



## 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



BPSC



UP TET



IBPS RRB



IBPS CLERK



IES



UPSC CAPF



SSC Stenogr..



RRB NTPC



SSC GD



RBI GRADE B



RBI Assistant



DSSSB

# SSC CHSL 2021 (Tier-I) Previous Year Paper (02-Jun-2022) (Shift 1)

Total Time: 1 Hour

Total Marks: 200

## Instructions

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

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

## English Language

1. Select the most appropriate meaning of the given idiom.

(+2, -0.5)

White elephant

- a. Useful and expensive possession
- b. Memorable possession
- c. Costly but useless possession
- d. Motivational possession

2. Select the option that can be used as a one-word substitute for the given group of words.

(+2, -0.5)

One thing that can be divided

- a. Remainder
- b. Quotient
- c. Dividend
- d. Divisible

3. Select the most appropriate synonym of the given word.

(+2, -0.5)

Banter

- a. Repartee
- b. Rebuke
- c. Reliance

d. Commendation

---

4. Parts of the given sentence have been underlined and given as options. (+2, -0.5)  
One of them contains an error. Select the option that correctly rectifies the error.

It is possible to prevent oneself with respiratory diseases by maintaining a disciplined lifestyle.

- a. of prevent oneself
  - b. to a disciplined lifestyle
  - c. on maintaining
  - d. from respiratory diseases
- 

5. Select the most appropriate meaning of the given idiom. (+2, -0.5)

To put someone's back up

- a. To flatter someone
  - b. To irritate someone
  - c. To help someone
  - d. To deceive someone
- 

6. Select the INCORRECTLY spelt word. (+2, -0.5)

- a. Movement
- b. Career

- c. Carrier
  - d. Freadom
- 

7. Select the most appropriate spelling that can substitute the underlined word in the given sentence. (+2, -0.5)

He had to prepare for his competation.

- a. competetion
  - b. compitition
  - c. competion
  - d. competition
- 

8. Select the option that expresses the given sentence in active voice. (+2, -0.5)

The door was opened by the children for their father.

- a. The children was opened the door for their father.
  - b. The children are opens the door for their father.
  - c. The children opened the door for their father.
  - d. The children opens the door for their father.
- 

9. Select the most appropriate option to fill in the blank. (+2, -0.5)

Though he is stout, he runs \_\_\_\_\_.

- a. faster

- b. fastest
- c. fast
- d. fastly

---

10. Select the most appropriate meaning of the highlighted idiom (+2, -0.5)

The actress' daughter is just a chip off the old block.

- a. console the dreary
- b. Similar to one's parents in behaviour
- c. get into the enemy's territory
- d. chip off the edges

---

11. Select the INCORRECTLY spelt word. (+2, -0.5)

- a. Summary
- b. Emigrate
- c. Rivelry
- d. Grandeur

---

12. Select the most appropriate synonym of the given word. (+2, -0.5)

Austere

- a. Promising
- b. Stern

- c. Brisk
- d. Mitigating

- 
13. Parts of the given sentence have been given as options. One of them may contain an error. Select the part that contains the error from the given options. If you don't find any error, mark 'No error' as your answer. (+2, -0.5)

The Minister announced that the bridge would constructed within a week.

- a. No error
- b. that the bridge would constructed
- c. The Minister announced
- d. within a week

- 
14. Sentences of a paragraph are given below in jumbled order. Arrange the sentences in the correct order to form a meaningful and coherent paragraph. (+2, -0.5)

- A. Two astronomers – Johannes Kepler from Germany and Galileo from Italy – supported the Copernican theory after nearly a century passed by.
- B. Copernicus' view was that the sun was stationary and the earth and the planets moved in orbits around the sun.
- C. Nicholas Copernicus, a Polish priest, proposed a model in 1514.
- D. There are many popular theories about the solar system. Ancient People believed that the sun moved around the earth and the earth was static.

- a. BCAD
- b. ABCD

c. DCBA

d. DACB

- 
15. Select the most appropriate option that can substitute the underlined segment in the given sentence. (+2, -0.5)

They had eaten an apple every day for breakfast.

a. eaten

b. eat

c. has eaten

d. eating

- 
16. Select the most appropriate ANTONYM of the given word. (+2, -0.5)

Famous

a. Quiet

b. Concert

c. Obscure

d. Affluent

- 
17. Select the most appropriate option to fill in the blank. (+2, -0.5)

Other countries of comparable size and exposure to Information and Communication Technologies (ICT) have adopted a decentralised organizational structure, liberal policies, and a \_\_\_\_\_ dispute

resolution mechanism deployed state-of-the-art infrastructure and used the private-public partnership to market Domain Name Registration Services (DNS), resulting in phenomenal growth of their country code domain name.

- a. short
- b. narrow
- c. restricted
- d. comprehensive

---

18. Select the sentence which has no spelling error. (+2, -0.5)

- a. Aries is the first sign of the zodiac.
- b. Many cities are named after zodaic signs.
- c. Water bearer is the symbol for zodiak Aquarius.
- d. The zodyac signs are split in twelve months.

---

19. Select the option that can be used as a one-word substitute for the given group of words. (+2, -0.5)

Unselfish interest in the welfare of others

- a. Celibacy
- b. Misanthropy
- c. Egoism
- d. Altruism

20. Select the option that expresses the given sentence in passive voice. (+2, -0.5)

I am going to ask all employees about the incident that took place in the canteen yesterday.

- a. All the employees are gone to be asked about the incident that took place in the canteen yesterday.
- b. All the employees are going to be asked about the incident that took place in the canteen yesterday.
- c. All the employees are asked by me about the incident that took place in the canteen yesterday.
- d. All the employees will go to be questioned by me about the incident that took place in the canteen yesterday.

21. In the following passage, some words have been deleted. Read the passage carefully and select the most appropriate option to fill in each blank. (+2, -0.5)

Salander sat for a while (1) \_\_\_\_\_ the telephone after Armansky hung up. She went to her work corner in the living room (2) \_\_\_\_\_ looked at the notes she had pinned up on the wall and the papers she had (3) \_\_\_\_\_ on the desk. What she had managed to collect was mostly press cuttings and articles (4) \_\_\_\_\_ from the Internet. She took the papers and dropped (5) \_\_\_\_\_ in a desk drawer.

Select the most appropriate option to fill in blank number 1.

- a. to be holding
- b. holds
- c. holding

d. hold

22. In the following passage, some words have been deleted. Read the passage carefully and select the most appropriate option to fill in each blank. (+2, -0.5)

Salander sat for a while (1) \_\_\_\_\_ the telephone after Armansky hung up. She went to her work corner in the living room (2) \_\_\_\_\_ looked at the notes she had pinned up on the wall and the papers she had (3) \_\_\_\_\_ on the desk. What she had managed to collect was mostly press cuttings and articles (4) \_\_\_\_\_ from the Internet. She took the papers and dropped (5) \_\_\_\_\_ in a desk drawer.

Select the most appropriate option to fill in blank number 2.

- a. and
- b. so
- c. but
- d. although

23. In the following passage, some words have been deleted. Read the passage carefully and select the most appropriate option to fill in each blank. (+2, -0.5)

Salander sat for a while (1) \_\_\_\_\_ the telephone after Armansky hung up. She went to her work corner in the living room (2) \_\_\_\_\_ looked at the notes she had pinned up on the wall and the papers she had (3) \_\_\_\_\_ on the desk. What she had managed to collect was mostly press cuttings and articles (4) \_\_\_\_\_ from the Internet. She took the papers and dropped (5) \_\_\_\_\_ in a desk drawer.

Select the most appropriate option to fill in blank number 3.

- a. tacked
- b. slacked
- c. mounded
- d. stacked

24. In the following passage, some words have been deleted. Read the passage carefully and select the most appropriate option to fill in each blank. (+2, -0.5)

Salander sat for a while (1) \_\_\_\_\_ the telephone after Armansky hung up. She went to her work corner in the living room (2) \_\_\_\_\_ looked at the notes she had pinned up on the wall and the papers she had (3) \_\_\_\_\_ on the desk. What she had managed to collect was mostly press cuttings and articles (4) \_\_\_\_\_ from the Internet. She took the papers and dropped (5) \_\_\_\_\_ in a desk drawer.

Select the most appropriate option to fill in blank number 4.

- a. cropped
- b. uploaded
- c. cut
- d. downloaded

25. In the following passage, some words have been deleted. Read the passage carefully and select the most appropriate option to fill in each blank. (+2, -0.5)

Salander sat for a while (1) \_\_\_\_\_ the telephone after Armansky hung up. She went to her work corner in the living room (2) \_\_\_\_\_ looked at the notes she had pinned up on the wall and the papers she had (3)

\_\_\_\_\_ on the desk. What she had managed to collect was mostly press cuttings and articles (4) \_\_\_\_\_ from the Internet. She took the papers and dropped (5) \_\_\_\_\_ in a desk drawer.

**Select the most appropriate option to fill in blank number 5.**

- a. it
- b. them
- c. they
- d. that

Prepp

Your Personal Exams Guide

## General Intelligence

26. Select the correct mirror image of the given combination when the mirror is placed at MN as shown. (+2, -0.5)



- a.
- b.
- c.
- d.

27. In a certain code language, 'CONCEPT' is written as '3o14c5p20' and 'PROBLEM' is written as '16r15b12e13'. How will 'SOLVE' be written in that language? (+2, -0.5)

- a. Po12v5
- b. 19o12v5
- c. 18o12v5
- d. 19o1345

28. Select the option that represents the correct order of the given words as they would appear in an English dictionary. (+2, -0.5)

1. Necessary
2. Networks
3. Negotiate
4. Needlework
5. Neigh

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

- 
29. Two different positions of the same dice are shown, the six faces of which are coloured Red, Green, Blue, Yellow, Black, White. Select the colour that will be on the face opposite to the one coloured Yellow. (+2, -0.5)



- a. Green
  - b. Black
  - c. Red
  - d. White
-

30. Which of the following numbers will replace the question mark (?) in the given series? (+2, -0.5)

7, 7, 9, 27, 31, 155, ?

- a. 166
- b. 183
- c. 161
- d. 181

31. Select the option that is related to the fifth number in the same way as the second number is related to the first number and the fourth number is related to the third number. (+2, -0.5)

9 : 135 :: 6 : 54 :: 7 : ?

- a. 84
- b. 74
- c. 77
- d. 85

32. Select the option that represents the letters that, when sequentially placed from left to right in the blanks below, will complete the letter series. (+2, -0.5)

H \_ H \_ \_ S r \_ a H \_ \_ S r H \_ \_ S a S r

- a. a S a H S a a H
- b. a S a S S a a H

c. S S a H S a a H

d. a S a a a a a H

33. Select the option that is related to the fifth term in the same way as the second term is related to the first term and the fourth term is related to the third term. (+2, -0.5)

PEARL : LRAEP :: ULTRA : ARTLU :: VIRAL : ?

a. LIRAV

b. AIRLV

c. LARIV

d. ALRIV

34. Select the option that is related to the fifth term in the same way as the second term is related to the first term and fourth term related to third term. (+2, -0.5)

12 : 208 :: 9 : 108 :: 15 : ?

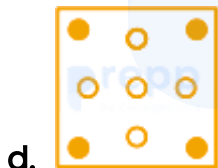
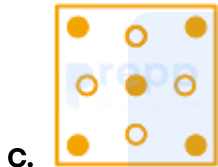
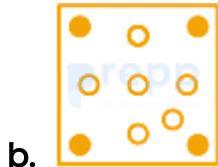
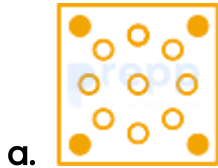
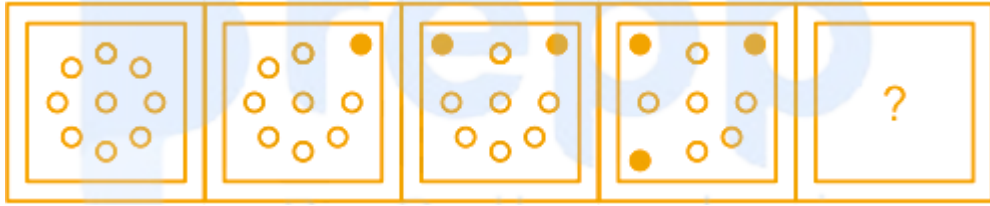
a. 350

b. 360

c. 325

d. 365

35. Select the figure that will replace the question mark (?) in the following figure series. (+2, -0.5)



36. Select the option that is related to the fifth number in the same way as the second number is related to the first number and the fourth number is related to the third number. (+2, -0.5)

207 : 30 :: 108 : 19 :: 63 : ?

