

Prepp

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



BPS



UP TET



IBPS RRB



IBPS CLERK



IES



UPSC CAPF



SSC Stenogr..



RRB NTPC



SSC GD



RBI GRADE B



RBI Assistant



DSSSB

SSC MTS Previous Year Paper (Held on: 13 Oct 2021 Shift 3)

Total Time: 1 Hour : 30 Minute

Total Marks: 100

Instructions

| Sl No. | Section Name | No. of Question | Maximum Marks | Negative Marks | Positive Marks |
|--------|----------------------------------|-----------------|---------------|----------------|----------------|
| 1 | General English | 25 | 25 | 0.25 | 1 |
| 2 | General Intelligence & Reasoning | 25 | 25 | 0.25 | 1 |
| 3 | Numerical Aptitude | 25 | 25 | 0.25 | 1 |
| 4 | General Awareness | 25 | 25 | 0.25 | 1 |

- 1.) A total of 90 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.

General English

1. Select the most appropriate option to substitute the underlined segment in the given sentence. If there is no need to substitute it, select 'No substitution required'. (+1, -0.25)

Prema's exceptional good looks always distinguish her from the rest of her sisters.

- a. distinguishing
- b. No substitution required
- c. distinguishes
- d. are distinguish

-
2. Select the most appropriate ANTONYM of the given word. (+1, -0.25)

BRIGHT

- a. Colourful
- b. Bleak
- c. Charming
- d. Active

-
3. Select the INCORRECTLY spelt word. (+1, -0.25)

- a. Receive
- b. Conceive

- c. Seive
 - d. Perceive
-

4. Select the word which means the same as the group of words given. (+1, -0.25)

A person who knows everything

- a. Omnipresent
 - b. Omniscient
 - c. Omnipotent
 - d. Omnivorous
-

5. Select the most appropriate meaning of the given idiom. (+1, -0.25)

A rotten apple

- a. A time when things are left to spoil
 - b. A single bad person or thing in a group
 - c. A single moment when things change
 - d. A tree which gives poor produce
-

6. Select the word which means the same as the group of words given. (+1, -0.25)

Scientific study of mind and behaviour

- a. Philosophy
- b. Astrology

- c. Neurology
 - d. Psychology
-

7. Select the most appropriate option to substitute the underlined segment in the given sentence. If there is no need to substitute it, select 'No substitution required'. (+1, -0.25)

The children have been quarrelling all the time, are they?

- a. have they
 - b. haven't they
 - c. aren't they
 - d. No substitution required
-

8. Identify the segment in the sentence which contains a grammatical error. (+1, -0.25)

Rohit said that he would save me from been scold by father.

- a. said that
 - b. he would
 - c. save me
 - d. been scold
-

9. Select the most appropriate synonym of the given word. (+1, -0.25)

INEXPENSIVE

- a. Costly

- b. Attractive
 - c. Cheap
 - d. Unaffordable
-

10. Select the most appropriate meaning of the given idiom. (+1, -0.25)

Giving a false alarm

- a. A situation when people ring an alarm bell to frighten everybody just for fun
 - b. A situation when people wrongly think that something bad is going to happen
 - c. A situation when people don't think that something is good and the opposite happens
 - d. A situation when things go wrong and everything bad happens
-

11. Identify the segment in the sentence which contains a grammatical error. (+1, -0.25)

Both Renu and her sister is very tall and are in the basketball team.

- a. in the basketball team
 - b. is very tall
 - c. and her sister
 - d. and are
-

12. Select the most appropriate word to fill in the blank. (+1, -0.25)

_____ it was snowing we decided to carry on driving in the mountains.

- a. However
 - b. If
 - c. Unless
 - d. Though
-

13. Select the most appropriate option to substitute the underlined segment in the given sentence. If there is no need to substitute it, select 'No substitution required.' (+1, -0.25)

Aren't it difficult to drive a car in a crowded city?

- a. No substitution required
 - b. Hasn't
 - c. Isn't
 - d. Hadn't
-

14. Select the most appropriate ANTONYM of the given word. (+1, -0.25)

NATIVE

- a. Resident
 - b. Heavenly
 - c. Free
 - d. Alien
-

15. Select the most appropriate word to fill in the blank. (+1, -0.25)

Most countries are now beginning to show a _____ in their economy and there's a sense of relief.

- a. downturn
- b. setback
- c. growth
- d. dismay

16. Identify the segment in the sentence which contains a grammatical error. (+1, -0.25)

We were not able to watched the movie due to lockdown.

- a. able to watched
- b. the movie
- c. were not
- d. due to

17. Select the most appropriate synonym of the given word. (+1, -0.25)

INVESTIGATE

- a. Discover
- b. Reveal
- c. Search
- d. Prepare

18. Select the most appropriate word to fill in the blank. (+1, -0.25)

The Registrar informed the candidate that the last date _____ submission of forms was over.

- a. at
- b. for
- c. to
- d. in

19. Select the most appropriate word to fill in the blank. (+1, -0.25)

My joy knew no _____ when I met my family after five years.

- a. pleasure
- b. attention
- c. sadness
- d. bounds

20. Select the INCORRECTLY spelt word. (+1, -0.25)

- a. Tuition
- b. Grammar
- c. Defination
- d. Allergy

21. In the following passage some words have been deleted. Fill in the blanks with the help of the alternatives given. Select the most appropriate option for each blank. (+1, -0.25)

For the past few months, Twinkle and Himanshu Kalia have been relentlessly (1)_____ to ensure that Covid patients and those suspected to (2)_____ reach the hospital by providing them ambulance service. Twinkle and her husband (3)_____ drive two of their fleet of 10 private ambulances. Twinkle herself caught the virus (4)_____ driving patients to hospitals or funeral grounds. But she did not (5)_____ her work and started working once she was fit.

Select the most appropriate option to fill in blank no. 1.

- a. working
- b. worked
- c. works
- d. work

22. In the following passage some words have been deleted. Fill in the blanks with the help of the alternatives given. Select the most appropriate option for each blank. (+1, -0.25)

For the past few months, Twinkle and Himanshu Kalia have been relentlessly (1)_____ to ensure that Covid patients and those suspected to (2)_____ reach the hospital by providing them ambulance service. Twinkle and her husband (3)_____ drive two of their fleet of 10 private ambulances. Twinkle herself caught the virus (4)_____ driving patients to hospitals or funeral grounds. But she did not (5)_____ her work and started working once she was fit.

Select the most appropriate option to fill in blank no. 2.

- a. had affected
- b. have affected
- c. be affected
- d. be affect

23. In the following passage some words have been deleted. Fill in the blanks with the help of the alternatives given. Select the most appropriate option for each blank. (+1, -0.25)

For the past few months, Twinkle and Himanshu Kalia have been relentlessly (1)_____ to ensure that Covid patients and those suspected to (2)_____ reach the hospital by providing them ambulance service. Twinkle and her husband (3)_____ drive two of their fleet of 10 private ambulances. Twinkle herself caught the virus (4)_____ driving patients to hospitals or funeral grounds. But she did not (5)_____ her work and started working once she was fit.

Select the most appropriate option to fill in blank no. 3.

- a. herself
- b. themselves
- c. itself
- d. ourselves

24. In the following passage some words have been deleted. Fill in the blanks with the help of the alternatives given. Select the most appropriate option for each blank. (+1, -0.25)

For the past few months, Twinkle and Himanshu Kalia have been relentlessly (1)_____ to ensure that Covid patients and those

suspected to (2) _____ reach the hospital by providing them ambulance service. Twinkle and her husband (3) _____ drive two of their fleet of 10 private ambulances. Twinkle herself caught the virus (4) _____ driving patients to hospitals or funeral grounds. But she did not (5) _____ her work and started working once she was fit.

Select the most appropriate option to fill in blank no. 4.

- a. since
- b. for
- c. while
- d. because

25. In the following passage some words have been deleted. Fill in the blanks with the help of the alternatives given. Select the most appropriate option for each blank. (+1, -0.25)

For the past few months, Twinkle and Himanshu Kalia have been relentlessly (1) _____ to ensure that Covid patients and those suspected to (2) _____ reach the hospital by providing them ambulance service. Twinkle and her husband (3) _____ drive two of their fleet of 10 private ambulances. Twinkle herself caught the virus (4) _____ driving patients to hospitals or funeral grounds. But she did not (5) _____ her work and started working once she was fit.

Select the most appropriate option to fill in blank no. 5.

- a. escape
- b. redeem
- c. continue
- d. abandon

General Intelligence & Reasoning

26. In a certain code language, SQUARE is coded as RP51Q2 and CUBE is coded as B5A2. How will TRIANGLE be coded in the same language? (+1, -0.25)
- a. SQ114HM2
 - b. 5S11OHM2
 - c. SQ31MFK2
 - d. SQ13FMK2
-

27. In a certain code language, SWIM is written as HDRN. How will CLEAR be written in the same code language? (+1, -0.25)
- a. YOZUR
 - b. OVXZR
 - c. XVOIZ
 - d. XOVZI
-

28. Five students Ahmad, Rohit, Charu, Deeksha and Chinmayi, are sitting in a row facing you such that Deeksha is on the left of Charu and Rohit is on the right of Chinmayi. Ahmad is one the right of Charu and Rohit is on the left of Deeksha. If Chinmayi occupies a corner position, then who is sitting in the centre? (+1, -0.25)
- a. Rohit
 - b. Deeksha

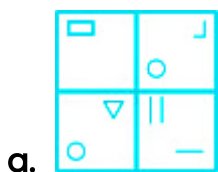
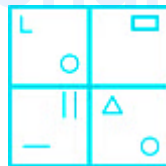
- c. Charu
- d. Ahmad

29. Study the following series carefully and select the option that represents the value of B. (+1, -0.25)

| | | | |
|----|----|----|-----|
| 7 | 21 | 84 | 420 |
| 15 | 45 | A | B |

- a. 720
- b. 850
- c. 900
- d. 950

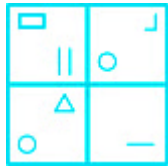
30. Select the correct mirror image of the given figure when the mirror is placed to the right side of the figure. (+1, -0.25)



b.

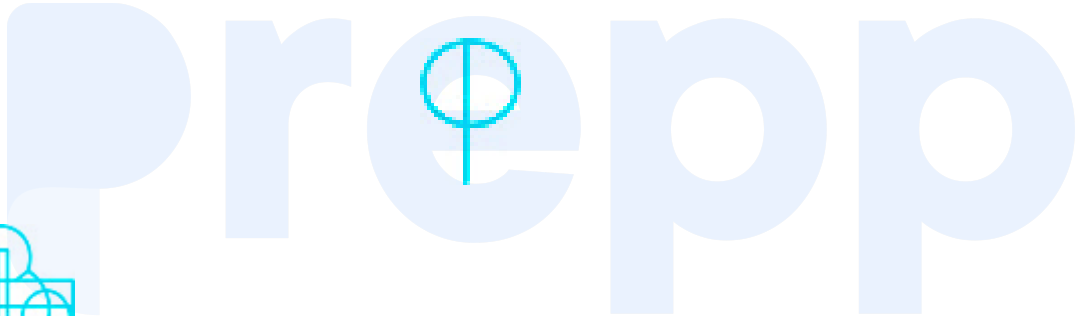


c.



d.

31. Select the option in which the given figure is embedded (rotation is NOT allowed). (+1, -0.25)



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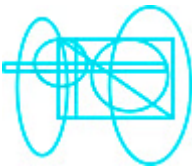
a.



b.



c.



d.



32. Select the option which is related to the third letter-group in the same way as the second letter-group is related to the first letter-group. (+1, -0.25)

Protection : Shield :: Exposure : ?

- a. injury
- b. cover
- c. threaten
- d. Disclosure

33. Select the option that is related to the third number in the same way as the second number is related to the first number. (+1, -0.25)

75 : 9 :: 15 : ?

- a. 13
- b. 45
- c. 135
- d. 225

34. Three statements are given, followed by three conclusions numbered I, II and III. Assuming that the information given in the statements is true, even if it appears to be different than commonly known facts, decide which of the conclusions logically follow(S) from the statements. (+1, -0.25)

Statements:

- 1. No leaves are green.

- 2. All fruits are greens.
- 3. Some sweets are fruits.

Conclusions:

- I. No leaves are fruits.
 - II. All sweets are greens.
 - III. Some leaves can be greens.
- a. Both conclusions I and II follow.
 - b. Both conclusions I and III follow.
 - c. Only conclusion III follows.
 - d. Only conclusion I follows.

35. In a certain code language, SOCKS is written as OKYGO. How will GLORY be written in the same code language? (+1, -0.25)

- a. CKHNU
- b. CKHUM
- c. CHKMC
- d. CHKNU

36. Select the option that is related to the third letter-cluster in the same way as the second letter-cluster is related to the first letter-cluster. (+1, -0.25)

ACTION : EXPNSI :: SISTER : ?

- a. UDPZIM

- b. WDOYIM
- c. VDOYIN
- d. WEOZJN

37. Select the option that is related to the third term in the same way as the second term is related to the first term. (+1, -0.25)

Pencil : Sharpener :: Wood :?

- a. Rubber
- b. Tree
- c. Axe
- d. Screwdriver

38. Two statements are given, followed by two conclusions numbered I and II. (+1, -0.25)
Assuming that the information given in the statements given in the statements is true, even if it appears to be different than commonly known facts, decide which of the conclusions logically follow(s) from the statements.

Statements:

- 1. All spoons are rounds.
- 2. All rounds are shapes.

Conclusions:

- I. Some shapes are rounds.
- II. All spoons are shapes.

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

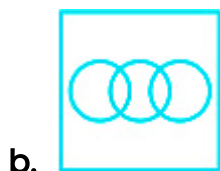
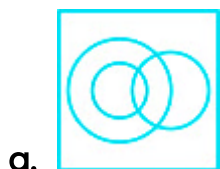
39. Select the number that can replace the question mark (?) in the following series. (+1, -0.25)

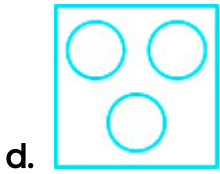
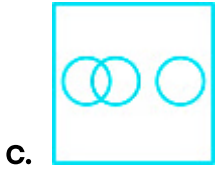
7, 8, 15, 18, 23, 28, 31, 38, ?

- a. 39
- b. 48
- c. 45
- d. 43

40. Select the Venn diagram that best illustrates the relationship between the following classes. (+1, -0.25)

Diary, Pages, Pen





41. Study the given pattern carefully and select the number that can replace the question mark (?) in it. (+1, -0.25)

| | | |
|---|----|----|
| 3 | 5 | 13 |
| 8 | 12 | 92 |
| 8 | 16 | ? |

- a. 120
- b. 124
- c. 128
- d. 136

42. Select the option figure that will replace question mark (?) in the following figure series. (+1, -0.25)





43. Given below is pattern out of which a section has been cut. Select the option which, when placed correctly, will complete the pattern.

(+1, -0.25)



44. Select the combination of letters that when sequentially placed in the blanks of the given letter series will complete the series. (+1, -0.25)

_ B _ A _ SAB _ _ B S

- a. ASBAS
- b. ASBSA
- c. BASBA
- d. SABAS

-
45. Ajay, Lalit, Charan, Dhruv and Gajendra are five men, who are sitting in a row facing south while Mayuri, Narmada, Shalini, Priya and Harshini are five women, who are facing north in the second row parallel to the first row. Sitting facing up. (+1, -0.25)

Lalit, who is sitting immediately left of Dhruv, is facing Harshini.

Charan and Narmada are sitting diagonally facing each other.

Gajendra is facing Shalini, who is sitting on the immediate right of Mayuri in the neighborhood.

Priya, who is sitting immediately left of Harshini, is facing Dhruv.

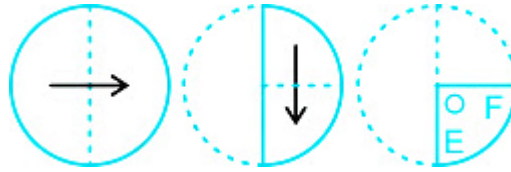
Mayuri is sitting at one end of the row.

Who is sitting third to the right of Shalini?

- a. Narmada
- b. Priya
- c. Mayuri

d. Harshini

46. A paper is folded and cut as shown below. How will it appear when unfolded? (+1, -0.25)



47. Arrange the expenditure of these season in the order in which they appear in India from March to February. (+1, -0.25)

1. Autumn
2. Spring
3. Monsoon

- 4. Winter
- 5. Summer
- a. 1, 5, 3, 2, 4
- b. 2, 5, 3, 1, 4
- c. 1, 5, 2, 3, 4
- d. 2, 3, 5, 1, 4

48. Which two signs should be interchanged to make the given equation correct? (+1, -0.25)

$$128 + 8 \times 2 \div 4 - 6 = 30$$

- a. \times and $-$
- b. \div and $-$
- c. \div and $+$
- d. $+$ and \times

49. Select the correct sequence of mathematical signs to sequentially replace the * signs and balance the given equation. (+1, -0.25)

$$8 * 20 * 320 * 20 * 10 = 166$$

- a. $+, \times, -, \div$
- b. $\times, +, \div, -$
- c. $\div, \times, +, -$

d. $-$, \div , $+$, \times

50. In a certain code language, AMAZON is coded as 140 and BRAZIL is coded as 136. How will GERMANY be coded in the same language? **(+1, -0.25)**

a. 166

b. 106

c. 183

d. 83

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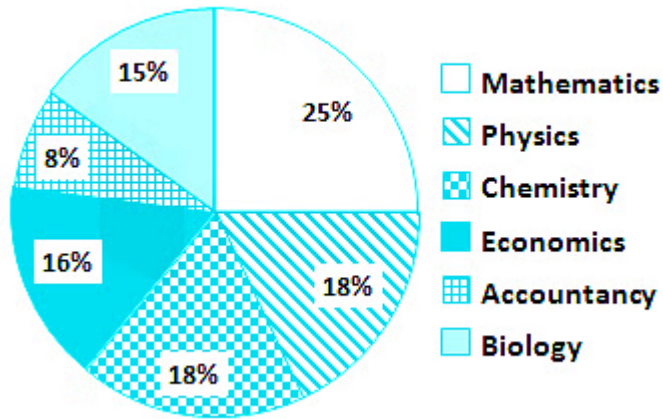
Numerical Aptitude

51. If the volume of a cube is $81\sqrt{3} \text{ cm}^3$, then its total surface area is: (+1, -0.25)
- a. 166 cm^2
 - b. 152 cm^2
 - c. 164 cm^2
 - d. 162 cm^2
-

52. A and B together can do a piece of work in 24 days. B and C together can do it in 36 days. If A is thrice as good a workman as C, in how many days can B alone do the work? (+1, -0.25)
- a. 48 days
 - b. 36 days
 - c. 45 days
 - d. 40 days
-

53. Study the following pie chart that shows the percentage-wise distribution of teachers who teach six different subjects, and answer the question given below. (+1, -0.25)

Total number of teachers = 1600



If $\frac{3}{8}$ of the teachers who teach Chemistry are females, then the number of male Chemistry teachers is what percentage of the total number of teachers who teach Mathematics?

