demand curve will remain the same.
- The equilibrium price will increase due to the fact that the suppliers want more money because they are losing money when buying the expensive steel.
- The number (quantity) of two-wheelers will decrease because the suppliers are not interested to buy expensive steel to make and sell a large number of two-wheelers.

87. Answer: d

Explanation:

Key facts about pathogen and the diseases caused by it:

- Parasitic type of pathogen causes the water-borne disease Ascariasis.
- It is a roundworm organism found in the small intestine mostly occurs in children.
- The infection takes place by eating food or drink contaminated water with Ascaris eggs from human excreta.
- Abdominal pain, Abdominal swelling, shortness of breathing, fever and diarrhoea are the main symptoms of this disease.

88. Answer: d

Explanation:

★ Key Points

- Bacterial type of pathogen causes the water-borne disease dysentery.
- It is an inflammatory disease of the intestine mostly in the colon which prompts diarrhoea and abdominal pains.
- It is caused by various types of infectious pathogens such as bacteria, viruses, and parasites.
- Its most common symptoms are fever and dysentery.

★ Confusion Points

- The cause of dysentery is usually the bacteria from genus *Shigella*, in which case it is known as shigellosis, or the amoeba *Entamoeba histolytica*; then it is called amoebiasis.
- Hence the correct answer is bacteria.

89. Answer: a

Explanation:

Power sources in India:

- Coal is the major electricity generation power source in India.
- There are different types of thermal power plants based on the fuel, used to produce steam such as coal, gas, diesel and natural gas.
- It is the main source of electricity because coal-fired power plants convert coal to a gas for use in a gas cylinder to produce electricity.

90. Answer: b

Explanation:

The correct answer is Cartographer.

★ Key Points

- A person, who draws or makes maps or charts, is called **Cartographer** .

★ Additional Information

Occupation	Role
Hydrographer	Who measures the physical features of seas, oceans, rivers, lakes and coastal areas.
Cartographer	Someone who draws or makes maps or charts
Seismographer	Who measures and records earthquakes and other ground vibrations.
Lexicographer	a person who compiles dictionaries.

91. Answer: a

Explanation:

- Brihadeshwara Temple of Thanjavur was built by Raja Raja Chola I.

Key facts about Brihadeshwara Temple:

- Brihadeshwara Temple, Thanjavur is in Tamil Nadu. It is a Hindu Temple dedicated to Lord Shiva.
- It is one of the largest Temple in the southern part of India.
- It is built between 1003 and 1010 AD by Raja Raja Chola I in Dravidian architecture style.
- It is in the list of UNESCO World Heritage Site.
- It is also called as Dakshina Meru which simplifies "Meru of South".

92. Answer: b

Explanation:

About Salt March:

- Salt March is also known as Dandi March was initiated by Mahatma Gandhi.
- It was started on 12 March 1930 and rallied for 24 days at Sabarmati near Ahmedabad.
- Gandhiji and more than thousands of people got arrested while making their own salt as a protest of British rule and British taxation of salt production to make it legal and tax-free.
- It ultimately turned into a victory when the British unleashed the protesters from prison and granted the people to make their own salt.

93. Answer: c

Explanation:

About Chauri-Chaura incident:

- Chauri Chaura incident took place on 5th February 1922 in Gorakhpur District of Uttar Pradesh.

- During the Non-cooperation Movement, a group of protestors clashed with the local Police and as a result of this, Policemen opened fired on the protestors.
- Many leaders of the Non-Cooperation Movement were arrested and locked up at the Chauri Chaura police station.
- In response to the beatings and imprisonment of verification against the police on the following day was known to be as Chauri Chaura incident.

94. Answer: a

Explanation:

Alexander Graham Bell invented Telephone.

Inventor	Invented	Nationality
Alexander Graham Bell	Telephone	American
Thomas Edison	Incandescent light bulb	American
Benjamin Franklin	Lightning rod	American
James Watt	Watt steam engine	Scottish, British

95. Answer: d

Explanation:

The Psophometer measures AF (Audio Frequency) signal level and noise.

Instrument	Measures
Vectorscope	The colour components of a video signal.
VU meter(volume unit)	The volume of analogue audio signals.
Q meter	The testing of radio frequency circuits
Psophometer	The perceptible noise of a telephone circuit.

96. Answer: b

Explanation:

The process of defining dimensions for the physical quantities:

- If a physical quantity has the units - ampere meters per second squared, then it's dimensions are $[ALT^{-2}]$.
- Ampere is Electric current (Rate of flow of electrical charge per unit time) and its dimension is A.
- Metre is Length (one dimension extent of an object) and dimension is L.
- Second is Time (The duration of an event) and its dimension is T.

97. Answer: b

Explanation:

The 42nd Amendment of the Constitution of India:

- The 42nd Amendment of the Constitution of India was enacted in the **year 1976**.
- It is officially known as the Constitution Act, 1976.
- It was enacted during the Emergency by the Indian National Congress Head Indira Gandhi.
- It is considered as the most controversial Constitutional Amendments in Indian history.
- Added three new Directive Principles viz., equal justice and free legal aid, the participation of workers in the management of industries and protection of the environment, forests, and wildlife.
- Provided for the creation of the All-India Judicial Service.
Shortened the procedure for disciplinary action by taking away the right of a civil servant to make representation at the second stage after the inquiry (i.e., on the penalty proposed).
- It is often called a "mini-Constitution" or the "Constitution of Indira".

98. Answer: b

Explanation:

The correct answer is option 2, i.e. 5.

Key facts of Chhattisgarh:

- The number of parliamentary seats (Rajya Sabha) of Chhattisgarh is 5.
- **Raipur** is the capital of Chhattisgarh.
- **Raman Singh** is the former Chief Minister of Chhattisgarh (2003–2018).
- **Bhupesh Baghel** is the current Chief Minister of Chhattisgarh (assumed office–2018).

States	Rajya Sabha Seats
Uttarakhand, National Capital Territory of Delhi and Himachal Pradesh.	3
Chhattisgarh and Haryana	5
Andhra Pradesh, Gujarat and Madhya Pradesh	11
Bihar and West Bengal	16

99. Answer: a

Explanation:

Russia's seven swimmers were banned from the Rio Olympics.

- They are banned by the Governing body of World Aquatics FINA (Federation Internationale De Natation) over doping allegations.
- The swimmers who banned in 2016 Olympics are Mikhail Dovgalyuk, Daria Ustinova, Natalia Lovtcova, Anastasia Krapivina, Vladimir Morozov, Yulia Efimova and Nikita Lobintsev.

100. Answer: b

Explanation:

About Shashi Tharoor:

- Shashi Tharoor is the author of "The Great Indian Novel".
- He is the winner of the Commonwealth Writers Prize and Head of the Department of Public Information of the United Nations respectively.
- The novel is a fictional story, combined with epic Mahabharata and the history of Indian independence.
- The novel consists of eighteen books.

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