- a. 18
- b. 20
- c. 14
- d. 11

---

37. The second number in the given number pairs is obtained by performing certain mathematical operation(s) on the first number. The same operation(s) are followed in all the number pairs, except one. Find that odd number pair. (+2, -0.5)

- a. 25 : 125
- b. 49 : 343
- c. 81 : 730
- d. 36 : 216

---

38. In a certain code language, 'CURD' is written as '342184' and 'BREAD' is written as '2181024'. How will 'BUTTER' be written in that language? (+2, -0.5)

- a. 442201018
- b. 421201018
- c. 24220201018
- d. 2212020518

---

39. Select the option that is related to the fourth term in the same way as the first term is related to the second term and the fifth term is related to the sixth term (+2, -0.5)

16 : 36 :: ? : 50 :: 9 : 22

- a. 31
- b. 23

c. 34

d. 22

40. Select the correct mirror image of the given combination when the mirror is placed at MN as shown below. (+2, -0.5)



a. 3 z 9 4 k g

b. 3 z 9 4 k g

c. 3 z 9 4 k g

d. 3 z 6 4 k g

41. Select the option that is related to the third number in the same way as the second number is related to the first number and the sixth number is related to the fifth number. (+2, -0.5)

21 : 54 :: 24 : ? :: 29 : 78

a. 56

b. 63

c. 30

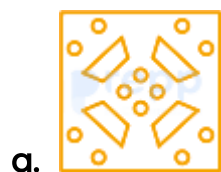
d. 49

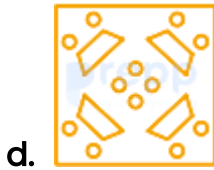
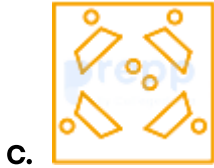
42. Select the option that represents the correct order of the given words as they would appear in an English dictionary. (+2, -0.5)

1. Facsimile
2. Frightful
3. Favourable
4. Fructification
5. Fanatical

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

43. A paper is folded and cut as shown. How will it appear when unfolded? (+2, -0.5)





44. Two different positions of the same dice are shown, the six faces of which are numbered from 11 to 16. Select the number that will be on the face opposite to the one showing '12'. (+2, -0.5)



- a. 16  
b. 15  
c. 13  
d. 11

45. Select the Venn diagram that best represents the relationship between the following classes. (+2, -0.5)

Brothers, Fathers, Mothers



46. Select the correct combination of mathematical signs to replace the \* signs and to balance the given equation. (+2, -0.5)

$$50 * 24 * 2 * 5 * 3$$

- a. +, =, ×, ×  
b. =, +, +, +  
c. -, =, +, ×  
d. =, ×, +, -

47. Select the set in which the numbers are related in the same way as are the numbers of the following set. (+2, -0.5)

(37, 28, 333)

(41, 39, 82)

(NOTE : Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding / deleting / multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is NOT allowed)

a. (18, 13, 90)

b. (17, 14, 67)

c. (16, 12, 54)

d. (19, 15, 44)

---

48. The second number in the given number pairs is obtained by performing certain mathematical operation(s) on the first number. The same operation(s) are followed in all the number pairs, EXCEPT one. Find that odd number pair. (+2, -0.5)

a. 50 : 150

b. 30 : 80

c. 40 : 120

d. 20 : 60

---

49. In a certain code language, "QUOTE" is written as "RWRXJ", and "UNION" is written as "VPLSS". How will "YOUNG" be written in that language? (+2, -0.5)

a. ZQXRL

b. ZQWRL

- c. ZPXRL
  - d. ZQXQL
- 

50. Which letter cluster will replace the question mark (?) to complete the given series? (+2, -0.5)

UQMI, VOPE, WMSA, ?, YIYS

- a. XKWV
- b. KXWV
- c. XKVW
- d. XVWK

prepp

Your Personal Exams Guide

## Quantitative Aptitude

51. In a circular race of 2500 m, a man and a woman start from a point towards opposite directions with speeds of 37 km/h and 35 km/h, respectively. After how much time from the start of the race will they meet for the first time? (+2, -0.5)
- a. 2 min 40 sec
  - b. 2 min 30 sec
  - c. 2 min 5 sec
  - d. 2 min 20 sec
- 
52. What will be the area of a triangle whose sides are 13 cm, 5 cm and 12 cm? (+2, -0.5)
- a.  $50 \text{ cm}^2$
  - b.  $40 \text{ cm}^2$
  - c.  $35 \text{ cm}^2$
  - d.  $30 \text{ cm}^2$
- 
53. The table below shows the number of cakes sold by six different bakeries in a town on five different days of particular week. (+2, -0.5)

| Days<br>Bakery | Monday | Tuesday | Thursday | Saturday | Sunday |
|----------------|--------|---------|----------|----------|--------|
| A              | 222    | 255     | 215      | 250      | 266    |
| B              | 205    | 275     | 314      | 295      | 260    |
| C              | 245    | 266     | 305      | 195      | 235    |
| D              | 221    | 230     | 185      | 300      | 280    |
| E              | 312    | 325     | 298      | 272      | 254    |
| F              | 175    | 205     | 255      | 240      | 308    |

If out of the total number of cakes sold by bakery C on Monday, 40% are Vanilla cakes and rest are strawberry cakes, then what is the number of strawberry cakes sold by Bakery C on Monday?

- a. 98
- b. 147
- c. 145
- d. 150

54. Find the fourth proportional to 7, 13 and 21. (+2, -0.5)

- a. 14
- b. 26
- c. 39
- d. 21

55. The volume of a cube is  $5832 \text{ cm}^3$ . Find its total surface area. (+2, -0.5)

- a.  $1672 \text{ cm}^2$
- b.  $1944 \text{ cm}^2$
- c.  $1536 \text{ cm}^2$
- d.  $1824 \text{ cm}^2$

56.  $3 \sin A - 4 \sin^3 A = ?$  (+2, -0.5)

- a.  $\cot 3A$
- b.  $\sin 3A$
- c.  $\cos 3A$
- d.  $\tan 3A$

57. Find the ratio in which a grocer should mix two varieties of pulses costing ₹75 and ₹90 per kg, respectively, so as to get a mixture costing ₹80 per kg. (+2, -0.5)

- a. 2 : 3
- b. 3 : 2
- c. 1 : 2
- d. 2 : 1

---

58. The expenses of a family on wheat, vegetables and oil are in the ratio 12 : 8 : 5. The prices of these items increased by 50%, 25% and 40%, respectively. The total expenses of the family on these items increased by: (+2, -0.5)

- a. 40%
- b. 38%
- c. 44%
- d. 42%

---

59. The table below gives the age-wise distribution of number of people who responded to a survey about their favourite style of dance. As per information given in the table, what approximate percentage of the respondents till the age of 30 years indicated that Dandiya is their favourite style of dance? (Give your answer upto two decimal places) (+2, -0.5)

| Age           | Less than 20 years | From 21 years to 30 years | More than 30 year |
|---------------|--------------------|---------------------------|-------------------|
| Bharatanatyam | 6                  | 4                         | 17                |
| Dandiya       | 7                  | 8                         | 10                |
| Kuchipudi     | 9                  | 3                         | 4                 |
| Kathakali     | 2                  | 2                         | 2                 |
| Bhangra       | 8                  | 8                         | 5                 |
| Bihu          | 4                  | 9                         | 2                 |
| <b>Total</b>  | <b>36</b>          | <b>34</b>                 | <b>40</b>         |

- a. 23.34%
- b. 29.79%
- c. 11.44%
- d. 21.43%

60. A shopkeeper gives a 35% discount on the marked price of a bottle. If the selling price of the bottle is ₹1,755, then the marked price of the bottle will (+2, -0.5)

be:

- a. ₹2800
- b. ₹2500
- c. ₹2700
- d. ₹3500

---

61. The average age of a group is increased by 6 years when a person whose age is 24 years was replaced by a person whose age is 66. Find the number of persons in the group. (+2, -0.5)

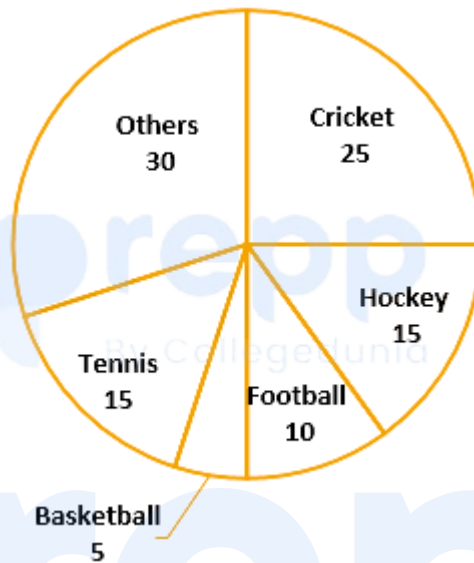
- a. 8
- b. 9
- c. 6
- d. 7

---

62. A sells an article to B at 10% profit. B sells it to C at 25% profit. If C pays ₹6,875 for it, then the price at which A bought it is: (+2, -0.5)

- a. ₹4,665
- b. ₹4,850
- c. ₹5,000
- d. ₹5,500

63. The pie chart below shows the percentage shares of the total expenditure on sports made by a country on various sports during 2019–2020. Study the pie chart and answer the question that follows. (+2, -0.5)



If the total amount spent on sports during 2019–2020 was ₹260 crores, then how much was spent on hockey?

- a. ₹30 crores
  - b. ₹42 crores
  - c. ₹34 crores
  - d. ₹39 crores
- 
64. What will be the present value of ₹90,774 due 2 years hence, when the interest is compounded at 23% per annum? (+2, -0.5)
- a. ₹65,000
  - b. ₹62,950
  - c. ₹60,850

d. ₹60,000

65. Simplify:

(+2, -0.5)

$$178.01 - [86.23 - \{40.22 + (28 - 24)\}]$$

a. 125

b. 120

c. 130

d. 136

66. The value of a residential flat constructed at a cost of ₹10,00,000 is depreciating at a rate of 10% per annum. What will be its value 3 years after the construction

(+2, -0.5)

a. ₹2,78,000

b. ₹7,29,000

c. ₹7,92,000

d. ₹6,29,000

67. Simplify the following expression.

(+2, -0.5)

$$\frac{(777 \times 777 \times 777) + (423 \times 423 \times 423)}{(777 \times 777) - (777 \times 423) + (423 \times 423)} \times \frac{1}{(77 - 47)}$$

a. 40

b. 400

c. 1200

d. 30

68. Sonam is a cab driver, who plies within a city. The number of kilometres that she drives on a Tuesday was 12.5% less than the number of kilometres that she drives on the day before. On the other hand, the number of kilometres that she drives on Wednesday was 20% more than the number of kilometres that she drives on Tuesday. If Sonam drives a total of 336 km on Wednesday, how many kilometres did she drive on Monday? (+2, -0.5)

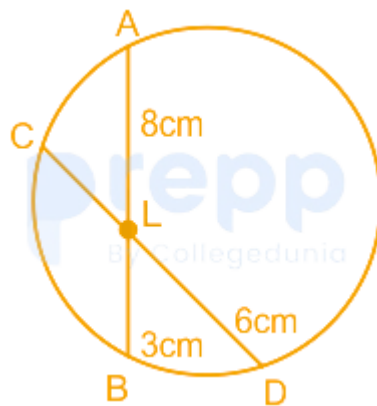
a. 315 km

b. 318 km

c. 320 km

d. 324 km

69. In the given figure, chords AB and CD intersect each other at point L. Find CL. (+2, -0.5)



a. 6 cm

b. 4 cm

c. 7 cm

d. 5 cm

---

70. The largest six-digit number exactly divisible by 81 is: (+2, -0.5)

a. 999876

b. 999945

c. 999989

d. 999991

---

71. A beaker is filled with a liquid, 3 parts of which are water and 7 parts some medicine. What part of the mixture should be replaced with water so that the resultant mixture has water and medicine in a ratio 1 : 1? (+2, -0.5)

a.  $\frac{2}{7}$

b.  $\frac{1}{7}$

c.  $\frac{2}{5}$

d.  $\frac{1}{5}$

---

72. A is 3 times as fast as B and is, therefore, able to complete a work in 32 days lesser than B. A and B, working together, can complete the work in -----.