- a. 55%
- b. 45%
- c. 40%
- d. 60%



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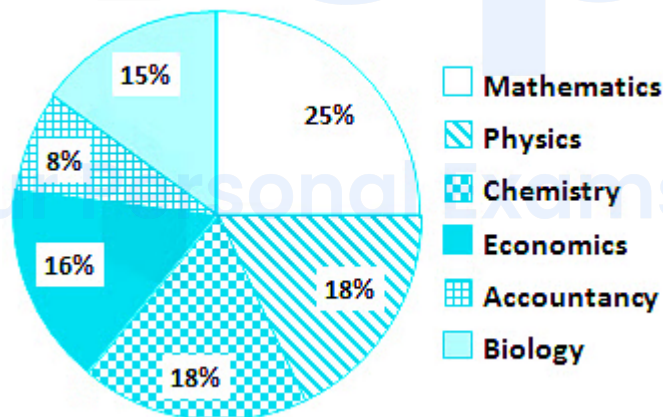
54. A person travels equal distances at speeds of 5 km/h, 8 km/h and 10 km/h and takes a total time of 2 hours and 33 minutes. The total distance travelled by him was: (+1, -0.25)

- a. 18 km
- b. 10 km
- c. 5 km
- d. 8 km

55. The sum of three numbers is 272. If the ratio between the first and second is 3 : 5 and that between the second and third is 5 : 8, then the third number is: (+1, -0.25)
- 136
 - 142
 - 126
 - 236

56. Study the following pie chart that shows the percentage-wise distribution of teachers who teach six different subjects, and answer the question given below. (+1, -0.25)

Total number of teachers = 1600



If the number of teachers who teach Accountancy is increased by 25% and the number of teachers who teach Economics is decreased by 25%, then the total number of teachers who teach Accountancy and Economics together is:

- 440

- b. 445
 - c. 464
 - d. 352
-

57. Three numbers are in the ratio 3 : 5 : 7 and their LCM is 840. Their HCF is: **(+1, -0.25)**

- a. 6
 - b. 4
 - c. 5
 - d. 8
-

58. An article was sold for Rs.1,190 after allowing a discount of 15%. If 12.5% discount is given, then for how much should it be sold? **(+1, -0.25)**

- a. Rs.1,200
 - b. Rs.1,220
 - c. Rs.1,325
 - d. Rs.1,225
-

59. A 144-m-long wire of radius 4 mm is melted to form a sphere. What is the surface area (in cm^2) of the sphere, assuming there is no wastage of material? **(+1, -0.25)**

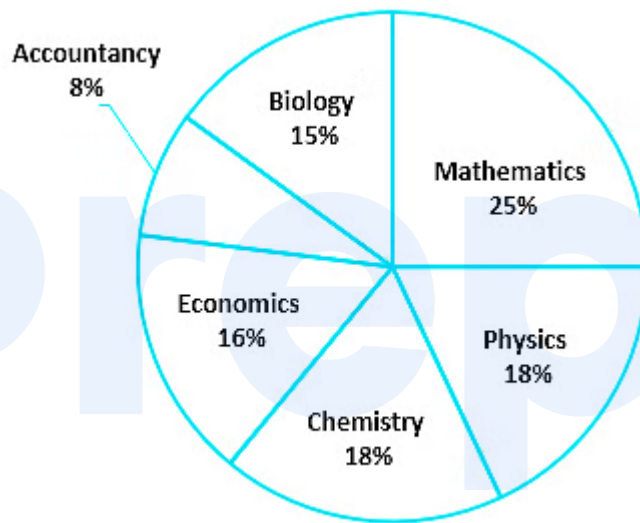
- a. 400π
- b. 676π

c. 576π

d. 484π

60. Study the following pie chart that shows the percentage-wise distribution of teachers who teach six different subjects, and answer the question given below. (+1, -0.25)

Total number of teachers = 1600



The central angle of teachers who teach Biology and Mathematics together is:

- a. 134°
- b. 124°
- c. 144°
- d. 140°

61. The value of $\frac{\frac{1}{3} + [4\frac{3}{4} - (3\frac{1}{6} - 2\frac{1}{3})]}{(\frac{1}{5} \text{ of } \frac{1}{5} \div \frac{1}{5}) \div (\frac{1}{5} \div \frac{1}{5} \times \frac{1}{5})}$ lies between: (+1, -0.25)

- a. 4.2 and 4.3
 - b. 4.3 and 4.4
 - c. 4.6 and 4.8
 - d. 4.0 and 4.1
-

62. The ratio of boys and girls in a school is 17 : 12, and the total number of students in the school is 1305. The number of boys in the school is: (+1, -0.25)

- a. 650
 - b. 765
 - c. 750
 - d. 700
-

63. The mean of 50 items was 24. Later on, it was discovered that two items were misread as 83 and 17 instead of 38 and 77. The correct mean is: (+1, -0.25)

- a. 24.3
 - b. 23.4
 - c. 24
 - d. 22.5
-

64. If the area of the base of a cone is 154 cm^2 and the area of the curved surface is 550 cm^2 , then its volume is: $(\text{Take } \pi = \frac{22}{7})$ (+1, -0.25)

- a. 1232 cm^3

b. 1132 cm^3

c. 1234 cm^3

d. 1130 cm^3

65. Varun gave 60% of the money he had to his wife. He also gave 20% of the remaining amount to each of his three children. Three-fifth of the amount now left was spent on miscellaneous items, and the remaining amount of Rs. 9,600 was deposited in the bank. How much money did Varun have initially? (+1, -0.25)

a. Rs. 2,00,000

b. Rs. 1,80,000

c. Rs. 1,50,000

d. Rs. 1,60,000

66. If a person walked at 12 km/h instead of $8\frac{1}{2}$ km/h, he would have walked 14 km more. The actual distance travelled by him was: (+1, -0.25)

a. 32 km

b. 30 km

c. 36 km

d. 34 km

67. The average age of a group of students in a class is 15.5 years. 15 new students with an average age of 14.5 years join the group, due to which (+1, -0.25)

the average age of students in the class becomes 15 years. The number of students initially present in the class is:

- a. 18
- b. 12
- c. 14
- d. 15

68. 'A' alone can complete a work for Rs. 6,500 in 15 days. With the help of 'B', the work is completed in 12 days. The share of 'B' is: (+1, -0.25)

- a. Rs. 1,500
- b. Rs. 1,200
- c. Rs. 2,300
- d. Rs. 1,300

69. Each of the measure of the radius of a cylinder and that of a sphere is 10.5 cm. Also, the volumes of these two solids are equal. The curved surface area of the cylinder is: (+1, -0.25)

(Take $\pi = \frac{22}{7}$)

- a. 934 cm^2
- b. 824 cm^2
- c. 920 cm^2
- d. 924 cm^2

70. A man wanted to sell his cycle at 20% profit, but actually sold it at 20% loss for Rs. 960. At what price did he want to sell it to earn the profit of 20%? (+1, -0.25)

- a. Rs. 1,420
- b. Rs. 1,440
- c. Rs. 1,450
- d. Rs. 1,340

71. Naveen took two loans, altogether for Rs. 9,400, from Suman and Arya. (+1, -0.25)
Suman claimed $12\frac{1}{2}$ % simple interest per annum, while Arya claimed $10\frac{1}{2}$ % per annum. The total interest paid by Naveen in one year was Rs. 1,063. The sum borrowed from Arya is:

- a. Rs. 6,600
- b. Rs. 5,400
- c. Rs. 5,200
- d. Rs. 5,600

72. The average of five numbers is 78. If the average of the first two numbers is 54 and the average of the last two numbers is 63, then the third numbers is: (+1, -0.25)

- a. 156
- b. 126
- c. 136

d. 144

73. An article was sold at 5.75% profit. Had it been sold at 1.2% loss, it would have given him Rs. 1,390 less. The cost price of the article is: (+1, -0.25)

a. Rs. 25,000

b. Rs. 22,500

c. Rs. 20,000

d. Rs. 22,000

74. The daily wages of men and women are in the ratio 4 : 3. 15 men and 25 women together earn Rs. 5,400. Find the total wages of one man and 5 women. (+1, -0.25)

a. Rs. 740

b. Rs. 680

c. Rs. 860

d. Rs. 760

75. The compound interest obtained on Rs. 6,250 for two years at the rate of interest 8% per annum, compounded annually, will be: (+1, -0.25)

a. Rs. 1,040

b. Rs. 1,500

c. Rs. 1,450

d. Rs. 1,020

prepp

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General Awareness

76. In which year was the Treaty of Versailles signed? (+1, -0.25)
- a. 1921
 - b. 1919
 - c. 1933
 - d. 1940
-

77. What does UNDP stand for in the context of Economics? (+1, -0.25)
- a. United Nations Disinflation Programme
 - b. United Nations Development Programme
 - c. United Nations Defaulting Programme
 - d. United Nations Deregulation Programme
-

78. Who was the author of the three-act play, 'Post Office'? (+1, -0.25)
- a. Vishnu Sharma
 - b. Karan Singh
 - c. MK Gandhi
 - d. Rabindranath Tagore
-

79. The Central Board of Directors of the RBI (Reserve Bank of India) is appointed/nominated for a period of _____ years. (+1, -0.25)

- a. five
 - b. six
 - c. three
 - d. four
-

80. By which British statute were Indian representatives, for the first time, allocated seats for election in Indian Legislative Councils? (+1, -0.25)

- a. Government of India Act, 1833
 - b. Indian Councils Act, 1892
 - c. Government of India Act, 1915
 - d. Indian Councils Act, 1861
-

81. Poonam Yadav won the 2019 Arjuna Award for which sport? (+1, -0.25)

- a. Badminton
 - b. Cricket
 - c. Shooting
 - d. Wrestling
-

82. 'Dhangari Gaja' is a dance form mainly associated with _____. (+1, -0.25)

- a. Uttar Pradesh
- b. Jharkhand

- c. Maharashtra
 - d. Chhattisgarh
-

83. Bhalari is one of the popular folk songs of _____, which is sung by farmers while working in their fields. (+1, -0.25)

- a. Rajasthan
 - b. Maharashtra
 - c. Himachal Pradesh
 - d. Bihar
-

84. As of August 2020, who among the following was the Chief Economic Adviser to the Finance Ministry of India? (+1, -0.25)

- a. Ajit Pai
 - b. Krishnamurthy V Subramanian
 - c. Ravi Anshuman
 - d. Anand Nandkumar
-

85. Emperor Ashoka embraced Buddhism after the: (+1, -0.25)

- a. Kalinga War
- b. Battle of Buxar
- c. Battle of Haldighati

d. Battle of Tarain

86. Gambhira, Dhali and Jatra are the famous dance forms of which state? (+1, -0.25)

- a. Punjab
 - b. West Bengal
 - c. Tamil Nadu
 - d. Uttar Pradesh
-

87. What does Herpetology deal with? (+1, -0.25)

- a. Study of fish
 - b. Study of insects
 - c. Study of reptiles and amphibians
 - d. Study of birds
-

88. Name the only sea in the world that does NOT have a land boundary. (+1, -0.25)

- a. Sargasso Sea
 - b. Pechora Sea
 - c. Amundsen Sea
 - d. Iroise Sea
-

89. Which of the following elements can be used to treat/purify water? (+1, -0.25)

- a. Potassium
 - b. Magnesium
 - c. Chlorine
 - d. Lead
-

90. Which of the following is the largest west flowing river in Rajasthan? (+1, -0.25)

- a. Luni
 - b. Chambal
 - c. Banganga
 - d. Banas
-

91. What does Article 61 of the Indian Constitution deal with? (+1, -0.25)

- a. Fundamental Duties
 - b. Impeachment of the President
 - c. Financial Emergency
 - d. National Emergency
-

92. Which of the following acids is released by the gastric glands present in the stomach? (+1, -0.25)

- a. Acetic acid
- b. Nitric acid

- c. Citric acid
- d. Hydrochloric acid

93. Which country has the most time zones in the world? (+1, -0.25)

- a. France
- b. United States of America
- c. Russia
- d. United Kingdom

94. On 22 July 2020, _____, Deputy Commissioner of Mumbai Customs, was appointed as an honorary adviser to the steering committee for BRICS Chamber of Commerce and Industry (CCI) young leaders for the period 2020-2023. (+1, -0.25)

- a. Amit Ghawate
- b. Sahil Seth
- c. Yogesh Yadav
- d. HM Patel

95. Who discovered the TB vaccine? (+1, -0.25)

- a. Edward Jenner
- b. Jonas Salk and Camille Guerin
- c. Leon Calmette and Camille Guerin

d. Louis Pasteur

96. Which Part of the Constitution of India deals with finance, property, contracts and suits? (+1, -0.25)

a. Part XII

b. Part IX

c. Part X

d. Part VIII

97. Name the country which has the most AFC (AFC) Asian Cup titles? (+1, -0.25)

a. South Korea

b. Saudi Arab

c. Japan

d. Iran

98. Who was the first woman Election Commissioner of Maharashtra? (+1, -0.25)

a. Neela Satyanarayan

b. Rekha Sharma

c. Minati Behera

d. Sugatha Kumari

99. Which newspaper was founded by Mahatma Gandhi in South Africa in 1903? (+1, -0.25)

- a. Young India
 - b. Indian Opinion
 - c. Swaraj Hind
 - d. Navajivan
-

100. Which of the following gases is used in electric bulbs? (+1, -0.25)

- a. Halogen
- b. Nitrogen
- c. Carbon dioxide
- d. Hydrogen

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Answers

1. Answer: b

Explanation:

The correct answer is 'No substitution required'.

★ Key Points

- In the given sentence and from the given options we understand that the verb **distinguish** (be an identifying characteristic or mark of) or one of its tense forms need to be used for the underlined part.
- **Distinguishing** can be used as the gerund or present participle form. Using either depends on the main verb in the sentence. Since **distinguish** is the main verb in the given sentence, **option 1** cannot be used.
- **Distinguishes** is the third person present form. It is also used to maintain subject-verb agreement when the subject is singular. But in the given sentence, the subject is plural (good looks). So, it cannot be used.
- **are distinguish** is a phrase where the linking verb is plural and will only go with a plural subject.
- Thus, none of the options can substitute the underlined segment of the given sentence.
- Hence, **option 2** is the correct answer.

2. Answer: b

Explanation:

The correct answer is '**Bleak**'.

★ Key Points

- **Bright** is an adjective which means full of light. When it is used to describe a day, it means (of a period of time) having sunny, cloudless weather.

- The meaning of the given options are as follows –
 - **Colourful** – having much or varied colour; bright.
 - **Bleak** – (of the weather) cold and miserable.
 - **Charming** – very pleasant or attractive.
 - **Active** – engaging or ready to engage in physically energetic pursuits.
- From the above meanings it is evident that **bleak** is the correct antonym for the word **bright**.
- Thus, **option 2** is the correct answer.

3. Answer: c

Explanation:

The erroneous spelling is '**seive**'.

★ Key Points

- Let us explore the meaning of the given options
 - **Receive** – be given, presented with, or paid (something).
 - **Conceive** – form or devise (a plan or idea) in the mind.
 - **Seive** – There is no such word in English or we can say that there is a spelling mistake in the word.
 - **Perceive** – become aware or conscious of (something); come to realize or understand.
- Hence, the correct answer is **option 3**.

★ Additional Information

- If we **interchange e and i** in the word **seive**, we get the word **sieve**.
- **Sieve** is a proper English word and it means a utensil consisting of a wire or plastic mesh held in a frame, used for straining solids from liquids, for separating coarser from finer particles, or for reducing soft solids to a pulp.
- "**I before E, except after C**" is a mnemonic rule of thumb for English spelling. If one is unsure whether a word is spelled with the digraph ei or ie, the rhyme suggests that the **correct order is ie** unless the preceding letter is c, in which case it is ei.

- In the given spellings this rule has been followed in the three correctly spelled words - re **cei** ve, con **cei** ve, per **cei** ve

4. Answer: b

Explanation:

The correct answer is 'Omniscient'.

★ Key Points

- Let us look into the meaning of the words in the options -
 - **Omnipresent**- widely or constantly encountered; widespread.
 - Omniscient - knowing everything.
 - **Omnipotent** - (of a deity) having unlimited power.
 - **Omnivorous** - (of an animal or person) feeding on a variety of food of both plant and animal origin.
- From the above meanings, it is clear that **omniscient** is the best word to substitute for the given group of words.
- Hence, **option 2** is the correct answer.

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5. Answer: b

Explanation:

The correct answer is 'A situation when people wrongly think that something bad is going to happen'.

★ Key Points

- A rotten apple is an idiom where bad apple (or rotten apple) is indeed defined as "someone who creates problems or causes trouble for others; specifically : a member of a group whose behavior reflects poorly on or negatively affects or influences the remainder of the group." (कोई है जो समस्याएँ पैदा करता है या दूसरों के लिए

परेशानी का कारण बनता है; विशेष रूप से: एक समूह का सदस्य जिसका व्यवहार खराब रूप से दर्शाता है या समूह के शेष को नकारात्मक रूप से प्रभावित या प्रभावित करता है)

- Example - The roommates are having problems with Edith-she's the **one rotten apple** of the bunch.
- So, **A single bad person or thing in a group** is the most appropriate meaning of the given idiom.

6. Answer: d

Explanation:

The correct answer is 'Psychology' .

★ Key Points

- Let us look into the meaning of the words in the options -
 - Philosophy - the study of the fundamental nature of knowledge, reality, and existence, especially when considered as an academic discipline.
 - Astrology - the study of the movements and relative positions of celestial bodies interpreted as having an influence on human affairs and the natural world.
 - Neurology - the branch of medicine or biology that deals with the anatomy, functions, and organic disorders of nerves and the nervous system.
 - Psychology - the scientific study of the human mind and its functions, especially those affecting behaviour in a given context.
- From the above meanings it is clear that psychology is the best word to substitute the given group of words.
- Hence, option 4 is the correct answer.

7. Answer: b

Explanation:

The correct answer is "haven't they"

★ Key Points

- According to grammar, whenever we use a question tag then, we need to take it according to the main verb of the sentence. In the given sentence, the main verb is "have" hence, we need to use a question tag "haven't" and the pronoun will be used according to the subject of the sentence i.e. "they".
- Hence, the correct answer is Option 2 i.e. "Haven't they"

So the correct sentence is- *The children have been quarrelling all the time, haven't they?*

8. Answer: d

Explanation:

The erroneous part is 'been scold'.

★ Key Points

- The given sentence implies that the action of scolding will be occurring in the future and the subject will be saved from it by someone called Rohit.
- The use of **would** also imply that the given sentence is in indirect speech.
- **Been** is the past participle of being, and we only use it in the perfect tense - Past perfect continuous, Present perfect continuous, Past perfect, Future perfect continuous.
- **Scold** is the simple present tense form.
- So, the phrase " **been scold**" is an incorrect phrase. Instead of this, we need to use "being scolded"
- Hence, the error lies in this part, making **option 4** the correct answer.

So the correct sentence is- *Rohit said that he would save me from being scolded by father.*

9. Answer: c

Explanation:

The correct answer is 'Cheap'.

★ Key Points

- Inexpensive is an adjective which means not costing a great deal.
- The meaning of the given options are as follows -
 - Costly - costing a lot; expensive.
 - **Attractive** - pleasing or appealing to the senses.
 - Cheap - low in price, especially in relation to similar items or services.
 - Unaffordable - too expensive to be afforded by the average person.
- From the above meanings it is evident that cheap is the correct synonym for the word inexpensive.
- Thus, option 3 is the correct answer.

★ Additional Information

- Costly and unaffordable are antonyms for the word inexpensive.

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10. Answer: b

Explanation:

The correct answer is 'A situation when people wrongly think that something bad is going to happen'.

★ Key Points

- **Giving a false alarm** is an idiom that means a warning of something, especially something unpleasant or dangerous, which does not in fact happen. (किसी चीज की चेतावनी, विशेष रूप से कुछ अप्रिय या खतरनाक, जो वास्तव में नहीं होता है)
 - Example - They said it was a bomb, but they were **giving a false alarm**.

- So, A situation when people wrongly think that something bad is going to happen is the most appropriate meaning of the given idiom.
-

11. Answer: b

Explanation:

The erroneous part is 'is very tall' .

★ Key Points

- The given sentence has a **subject-verb** disagreement.
- If the subject consists of two or more words (Renu; her sister) that are connected by **and or by both...and** , the subject is plural and requires a plural verb.
- Thus, it is incorrect to use the **singular linking verb is**.
- This makes **option 2** incorrect.

So the correct sentence is- *Both Renu and her sister **are** very tall and are in the basketball team.*

★ Additional Information

- The sentence can be made correct by using the **plural linking verb are**.
-

12. Answer: d

Explanation:

The correct answer is 'Though' .

★ Key Points

- The given blank needs a **conjunction** to join the two clauses - it was snowing / we decided to carry on driving in the mountains.

- The two clauses imply that the decision to carry on driving in the mountains was taken in spite of the fact that it was snowing.
- Thus, the conjunction **though** which means despite the fact that; although is the most appropriate word for the given blank.
- Hence, **option 4** is the correct answer.

★ Additional Information

- **However** is an adverb which is used to introduce a statement that contrasts with or seems to contradict something that has been said previously.
- **If** is a conjunction (introducing a conditional clause) on the condition or supposition that; in the event that.
- **Unless** is a conjunction which means except if (used to introduce the case in which a statement being made is not true or valid).

13. Answer: c

Explanation:

The correct answer is 'Isn't'.

★ Key Points

- **Aren't** means **are not**. It is used when the subject is multiple items/plural. - *They **aren't** nice people.*
- But in the given sentence the subject is singular - a car.
- Thus, we need to substitute the underlined part with **Isn't**.
- **Isn't** means **is not**. It is used when the subject is one item/singular. - *He **isn't** a nice person.*
- We use "**Isn't it?**" when we have some idea that something is true, or we suspect it is true, but we are not sure and are asking from a position of uncertainty.
 - Example: *The moon is a satellite of the earth, **isn't it?***
- Thus, **option 3** is the correct substitute for the underlined part.

14. Answer: d

Explanation:

The correct answer is 'Alien' .

★ Key Points

- **Native** is an adjective which refers to the indigenous inhabitants of a place.
- The meaning of the given options are as follows –
 - Resident – a person who lives somewhere permanently or on a long-term basis.
 - Heavenly – of heaven; divine.
 - Free – able to act or be done as one wishes; not under the control of another.
 - Alien – belonging to a foreign country.
- From the above meanings it is evident that **alien** is the correct antonym for the word **native** .
- Thus, option 4 is the correct answer.

15. Answer: c

Explanation:

The correct answer is '**growth**'.

★ Key Points

- The meaning of the given options are as follows –
 - **downturn** – a decline in economic, business, or other activity.
 - **setback** – a reversal or check in progress.
 - **growth** – the process of increasing in size.
 - **dismay** – concern and distress caused by something unexpected.

- The given sentence talks about how countries now have a sense of relief because of something happening to the economy.
 - Since, something positive will lead to this sense of relief, it is evident that the correct word for the given blank is **growth**.
 - All the other options imply something negative.
 - Thus, **option 3** is the correct answer.
-

16. **Answer: a**

Explanation:

The erroneous part is '**able to watched**'.

★ **Key Points**

- The sentence appears to be in past tense as the subject could not perform the action (to watch a movie) in the past.
- As such, the sentence has used past tense to represent the same (were, watched).
- The sentence is also a negative sentence.
- Negatives in the simple past are formed by adding didn't (informal) or did not (formal) before the simple form of the verb.
- The verb BE is an exception to this; in the case of BE, we just add n't (informal) or not (formal) after "was" or "were".
- Thus, it is incorrect to use the **past tense watched** in the sentence instead of the simple verb form **watch**.
- So, **option 1** is the correct answer.

So the correct sentence is- *We were not able to watch the movie due to lockdown.*

17. **Answer: c**

Explanation:

The correct answer is 'Search' .

★ Key Points

- Investigate is a verb which means to carry out a systematic or formal inquiry to discover and examine the facts of (an incident, allegation, etc.) so as to establish the truth.
- The meaning of the given options are as follows -
 - Discover - find unexpectedly or during a search.
 - Reveal - make (previously unknown or secret information) known to others.
 - Search - try to find something by looking or otherwise seeking carefully and thoroughly.
 - Prepare - make (something) ready for use or consideration.
- From the above meanings it is evident that search is the correct synonym for the word investigate .
- Thus, option 3 is the correct answer.

18. Answer: b

Explanation:

The correct answer is 'for' .

★ Key Points

- The given blank needs a **preposition** to indicate the duration of the time of submission.
- The **preposition at** is used to indicate precise time - *at 3'o clock*
- The preposition for is used as a function word to indicate the duration of time or extent of space - *gone for two days*
- The preposition to is used as a function word to indicate position or relation in time - *five minutes to ten*
- The preposition in is used for months, years, and longer periods of time - *in May*

- Thus, **for** is the most appropriate preposition for the given blank, making **option 2** the correct answer.

So the correct sentence is- *The Registrar informed the candidate that the last date for submission of forms was over.*

19. Answer: d

Explanation:

The correct answer is '**bounds**'.

★ Key Points

- The correct word for the given blank is **bounds**.
 - **joy knew no bounds** is an idiomatic phrase that is used for emphasizing that it is very strong or intense.
 - Hence, **option 4** is the correct answer.
 - The other given options do not form any meaning when used in the given blank.
-

20. Answer: c

Explanation:

The erroneous spelling is "**Defination**"

★ Key Points

- Let us explore the meaning of the given options
 - Tuition - teaching or instruction, especially of individual pupils or small groups.
 - Grammar - the whole system and structure of a language or of languages in general, usually taken as consisting of syntax and
-

morphology (including inflections) and sometimes also phonology and semantics.

- Defination - There is no such word in English or we can say that there is a spelling mistake in the word.
 - If we replace the letter 'a' with 'i' in the word ' defination' , we get the word ' definition'.
 - 'Definition' is a proper English word and it means a ***statement of the exact meaning of a word, especially in a dictionary.***
 - Allergy - a damaging immune response by the body to a substance, especially a particular food, pollen, fur, or dust, to which it has become hypersensitive.
- Hence, the correct answer is option 3 .

21. Answer: a

Explanation:

The correct answer is 'working' .

★ Key Points

- From the given options we can see, that the given blank must be filled by the correct tense form of the root verb **work**.
- The given sentence implies that the action being performed by the subjects had started in the past and is continuing at the present time. (have been)
- Thus, **working** is the correct tense form to be used in the given blank.
- Have been ... working is the present perfect continuous tense.
- Thus, **option 1** is the correct answer.

So the complete passage is- *For the past few months, Twinkle and Himanshu Kalia have been relentlessly (1) **working** to ensure that Covid patients and those suspected to (2) **be affected** reach the hospital by providing them ambulance service. Twinkle and her husband (3) **themselves** drive two of their fleet of 10 private ambulances. Twinkle herself caught the virus (4) **while** driving patients to hospitals*

or funeral grounds. But she did not (5) **abandon** her work and started working once she was fit.

★ Additional Information

- **Worked** is the past tense form.
- **Works** is the third person present tense.
- **Work** is the simple present tense.

22. Answer: c

Explanation:

The correct answer is 'be affected'.

★ Key Points

- From the given options, it is clear that the **to** before the blank is an infinitive marker as none of the options form are the gerund form of the root verb **affect**. (**affecting**)
- **to be** is used to say something about a person, thing, or state, to show a permanent or temporary quality, state, job, etc.
- **to have/had** is used to show possession.
- The given sentence is implying those who are suspected of having Covid or are affected by it.
- Thus, it is saying something about the people.
- Hence, **to be affected** is the correct phrase for the given blank.
- Thus, option 3 is the correct answer.

So the complete passage is- *For the past few months, Twinkle and Himanshu Kalia have been relentlessly (1) working to ensure that Covid patients and those suspected to (2) be affected reach the hospital by providing them ambulance service. Twinkle and her husband (3) themselves drive two of their fleet of 10 private ambulances. Twinkle herself caught the virus (4) while driving patients to hospitals or funeral grounds. But she did not (5) abandon her work and started working once she was fit.*

23. Answer: b

Explanation:

The correct answer is '**themselves**'.

★ Key Points

- The given blank needs a **reflexive pronoun** to refer to the noun 'Twinkle and her husband'.
- **Twinkle and her husband** can be expressed by the **subject pronoun they**.
- When **they** is the subject pronoun, the corresponding reflexive pronoun is **themselves**.
- Thus, **option 2** is the correct answer.

So the complete passage is- *For the past few months, Twinkle and Himanshu Kalia have been relentlessly (1) working to ensure that Covid patients and those suspected to (2) be affected reach the hospital by providing them ambulance service. Twinkle and her husband (3) themselves drive two of their fleet of 10 private ambulances. Twinkle herself caught the virus (4) while driving patients to hospitals or funeral grounds. But she did not (5) abandon her work and started working once she was fit.*

★ Additional Information

| Subject Pronoun | Reflexive Pronoun |
|-----------------|-------------------|
| she | herself |
| it | itself |
| we | ourselves |

24. Answer: c

Explanation:

The correct answer is 'while'.

★ Key Points

- The given blank needs an **adverb** to modify the succeeding verb **driving**.
- The meaning of the given options when used as adverbs as follows -
 - **since** - between then and now.
 - **for** - cannot be used as an adverb
 - **while** - during which.
 - **because** - cannot be used as an adverb
- **While** is a better fit for the given blank as the sentence implies that Twinkle was affected by Covid when she was driving the patients to the hospital.
- Thus, **option 3** is the correct word.

So the complete passage is- *For the past few months, Twinkle and Himanshu Kalia have been relentlessly (1) working to ensure that Covid patients and those suspected to (2) be affected reach the hospital by providing them ambulance service. Twinkle and her husband (3) themselves drive two of their fleet of 10 private ambulances. Twinkle herself caught the virus (4) while driving patients to hospitals or funeral grounds. But she did not (5) abandon her work and started working once she was fit.*

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25. Answer: d

Explanation:

The correct answer is 'abandon'.

★ Key Points

- The meaning of the given options are as follows -
 - **escape** - break free from confinement or control.
 - **redeem** - compensate for the faults or bad aspects of.

- **continue** - persist in an activity or process.
- **abandon** - cease to support or look after (someone); desert.
- The sentence with the blank implies that Twinkle refused to stop her work despite falling sick.
- Thus, **abandon** is the best fit word for the given sentence.
- Hence, **option 4** is the correct answer.

So the complete passage is- *For the past few months, Twinkle and Himanshu Kalia have been relentlessly (1) working to ensure that Covid patients and those suspected to (2) be affected reach the hospital by providing them ambulance service. Twinkle and her husband (3) themselves drive two of their fleet of 10 private ambulances. Twinkle herself caught the virus (4) while driving patients to hospitals or funeral grounds. But she did not (5) abandon her work and started working once she was fit.*

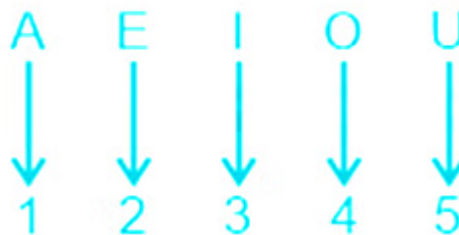
26. Answer: c

Explanation:

The logic followed here is :-

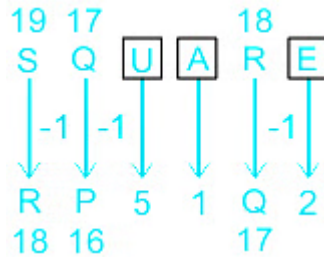
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|------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Alphabets | A | B | C | D | E | F | G | H | I | J | K | L | M |
| Positional value | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| Positional value | 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 |

Vowel order value :



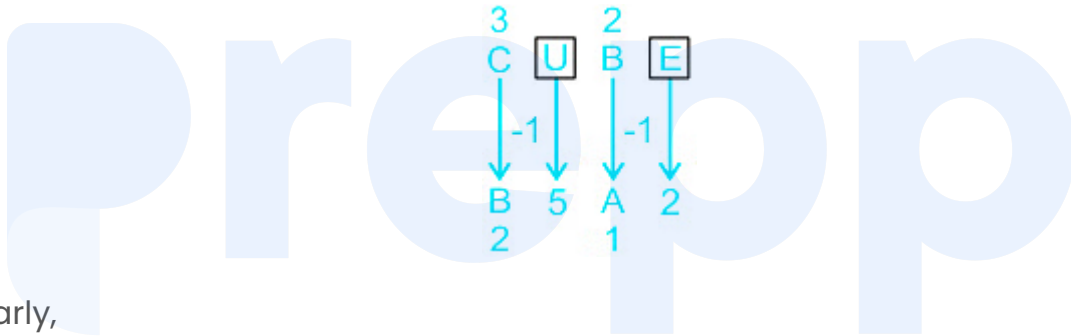
- Consonants are decreases - 1.
- Vowels alphabets order value is represented.

SQUARE is coded as RP5IQ2.



And,

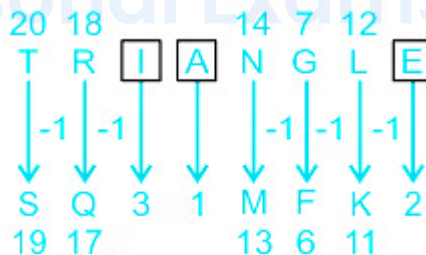
CUBE is coded as B5A2.



Similarly,

- TRIANGLE will be coded as :

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Hence, the correct answer is "SQ3IMFK2".

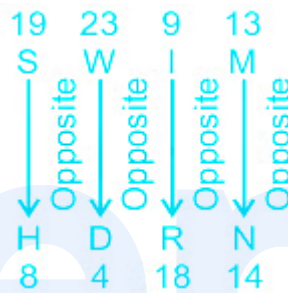
27. Answer: d

Explanation:

The logic followed here is :-

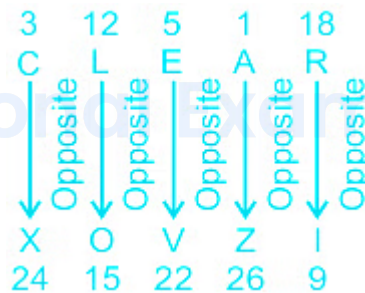
| | | | | | | | | | | | | | |
|------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Alphabets | A | B | C | D | E | F | G | H | I | J | K | L | M |
| Positional value | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| Positional value | 26 | 25 | 24 | 23 | 22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

SWIM is written as HDRN.