a. 10 days

b. 12 days

c. 16 days

d. 14 days

73. If  $1.5x = 0.04y$ , then what will be the value of  $\frac{y-x}{y+x}$  ? (+2, -0.5)

a.  $\frac{77}{73}$

b.  $\frac{77}{72}$

c.  $\frac{72}{77}$

d.  $\frac{73}{77}$

74. Find the volume of a cylinder whose diameter of base is 20 cm and height is two times that of the radius of its base. (+2, -0.5)

a.  $4000 \text{ cm}^3$

b.  $2000\pi \text{ cm}^3$

c.  $6000\pi \text{ cm}^3$

d.  $3000 \text{ cm}^3$

75. Simplify the expression  $((82 \times 82) - (18 \times 18))^{0.5}$  (+2, -0.5)

a. 100

b. 20

c. 40

d. 80

## General Awareness

76. Who among the following wrote two books on the history and dance structure of Mohiniyattam? (+2, -0.5)
- a. Kalamandalam Radhika
  - b. Kalamandalam Kalyanikutty Amma
  - c. Kalamandalam Hymavathi
  - d. Thankamani
- 
77. In which year will India host the ICC Champions Trophy? (+2, -0.5)
- a. 2022
  - b. 2025
  - c. 2023
  - d. 2029
- 
78. Malka Jaan of Agra Gharana was the court musician at the durbar of which of the following Nawabs of Calcutta? (+2, -0.5)
- a. Shuza-ud-Daula
  - b. Wajid Ali Shah
  - c. Asaf-ud-Daula
  - d. Mohammad Ali Shah
-

79. Who among the following Indian singers has written 'Raag Sarita'? (+2, -0.5)

- a. Pandit Kumar Gandharva
- b. Balasaheb Poonchwale
- c. Chintaman Raghunath Vyas
- d. Vishnu Narayan Bhatkhande

80. The first train inaugurated in 1853 was between which two stations? (+2, -0.5)

- a. Delhi and Chandigarh
- b. Mumbai and Thane
- c. Mumbai and Surat
- d. Bangalore and Mysore

81. Ustad Bade Ghulam Ali Khan was renowned a \_\_\_\_\_. (+2, -0.5)

- a. sarod player
- b. harmonium player
- c. tabla player
- d. classical singer

82. The title of the autobiography of actor Dilip Kumar is \_\_\_\_\_. (+2, -0.5)

- a. The Substance And The Shadow: An Autobiography

- b. Romancing With Life: An Autobiography
  - c. Actually ... I Met Them
  - d. An Unfinished Story
- 

83. Who won the Saraswati Samman for the year 2020? (+2, -0.5)

- a. Padma Sachdev
  - b. Sharankumar Limbale
  - c. Amitabha Bagchi
  - d. Leeladhar Jagudi
- 

84. Indian men's hockey team won its first Olympic gold medal in which year? (+2, -0.5)

- a. 1928
  - b. 1922
  - c. 1956
  - d. 1920
- 

85. What is the domestic income if national income is ₹10,000 crore and net factor income from abroad is ₹2,000 crore? (+2, -0.5)

- a. ₹5,000 crore
- b. ₹12,000 crore
- c. ₹10,000 crore

d. ₹8,000 crore

---

86. The bodies of the animals of phylum Platyhelminthes show \_\_\_\_\_ grade organisation. (+2, -0.5)

- a. tissue-organ
  - b. protoplasmic
  - c. cellular
  - d. cell-tissue
- 

87. Who was famous for inventing the power battery, one of the first devices to provide a reliable source of electricity, in 1800? (+2, -0.5)

- a. Alessandro Volta
  - b. Michael Faraday
  - c. Luigi Galvani
  - d. Henri Becquerel
- 

88. Whose autobiography is titled 'Ace against Odds'? (+2, -0.5)

- a. Sania Mirza
  - b. Mary Kom
  - c. Karnam Malleswari
  - d. PT Usha
-

89. Which group was given the name 'paraffins' earlier? (+2, -0.5)

- a. Aldehydes
- b. Alkanes
- c. Alcohols
- d. Acids

90. Who among the following was the third Vice-President of India? (+2, -0.5)

- a. BD Jatti
- b. Zakir Hussain
- c. Gopal Swarup Pathak
- d. V V Giri

91. Uma Sharma was conferred the Padma Bhushan award for enriching which of the following forms of Classical Dances in India? (+2, -0.5)

- a. Kathak
- b. Bharatanatyam
- c. Manipuri
- d. Odissi

92. Mrinalini Sarabhai was awarded the \_\_\_\_\_ in 1992. (+2, -0.5)

- a. Padma Vibhushan
  - b. Padma Shri
  - c. Padma Bhushan
  - d. Bharat Ratna
- 

93. Vilayat Khan is associated with which musical instrument? (+2, -0.5)

- a. Tabla
  - b. Bansuri
  - c. Sitar
  - d. Santoor
- 

94. Who among the following invented and perfected India's classical dance form Sattras? (+2, -0.5)

- a. Srimanta Sankardev
  - b. K Uma Rama Rao
  - c. Uday Shankar
  - d. Guru Gopinath
- 

95. Which sea is the north-western part of the Indian Ocean that covers a total area of approximately 14,91,000 square miles and forms a part of the major sea route between Europe and India? (+2, -0.5)

- a. Arabian Sea

- b. Caspian Sea
  - c. Caribbean Sea
  - d. Mediterranean Sea
- 

96. Who among the following Indians was selected as a member of International Law Commission for a 5 year term starting January 1, 2023 in the month of November 2021? (+2, -0.5)

- a. Vinod Rai
  - b. Bimal Jalan
  - c. Suresh Prabhu
  - d. Bimal Patel
- 

97. Find the odd one out with respect to animals' response to abiotic factors. (+2, -0.5)

- a. Suspend
  - b. Migrate
  - c. Conform
  - d. Reproduce
- 

98. Which is the major microtubule-organising centre (MTOC) in eukaryotic cells involved in various cellular processes, including sensory reception, locomotion, and embryogenesis? (+2, -0.5)

- a. Lysosomes

- b.** Centrosome
  - c.** Plastids
  - d.** Vacuoles
- 

**99.** The 'Nijaat' (riddance) anti-drug campaign launched by a district police of which state has been acknowledged and appreciated by many Bollywood actors in 2021? **(+2, -0.5)**

- a.** West Bengal
  - b.** Chhattisgarh
  - c.** Punjab
  - d.** Maharashtra
- 

**100.** Who is the only Indian female sportsperson to win two consecutive Olympic medals? **(+2, -0.5)**

- a.** Dutee Chand
- b.** PV Sindhu
- c.** Mary Kom
- d.** Mirabai Chanu

## Answers

### 1. Answer: c

#### Explanation:

The correct answer is: **Costly but useless possession**

#### ★ Key Points

- The idiom **White Elephant** means any burdensome, expensive and useless possession that is much more trouble than it is worth.
  - **Example**– *That theatre is a real **white elephant**. It cost millions to build and nobody ever goes there.*
- So, it is clear that the most appropriate meaning of the given idiom '**White elephant**' is '**Costly but useless possession.**'
- Hence, the correct answer is **option 3**.

---

### 2. Answer: d

#### Explanation:

The correct answer is: **Divisible**.

#### ★ Key Points

- **Divisible** means capable of being evenly divided, without remainder.
  - **Example** – *The math teacher explained that the number 10 is **divisible** by 2, but cannot be split by three equally.*
- So, it is clear that the '**Divisible**' can be used as a one-word substitute for '**One thing that can be divided**.'
- Therefore, the correct answer is **option 4**.

#### ★ Additional Information

- **Remainder** means the part that is left after the other parts are gone, used, or taken away.
- **Quotient** means a result obtained by dividing one quantity by another.
- **Dividend** means the value that is divided by another value to get the result.

### 3. Answer: a

#### Explanation:

The correct answer is: **Repartee**.

#### ★ Key Points

- **Banter** means the playful and friendly exchange of teasing remarks.
  - **Example** – *There was much good-natured **banter**.*
- Marked option **Repartee** means conversation or speech characterized by quick, witty comments or replies.
  - **Example** – *The **repartee** between the two actors made the movie really funny.*
- It is clear that '**Banter**' and '**Repartee**' are similar in meaning.
- Therefore the correct answer is **option 1**.

#### ★ Additional Information

- **Rebuke** means an expression of sharp disapproval or criticism.
- **Reliance** means dependence on or trust in someone or something.
- **Commendation** means formal or official praise.

### 4. Answer: d

#### Explanation:

The correct answer is: **from respiratory diseases**

### ★ Key Points

- Replace the preposition '**with**' with '**from**' to make the sentence correct.
- '**From**' is a preposition, that is used as a function word to indicate physical separation or an act or condition of removal, abstention, exclusion, release, subtraction, or differentiation.
  - **Example** – *He is suffering **from** a headache.*
- The main difference between the part '**with**' and part '**from**' is that the phrase part '**with**' is typically used in reference to objects or possessions, whereas the phrase part '**from**' is typically used in reference to people.
- Here in the given sentence, '**from**' is used to explain the theme of the passage, that is "**If an individual person maintains a disciplined lifestyle then it is possible to keep him/her from respiratory diseases**"
- Therefore, the correct answer is **option 4**.

Hence, the corrected sentence is: *It is possible to prevent oneself from respiratory diseases by maintaining a disciplined lifestyle.*

---

### 5. Answer: b

#### Explanation:

The correct answer is: **To irritate someone.**

### ★ Key Points

- The idiom '**To put someone's back up**' means **to make someone annoyed or angry**.
  - **Example** – *Just ignore him, he's only trying to **put your back up**.*
- So, it is clear that the most appropriate meaning of the given idiom '**To put someone's back up**' is '**To irritate someone**.'
- Hence, the correct answer is **option 2**.

---

### 6. Answer: d

## Explanation:

The erroneous spelling is: **Freadom** .

### ★ Key Points

- The correct spelling should be '**Freedom**'.
- **Freedom** means the power or right to act, speak, or think as one wants.
  - **Example**– *Today we have the **freedom** to decide our own futures.*
- Therefore, the correct answer is **option 4** which is incorrectly spelt.

### ★ Additional Information

- **Movement** means the act or process of changing a situation or event.
- **Career** means an occupation undertaken for a significant period of a person's life and with opportunities for progress.
- **Carrier** means a person or thing that carries, holds, or conveys something.

---

## 7. Answer: d

## Explanation:

The correct answer is: **competition**.

### ★ Key Points

- The correct spelling should be '**competition**'.
- **Competition** means the activity or condition of striving to gain or win something by defeating or establishing superiority over others.
  - **Example**– *Prices are lower when there is **competition** among the stores.*
- Therefore, the most appropriate spelling that can substitute the underlined word in the given sentence is '**competition**'.
- Hence, the correct answer is **option 4**.

## 8. Answer: c

### Explanation:

The correct answer is: **The children opened the door for their father.**

#### ★ Key Points

- The given sentence is in the **passive form** and in the **past simple tense**.
- The **simple past tense** in the **passive voice** has the following form: Object + was/were V3 + by + subject.
- The **simple past tense** in the **active voice** has the following form: Subject + V2 + object.
  - **Passive:** *The floor was cleaned by Reema.*
  - **Active:** *Reema cleaned the floor.*
- In the **active voice of the simple past tense**, we have to change the structure, so the **subject in the passive voice becomes the object in the active voice.**
- Therefore, the correct answer is **option 3.**

**Correct Active Voice:** *The children opened the door for their father.*

## 9. Answer: c

### Explanation:

The correct answer: **fast.**

#### ★ Key Points

- **Fast** means moving or capable of moving at high speed.
- **"Fast"** is generally used for actions that are more sustained.
- Here **"fast"** is an adverb because it modifies the verb **'run'**.
- The given sentence is in the simple present form, so **'fast'** (V<sub>1</sub>) should be used.
  - **Example** – The athlete runs really **fast**.
- Therefore, the correct answer is **option 3.**

Complete sentence: *Though he is stout, he runs fast.*

★ Additional Information

- "Faster" is the comparative degree of "fast". It is used when we compare speed between two persons or objects.
- "Fastest" is the superlative degree of "fast". It is used if we were talking about more than two things and showing superiority.
- The fact is that there is no such word as "fastly". "Fast" is already both an adjective and an adverb.

---

10. Answer: b

Explanation:

The correct answer is: **Similar to one's parents in behaviour.**

★ Key Points

- The idiom 'Chip off the old block' is an expression used for someone whose character or personality resembles that of their parent.
  - **Example**– *He is a real chip off the old block. When I looked at his father, I saw that they were similar.*
- So, it is clear that the most appropriate meaning of the given idiom 'Chip off the old block' is 'Similar to one's parents in behaviour.'
- Hence, the correct answer is **option 2**.

---

11. Answer: c

Explanation:

The erroneous spelling is: **Rivelry**.