Similarly,

- CLEAR will be written as :



Hence, the correct answer is "XOVZI".

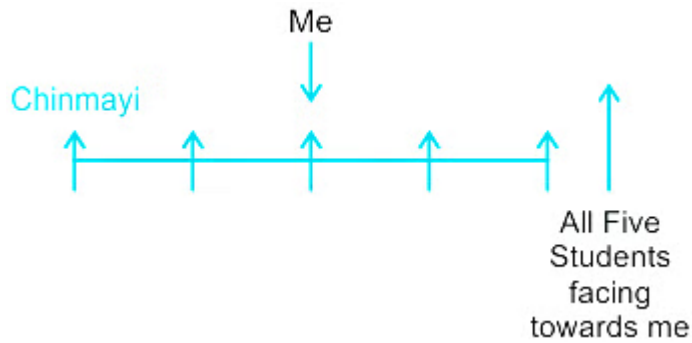
28. Answer: b

Explanation:

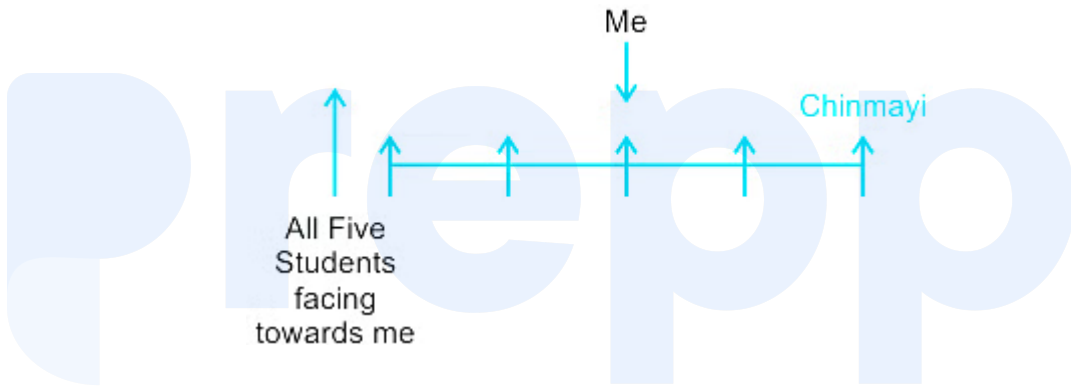
Five students Ahmad, Rohit, Charu, Deeksha and Chinmayi, are setting in a row facing you

1) If Chinmayi occupies a corner position.

Case (i) :

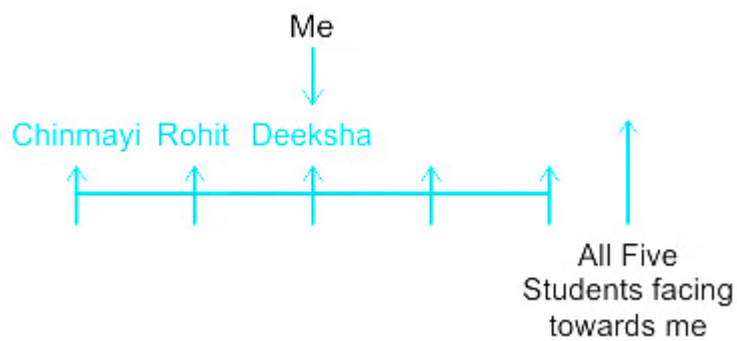


Case (ii) :

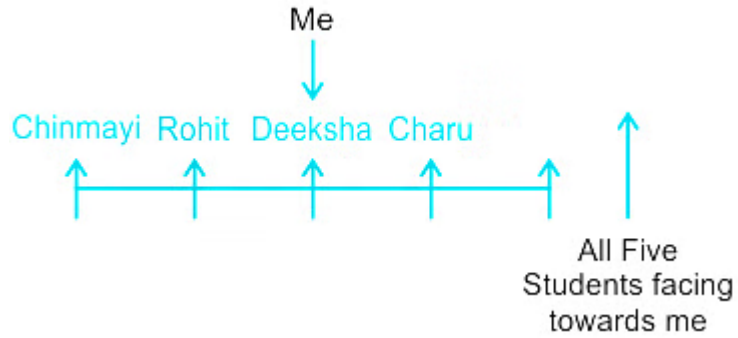


2) Rohit is on the right of Chinmayi.

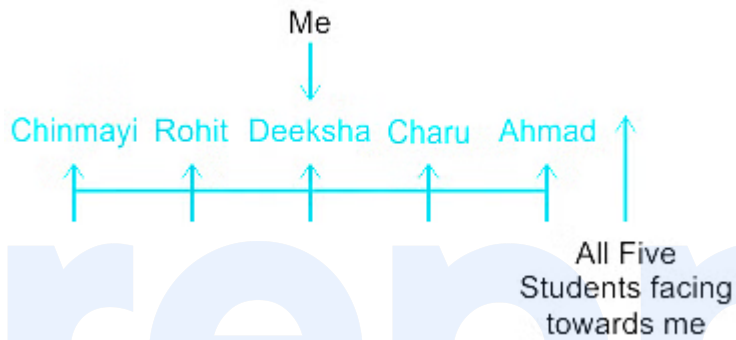
3) Rohit is on the left of Deeksha.



4) Deeksha is on the left of Charu.



5) Ahmad is one the right of Charu.



∴ Here, 'Deeksha' is sitting in center of the row.

Hence, the correct answer is "Deeksha".

29. Answer: c

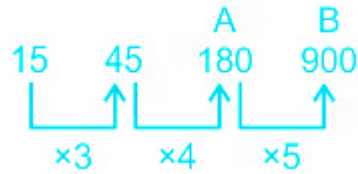
Explanation:

The logic followed here is :-

Row 1) :



Row 2) :



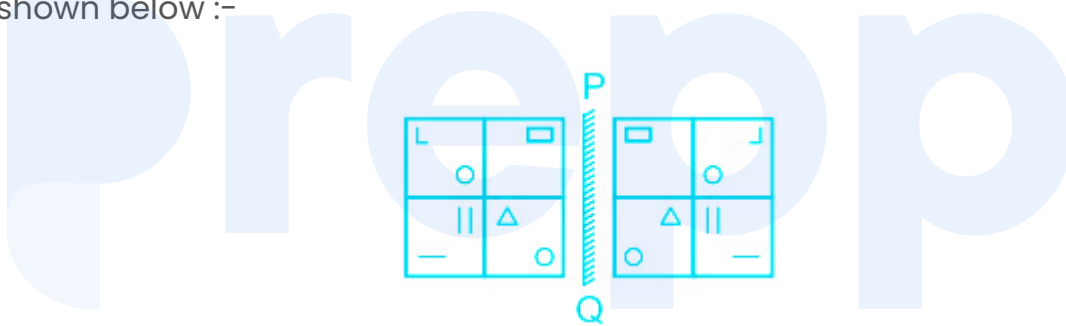
∴ Here, the value of A = 180 and B = 900 from the following series.

Hence, the correct answer is "900".

30. Answer: b

Explanation:

The correct mirror image of the given combination when the mirror is placed at PQ is as shown below :-

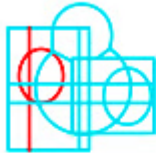





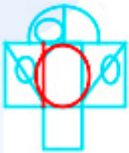



Hence, the correct answer is "Option 2".

31. Answer: c

Explanation:

The image embedded in given figure is as shown below :

| No. | Option | Question | Answer |
|-----|---|---|--------------|
| 1. |  |  | Not Embedded |
| 2. |  |  | Not Embedded |
| 3. |  |  | Embedded |
| 4. |  |  | Not Embedded |

Hence, the correct answer is "Option 3".

32. Answer: d

Explanation:

The logic followed here is :-

- Shield is the synonym of Protection.

Similarly,

- Disclosure is synonym of Exposure.

Hence, the correct answer is "Disclosure".

33. Answer: b

Explanation:

The logic followed here is :-

$$75 : 9 :: 15 : ?$$

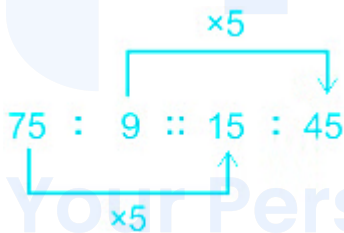
$$\Rightarrow 75 \times 9 = 15 \times X$$

$$\Rightarrow 15X = 675$$

$$\Rightarrow X = 675/15$$

$$\Rightarrow X = 45$$

★ Alternate Method

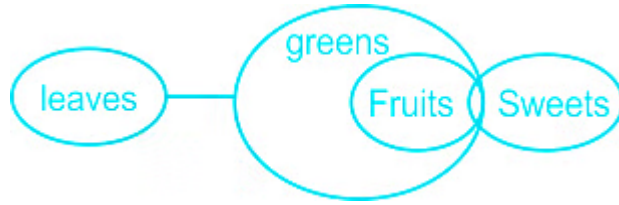


Hence, the correct answer is "45".

34. Answer: d

Explanation:

The least possible Venn diagram for the given statements is as shown below :-



Conclusions :

I. No leaves are fruits → True (As All fruits are greens and No leaves are green so, No leaves are fruits, hence, true)

II. All sweets are greens → False (As All fruits are greens and Some sweets are fruits so, All sweets are greens, hence, false)

III. Some leaves can be greens → False (As No leaves are green so, Some leaves can be greens, hence, false)

∴ Here, the conclusion I is true.

Hence, the correct answer is "Only conclusion I follows".

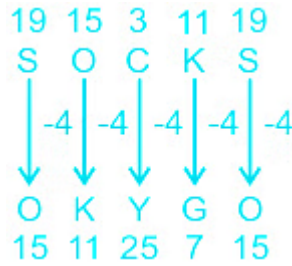
35. Answer: d

Explanation:

The logic followed here is :-

| | | | | | | | | | | | | | |
|------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 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 |

- SOCKS is written as OKYGO.



Similarly,

- GLORY will be written as :



Hence, the correct answer is "CHKNU".

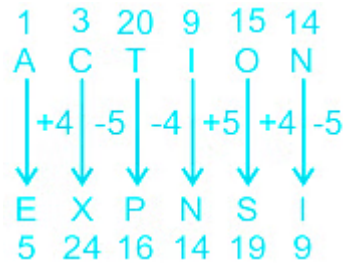
36. Answer: b

Explanation:

The logic followed here is :-

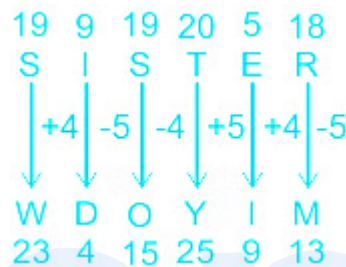
| | | | | | | | | | | | | | |
|------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Alphabets | A | B | C | D | E | F | G | H | I | J | K | L | M |
| Positional value | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| Positional value | 26 | 25 | 24 | 23 | 22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

- ACTION : EXPNSI



Similarly,

- **SISTER : ?**



Hence, the correct answer is "WDOYIM".

37. **Answer: c**

Explanation:

The logic followed here is :-

- **Sharpener** is a tool which is **used to sharp the pencil**.

Similarly,

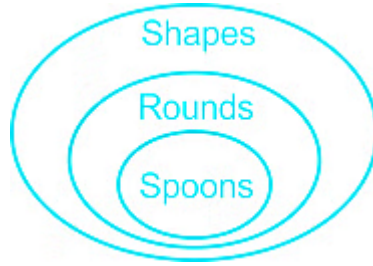
- **Axe** is a tool which is **used to sharp or cut the wood**.

Hence, the correct answer is "**Axe**".

38. **Answer: a**

Explanation:

The least possible Venn diagram for the given statements is as shown below :-



Conclusions:

- I. Some shapes are rounds \rightarrow True (As All rounds are shapes so, Some shapes are rounds is true)
- II. All spoons are shapes \rightarrow True (As All spoons are rounds and All rounds are shapes so, All spoons are shapes is true)

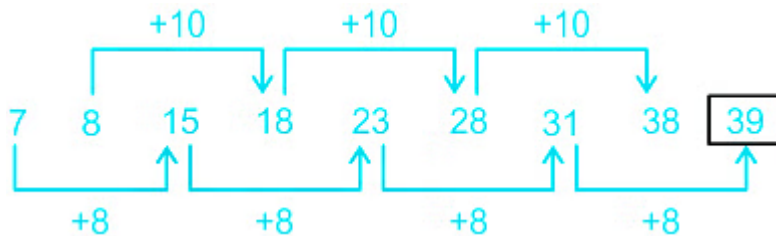
\therefore Here, Both conclusions I and II are true.

Hence, the correct answer is "Both conclusions I and II follow".

39. Answer: a

Explanation:

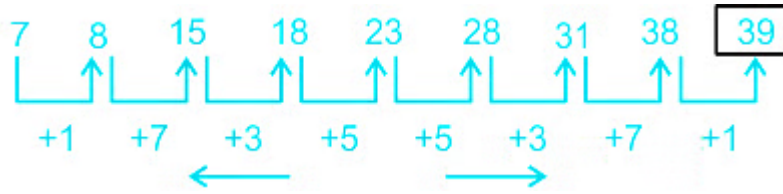
The logic followed here is:-



Hence, the correct answer is "39".

★ Alternate Method

The logic followed here is:-



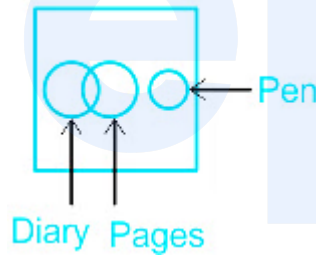
Hence, the correct answer is "39".

40. Answer: c

Explanation:

The least possible Venn diagram for the given relation is as shown below :

- Some pages are present in Dairy.
- Pen is a instrument consists ink which is used for writing in pages.



Hence, the correct answer is "Option 3".

41. Answer: a

Explanation:

The logic followed here is :-

- Row 1 → (First number × Second number) - 2 = Third number.
- Row 2 → (First number × Second number) - 4 = Third number.
- Row 3 → (First number × Second number) - 8 = Third number.

Row 1) : 3, 5, 13

$$= (3 \times 5) - 2$$

$$= 15 - 2$$

$$= 13$$

Row 2) : 8, 12, 92

$$= (8 \times 12) - 4$$

$$= 96 - 4$$

$$= 92$$

Similarly,

Row 3) : 8, 16, ?

$$= (8 \times 16) - 8$$

$$= 128 - 8$$

$$= 120$$

★ Hint

$$3, 5, 13 \rightarrow (3 \times 5) - 2 = 15 - 2 = 13$$

↓^{x2}

$$8, 12, 92 \rightarrow (8 \times 12) - 4 = 96 - 4 = 92$$

↓^{x2}

$$8, 16, \boxed{120} \rightarrow (8 \times 16) - 8 = 128 - 8 = 120$$

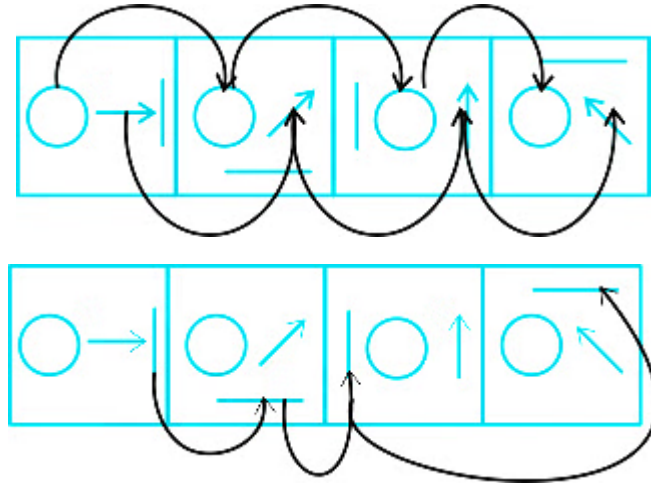
Hence, the correct answer is "120".

42. Answer: d

Explanation:

The pattern followed here is :

- The straight line is rotated 90° in anticlockwise direction from figure to figure.
- Arrow moves 45° in anti-clockwise in each step at the same position.



Observe Options carefully:

Option 1) :

- Here arrow is rotated 135° clockwise direction.
- Straight line is above the circle and arrow.



Option 2) :

- Here arrow is rotated 45° anti-clockwise direction.
- Straight line is beside arrow.



Option 3) :

- Here arrow is rotated 45° clockwise direction.
- Straight line is above the circle and arrow.



Option 4) :

- Here arrow is rotated 45° anti-clockwise direction.
- Straight line is above the circle and arrow.



Hence, the correct answer is "Option 4".

43. Answer: d

Explanation:

The figure that complete the given pattern is as shown below :-



Hence, the correct answer is "Option 4".

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44. Answer: b

Explanation:

Given :- _ B _ A _ SAB _ _ B S

By checking options and substituting accordingly.

1) ASBAS → A B S - A B S - A B A - S B S

2) ASBSA → A B S - A B S - A B S - A B S

- Here " A B S" is repeated.

3) BASBA → B B A - A S S - A B B - A B S

4) SABAS → S B A - A B S - A B A - S B S

- Option (2) gives the pattern of A B S - A B S - A B S - A B S.

Hence, the correct answer is "ASBSA".

45. Answer: a

Explanation:

Ajay, Lalit, Charan, Dhruv and Gajendra are five men, who are sitting in a row facing south while Mayuri, Narmada, Shalini, Priya and Harshini are five women, who are facing north.

1) Mayuri is sitting at one end of the row.

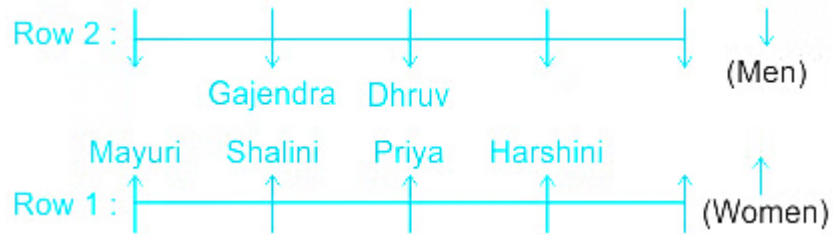
2) Gajendra is facing Shalini, who is sitting on the immediate right of Mayuri in the neighborhood.

- Here Shalini is sitting on the immediate right of Mayuri in the neighborhood not Gajendra.



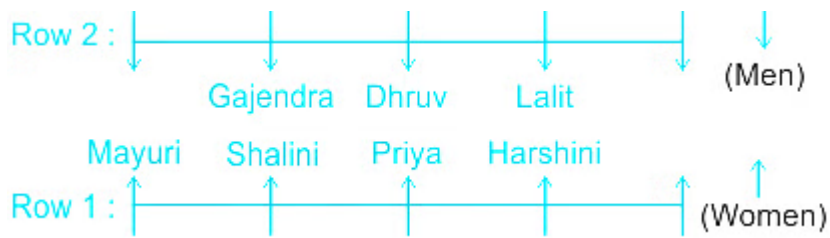
3) Priya, who is sitting immediately left of Harshini, is facing Dhruv.

- Here Priya is facing Dhruv not Harshini.

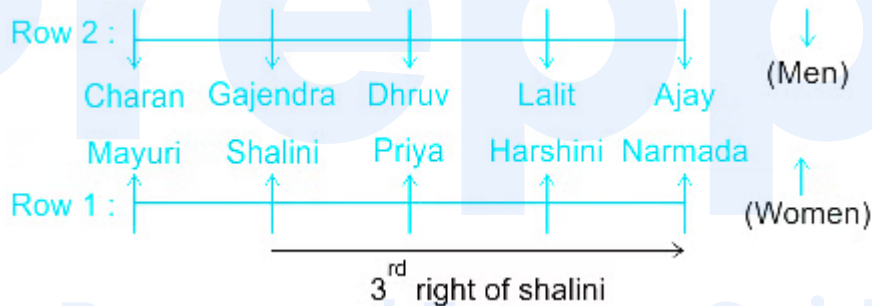


4) Lalit, who is sitting immediately left of Dhruv, is facing Harshini.

- Here Lalit is facing Harshini not Dhruv .



5) Charan and Narmada are sitting diagonally facing each other.



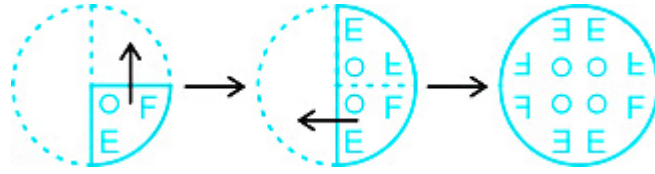
∴ Here, 'Narmada' is sitting third to right of 'Shalini'.

Hence, the correct answer is "Narmada".

46. Answer: d

Explanation:

After unfolding the given paper the figure formed is as shown below :



Hence, the correct answer is "Option 4".

47. Answer: b

Explanation:

The arrangement of expenditure of season order appear in India from March to February is as follows :

2. **Spring** season occurs from **March to April** in India.
5. **Summer** season occurs from **April to May end** in India.
3. **Monsoon** season occurs from **June to September** in India.
1. **Autumn** season occurs from **September end to December** in India.
4. **Winter** season occurs in **January and February** in India.

∴ Here, the order of season in India from March to February is '2, 5, 3, 1, 4'.

Hence, the correct answer is "2, 5, 3, 1, 4".

48. Answer: c

Explanation:

By using BODMAS RULE :

| | | |
|----------|------------------------------|-----------------------------|
| B | Brackets in order (), {}, [] | ब्रैकेट (), {}, [] क्रम में |
| O | of | का |
| D | Division (÷) | विभाजन (÷) |
| M | Multiplication (×) | गुणा (×) |
| A | Addition (+) | जोड़ (+) |
| S | Subtraction (-) | घटाव (-) |

Option 1) : × and -

Given equation is : $128 + 8 \times 2 \div 4 - 6 = 30$

After interchanging the symbols in given equation the equation is as follows :

$$\Rightarrow 128 + 8 - 2 \div 4 \times 6 = 30$$

$$\Rightarrow 128 + 8 - 0.5 \times 6 = 30$$

$$\Rightarrow 128 + 8 - 3 = 30$$

$$\Rightarrow 136 - 3 = 30$$

$$\Rightarrow 133 \neq 30$$

LHS \neq RHS

Option 2) : ÷ and -

Given equation is : $128 + 8 \times 2 \div 4 - 6 = 30$

After interchanging the symbols in given equation the equation is as follows :

$$\Rightarrow 128 + 8 \times 2 - \underline{4 \div 6} = 30$$

$$\Rightarrow 128 + \underline{8 \times 2} - 0.66 = 30$$

$$\Rightarrow \underline{128 + 16} - 0.66 = 30$$

$$\Rightarrow \underline{144 - 0.66} = 30$$

$$\Rightarrow 143.34 \neq 30$$

LHS \neq RHS

Option 3) : \div and +

Given equation is : $128 + 8 \times 2 \div 4 - 6 = 30$

After interchanging the symbols in given equation the equation is as follows :

$$\Rightarrow \underline{128 \div 8} \times 2 + 4 - 6 = 30$$

$$\Rightarrow \underline{16 \times 2} + 4 - 6 = 30$$

$$\Rightarrow \underline{32 + 4} - 6 = 30$$

$$\Rightarrow \underline{36 - 6} = 30$$

$$\Rightarrow 30 = 30$$

LHS = RHS

Option 4) : - and +

Given equation is : $128 + 8 \times 2 \div 4 - 6 = 30$

After interchanging the symbols in given equation the equation is as follows :

$$\Rightarrow 128 - 8 \times \underline{2 \div 4} + 6 = 30$$

$$\Rightarrow 128 - \underline{8 \times 0.5} + 6 = 30$$

$$\Rightarrow \underline{128} - 4 + \underline{6} = 30$$

$$\Rightarrow \underline{134 - 4} = 30$$

$\Rightarrow 130 \neq 30$

LHS \neq RHS

Hence, the correct answer is " \div and $+$ ".

49. Answer: b

Explanation:

The logic followed here is :-

By using BODMAS RULE :

| | | |
|----------|------------------------------|-----------------------------|
| B | Brackets in order (), {}, [] | ब्रैकेट (), {}, [] क्रम में |
| O | of | का |
| D | Division (\div) | विभाजन (\div) |
| M | Multiplication (\times) | गुणा (\times) |
| A | Addition ($+$) | जोड़ ($+$) |
| S | Subtraction ($-$) | घटाव ($-$) |

Option 1) : $+, \times, -, \div$

Given equation is : $8 * 20 * 320 * 20 * 10 = 166$

After inserting the signs in given equation the equation is as follows :

$\Rightarrow 8 + 20 \times 320 - \underline{20 \div 10} = 166$

$$\Rightarrow 8 + \underline{20 \times 320} - 2 = 166$$

$$\Rightarrow \underline{8 + 6400} - 2 = 166$$

$$\Rightarrow 6408 - 2 = 166$$

$$\Rightarrow 6406 \neq 166$$

Option 2) : $\times, +, \div, -$

Given equation is : $8 * 20 * 320 * 20 * 10 = 166$

After inserting the signs in given equation the equation is as follows :

$$\Rightarrow 8 \times 20 + \underline{320 \div 20} - 10 = 166$$

$$\Rightarrow \underline{8 \times 20} + 16 - 10 = 166$$

$$\Rightarrow \underline{160} + 16 - 10 = 166$$

$$\Rightarrow \underline{176} - 10 = 166$$

$$\Rightarrow 166 = 166$$

LHS = RHS

Option 3) : $\div, \times, +, -$

Given equation is : $8 * 20 * 320 * 20 * 10 = 166$

After inserting the signs in given equation the equation is as follows :

$$\Rightarrow \underline{8 \div 20} \times 320 + 20 - 10 = 166$$

$$\Rightarrow \underline{0.4 \times 320} + 20 - 10 = 166$$

$$\Rightarrow \underline{128} + 20 - 10 = 166$$

$$\Rightarrow \underline{148} - 10 = 166$$

$$\Rightarrow 138 \neq 166$$

LHS \neq RHS

Option 4) : -, ÷, +, ×

Given equation is : $8 * 20 * 320 * 20 * 10 = 166$

After inserting the signs in given equation the equation is as follows :

⇒ $8 - \underline{20} \div \underline{320} + 20 \times 10 = 166$

⇒ $8 - 0.0625 + \underline{20} \times \underline{10} = 166$

⇒ $\underline{8} - 0.0625 + \underline{200} = 166$

⇒ $\underline{208} - \underline{0.0625} = 166$

⇒ $207.9375 \neq 166$

LHS ≠ RHS

Hence, the correct answer is "×, +, ÷, -".

50. Answer: a

Explanation:

The logic followed here is :-

| | | | | | | | | | | | | | |
|------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 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 |

Sum of alphabet positional value × 2.

- AMAZON is coded as 140



$$= (1 + 13 + 1 + 26 + 15 + 14) \times 2$$

$$= 70 \times 2$$

$$= 140$$

And,

- BRAZIL is coded as 136.



$$= (2 + 18 + 1 + 26 + 9 + 12) \times 2$$

$$= 68 \times 2$$

$$= 136$$

Similarly,

- GERMANY will be coded as :



$$= (7 + 5 + 18 + 13 + 1 + 14 + 25) \times 2$$

$$= 83 \times 2$$

$$= 166$$

Hence, the correct answer is "166".

51. Answer: d

Explanation:

Given

$$\text{volume of a cube} = 81\sqrt{3} \text{ cm}^3$$

Formula used

$$\text{Total surface area of cone} = 6 \times (\text{side})^2$$

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

Calculation

$$81\sqrt{3} = (\text{side})^3$$

$$\Rightarrow 3 \times 3 \times 3 \times 3 \times \sqrt{3} = (\text{side})^3$$

$$\Rightarrow 3\sqrt{3} = \text{side (as } 3 = \sqrt{3} \times \sqrt{3})$$

$$\text{Total surface area of cube} = 6\text{side}^2$$

$$\Rightarrow 6 \times 3\sqrt{3} \times 3\sqrt{3}$$

$$\Rightarrow 54 \times 3$$

$$\Rightarrow 162 \text{ cm}^2$$

$$\therefore \text{Total surface are of cone is } 162 \text{ cm}^2$$

52. Answer: a

Explanation:

Given

A and B completes a work in 24 days

B and C completes a work in 36 days

Efficiency of A = 3 × efficiency of C

Calculation

Let C completes a work in x days.

so, A completes a work in $(x/3)$ days

B completes a work in y days

One day work done by A and B

$$(3/x) + (1/y) = 1/24$$

$$(1/y) + (1/x) = 1/36$$

let $(1/x) = a$ and $(1/y) = b$

$$3a + b = 1/24$$

$$\Rightarrow 72a + 24b = 1 \quad \text{---- (1)}$$

$$b + a = 1/36$$

$$\Rightarrow 36b + 36a = 1 \quad \text{---- (2)}$$

$$\Rightarrow 36b = 1 - 36a$$

$$\Rightarrow b = (1 - 36a)/36 \quad \text{---- (3)}$$

$$72a + 24(1 - 36a)/36 = 1 \quad \text{(from 1 and 3)}$$

$$\Rightarrow 72a + 2(1 - 36a)/3 = 1$$

$$\Rightarrow 72a + (2 - 72a)/3 = 1$$

$$\Rightarrow (216a + 2 - 72a)/3 = 1$$

$$\Rightarrow 144a + 2 = 3$$

$$\Rightarrow 144a = 3 - 2$$

$$\Rightarrow 144a = 1$$

$$a = 1/144$$

$$3 \times (1/144) + b = 1/24 \text{ (from 1)}$$

$$\Rightarrow 1/48 + b = 1/24$$

$$\Rightarrow b = (1/24) - (1/48)$$

$$\Rightarrow b = (2 - 1)/48$$

$$\Rightarrow b = 1/48$$

\therefore Number of days taken by B to complete a work is 48 days

53. Answer: b

Explanation:

| Subjects | Number of teachers |
|-------------|--------------------|
| Mathematics | 25% of 1600 = 400 |
| Physics | 18% of 1600 = 288 |
| Chemistry | 18% of 1600 = 288 |
| Economics | 16% of 1600 = 256 |
| Accountancy | 8% of 1600 = 128 |
| Biology | 15% of 1600 = 240 |

Number of male chemistry teachers = $288 - [(3/8) \times 288]$

$$\Rightarrow 288 - 108$$

$$\Rightarrow 180$$

$$\text{Required percentage} = (180/400) \times 100$$

$$\Rightarrow 45\%$$

\therefore The number of male Chemistry teachers is 45% of the total number of teachers who teach Mathematics.

54. Answer: a

Explanation:

Given

Three speeds = 5 km/h, 8 km/h and 10 km/h

Formula used

Time = Distance/Speed; 1 hour = 60 minutes

Calculation

let the distance travelled in each speed is x km

Time taken in each speed by a person to travel same distance = $x/5$; $x/8$ and $x/10$

According to question

$$(x/5) + (x/8) + (x/10) = 2 + (33/60)$$

$$\Rightarrow (8x + 5x + 4x)/40 = 2 + (11/20)$$

$$\Rightarrow 17x/40 = (40 + 11)/20$$

$$\Rightarrow 17x/40 = 51/20$$

$$\Rightarrow x = (51 \times 40)/(17 \times 20)$$

$$\Rightarrow x = 6$$

Total distance travelled in three different speed = $6 + 6 + 6$

$$\Rightarrow 18 \text{ km}$$

\therefore Total distance travelled by a person is 18 km

55. Answer: a

Explanation:

Given

Sum of three numbers = 272

Concept

If ratio of A and B = $m : n$ and ratio of B and C = $o : p$, then ratio of A : B : C = $m \times o : n \times o : n \times p$

Calculation

Ratio of three numbers = $3 \times 5 : 5 \times 5 : 5 \times 8$

$$\Rightarrow 15 : 25 : 40$$

$$\Rightarrow 3 : 5 : 8$$

$$3x + 5x + 8x = 272$$

$$\Rightarrow 16x = 272$$

$$\Rightarrow x = 272/16$$

$$\Rightarrow x = 17$$

Third number = 8×17

$$\Rightarrow 136$$

∴ Third number is 136

56. Answer: d

Explanation:

| Subjects | Number of teachers |
|-------------|--------------------|
| Mathematics | 25% of 1600 = 400 |
| Physics | 18% of 1600 = 288 |
| Chemistry | 18% of 1600 = 288 |
| Economics | 16% of 1600 = 256 |
| Accountancy | 8% of 1600 = 128 |
| Biology | 15% of 1600 = 240 |

Number of Accountancy teacher increased by 25% = $128 + 25\%$ of 128

⇒ $128 + 32$

⇒ 160

Number of Economics teacher decreased by 25% = $256 - 25\%$ of 256

⇒ $256 - 64$

⇒ 192

Total number of Accountancy and Economics teacher = $160 + 192$

⇒ 352

∴ The total number of teachers who teach Accountancy and Economics together is 352

57. Answer: d

Explanation:

Given

Ratio of three numbers = 3 : 5 : 7

Calculation

Three numbers are $3x$, $5x$ and $7x$

L.C.M of $3x$, $5x$ and $7x = 105x$

$105x = 840$

$x = 8$

Three numbers are 24, 40 and 56 (i.e. 3×8 ; 5×8 and 7×8)

H.C.F of 24, 40 and 56 is 8. As 8 is the highest factor among all the three numbers.

\therefore HCF is 8

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58. Answer: d

Explanation:

Given:

Selling price = Rs.1,190

Discount = 15%

The formula used

Selling Price = Marked Price - Discount

calculation

The marked price is Rs. x

Discount = 15% of x

Selling price = $x - 15\%$ of x

$$1190 = x - (15x/100)$$

$$\Rightarrow 1190 = (100x - 15x)/100$$

$$\Rightarrow 1190 = 85x/100$$

$$\Rightarrow x = (1190 \times 100)/85$$

$$\Rightarrow x = 1400$$

New Discount = 12.5%

New selling price = $1400 - 12.5\%$ of 1400

$$\Rightarrow 1400 - 175$$

$$\Rightarrow 1225$$

\therefore The item was sold for Rs.1225.