★ Key Points

- The correct spelling should be '**Rivalry**'.
- **Rivalry** means competition for the same objective or for superiority in the same field.
  - **Example** – *There always has been intense **rivalry** between the football clubs.*
- Therefore, the correct answer is **option 3** which is incorrectly spelt.

#### ★ Additional Information

- **Summary** means a brief statement or account of the main points of something.
- **Emigrate** means to leave one's own country in order to settle permanently in another.
- **Grandeur** means splendour and impressiveness, especially in appearance or style.

---

## 12. Answer: b

### Explanation:

The correct answer is: **Stern**.

#### ★ Key Points

- **Austere** means severe or strict in manner or attitude.
  - **Example** – *Even though she appeared **austere**, my teacher was a very kind woman.*
- Marked option **Stern** means serious and unrelenting, especially in the assertion of authority and exercise of discipline.
  - **Example** – *'We will take the necessary steps,' she said **sternly**.*
- It is clear that '**Austere**' and '**Stern**' are similar in meaning.
- Therefore the correct answer is **option 2**.

#### ★ Additional Information

- **Promising** means showing signs of future success.
- **Brisk** means quick in manner or movement; energetic.
- **Mitigating** means making something less severe or less unpleasant.

### 13. Answer: b

#### Explanation:

The erroneous part of the sentence is: **that the bridge would constructed.**

#### ★ Key Points

- Add '**be**' after '**would**' to make the sentence correct.
- '**Would**' is an auxiliary modal verb used to express an intention or plan after a verb in the past tense.
- The given sentence is written in passive form . So, the structure 'would be + V3' should be used.
- Modals are helping verbs that express possibility, ability, duty, permission or advisability. Words like can, could, may, might, must and should, will – are all modals.
- To form these past modals , use could, would, or should are followed by a past participle verb .
  - Structure: modal or modal phrase + be + the past participle.
- Therefore, the correct answer is **option 2.**

Hence, the corrected sentence is: *The Minister announced that the bridge would be constructed within a week.*

### 14. Answer: c

#### Explanation:

The correct answer is "**DCBA**".

#### ★ Key Points

- Let's look at the correct sequence of the passage.

- **Statement D** is the opening sentence of the passage which explains **the theories available and what ancient people believed about the movement of the Sun and the Earth.**
- **Statement C** is the second sentence of the passage which introduces **Nicholas Copernicus and his proposed model and which year it was proposed.**
- **Statement B** is the third sentence of the passage which explains the **theory of Nicholas Copernicus .**
- **Statement A** is the last sentence of the passage which shows that **other astronomers like, Johannes Kepler and Galileo supported the Copernican theory after nearly a century passed.**
- Hence, the correct sequence is **D, C, B, A.**

**The correct passage is:** *D. There are many popular theories about the solar system. Ancient People believed that the sun moved around the earth and the earth was static. C. Nicholas Copernicus, a Polish priest, proposed a model in 1514. B. Copernicus' view was that the sun was stationary and the earth and the planets moved in orbits around the sun. A. Two astronomers – Johannes Kepler from Germany and Galileo from Italy – supported the Copernican theory after nearly a century passed by.*

## 15. Answer: b

### Explanation:

The correct answer is: **eat.**

### ★ Key Points

- Replace '**had eaten**' with '**eat**' to make the sentence correct.
- **Eat** means to put food into the mouth and chew and swallow it.
  - **Example** – *He used to **eat** out every day, but now he can't afford it.*
- Here, in the question, the given sentence is in the **simple present tense** and '**everyday**' is mentioned. That means it is a **daily habit** or a **continuous process** . For this reason, the present form '**eat**' should be used.

- We use 'had eaten' in the **past perfect tense** when a past action occurs before another past action.
  - **Example** – *I **had eaten** recklessly and gained too much weight.*
- Therefore, it is clear that the correct answer is **option 2**.

Hence, the corrected sentence is: *They **eat** an apple every day for breakfast.*

## 16. Answer: c

### Explanation:

The correct answer is: **Obscure**

#### ★ Key Points

- **Famous** means known and recognized by many people.
  - **Example** – *The actor was one of many **famous** faces at the party.*
- Marked option **Obscure** meaning is difficult to understand and likely to be understood by only a few people.
- **Example** – The **obscure** writer was not known in the literary community.
- It is clear that 'Famous' and 'Obscure' are opposite in meaning.
- Therefore the correct answer is **option 3**.

#### ★ Additional Information

- **Quiet** means absence of noise or bustle; silence; calm.
- **Concert** means a live music performance in front of an audience.
- **Affluent** means a person who is well-off financially.

## 17. Answer: d

### Explanation:

The correct answer is: **comprehensive**

### ★ Key Points

- **Comprehensive** means covering everything or all important points.
  - **Example** – *She has a **comprehensive** grasp of the subject.*
- In the given passage, '**Comprehensive**' means "A **complete** dispute resolution mechanism deployed state-of-the-art infrastructure".
- Therefore, the correct answer is **option 4**.

**Complete passage :** *Other countries of comparable size and exposure to Information and Communication Technologies (ICT) have adopted a decentralised organizational structure, liberal policies, and a **comprehensive** dispute resolution mechanism deployed state-of-the-art infrastructure and used the private-public partnership to market Domain Name Registration Services (DNS), resulting in phenomenal growth of their country code domain name.*

### ★ Additional Information

- **Short** means not covering much of the body; brief description.
- **Narrow** means become or make less wide.
- **Restricted** means limited in extent, number, scope, or action.

18. Answer: a

**Explanation:**

The correct answer is: **Aries is the first sign of the zodiac.**

### ★ Key Points

- The word **Zodiac** is correctly spelt in the **first sentence** .
- The **Zodiac** is a diagram used by astrologers to represent the positions of the planets and stars.
- **Example** – *The sun enters and leaves each sign of the **zodiac** slightly later each year at the rate of about 1 day every 72 years.*
- Therefore, the sentence which has no spelling error is :*Aries is the first sign of the **zodiac** .*

- Hence, the correct answer is **option 1**.

---

## 19. Answer: d

### Explanation:

The correct answer is: **Altruism**.

#### ★ Key Points

- **Altruism** means unselfish concern for other people's happiness and welfare.
  - **Example** – *Politicians are not necessarily motivated by pure **altruism**.*
- So, it is clear that '**Altruism**' can be used as a one-word substitute for '**Unselfish interest in the welfare of others.**'
- Therefore, the correct answer is **option 4**.

#### ★ Additional Information

- **Celibacy** means the state of abstaining from marriage and sexual relations.
- **Misanthropy** means hatred or distrust of humankind.
- **Egoism** is an ethical theory that treats self-interest as the foundation of morality.

Your Personal Exams Guide

---

## 20. Answer: b

### Explanation:

The correct answer is: **All the employees are going to be asked about the incident that took place in the canteen yesterday.**

#### ★ Key Points

- '**To ask**' is the main verb here. As per the rule, we use the **past participle** form of the **given verb** in the **passive voice**.
- So the best we can do is make the **infinitive verb form passive** :

- **Active voice:** to ask.
- **Passive voice:** to be asked.
- 'am going' will be converted to 'are going' as the subject and object have been interchanged.
- Therefore, the correct answer is option 2.

**Correct Passive Voice:** *All the employees are going to be asked about the incident that took place in the canteen yesterday.*

## 21. Answer: c

### Explanation:

The correct answer is: **holding**.

#### ★ Key Points

- '**Holding**' is the Present Participle form of the verb '**Hold**'.
- A word ending in "**-ing**" that is made from a **verb** and is used like a **noun** is called a **gerund**.
- Here in the given sentence, the word '**holding**' is acting as a **gerund**. It is used as the subject of the first sentence. That means "**Salander was holding the telephone while sitting.**"
- So, it is clear that the most appropriate word is '**holding**'.
- Therefore, the correct answer is **option 3**.

**Correct paragraph:** *Salander sat for a while (1) holding the telephone after Armansky hung up. She went to her work corner in the living room (2) \_\_\_\_\_ looked at the notes she had pinned up on the wall and the papers she had (3) \_\_\_\_\_ on the desk. What she had managed to collect was mostly press cuttings and articles (4) \_\_\_\_\_ from the Internet. She took the papers and dropped (5) \_\_\_\_\_ in a desk drawer.*

## 22. Answer: a

## Explanation:

The correct answer is: **and**.

### ★ Key Points

- **And** is a coordinating conjunction, that is used to connect words of the same part of speech, clauses, or sentences, that are to be taken jointly.
  - **Example** – *Bread **and** Butter*
- Here, in the given paragraph '**and**' is used to join the clauses "**She went to her work corner in the living room** ", "**looked at the notes she had pinned up on the wall...**"
- So, it is clear that the most appropriate word is '**and**' .
- Therefore, the correct answer is **option 1** .

**Correct Paragraph:** Salander sat for a while (1) holding the telephone after Armansky hung up. She went to her work corner in the living room (2) and looked at the notes she had pinned up on the wall and the papers she had (3) \_\_\_\_\_ on the desk. What she had managed to collect was mostly press cuttings and articles (4) \_\_\_\_\_ from the Internet. She took the papers and dropped (5) \_\_\_\_\_ in a desk drawer.

### ★ Additional Information

- **So** is used as subordinating conjunction to introduce clauses of result or decision.
- **But** used to introduce a phrase or clause contrasting with what has already been mentioned.
- **Although** means in spite of the fact that; even though.

23. Answer: d

## Explanation:

The correct answer is: **stacked**.

### ★ Key Points

- **Stacked** means to arrange things in an ordered pile.
  - **Example** – *She opened it and **stacked** the keys in it.*
- Here, in the given paragraph '**stacked**' is used to explain "...the papers she had put together at the desk."
- So, it is clear that the most appropriate word is '**stacked**' .
- Therefore, the correct answer is **option 4** .

**Correct Paragraph:** *Salander sat for a while (1)**holding** the telephone after Armansky hung up. She went to her work corner in the living room (2)**and** looked at the notes she had pinned up on the wall and the papers she had (3)**stacked** on the desk. What she had managed to collect was mostly press cuttings and articles (4) \_\_\_\_\_ from the Internet. She took the papers and dropped (5) \_\_\_\_\_ in a desk drawer.*

### ★ Additional Information

- **Tacked** means to fasten or attach with a tack.
- **Slacked** means to work more slowly and with less effort than usual.
- **Mounded** means a small hill or pile of dirt or stones.

24. Answer: d

**Explanation:**

The correct answer is: **Downloaded**

### ★ Key Points

- **Downloaded** means copied data from one computer system to another, typically over the internet.
  - **Example** – *He **downloaded** a photo from the internet to use as his own.*
- Here, in the given paragraph the word '**downloaded**' is used to explain **that all the papers and notes were copied from the internet** .
- So, it is clear that the most appropriate word is '**downloaded**' .
- Therefore, the correct answer is **option 4** .

**Correct Paragraph:** Salander sat for a while (1) holding the telephone after Armansky hung up. She went to her work corner in the living room (2) and looked at the notes she had pinned up on the wall and the papers she had (3) stacked on the desk. What she had managed to collect was mostly press cuttings and articles (4) downloaded from the Internet. She took the papers and dropped (5) \_\_\_\_\_ in a desk drawer.

★ **Additional Information**

- **Cropped** means to cut or bite off the tops or ends.
- **Uploaded** means transferred data from one computer to another, typically to one that is larger or remote from the user or functioning as a server.
- **Cut** means to divide into pieces with a knife or other sharp implement.

25. Answer: b

**Explanation:**

The correct answer is: **them**

★ **Key Points**

- '**Them**' (pronoun) is used as the object of a verb or preposition to refer to two or more people or things previously mentioned or easily identified.
  - **For example** – I bathed the kids and read **them** stories.
- Here, in the given paragraph the word '**them**' refers to '**the papers**'.
- So, it is clear that the most appropriate word is '**them**'.
- Therefore, the correct answer is **option 2**.

**Correct Paragraph:** Salander sat for a while (1) holding the telephone after Armansky hung up. She went to her work corner in the living room (2) and looked at the notes she had pinned up on the wall and the papers she had (3) stacked on the desk. What she had managed to collect was mostly press cuttings and articles (4) downloaded from the Internet. She took the papers and dropped (5) them in a desk drawer.

★ Additional Information

- 'It' is often used to refer to animals or non-living things.
- 'They' is used to refer to a person of unspecified gender.
- 'That' is used to identify a specific person or thing observed or heard by the speaker.