59. Answer: c

Explanation:

Given

length of wire = 144 m

radius of wire = 4 mm

Formula used

$$\text{Surface area of sphere} = 4\pi r^2$$

$$\text{Volume of wire} = \pi r^2 h$$

$$\text{Volume of sphere} = \frac{4}{3}\pi r^3$$

$$1\text{m} = 100\text{ cm}$$

$$1\text{cm} = 10\text{ mm}$$

calculation

$$1\text{m} = 100\text{ cm}$$

$$144\text{ m} = 144 \times 100$$

$$144\text{ m} = 14400\text{ cm}$$

$$\text{Volume of wire} = \pi(0.4)^2 14400$$

$$\text{Volume of sphere} = \frac{4}{3}\pi r^3$$

$$\pi(0.4)^2 14400 = \frac{4}{3}\pi r^3$$

$$\Rightarrow r^3 = \frac{(0.4 \times 0.4 \times 14400 \times 3)}{4}$$

$$\Rightarrow r^3 = (0.4 \times 0.4 \times 3600 \times 3)$$

$$\Rightarrow r^3 = \left(\frac{4}{10}\right) \times \left(\frac{4}{10}\right) \times (3600) \times 3$$

$$\Rightarrow r^3 = (4 \times 4 \times 36 \times 3)$$

$$\Rightarrow r^3 = (4 \times 4 \times 4 \times 3 \times 3 \times 3)$$

$$\Rightarrow r = 4 \times 3$$

$$\Rightarrow r = 12$$

$$\text{Surface area of sphere} = 4 \times \pi \times (12)^2$$

$$\Rightarrow 576\pi\text{ cm}^2$$

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Your Personal Exams Guide

∴ Surface area of sphere is $567\pi \text{ cm}^2$

60. Answer: c

Explanation:

| Subjects | Number of teachers |
|-------------|--------------------|
| Mathematics | 25% of 1600 = 400 |
| Physics | 18% of 1600 = 288 |
| Chemistry | 18% of 1600 = 288 |
| Economics | 16% of 1600 = 256 |
| Accountancy | 8% of 1600 = 128 |
| Biology | 15% of 1600 = 240 |

Central angle of Biology and Mathematics teacher = $[(240 + 400)/1600] \times 360$

$\Rightarrow (640/1600) \times 360$

$\Rightarrow 144^\circ$

∴ The central angle of teachers who teach Biology and Mathematics together is 144°

61. Answer: a

Explanation:

Given:

$$\frac{\frac{1}{3} + [4\frac{3}{4} - (3\frac{1}{6} - 2\frac{1}{3})]}{(\frac{1}{5} \text{ of } \frac{1}{5} \div \frac{1}{5}) \div (\frac{1}{5} \div \frac{1}{5} \times \frac{1}{5})}$$

Concept:

| | | |
|----------|------------------------------|-----------------------------|
| B | Brackets in order (), {}, [] | ब्रैकेट (), {}, [] क्रम में |
| O | of | का |
| D | Division (÷) | विभाजन (÷) |
| M | Multiplication (×) | गुणा (×) |
| A | Addition (+) | जोड़ (+) |
| S | Subtraction (-) | घटाव (-) |

Calculation:

$$\frac{1}{3} + \left[\frac{19}{4} - \left(\frac{19}{6} - \frac{7}{3} \right) \right] / \left(\frac{1}{5} \times \frac{1}{5} \times 5 \right) \div \left(\frac{1}{5} \times 5 \times \frac{1}{5} \right)$$

$$\frac{1}{3} + \left[\frac{19}{4} - \left(\frac{19-14}{6} \right) \right] / \left(\frac{1}{5} \right) \div \left(\frac{1}{5} \right)$$

$$\frac{1}{3} + \left[\frac{19}{4} - \frac{5}{6} \right] / \left(\frac{1}{5} \times 5 \right)$$

$$\frac{1}{3} + \left(\frac{57-10}{12} \right)$$

$$\frac{1}{3} + \frac{47}{12}$$

$$\frac{(4+47)}{12}$$

$$\frac{51}{12}$$

4.25

∴ The value of $\frac{\frac{1}{3} + \left[4\frac{3}{4} - \left(3\frac{1}{6} - 2\frac{1}{3} \right) \right]}{\left(\frac{1}{5} \text{ of } \frac{1}{5} \div \frac{1}{5} \right) \div \left(\frac{1}{5} \div \frac{1}{5} \times \frac{1}{5} \right)}$ lies between 4.2 and 4.3

62. Answer: b

Explanation:

Given

Ratio of boys and girls = 17 : 12

Total number of students = 1305

Concept

Number of boys = [(ratio of boys/sum of the ratio of boys and girls)] × total number of students

Calculation

Total number of students = 1305

let the number of boys and girls are 17x and 12x

number of boys = $(17x/29x) \times 1305$

⇒ 765

∴ The number of boys in the school is 765.

63. **Answer: a**

Explanation:

Given

Number of items = 50

Mean = 50

Formula used

Mean = sum of observation/Number of observation

Calculation

Sum of observation = 50×24

⇒ 1200

correct mean = (Sum of observation - wrong item included + right item)/Number of items

$$\text{correct mean} = (1200 - 83 - 17 + 38 + 77)/50$$

$$\Rightarrow 1215/50$$

$$\Rightarrow 24.3$$

\therefore The correct mean is 24.3

64. Answer: a

Explanation:

Given

$$\text{Area of base of cone} = 154 \text{ cm}^2$$

$$\text{Area of curved surface} = 550 \text{ cm}^2$$

Formula used

$$\text{Volume of cone} = (1/3)\pi r^2 h$$

$$\text{Curved surface area of cone} = \pi r l$$

where l is slant height

$$l = \sqrt{h^2 + r^2}$$

Calculation

$$\text{Area of base of cone} = \pi r^2$$

$$(22/7) \times r^2 = 154$$

$$\Rightarrow r^2 = (154 \times 7)/22$$

$$\Rightarrow r^2 = 1078/22$$

$$\Rightarrow r^2 = 49$$

$$\Rightarrow r = 7 \text{ cm}$$

Curved surface area of cone = $\pi r l$

$$550 = (22/7) \times 7 \times l$$

$$\Rightarrow 550/22 = l$$

$$\Rightarrow 25 = l$$

Volume of cone = $(1/3)\pi r^2 h$

$$h = \sqrt{l^2 - r^2}$$

$$\Rightarrow h = \sqrt{(25)^2 - (7)^2}$$

$$\Rightarrow h = \sqrt{625 - 49}$$

$$\Rightarrow h = \sqrt{576}$$

$$\Rightarrow h = 24$$

Volume of cone = $(1/3) \times (22/7) \times 7 \times 7 \times 24$

$$\Rightarrow 22 \times 7 \times 8$$

$$\Rightarrow 22 \times 56$$

$$\Rightarrow 1232 \text{ cm}^3$$

\therefore Volume of cone is 1232 cm^3

65. Answer: c

Explanation:

Given

Amount given to wife = 60% of total money

Amount given to three children each = 20% of money left after giving to wife

Amount spent on miscellaneous items = $(\frac{3}{5})$ th of the money left after giving to wife and children

Amount deposited = 9600

Concept

Total money = sum of the money given to wife , children, spent on miscellaneous items and deposited in bank

Calculation

let the total money is Rs.x

amount given to wife = 60% of x

$\Rightarrow \frac{60x}{100}$

Money left after given to wife = $x - 60\%$ of x

$\Rightarrow \frac{40x}{100}$

Amount given to three children = $3 \times (\frac{40x}{100}) \times 20\%$

$\Rightarrow (\frac{120x}{100}) \times (\frac{20}{100})$

$\Rightarrow \frac{24x}{100}$

Amount left for miscellaneous items = $x - [(\frac{60x}{100}) + (\frac{24x}{100})]$

$\Rightarrow x - (\frac{84x}{100})$

$\Rightarrow \frac{(100x - 84x)}{100}$

$\Rightarrow \frac{16x}{100}$

$$\text{Amount spent on miscellaneous items} = \left(\frac{3}{5}\right) \times \left(\frac{16x}{100}\right)$$

$$\Rightarrow \frac{48x}{500}$$

According to question

$$\left(\frac{60x}{100}\right) + \left(\frac{24x}{100}\right) + \left(\frac{48x}{500}\right) + 9600 = x$$

$$\Rightarrow \left(\frac{84x}{100}\right) + \left(\frac{48x}{500}\right) + 9600 = x$$

$$\Rightarrow \left[\frac{420x + 48x}{500}\right] + 9600 = x$$

$$\Rightarrow \left[\frac{468x}{500}\right] + 9600 = x$$

$$\Rightarrow 9600 = x - \left(\frac{468x}{500}\right)$$

$$\Rightarrow 9600 = \frac{(500x - 468x)}{500}$$

$$\Rightarrow 9600 = \frac{32x}{500}$$

$$\Rightarrow \frac{(9600 \times 500)}{32} = x$$

$$\Rightarrow 300 \times 500 = x$$

$$\Rightarrow 150000 = x$$

\therefore Initial amount Varun has is RS.1,50,000 .

66. Answer: d

Explanation:

Given

Original speed of a person = 8.5 km/h

New speed of a person = 12 km/h

Formula used

Time = Distance/Speed

Calculation

let the distance is x km

At a speed of 12km/h, person travelled (x + 14) km

At a speed of 8.5 km/h, person travelled x km

According to question

$$(x/8.5) = [(x + 14)/12]$$

$$\Rightarrow 12x = 8.5x + 119$$

$$\Rightarrow 12x - 8.5x = 119$$

$$\Rightarrow 3.5x = 119$$

$$\Rightarrow x = 119/3.5$$

$$\Rightarrow x = 34 \text{ km}$$

∴ Actual distance travel by person is 34 km .

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67. **Answer: d**

Explanation:

Given

Average age of old number of students = 15.5 years

Average age of new 15 students = 14.5

Average age of old number of students and 15 new students = 15

Formula used

Average = Sum of observation/Number of observation

Calculation

Let the number of students = x

Sum of the ages of x students = $15.5 \times x$

$$\Rightarrow 15.5x$$

New sum of the ages of 15 students = 15×14.5

$$\Rightarrow 217.5$$

Total sum of the ages of $(x + 15)$ students = $15.5x + 217.5$ ----- (1)

and total sum of the ages of $(x + 15)$ students = $(x + 15) \times 15$

$$15x + 225$$
 -----(2)

from 1 and 2

$$15.5x + 217.5 = 15x + 225$$

$$\Rightarrow 15.5x - 15x = 225 - 217.5$$

$$\Rightarrow 0.5x = 7.5$$

$$\Rightarrow x = 15$$

\therefore The number of students initially present in the class is 15

68. Answer: d

Explanation:

Given

A complete a work in 15 days

wages earn by A is Rs,6500

Concept

To find the share of B, First find the efficiency of B

Calculation

let the number of days taken by B is x days

One day work done by A = $1/15$

One day work done by B = $1/x$

work done by A and B in 1 day = $1/12$

According to question

$$(1/15) + (1/x) = (1/12)$$

$$\Rightarrow (1/x) = (1/12) - (1/15)$$

$$\Rightarrow (1/x) = (5 - 4)/60$$

$$\Rightarrow (1/x) = 1/60$$

$$\Rightarrow x = 60$$

B takes 60 days to complete a work.

A is 4 times efficient than B i.e. A take 15 days while B takes 60 days to complete a work.

ratio of wages is 4 : 1

$$\text{B's share} = (1/5) \times 6500$$

$$\Rightarrow 1300$$

\therefore B's share is RS.1300

69. Answer: d

Explanation:

Given

Radius of cylinder = Radius of sphere = 10.5 cm

Volume of cylinder = Volume of sphere

Formula used

Volume of cylinder = $\pi r^2 h$

Volume of sphere = $(\frac{4}{3})\pi r^3$

Calculation

Volume of cylinder = Volume of sphere

$$\pi r^2 h = (\frac{4}{3})\pi r^3$$

$$\Rightarrow h = (\frac{4}{3})r$$

$$\Rightarrow h = (\frac{4}{3}) \times 10.5$$

$$\Rightarrow h = 14$$

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

$$\Rightarrow 2 \times (\frac{22}{7}) \times 10.5 \times 14$$

$$\Rightarrow 2 \times 22 \times 10.5 \times 2$$

$$\Rightarrow 88 \times 10.5$$

$$\Rightarrow 924 \text{ cm}^2$$

\therefore The curved surface area of cylinder is 924 cm^2

70. Answer: b

Explanation:

Given

Profit = 20%

Selling price = 960, when there is loss of 20%

Formula used

Selling price = Cost price - loss

or selling price = cost price + profit

Calculation

Let the cost price is Rs.x

selling price = x - 20% of x

$$960 = 80x/100$$

$$\Rightarrow x = (960 \times 100)/80$$

$$\Rightarrow x = 1200$$

To earn 20% profit(new selling price) = 1200 + 20% of 1200

$$\Rightarrow 1200 + 240$$

$$\Rightarrow 1440$$

\therefore To earn a profit of 20%, man need to sell the cycle for Rs.1440.

71. Answer: d

Explanation:

Given

Loan amount = Rs 9400

Simple interest rate on amount of loan taken from Suman = $12\frac{1}{2}$ %

Simple interest rate on amount of loan taken from Arya = $10\frac{1}{2}$ % per annum

Formula used

Simple interest = $(\text{Principal} \times \text{rate} \times \text{time})/100$

Calculation

Let the loan taken from suman is Rs x

and loan taken from Arya is $(9400 - x)$

interest paid to Suman = $(x \times 25 \times 1)/(100 \times 2)$

$$\Rightarrow 25x/200$$

$$\Rightarrow x/8$$

Interest paid to Arya = $[(9400 - x) \times (21) \times 1]/(100 \times 2)$

$$\Rightarrow (197400 - 21x)/200$$

According to question

$$1063 = (x/8) + (197400 - 21x)/200$$

$$\Rightarrow 1063 = (25x + 197400 - 21x)/200$$

$$\Rightarrow 1063 = (4x + 197400)/200$$

$$\Rightarrow 212600 = 4x + 197400$$

$$\Rightarrow 212600 - 197400 = 4x$$

$$\Rightarrow 15200 = 4x$$

$$\Rightarrow 3800 = x$$

Sum borrowed from Arya = $9400 - 3800$

$$\Rightarrow 5600$$

\therefore Amount from Arya is Rs.5600

72. Answer: a

Explanation:

Given

Average of 5 numbers = 78

Average of first two numbers = 54

Average of last two numbers = 63

Formula used

Average = $\frac{\text{sum of all observation}}{\text{Number of observation}}$

Calculation

sum of 5 numbers = 5×78

$$\Rightarrow 390$$

sum of first two numbers = 2×54

$$\Rightarrow 108$$

sum of last two numbers = 2×63

$$\Rightarrow 126$$

$$\text{Third number} = 390 - 108 - 126$$

$$\Rightarrow 390 - 234$$

$$\Rightarrow 156$$

\therefore The third number is 156.

73. Answer: c

Explanation:

Given

$$\text{Profit} = 5.75\%$$

$$\text{loss} = 1.2\%$$

Formula used

$$\text{selling price} = \text{cost price} + \text{Profit}$$

or

$$\text{Selling price} = \text{Cost price} - \text{Loss}$$

Calculation

let the cost price of an article = Rs.x

$$\text{Selling price} = x + 5.75\% \text{ of } x$$

$$\text{Selling price, if loss} = x - 1.2\% \text{ of } x$$

$$x + 5.75\% \text{ of } x - 1390 = x - (1.2x/100)$$

$$\Rightarrow x + (5.75x/100) - 1390 = x - (1.2x/100)$$

$$\Rightarrow (5.75x/100) + (1.2x/100) = 1390$$

$$\Rightarrow (6.95x/100) = 1390$$

$$\Rightarrow x = (1390 \times 100)/6.95$$

$$\Rightarrow x = 20,000$$

\therefore The cost price of article is Rs. 20,000

74. Answer: d

Explanation:

Given

Ratio of daily wages of men and women = 4 : 3

Concept

Total wages = number of men \times wages of one men + number of women \times wages of 1 woman

Calculation

let the daily wages of men and women is $4x$ and $3x$

$$15 \times 4x + 25 \times 3x = 5400$$

$$\Rightarrow 60x + 75x = 5400$$

$$\Rightarrow 135x = 5400$$

$$\Rightarrow x = 40$$

one day earning of men = 4×40

$$\Rightarrow 160$$

one day earning of women = 3×40

$$\Rightarrow 120$$

Total wages of 1 man and 5 women = $160 + (5 \times 120)$

$\Rightarrow 160 + 600$

$\Rightarrow 760$

\therefore Total wages of 1 man and 5 women is Rs.760

75. Answer: a

Explanation:

Given

Principal = Rs. 6,250

Time = 2 years

Rate = 8% per annum

Formula used

$$A = P(1 + r\%)^t$$

where p and r are principal and rate respectively

Compound interest = Amount - Principal

Calculation

$$A = 6250 (1 + 8\%)^2$$

$$\Rightarrow A = 6250 \times (108/100) \times (108/100)$$

$$\Rightarrow A = 6250 \times (27/25) \times (27/25)$$

$$\Rightarrow A = 10 \times 27 \times 27$$

$$\Rightarrow A = 7290$$

Compound interest = 7290 - 6250

⇒1040

∴ Compound interest is Rs.1040

76. Answer: b

Explanation:

The correct answer is 1919.

★ Key Points

- **The Treaty of Versailles** was the most important of **World War I's peace treaties**.
- It brought the war **between Germany and the Allies to an end** .
- It was signed in the Palace of Versailles on June 28, 1919, exactly five years after Archduke Franz Ferdinand was assassinated, sparking the war.
- On the German side, the other Central Powers signed separate treaties. Although the 11 November 1918 armistice halted the war, the peace accord took six months of Allied negotiations at the Paris Peace Conference.
- **On October 21, 1919** , the League of Nations Secretariat registered the treaty.
- **The Locarno Treaties**, which improved relations between Germany and other European powers, and the re-negotiation of the reparation system, which resulted in the Dawes Plan, the Young Plan, and the indefinite postponement of reparations at the Lausanne Conference of 1932, were the results of the treaty's problems.

★ Important Points

- **Treaty of Versailles:**
 - Signed: 28 June 1919
 - Location: Hall of Mirrors in the Palace of Versailles, Paris, France
 - Effective: 10 January 1920
 - Signatories :
 - Principal Allied and Associated Powers

- Allied and Associated Powers

77. Answer: b

Explanation:

The correct answer United Nations Development Programme.

★ Key Points

- UNDP:
 - It stands for **United Nations Development Programme** .
 - It works in **170 countries** and territories to eradicate poverty and reduce inequality. It helps countries to develop policies, leadership skills, partnering abilities, institutional capabilities, and to build resilience to achieve the Sustainable Development Goals.
 - It is based on the merging of the **United Nations Expanded Programme of Technical Assistance, created in 1949** , and the United Nations Special Fund, **established in 1958** . UNDP, as we know it now, was **established in 1966 by the General Assembly of the United Nations**.
 - **Headquarters: New York, United States** .
 - **Objective** : UNDP's mandate is to end poverty, and build democratic governance, rule of law, and inclusive institutions. It advocates for change and connects countries to knowledge, experience, and resources to help people build a better life.
 - The administrator of the United Nations Development Programme: **Achim Steiner (As of Jan 2022) of Germany is the new Administrator of UNDP for a term of four years**.

78. Answer: d

Explanation:

The correct answer is Rabindranath Tagore.

★ Key Points

- **Rabindranath Tagore** was the author of the three-act play, 'Post Office' of **1912**.
- It concerns Amal, a child confined to his adoptive uncle's home by an incurable disease.
- W. Andrew Robinson and Krishna Dutta note that the play "continues to occupy a special place in Tagore's reputation, both within Bengal and in the wider world." It was written in four days.

★ Additional Information

- **Rabindranath Tagore:**
 - He was the recipient of the **Nobel Prize for Literature in 1913** and is internationally known as a great poet. He was born in the **year 1861**, in **Calcutta, Bengal**.
 - From his earliest days, Rabindranath grew up in a house where all the changes emerging in Indian society of that time were being felt in his day-to-day life. Tagore's Philosophy of Education: Tagore, laid great stress and emphasis on the aesthetic development of the senses in his philosophy of education.
 - He argued that the development of the senses was as important as intellectual development. He, therefore, gave prominence to music, literature, art, dance, and drama in the daily life of the school.
 - Tagore believed in the all-around development of personality and in his institution education continues to address the all-around development of the students.
 - Tagore's theory of education is marked by naturalistic & aesthetic values. He had a belief that "**The widest road leading to the solution of all our problems is education.**"
 - Education can develop a new pattern of life that culminates in the realization of a universal man. Tagore's system of education emphasizes the intellectual, physical, social, moral economic, and spiritual aspects of human life by which a man can develop an integrated personality.

- Tagore believed that along with education, economic upliftment is also necessary.

79. Answer: d

Explanation:

The correct answer is **Four**.

★ **Key Points**

- The Reserve Bank of India was established on **April 1, 1935**, in accordance with the provisions of the **Reserve Bank of India Act, 1934**.
- The Central Office (Headquarters) of the Reserve Bank was initially established in Kolkata but was permanently moved to **Mumbai in 1937**.
- Though originally privately owned, since its nationalization in **1949**, the Reserve Bank is fully owned by the Government of India.
- The overall direction of the RBI lies with the **21-member central board of directors, composed of: the governor; four deputy governors; two finance ministry representatives, ten government-nominated directors, and four directors who represent local boards for Mumbai, Kolkata, Chennai, and Delhi.**
- **The Government of India appoints the directors for a four-year term.**
- The Reserve Bank of India (RBI) is India's central bank and regulatory body and is responsible for the issue and supply of the Indian rupee and the regulation of the Indian banking system.
- It also manages the country's main payment systems and works to promote its economic development.

★ **Additional Information**

- The Reserve Bank of India (RBI) has planned to align its financial year with the center.
- **The Central Board of Directors of the RBI recommended aligning the accounting year of RBI with the financial year of the government (April-March), from 2020-21.**

- The **preamble of RBI is to regulate the issue of Banknotes and keeping of reserves with a view to securing monetary stability in India** and generally to operate the currency and credit system of the country to its advantage; to have a modern monetary policy framework to meet the challenge of an increasingly complex economy, to maintain price stability while keeping in mind the objective of growth.
- The Reserve Bank's affairs are governed by a central board of directors. The board is appointed by the Government of India in keeping with the Reserve Bank of India Act.

80. Answer: b

Explanation:

The correct answer is Indian Councils Act, 1892.

★ Key Points

- The Indian Councils Act 1892 brought the provision of bringing additional members into the Legislative Council through indirect election . For the first time, the element of an election was introduced into the Indian political system. Provisions of the 1892 act.
- The act increased the number of additional or non-official members in the legislative councils as follows:
 - In 1892, out of 24 members, only 5 were Indians.
 - The members were given the right to ask questions on the budget (which was barred in the Indian Councils Act 1861) or matters of public interest but had to give notice of 6 days for it.
 - They could not ask supplementary questions.
 - The principle of representation was initiated through this act. The district boards, universities, municipalities, chambers of commerce, and zamindars were authorized to recommend members to the provincial councils.
 - The legislative councils were empowered to make new laws and repeal old laws with the permission of the Governor-General.

★ Additional Information

- **Indian Council Act, 1861:**

- For the executive functions of the Council, a fifth member was added. Now there were five members for home, military, law, revenue, and finance.
- Lord Canning, who was the Governor-General and Viceroy at the time, introduced the portfolio system. In this system, each member was assigned a portfolio of a particular department.
- Lord Canning nominated three Indians to the Council in 1862 namely, the Raja of Benares, the Maharaja of Patiala, and Sir Dinkar Rao.
- Any bill related to public revenue or debt, military, religion, or foreign affairs could not be passed without the Governor-General's assent.
- The Viceroy had the power to overrule the council if necessary.
- This Act restored the legislative powers of the Governor-in-Councils of the Presidencies of Madras and Bombay (which were taken away by the Charter Act of 1833).

- **The Charter Act of 1833:**

- The Governor-General and his Council were given vast powers.
- The Council got full powers regarding revenue, and a single budget for the country was prepared by the Governor-General.
- For the first time, the Governor-General's Government was known as the 'Government of India' and his Council as the 'Indian Council'.
- The Governor-General of Bengal was to be the Governor-General of India.
- All powers, administrative and financial, were handed over to Governor-General in Council.
- A Law Commission under Lord Macaulay was constituted for the codification of laws

81. **Answer: b**

Explanation:

The correct answer is Cricket.

★ Key Points

- **Poonam Yadav:**

- Poonam Yadav is an **Indian cricketer** who plays for the Indian women's cricket team.
- She plays for Central Zone, Uttar Pradesh, and Railways in domestic cricket.
- She received **Arjuna Award in the year 2019** .
- Poonam Yadav is ranked **second in women's T20I** rankings for bowlers.

★ **Additional Information**

- **Mithali Raj:**

- Captain of the India women's team, Mithali Raj on 12 March 2021 became the first woman cricketer from the country and only the second overall to score **10,000 international runs**.
- Mithali Raj, playing her **212th ODI** for India, achieved the landmark during the third match of the bilateral series against South Africa.

- **Smriti Mandhana -**

- Smriti was born on **18 July 1996 in Mumbai, Maharashtra**.
- His father is Srinivas Mandhana and his mother is Smita Mandhana.
- He also has a brother named Shraavan Mandhana who is a former district-level cricketer.
- Smriti has made her place in cricket with her good performance.
- He has also received the **ICC Player of the Year award in the year 2016** .
- She is the first female player to get this title.
- She has been named as the winner of the **Rachael Heyhoe Flint Trophy** for ICC Women's Cricketer of 2021.

- **Harmanpreet Kaur -**

- She is an Indian female cricket player.
- In **November 2018** , she became the first woman from India to score a century in a **Women's T20 International** .

82. **Answer: c**

Explanation:

The correct answer is Maharashtra.

★ Key Points

- Dhangari Gaja is one of Maharashtra's most colourful traditional folk dances.
- The shepherds, cowherds, buffalo keepers, and blanket weavers of Maharashtra's Sholapur district perform this wonderful kind of dance.
- Shepherds and men who work in the fields are known as Dhangars in the local dialect. This is a popular art form among the Sholapur district's shepherds.

★ Additional Information

- Maharashtra has a diverse range of dance styles.
- Povada is a Maratha dance form that celebrates Shivaji Maharaj's lifetime accomplishments.
- Tamasha is a popular folk dance that is performed throughout the state.

83. Answer: b

Explanation:

The correct answer is Maharashtra.

★ Key Points

- A folk song called Bhaleri is sung to encourage farmers in the field.
- During the harvesting season, they also sing unique songs.
- At dawn, Maharashtra's village women sing a folk song called owi, which describes maika, the mother's home, and sasural, the husband's home.

★ Important Points

- The most popular folk songs that entertain the people of Maharashtra are Lavani and Poveda .
- Suvasinis perform folk songs at wedding halad and ghana ceremonies.
- Palane is a Maharashtra lullaby used to soothe a sleeping kid.

- Artya is a folk song that appeases deities' wrath in order to defend against diseases such as smallpox and plague.

★ Additional Information

- In terms of land area, **Maharashtra** is India's third-largest state.
- It has a long history of Marathi saints of the Varakari religious movement, such as Dnyaneshwar, Namdev, Chokhamela, Eknath, and Tukaram, who form one of Maharashtra's Marathi culture's foundations.

84. Answer: b

Explanation:

The correct answer is Krishnamurthy V Subramanian.

★ Key Points

- Krishnamurthy Subramanian was the 17th Chief Economic Advisor to the Government of India.
- Arvind Subramanian was the 16th Chief Economic Advisor to the Government of India during the time period of 16th October 2014 to 20th June 2018.
- The Chief Economic Adviser (CEA):
 - It is a post in the Government of India and is equivalent to the rank of Secretary to the Government of India.
 - The CEA is the **ex-officio cadre** controlling authority of the Indian Economic Service.
 - The CEA is head of the **Economic Division of the Department of Economic Affairs, Ministry of Finance**.
 - **J. J. Anjaria** was the first Chief Economic Advisor to the **Government of India**.
- **V. Anantha Nageswaran** took charge as the 18th Chief Economic Advisor to the Government of India on **28 January 2022**.
 - He is a former executive with Credit Suisse Group AG and Julius Baer Group.

★ Additional Information

- **Ajit Pai:**
 - He is the chairman of the prestigious Federal Communications Commission (FCC) of the United States as of March 2018.
 - He was appointed on 23 January 2017.
-

85. **Answer: a**

Explanation:

The correct answer is Kalinga War.

★ Key Points

- **Ashoka adopted Buddhism after observing the brutality of the Kalinga War.**
- The Kalinga war was the most famous war fought between **the Mauryan Emperor Ashoka the Great and the State of Kalinga.**
- Ashoka embraced Buddhism under the influence of a **Buddhist monk, Upagupta.**
- Kalinga war was a horrifying event as mentioned in the **13th Rock Edict of Ashoka.**
- Ashoka was the son of **Bindusara**. He was the governor of **Taxila and Ujjain during his father's reign.**
- Ashoka sat on the throne around **268 B.C** after successfully defeating his brothers.
- Ashoka's mother's name was **Subhadrangi**. His wife's name was **Devi or Vedisa who was a princess of Ujjaini.**

★ Additional Information

- **The battle of Buxar:**
 - It was fought on 22nd October 1764. This battle was crucial for Britishers since it provided them full control of Bengal and Bihar.
 - It was fought between Hector Munro and the combined forces of Mir Qasim which included Shuja-ud-daula, Shah Alam II, etc.

- In this battle, the combined force of Mir Qasim was defeated.
- The Treaty of Allahabad was signed on 12 August 1765 between Robert Clive and Shah Alam II (Mughal emperor).
- Shah Alam II was forced to pay a fine of five million rupees.
- **The Battle of Haldighati:**
 - It was fought on 18 June 1576 between Rana of Mewar, Maharana Pratap, and the Mughal emperor Akbar.
- **Battle of Tarain:**
 - Prithviraj Chauhan defeated Muhammad Ghori in the first battle of Tarain in 1191 AD.
 - Muhammad Ghori defeated Prithviraj Chauhan iii in the 2nd battle of Tarain in 1192 AD.

86. Answer: b

Explanation:

The correct answer is West Bengal.

★ Key Points

- **Gambhira, Dhali and Jatra** are the famous dance forms of West Bengal.
- Shakti worshippers perform Gambhira, a sacred devotional dance.
- The dance is named after the Chandi Mandir - **Gambhira's dance** hall, which features a specifically built pavilion in front of the shrine for the dance.
- During the reign of Raja Pratapaditya, the **Dhali Dance** was born and evolved. The Dhali dance is done by two guys using cane shields and bamboo sticks as weapons.
- **Jatra Dance** is famous in West Bengal. Bibek (conscience) and Niyati (fear) are two figures who grab the audience's attention in this dance form (fate).

87. Answer: c

Explanation:

The correct answer is Study of reptiles and amphibians.

★ Key Points

- **Herpetology** is the study of reptiles and amphibians.
- The study of pancreas, liver, biliary tree, gall bladder, and their disorders is known as Hepatology.

★ Additional Information

- **Ornithology:** The branch of zoology that deals with the study of birds is called ornithology.
- **Entomology:** It is known as the study of insects.
- **Ichthyology:**
 - Ichthyology is the branch of zoology that deals with the study of fish, including bony fish, cartilaginous fish, and jawless fish.
 - The study of fish dates from the Upper Paleolithic Revolution.
 - The science of ichthyology was developed in several interconnecting epochs, each with various significant advancements.
 - The study of fish receives its origins from humans' desire to feed, clothe, and equip themselves with useful implements.

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88. Answer: a

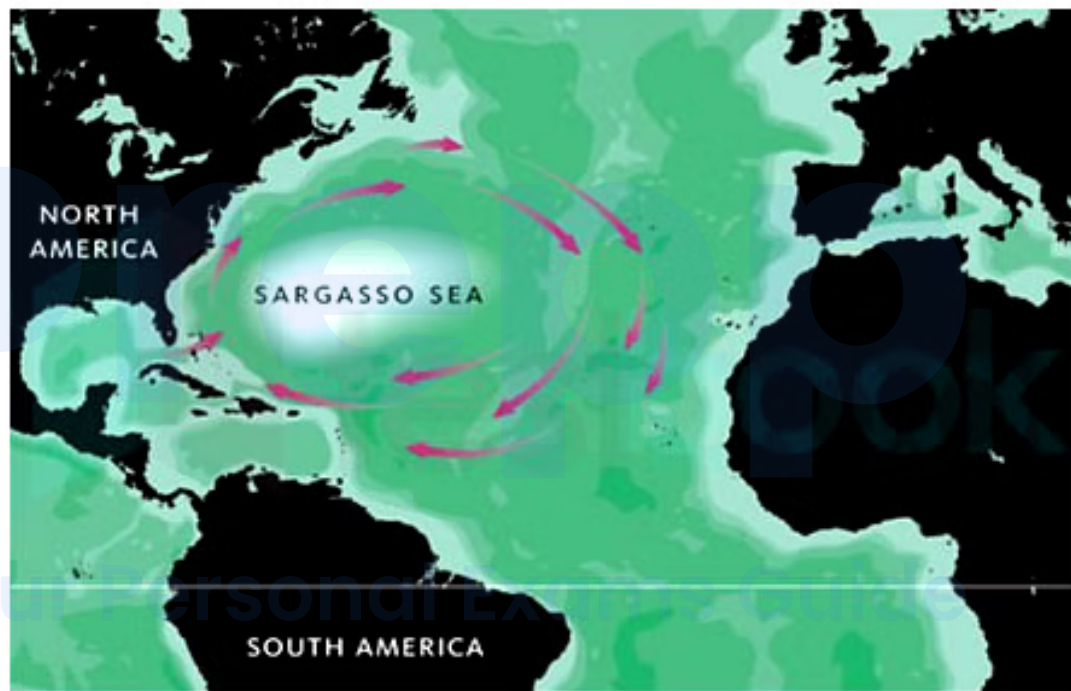
Explanation:

The correct answer is Sargasso Sea.

★ Key Points

- **Sargasso Sea:**
 - The Sargasso Sea is a region in the gyre in the middle of the North Atlantic Ocean.
 - It is the only sea on Earth that has no coastline.

- It is bounded on the **West by the Gulf Stream, in the North by the North Atlantic Current, in the East by the Canary Current; and in the South by the North Atlantic Equatorial Current.**
- This system of ocean currents forms the North Atlantic Gyre.
- Thick sea grass floats along the coast of this region. Sargassum is a rootless grass. This grass is called Sargassum in Portuguese language, after this the name of this ocean is named Sargasso Sagar.
- The sea is covered with rootless seaweeds which obstruct navigation.
- It is a spawning site for threatened and endangered Eels, as well as white Marlin, porbeagle Shark, and Dolphinfish.



89. Answer: c

Explanation:

The correct answer is Chlorine.

★ Key Points

- Chlorine elements can be used to treat/purify water.

- **Chlorination** is one of many methods that can be used to disinfect water.
- It is a chemical disinfection method that uses various types of chlorine or chlorine-containing substances for the oxidation and disinfection of what will be the potable water source.
- **Chlorine inactivates a microorganism by damaging its cell membrane. Once the cell membrane is weakened, chlorine can enter the cell and disrupt cell respiration and DNA activity.**
- The main objective of this chlorine addition is to disinfect the water and maintain chlorine residuals that will remain in the water as it travels through the distribution system.
- Any type of chlorine that is added to water during the treatment process will result in the formation of hypochlorous acid (HOCl) and hypochlorite ions (OCl⁻), which are the main disinfecting compounds in chlorinated water.
- The amount of chlorine that is required to disinfect water is dependent on the impurities in the water that needs to be treated.
- Chlorination is able to provide a residual to reduce the chance of pathogen regrowth in water storage tanks or within the water distribution system.
- Chlorination has been proven to be very effective against bacteria and viruses.
- However, it cannot disinfect all waterborne pathogens. Certain pathogens, namely protozoan cysts, are resistant to the effects of chlorine.

★ **Additional Information**

- **Chlorine** was first discovered in **Sweden in 1744**.
- At that time, people believed that odors from the water were responsible for transmitting diseases.
- Chlorination can be done at any time/point throughout the water treatment process. There is not one specific time when chlorine must be added.

90. **Answer: a**

Explanation:

The correct answer is Luni.