26. Answer: b

**Explanation:**

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

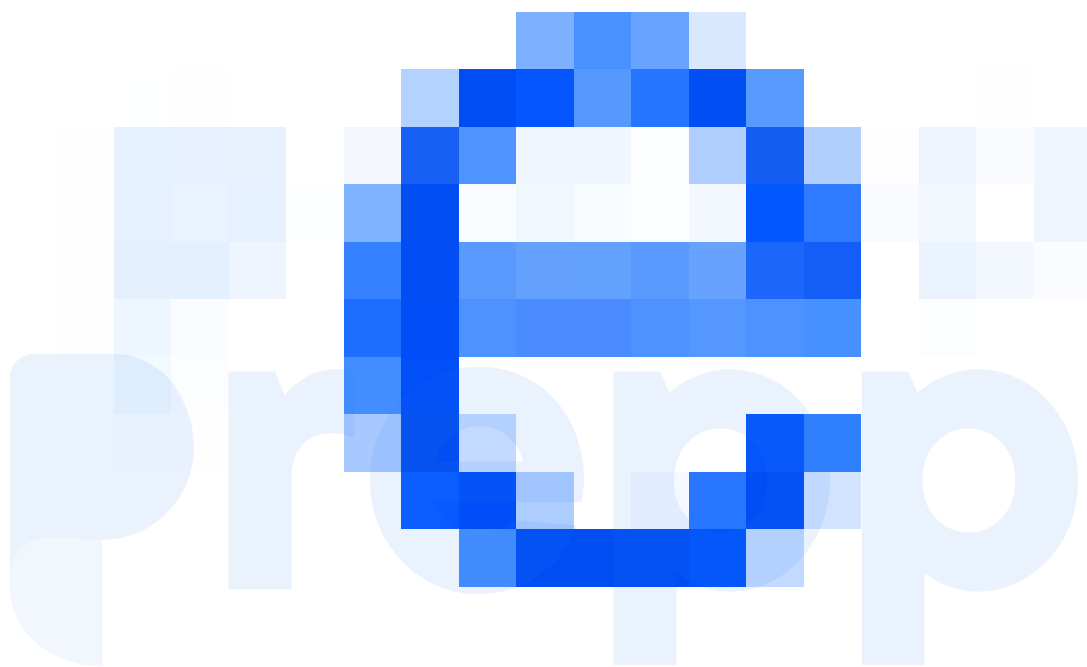


Detailed Explanation :-

- The line MN is the mirror.
- The word "

Ld592tSe

" ends with "



## Your Personal Exams Guide

". So, the mirror image will start with "



## Your Personal Exams Guide

- " → Options 4 is eliminated.
- The first letter is "



## Your Personal Exams Guide

". So, the last letter in the mirror image will be "



## Your Personal Exams Guide

"→ Options 1 is eliminated.

- The third letter is "



## Your Personal Exams Guide

". So, the third last letter in the mirror image will be "



## Your Personal Exams Guide

"→ Options 3 is eliminated.

Hence, Option 2) is the correct answer.

### ★ Additional Information

- In a mirror image Left changes to right and the right changes to left where top and bottom remains the same .
- When placement of mirror not given, by default we will assume it in vertical direction .
- The starting letter word will be at last after the mirror image drawn with left changes to right and right changes to left.

27. Answer: b

Explanation:

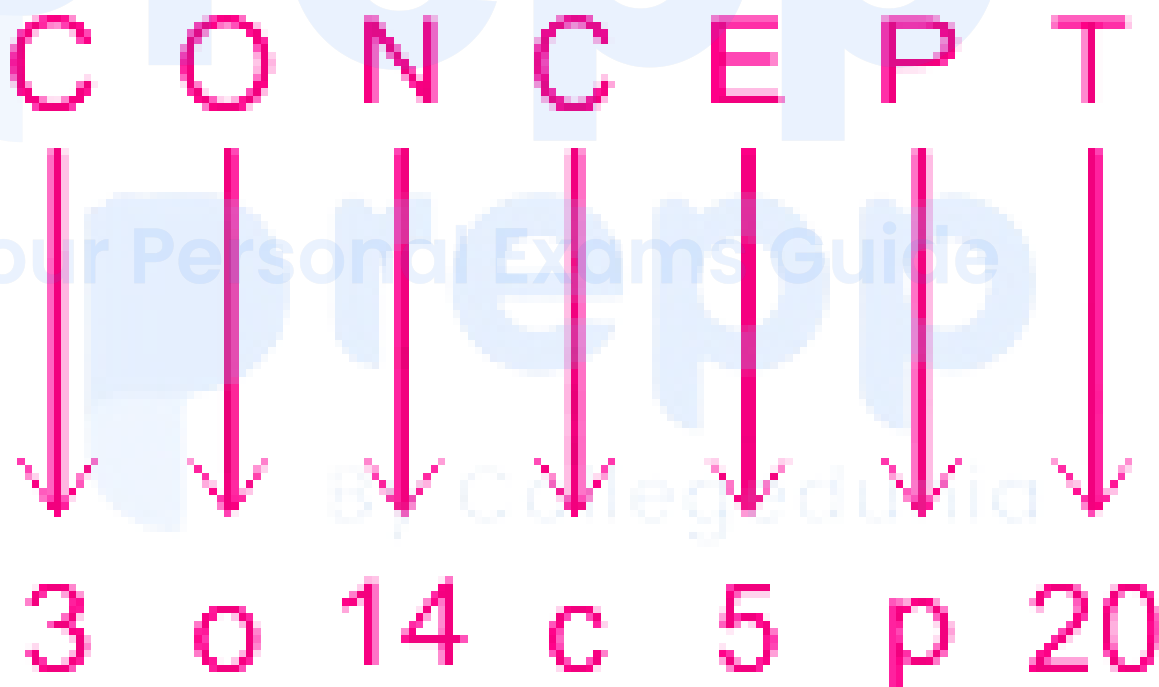
| Alphabets        | A  | B  | C  | D  | E  | F  | G  | H  | I  | J  | K  | L  | M  |
|------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Positional value | 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13 |
| Positional value | 26 | 25 | 24 | 23 | 22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

The logic followed here is :

Alternate letters are converted into their positional values and other letters are written in their lower form.

- CONCEPT

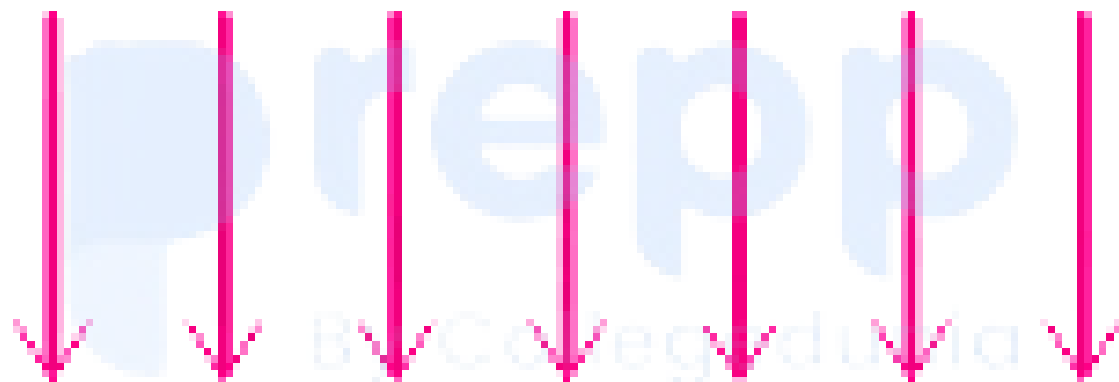
◦



- PROBLEM

○

P R O B L E M

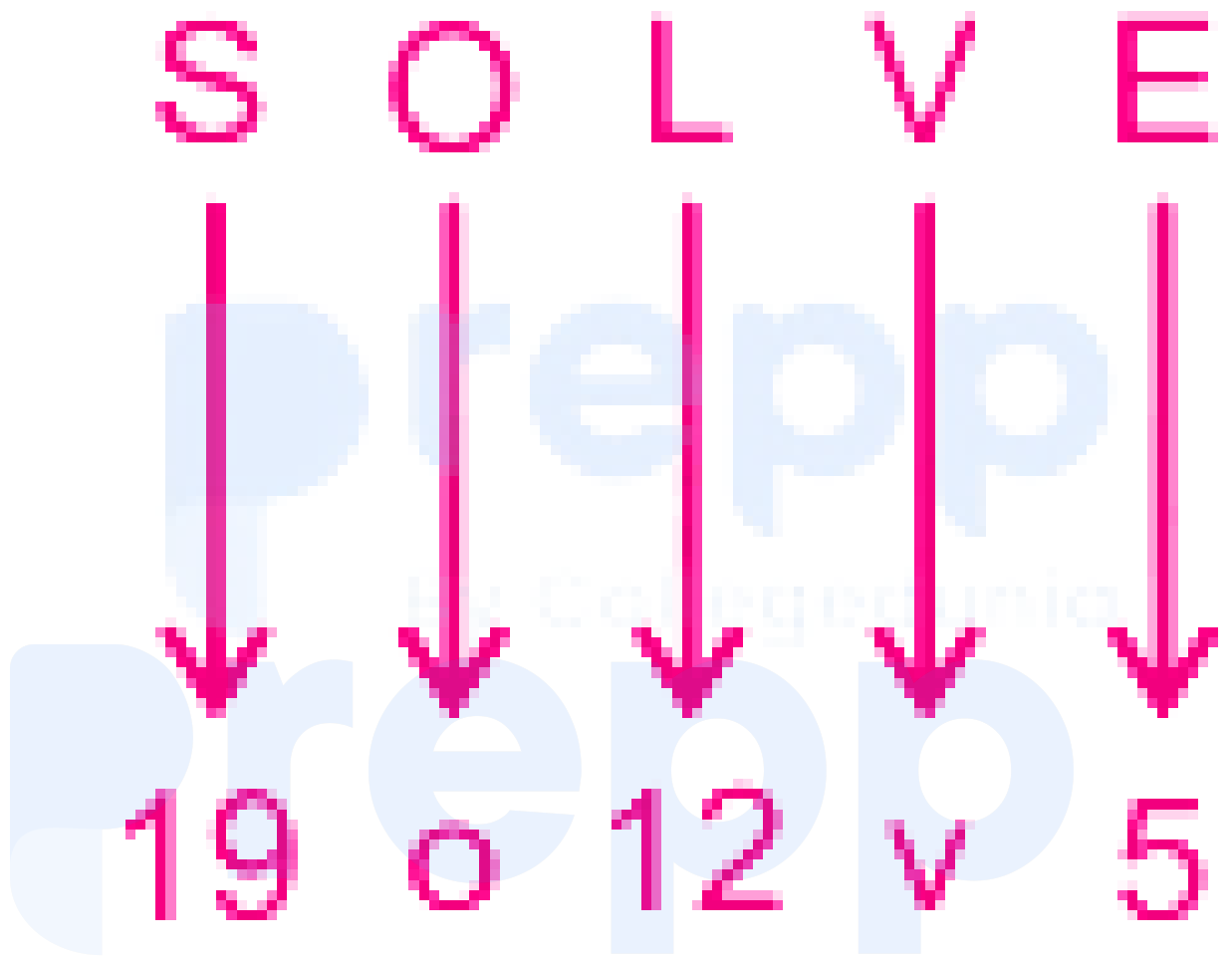


16 r 15 b 12 e 13

- Similarly, SOLVE → ?

Your Personal Exams Guide

○



Hence, option 2) is the correct answer.

## 28. Answer: b

### Explanation:

The option that represents the correct order of the given words as they would appear in an English dictionary is shown below:

1. **Nec** essary
4. **Nee** dlework
3. **Neg** otiate

5. Neigh

2. Net works

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

## 29. Answer: a

### Explanation:

The logic followed here is:

If two dice have the same two face values in the given image, then third word is opposite to each other.

In given figure,



Here, **Blue** and **White** are common.

So, the number opposite to **Yellow** is **Green**.

Hence, **option 2)** is the correct answer.

## 30. Answer: c

### Explanation:

The logic followed here is:



Hence, **option 3)** is the correct answer.

### 31. Answer: c

#### Explanation:

The logic followed here is:

$$\text{Second number} = \text{First number} \times (\text{First number} \times 2 - 3)$$

$$9 : 135 \rightarrow 9 \times (9 \times 2 - 3) = 9 \times (18 - 3) = 9 \times 15 = 135$$

$$6 : 54 \rightarrow 6 \times (6 \times 2 - 3) = 6 \times (12 - 3) = 6 \times 9 = 54$$

Similarly,

$$7 : ? \rightarrow 7 \times (7 \times 2 - 3) = 7 \times (14 - 3) = 7 \times 11 = 77$$

Hence, **option 3)** is the correct answer.

### 32. Answer: a

#### Explanation:

Given: H \_ H \_ \_ S r \_ a H \_ \_ S r H \_ \_ S a S r

Let's check each option:

$$1) \text{ a S a H S a a H} \rightarrow \text{H a H S a S r} - \text{H a H S a S r} - \text{H a H S a S r}$$

- Here we can see 'H a H S a S r' repeating itself.

$$2) \text{ a S a S S a a H} \rightarrow \text{H a H S a S r} - \text{S a H S a S r} - \text{H a H S a S r}$$

3) S S a H S a a H → H S H Sa S r - H a H Sa S r - H aH S a S r

4) a S a a a a a H → H a H Sa S r - a a H aa S r - H aH S a S r

Hence, **option 1)** is the correct answer.

### 33. Answer: c

Explanation:

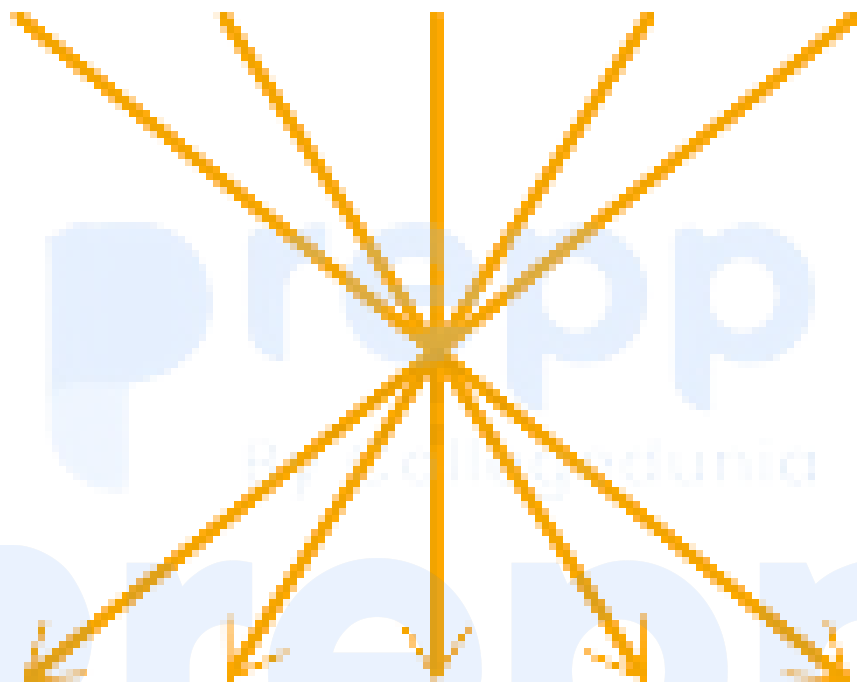
| Alphabets        | A  | B  | C  | D  | E  | F  | G  | H  | I  | J  | K  | L  | M  |
|------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Positional value | 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13 |
| Positional value | 26 | 25 | 24 | 23 | 22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

The pattern followed here is:

- In PEARL : LRAEP

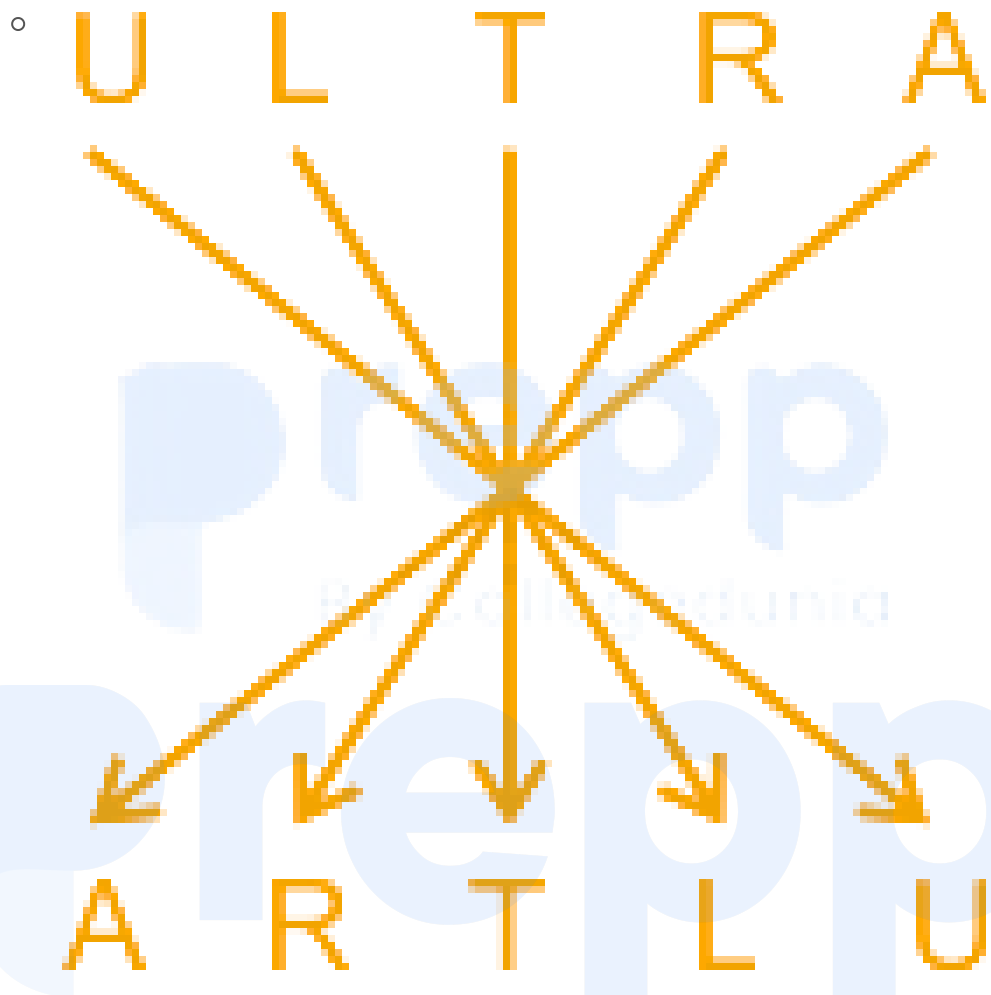
Your Personal Exams Guide

◦ P E A R L



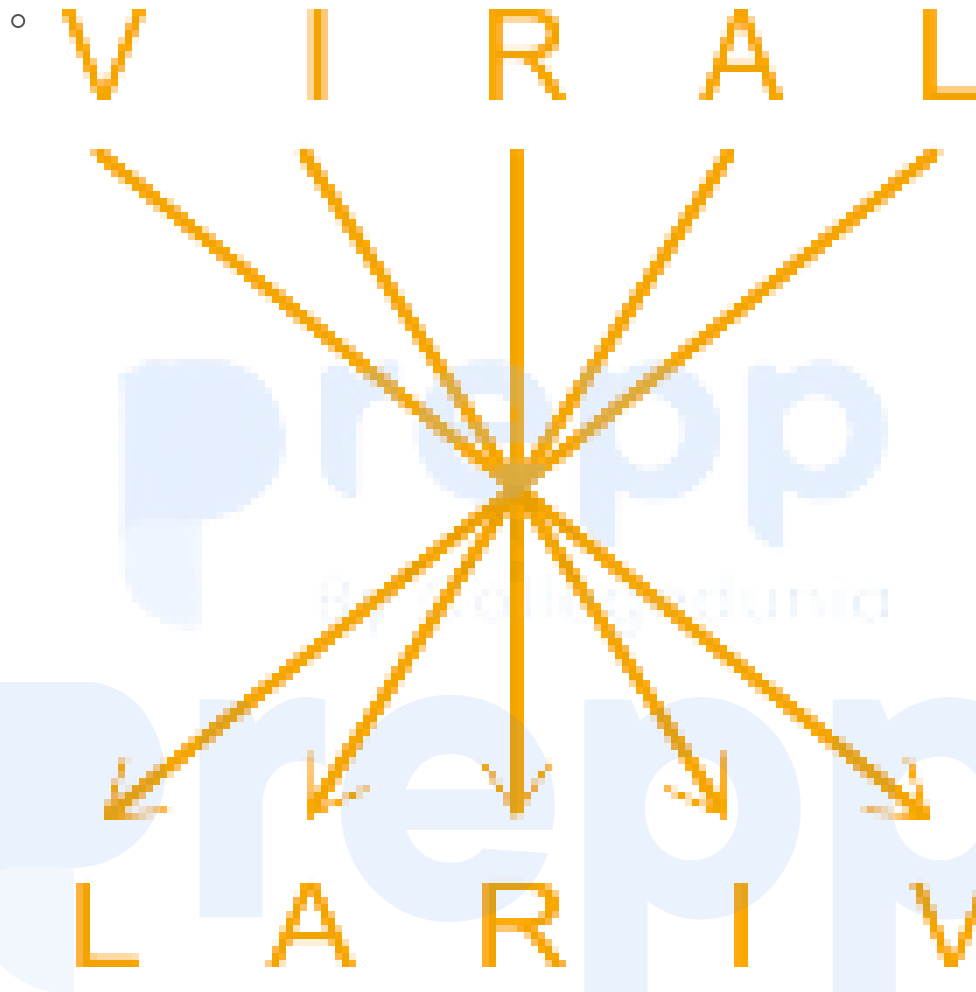
- In ULTRA : ARTLU

Your Personal Exams Guide



- Similarly, In **VIRAL** : ?

Your Personal Exams Guide



We get 'LARIV'.

Hence, Option 3) is the correct answer.

### 34. Answer: a

#### Explanation:

The logic followed here is:

$$\text{Second number} = (\text{First number})^2 + (\text{First number} \div 3)^3$$

$$12 : 208 \rightarrow 12^2 + (12 \div 3)^3 = 144 + 64 = 208$$

$$9 : 108 \rightarrow 9^2 + (9 \div 3)^3 = 81 + 27 = 108$$

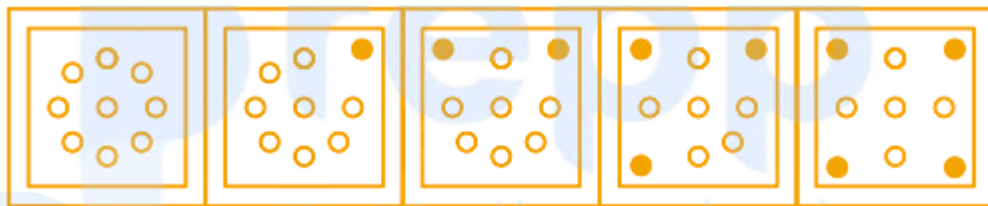
Similarly,  $15 : ? \rightarrow 15 \times 2 + (15 \div 3) \times 3 = 225 + 125 = 350$

Hence, **option 1)** is the correct answer.

**35. Answer: d**

**Explanation:**

The pattern :

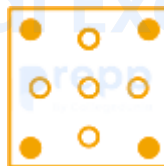


The logic followed here is:

**Black circles are put in place of white circles in the corners.**

So, the bottom right white circle will be removed and black circle will be put in the place of it in the corner.

So the correct option is



**36. Answer: c**

**Explanation:**

The logic followed here is:

First number =  $9 \times (\text{Second number} - 7)$

$$207 : 30 \rightarrow 207 = 9 \times 23 = 9 \times (\underline{30} - 7)$$

$$108 : 19 \rightarrow 108 = 9 \times 12 = 9 \times (\underline{19} - 7)$$

Similarly,

$$63 : ? \rightarrow 63 = 9 \times 7 = 9 \times (\underline{14} - 7)$$

Hence, **option 3** is the correct answer.

---

### 37. Answer: c

#### Explanation:

The logic followed here is:

$$1) 25 : 125 \rightarrow 25 = 5^2 : 5^2 \times 5 = 125$$

$$2) 49 : 343 \rightarrow 49 = 7^2 : 7^2 \times 7 = 343$$

$$3) 81 : 730 \rightarrow 81 = 9^2 : 9^2 \times 9 = 729 \neq 730$$

$$4) 36 : 216 \rightarrow 36 = 6^2 : 6^2 \times 6 = 216$$

Hence, **option 3** is the odd pair.