★ Key Points

- Luni River originates from Nag Pahar or Naga hills in the Ajmer district of Rajasthan and is the largest west-flowing river in the state.
- Luni originates in the Pushkar valley of the Aravalli Range, near Ajmer, and passes through the southeastern portion of the Thar Desert.
- It ends in the marshy lands of Rann of Kutch in Gujarat.
- Luni River flows through Ajmer, Barmer, Jalore, Jodhpur, Nagaur, Pali, and Sirohi districts of Rajasthan and the Banaskantha and Patan districts of Gujarat.
- Sukri, Mithri River, Bandi, Khari, Jawai, Guhiya, and Sagi are the left bank tributary of River Luni.
- Jojari is the right bank tributary of River Luni.
- Jaswant Sagar Dam, built in 1892 by Maharaja Jaswant Singh is one of the largest artificial lakes in India.
- Sardar Samand and Jawai dam are major irrigation projects on River Luni.

★ Additional Information

- The **Chambal River** is a tributary of the Yamuna River in Central and Northern India, and thus forms part of the greater Gangetic drainage system.
- **Banganga River**, an 240 km long tributary of the Gambhir river in India, originates from the hills of Aransar and Bairath in the Jaipur region of Rajasthan state and confluences with the Yamuna near Fatehabad in Agra district of Uttar Pradesh state.
- The **Banas** is a river that lies entirely within the state of Rajasthan in western India. It is a tributary of the Chambal River, itself a tributary of the Yamuna, which in turn merges into the Ganga. The Banas is approximately 512 kilometers in length.

91. Answer: b

Explanation:

The correct answer is the Impeachment of the President.

★ Key Points

- According to Article-61 of the Constitution, the resolution for impeachment against the President can be brought, when he/she violates the constitution.
- Article 61- Procedure for impeachment of the President:
 - When a President is to be impeached for violation of the Constitution, the charge shall be preferred by either House of Parliament.
 - A resolution to impeach the president has to be passed by a two-thirds majority of the total number of members of the originating house.
 - It is then sent to the other house.
 - The other house investigates the charges that have been made.
 - If the resolution to impeach the President is passed by a two-thirds majority of the total number of members of the second house, then the President is impeached.

★ Additional Information

- **Fundamental duties:**
 - These duties are mentioned in **article 51A**.
 - There was no list of fundamental duties in the original constitution.
 - Fundamental duties were added to the Indian constitution by the **42nd constitutional amendment act 1976**.
 - The 42nd constitutional amendment added **Part IV A** and Article 51A to the Indian constitution.
 - Fundamental duties were added to the Indian constitution on the recommendation of the **Swaran Singh Committee**.
 - Initially, there were only 10 fundamental duties in the constitution.
 - The **86th constitutional amendment act 2002** added one more fundamental duty to the constitution.
 - Currently, there are **11 fundamental duties** in the Indian constitution.
 - The idea of fundamental duties was borrowed from the Russian constitution.
 - Fundamental duties are **non-justiciable in nature**.
- **NATIONAL EMERGENCY:**
 - **Under Article 352**, the President can declare a national emergency when the security of India or a part of it is threatened by war or external aggression, or armed rebellion.

- It may be noted that the president can declare a national emergency even before the actual occurrence of war or external aggression or armed rebellion if he is satisfied that there is an imminent danger.
- The President can also issue different proclamations on grounds of war, external aggression, armed rebellion, or imminent danger thereof, whether or not there is a proclamation already issued by him, and such proclamation is in operation.
- This provision was added by the **38th Amendment Act of 1975**.
- When a national emergency is declared on the ground of 'war' or 'external aggression', it is known as an '**External Emergency**'.
- On the other hand, when it is declared on the ground of '**armed rebellion**', it is known as an '**Internal Emergency**' .
- **Financial Emergency:**
 - **Article 360** empowers the president to proclaim a Financial Emergency.

92. Answer: d

Explanation:

The correct answer is Hydrochloric acid.

★ Key Points

- The acid secreted by the gastric glands of human beings that helps in the digestion of food is Hydrochloric acid (HCl).
- Hydrochloric acid (HCl):
 - The acid has a distinctively pungent smell.
 - It is classified as strongly acidic and can attack the skin over a wide composition range.
 - Hydrochloric acid was discovered by the alchemist Jabir ibn Hayyan around the year 800 AD.
- The hydrochloric acid secreted by the gastric glands facilitates the action of pepsin.
 - Pepsin is an enzyme found in gastric juice that digests proteins.
 - Pepsin was found by German physiologist Theodor Schwann.

- Pepsin affects only partial degradation of proteins into smaller units called peptides which are absorbed by the intestines or broken down further by the pancreatic enzymes.

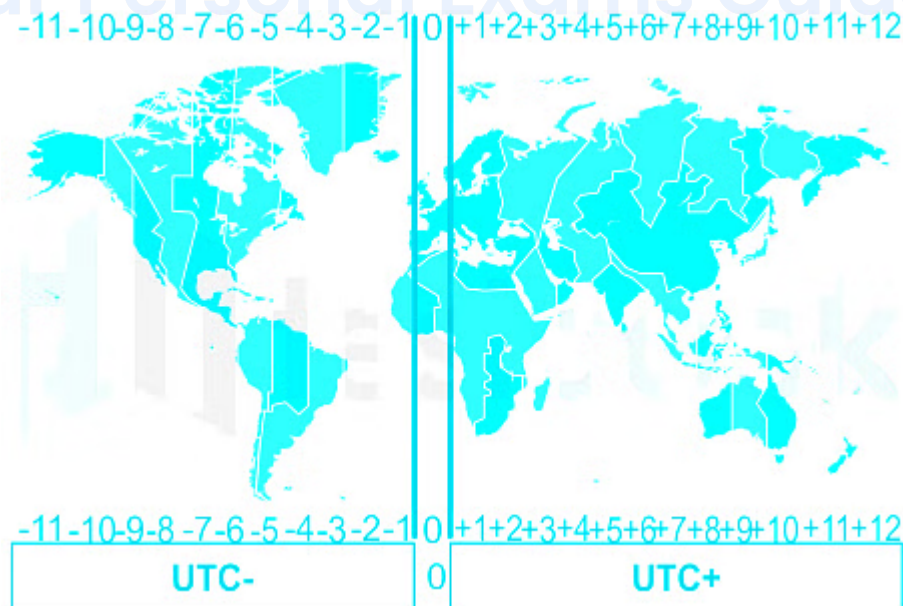
93. Answer: a

Explanation:

The correct answer is France.

★ Key Points

- A time zone is a region of the globe that observes a uniform standard time for legal, commercial, and social purposes.
- Time zones tend to follow the boundaries of countries and their subdivisions because it is convenient for areas in close commercial or other communication to keep the same time.
- **France, including its overseas territories, has the most time zones with 12.**
- Russia has 11 Time Zones.
- South Africa has 2 time zones.
- India has only **one-time zone** . The country has officially observed India Standard Time (IST) since 1947 .



94. Answer: b

Explanation:

The correct answer is Sahil Seth.

★ Key Points

- Sahil Seth has been appointed an honorary adviser to the committee for the BRICS Chamber of Commerce (CCI) young leaders for the period of 2020–2023.
- He is a Deputy Commissioner of Mumbai Customs.
- He is a 2011 batch Indian Revenue Service Officer.
- The role of an honorary advisor is on a voluntary basis and there are no financials involved which makes it a no/remuneration appointment.

★ Additional Information

- **BRICS:**
 - The full form of BRICS is Brazil, Russia, India, China, and South Africa.
 - Initially, in 2009 there were only four countries.
 - South Africa joined in 2010.
 - It is associated with five emerging economies of the world that have a significant influence on regional affairs.
 - It was formed in 2009 and since then the governments of these 5 countries met annually at formal summits.
 - For the year 2020, Russia hosted the 12th BRICS summit.
 - In 2021, India was the host 13th BRICS summit.
 - The headquarters of the BRICS is in Shanghai.

95. Answer: c

Explanation:

The correct answer is Leon Calmette and Camille Guerin.

★ Key Points

- **Bacillus Calmette–Guerin (BCG) vaccine** was developed by French bacteriologists **Leon Calmette** and **Camille Guerin** in 1921. It is used for the **Prevention of Tuberculosis**.
- The vaccine provides protection against **meningitis, leprosy, non-invasive bladder cancers, and disseminated TB** in children.
- A recent study has shown that the countries which have BCG vaccination in their immunization program have a low rate of death due to COVID-19.
- Tuberculosis (TB) disease is caused by *Mycobacterium tuberculosis*. Tuberculosis (TB) usually attacks the lungs.
- BCG vaccine was first considered by the WHO Expert Committee on Biological Standardization in its thirteenth report.
- BCG vaccine is one of the most widely used of all current vaccines.

★ Additional Information

- **Edward Jenner** – Edward Jenner, FRS FRCPE was a British physician and scientist who pioneered the concept of vaccines including creating the smallpox vaccine, the world's first ever vaccine. The terms vaccine and vaccination are derived from **Variolae vaccinae**, the term devised by Jenner to denote **cowpox**.
 - **Jonas Salk** – Jonas Edward Salk was an American virologist and medical researcher who developed one of the **first successful polio vaccines**.
- **Louis Pasteur** – He pioneered the study of **molecular asymmetry**; discovered that microorganisms cause **fermentation** and disease; originated the process of **pasteurization**; saved the beer, wine, and silk industries in France; and developed vaccines against **anthrax** and **rabies**.

96. **Answer: a**

Explanation:

The correct answer is **Part XII**.

★ Key Points

- The Constitution of India is grouped into 25 parts which are as follows:-

prepp

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| Part | Article | Related to |
|-----------|----------------|---|
| Part I | 1 to 4 | Union and its territory. |
| Part II | 5 to 11 | Citizenship. |
| Part III | 12 to 35 | Fundamental Rights. |
| Part IV | 36 to 51 | Directive Principles of State Policy. |
| Part IV A | 51A | Fundamental Duties. |
| Part V | 52 to 151 | The Union. |
| Part VI | 152 to 237 | The States. |
| Part VII | 238 | The Part-B States in the Indian Union. |
| Part VIII | 239 to 242 | The Union Territories. |
| Part IX | 243 to 243-O | The Panchayats. |
| Part IX-A | 243P to 243ZG | Municipalities. |
| Part IX-B | 243ZH to 243ZT | The Co-operative Societies. |
| Part X | 244 to 244A | The Scheduled and Tribal Areas. |
| Part XI | 245 to 263 | Relations between the Union and the States. |
| Part XII | 264 to 300A | Finance, Property, Contracts, and Suits. |
| Part XIII | 301 to 307 | Trade and Commerce within the territory of India. |

| | | |
|------------|---------------|--|
| Part XIV | 308 to 323 | Services under the Union, the States. |
| Part XIV | 323A to 323 B | Tribunals. |
| Part XV | 324 to 329A | Elections. |
| Part XVI | 330 to 342 | Special Provisions relating to certain classes. |
| Part XVII | 343 to 351 | Official Language. |
| Part XVIII | 352 to 360 | Emergency Provisions. |
| Part XIX | 361 to 367 | Miscellaneous. |
| Part XX | 368 | Amendment of the Constitution. |
| Part XXI | 369 to 392 | Temporary, Transitional, and special provisions. |
| Part XXII | 393 to 395 | Short title, date of commencement, etc. |

★ Confusion Points

- The original Indian Constitution had **22 parts** and **395 articles** . Later **3 parts** were added to it as amendments making the tally **25** .

97. Answer: c

Explanation:

The correct answer is Japan.

★ Key Points

- **Japan** is the tournament's most successful team, having won it four times.

- **Iran and Saudi Arabia** each have three titles, while **Israel, Kuwait, Iraq, Australia, and Qatar** each have one.
- The **AFC Asian Cup** was founded in 1956 as an association football competition.
- It is held every four years and is contested by the men's national teams of members of the **Asian Football Confederation (AFC)**, the sport's Asian governing body.
- The first tournament was won by South Korea in a round-robin format. The first final was held in Bangkok in 1972, with Iran defeating South Korea 2–1 after extra time.

★ Important Points

- The **Asian Football Confederation (AFC) Asian Cup** is the primary association football competition in which **senior men's national teams** from AFC members compete to determine the continental champion of Asia.
- After the Copa América, it is the world's second-oldest continental football competition.
- The winning team is crowned Asia's champion and qualified for the **FIFA Confederations Cup in 2015**.

98. Answer: a

Explanation:

The correct answer is Neela Satyaanarayan.

★ Key Points

- **Neela Satyanarayan** was the first woman Election Commissioner of Maharashtra.
- She was a former IAS officer who passed away in July 2020.
- The 1972 batch IAS officer was admitted to the hospital after she was diagnosed with COVID-19.
- She was an **additional Chief Secretary of the Revenue department and post-retirement, in 2009**, she was made the state election commissioner.
- **Mrs. Neela retired on July 5, 2014.**

- **Maharashtra :**
 - **Number of Districts** – 36.
 - **Lok Sabha seats** – 48.
 - **Rajya Sabha seats** – 19.
 - **State Animal** – Indian giant squirrel.
 - **State Bird** – Yellow-footed green pigeon.

99. **Answer: b**

Explanation:

The correct answer is Indian Opinion.

★ Key Points

- **Indian Opinion** was started by **Mahatma Gandhi** in **South Africa**.
- This paper existed from **1903 to 1905** and served as a useful tool to fight against racial discrimination and thus played a key role in winning civil rights for the Indian immigrants in South Africa.
- The publication was an important tool for the political movement led by **Gandhi and the National Indian Congress** to fight racial discrimination and win civil rights for the Indian immigrant community in **South Africa**.

★ Additional Information

- **Young India:**
 - It was started by the "**Home Rule Party**".
 - Young India was a weekly journal published under the supervision of "**Mohandas Karamchand Gandhi**" from the year **1919 to 1931**.
 - This journal inspired many people as Gandhi write his quotations in it.
 - This helped Gandhi in spreading his ideas and message to the people to motivate them in order to get freedom for Britain.
- **Hind Swaraj or Indian Home Rule:**
 - It is a book written by **Mohandas K. Gandhi** in **1909** .
 - Expresses his views on Swaraj, modern civilization, mechanization, etc.

- The book was banned in **1910** by the British government in India as a seditious text.
 - Gandhi's Hind Swaraj takes the form of a dialogue between two characters, "**The Reader and The Editor**".
-

100. Answer: b

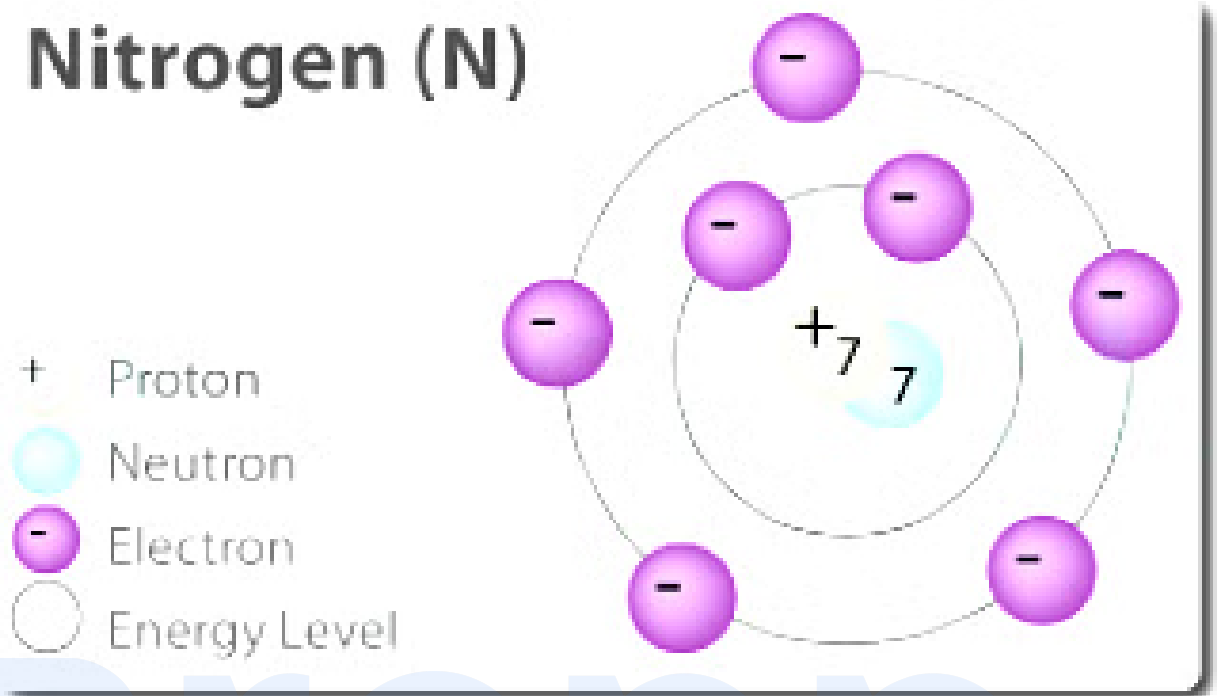
Explanation:

The correct answer is Nitrogen.

★ Key Points

- Bulbs are filled with chemically inactive gases like **Nitrogen or Argon** to prevent the oxidation of the tungsten filament used in the bulb.
- **About Nitrogen:**
 - It is a chemical element with **the atomic number 7** and is denoted by the symbol (N).
 - Nitrogen gas constitutes 78 % of the Earth's Air.
 - Nitrogen is odorless, colorless, and generally considered an **Inert Gas** in Nature.
 - Nitrogen was discovered by chemist and physician **Daniel Rutherford** in 1772.

Nitrogen (N)



★ Additional Information

- **Hydrogen:**
 - The atomic number is 1 and is denoted by the symbol (H).
 - It was discovered by **Henry Cavendish**.
- **Carbon dioxide:**
 - The atomic number is 6 and is denoted by the symbol (CO₂).
 - It was discovered by **Joseph Black**.
- **Halogens:**
 - Halogens are non-metals that do not exist in elemental forms.
 - For example - Bromine, chlorine, fluorine, iodine etc.