---

### 38. Answer: c

#### Explanation:

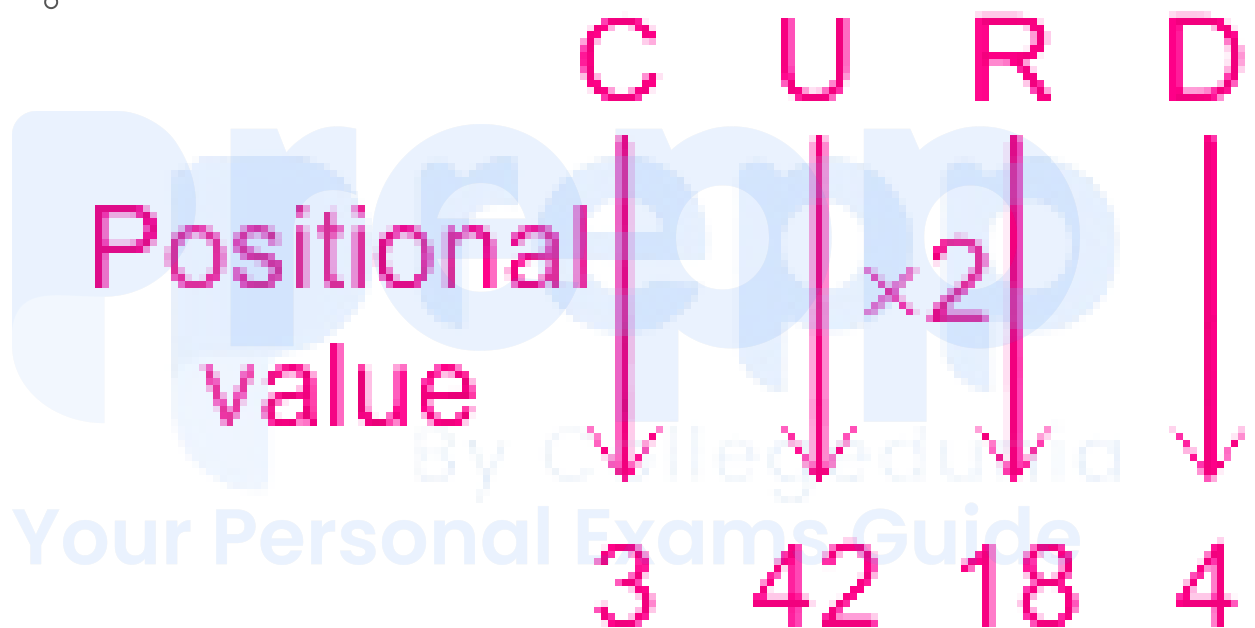
According to the English alphabet series and its positional value:

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

The logic follows here is:

The positional values of the vowels, i.e. A, E, I, O, U are doubled, rest has same positional values.

- CURD → 342184
  -



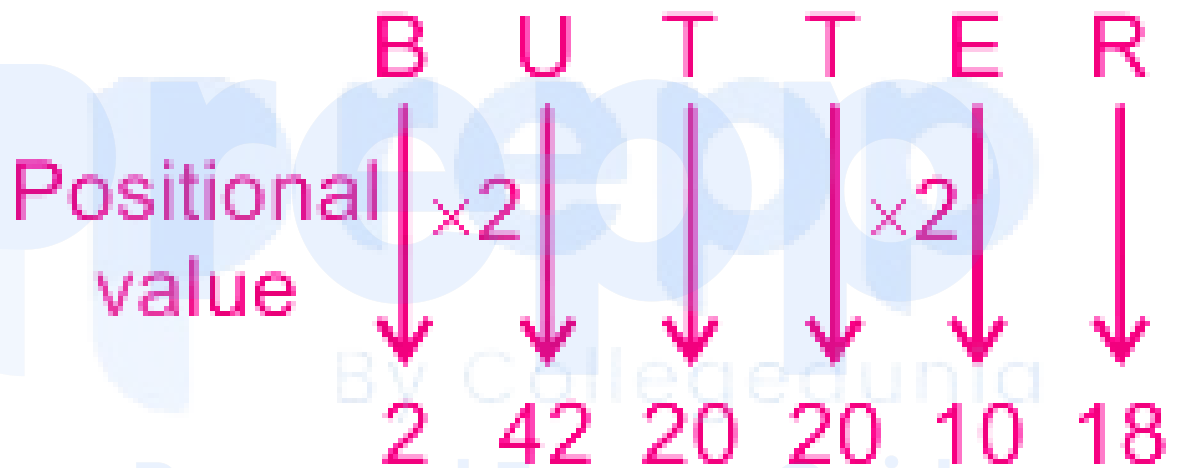
- BREAD → 2181024

○



- Similarly, **BUTTER** →

○



So, **24220201018** is the correct answer.

39. Answer: b

**Explanation:**

The logic followed here is:

Second number = (First number × 2) + 4

16 : 36 →  $16 \times 2 = 32 \rightarrow 32 + 4 = 36$

9 : 22 →  $9 \times 2 = 18 \rightarrow 18 + 4 = 22$

Similarly,

$$23 : 50 \rightarrow 23 \times 2 = 46 \rightarrow 46 + 4 = 50$$

Hence, **option 2)** is the correct answer.

#### 40. Answer: b

#### Explanation:

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

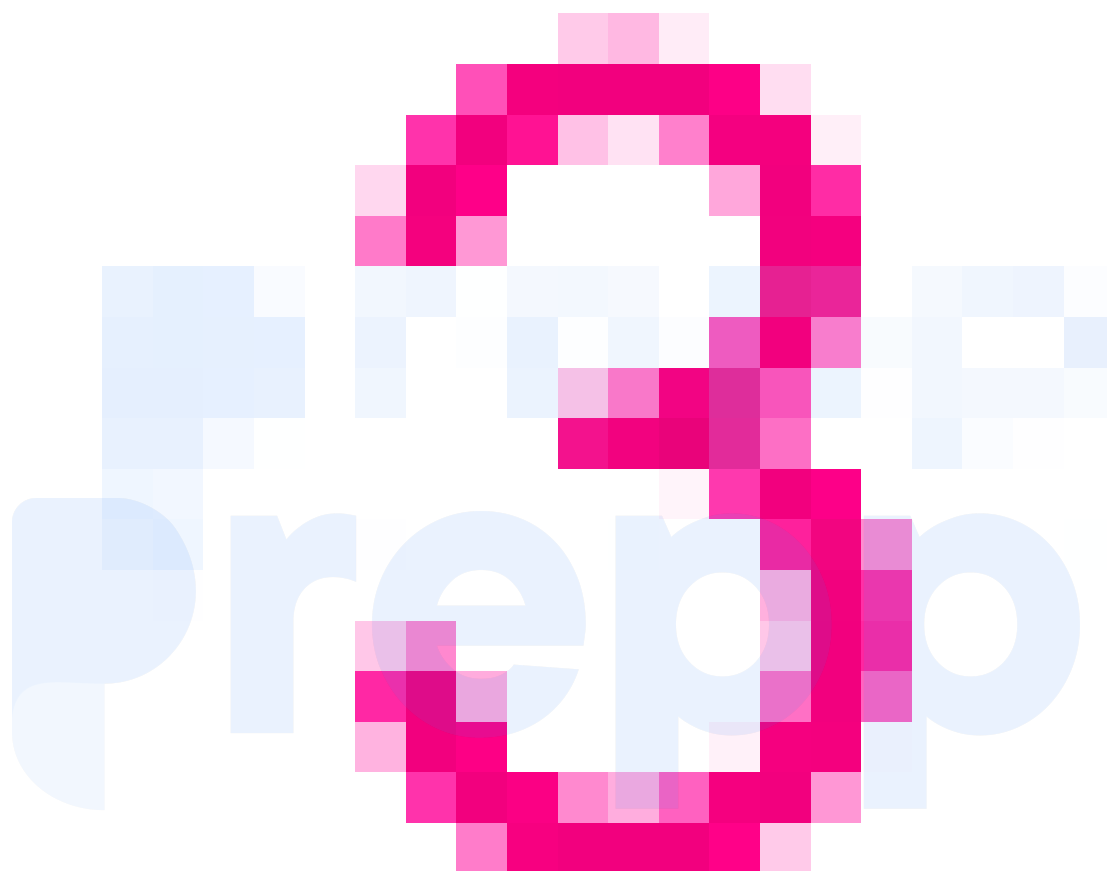


#### Detailed Explanation :-

- The line MN is the mirror.
- The word "

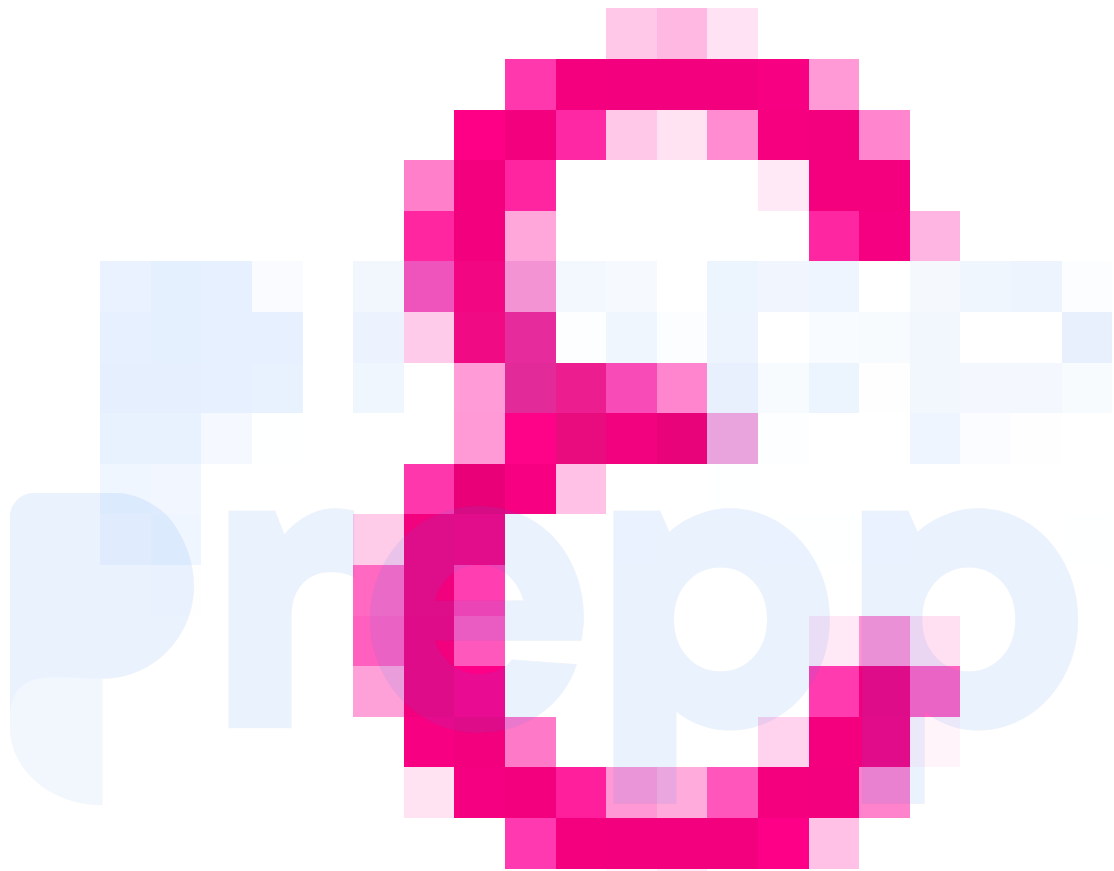


" ends with "



## Your Personal Exams Guide

". So, the mirror image will start with "



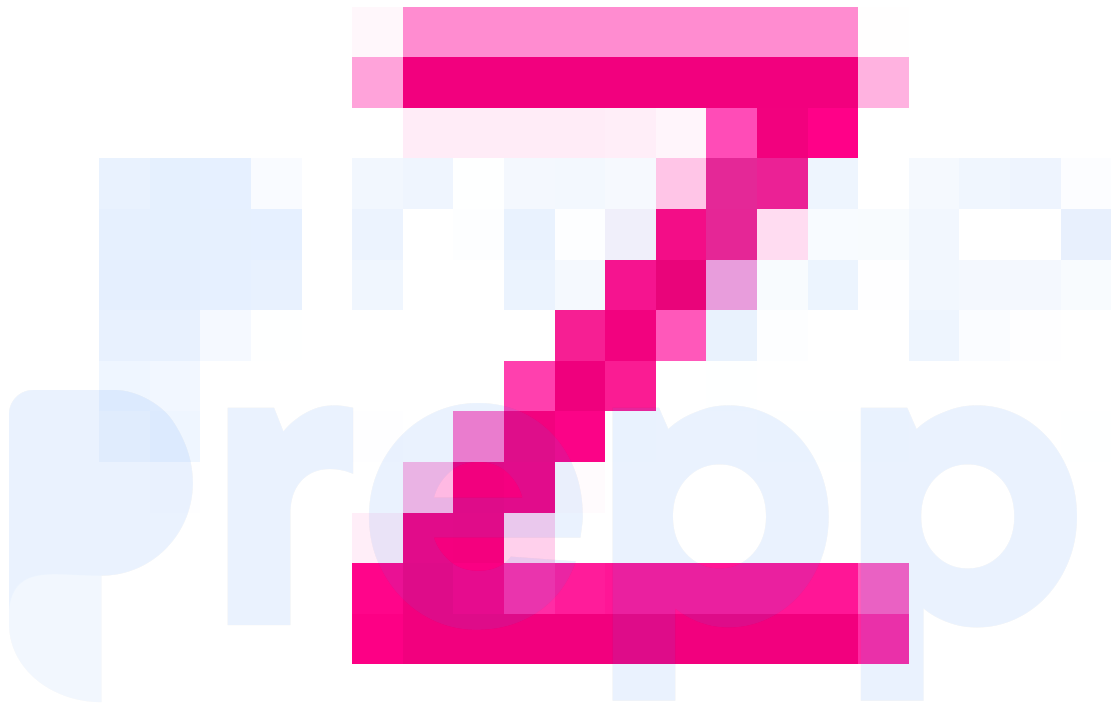
## Your Personal Exams Guide

" → Options 1 is eliminated.

- The second last letter of the word

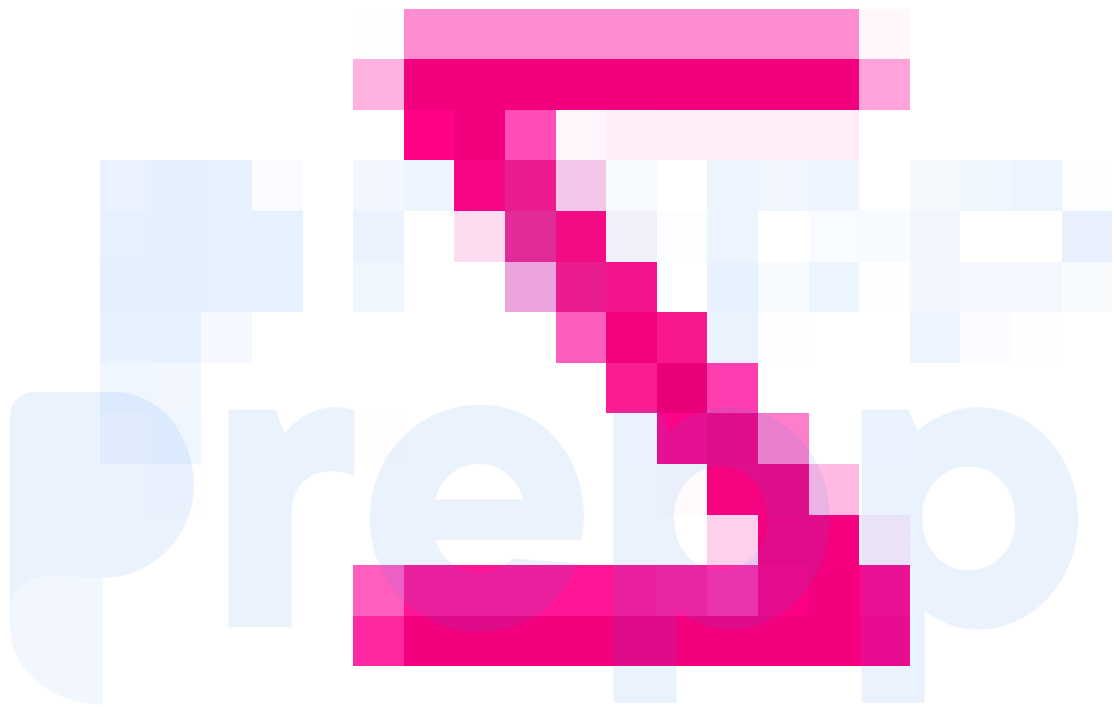


is "



## Your Personal Exams Guide

". So, the second letter in the mirror image will be "



## Your Personal Exams Guide

"→ Options 3, 4 are eliminated.

Hence, Option 2) is the correct answer.

### ★ Additional Information

- In a mirror image Left changes to right and the right changes to left where top and bottom remains the same .
- When placement of mirror not given, by default we will assume it in vertical direction .

- The starting letter word will be at last after the mirror image drawn with left changes to right and right changes to left.

---

**41. Answer: b**

**Explanation:**

Logic : First number  $\times 3 = A - 9 =$  Second number

21 : 54

$$21 \times 3 = 63 - 9 = 54$$

AND

24 : 63

$$24 \times 3 = 72 - 9 = 63$$

Similarly,

29 : 78

$$29 \times 3 = 87 - 9 = 78$$

Hence, **63** is the **correct answer**.

---

**42. Answer: c**

**Explanation:**

**Explanation :** The option that represents the correct order of the given words as they would appear in an english dictionary is shown below :

1. Fa csimile

5. Fa natical

3. Favourable

2. Frightful

4. Fructification

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

**43. Answer: d**

**Explanation:**

The paper when gets unfolded is as shown below:



Hence, 'option 4' is the correct answer.

**44. Answer: d**

**Explanation:**

Given :



**Explanation:**

13 and 14 numbers are common in both of the dices so, now if we rotate the dice from 13 clockwise or anti clockwise direction from the given diagram it is evident that 13 is opposite to 14 and **12 is opposite to 11**.

Hence, **11** is the **correct answer** .

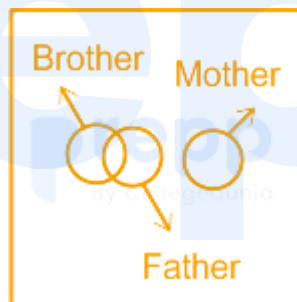
#### 45. Answer: a

##### Explanation:

Explanation :

Venn diagram for the given set of terms is :

Option 1 :



Both fathers and brothers are males that's why they are partially overlapping while mothers are female.

Hence, **Option 1** is the correct answer.

#### 46. Answer: d

##### Explanation:

Given equation –  $50 * 24 * 2 * 5 * 3$

According to BODMAS rule

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

Option 1 :  $50 + 24 = 2 \times 5 \times 3$

$$74 = 10 \times 3$$

$$74 \neq 30$$

Option 2 :  $50 = 24 + 2 + 5 + 3$

$$50 \neq 34$$

Option 3 :  $50 - 24 = 2 + 5 \times 3$

$$26 = 15 + 2$$

$$26 \neq 17$$

Option 4 :  $50 = 24 \times 2 + 5 - 3$

$$24 \times 2 = 48$$

$$48 + 5 = 53$$

$$53 - 3 = 50$$

Hence,  $=, \times, +, -$  is the correct answer.

47. Answer: a

### Explanation:

Given :

(37, 28, 333)

(41, 39, 82)

Explanation :

$$37 - 28 = 9 \times 37 \text{ ( first number ) } = 333$$

In the same way ( 41, 39, 82 )

$$41 - 39 = 2 \times 41 = 82$$

Option 1 : ( 18, 13, 90 ) →

$$18 - 13 = 5 \times 18 = 90$$

Option 2 : ( 17, 14, 67 ) →

$$17 - 14 = 3 \times 17 = 51 \neq 67$$

Option 3 : ( 16, 12, 54 ) →

$$16 - 12 = 4 \times 16 = 64 \neq 54$$

Option 4 : ( 19, 15, 44 ) →

$$19 - 15 = 4 \times 19 = 76 \neq 44$$

Hence, ( 18, 13, 90 ) is the correct answer.

---

### 48. Answer: b

### Explanation:

Explanation :

Option 1 :  $50 : 150 = 50 \times 3 = 150$

Option 2 :  $30 : 80 = 30 \times 3 = 60 \neq 80$

Option 3 :  $40 : 120 = 40 \times 3 = 120$

Option 4 :  $20 : 60 = 20 \times 3 = 60$

So, from all the options  $30 : 80$  is the odd pair

Hence,  **$30 : 80$**  is the **correct answer**.

#### 49. Answer: a

#### Explanation:

Explanation :

The table of alphabet positional value

| 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  |

According to positional value

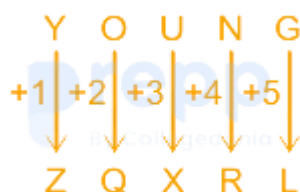
QUOTE is written as RWRXJ

|    |    |    |    |    |
|----|----|----|----|----|
| Q  | U  | O  | T  | E  |
| +1 | +2 | +3 | +4 | +5 |
| ↓  | ↓  | ↓  | ↓  | ↓  |
| R  | W  | R  | X  | J  |

In the same way, UNION is written as VLPSS



Similarly, "YOUNG" is written as "ZQXRL"



Hence, **ZQXRL** is the **correct answer**.

50. Answer: c

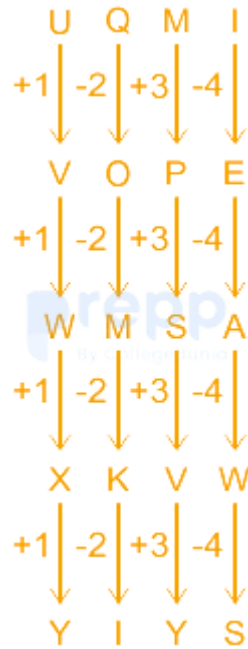
Explanation:

Explanation :

Table of english alphabet positional value

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

The pattern followed here is :



Hence, XKVW is the **correct answer**.

51. Answer: c

Explanation:

Given:

Circular race of 2500 m,

a man and a woman start from a point towards opposite directions,

With speeds of 37 km/h and 35 km/h, respectively.

Formula used:

$$\text{Time taken} = \frac{\text{distance}}{\text{speed}}$$

Calculation:

The relative speed between the man and the woman is,

$$\Rightarrow 37 + 35 = 72 \text{ km/h}$$

$$\Rightarrow \frac{72 \times 1000}{60 \times 60} = 20 \text{ m.s}^{-1} .$$

This means that the man is moving at a speed of 72 km/h with respect to the woman.

To meet the woman,

The man has to cover a distance of 2500m with a speed of 20 m/s.

$$\text{Time taken} = \frac{2500}{20} = 125 \text{ s} , \text{ which is equal to 2 min 5 sec.}$$

$\therefore$  The man and the woman will meet each other for the first after 2 minutes and 5 seconds.

## 52. Answer: d

### Explanation:

Given:

A triangle whose sides are 13 cm, 5 cm and 12 cm.

Formula used:

Area of triangle with sides a, b, c and perimeter '2s'

$$\Rightarrow \sqrt{s(s-a)(s-b)(s-c)} .$$

$$s = \frac{a+b+c}{2}$$

Calculation:

The semi perimeter of the triangle is,

$$\Rightarrow s = \frac{13+5+12}{2} = \frac{30}{2} = 15 \text{ cm} ..$$

$$\text{Area} = \sqrt{15(15-13)(15-5)(15-12)} .$$

$$\Rightarrow \sqrt{15 \times 2 \times 10 \times 3}$$

$$\Rightarrow \sqrt{900} = 30\text{cm}^2$$

$\therefore$  The area of the given triangle is  $30\text{cm}^2$ .

★ Shortcut Trick

5, 12, and 13 is the triplet of the right angle triangle

Formula used:

$$\text{Area of triangle} = \frac{1}{2} (\text{Base} \times \text{Height})$$

Calculation:

$$\text{Area of triangle} = \frac{1}{2} (\text{Base} \times \text{Height})$$

$$\Rightarrow \frac{1}{2} (5 \times 12)$$

$$\Rightarrow 30\text{ cm}^2.$$

$\therefore$  The area of the given triangle is  $30\text{cm}^2$ .

---

**53. Answer: b**

**Explanation:**

Given :

Bakery C sells 245 cakes on Monday,

Out of which 40% are Vanilla cakes and rest are strawberry cakes.

**Formula used:**

Number of items from a set of items,

$$\Rightarrow \frac{\text{percentage of the specific item}}{100} \times \text{total number of items}$$

**Calculation:**

On Monday,

The strawberry cakes sold by bakery C,

⇒ 60% of the total number of cakes.

∴ The number of strawberry cakes sold by Bakery C on Monday is  $\frac{60}{100} \times 245 = 147$ .

---

#### 54. Answer: c

##### Explanation:

Given:

Three numbers are given 7, 13 and 21.

Formula used:

If a, b, c, d are in proportional series then  $\frac{a}{b} = \frac{c}{d}$

Calculation:

Let the fourth proportional be x.

Then this means that  $\frac{7}{13} = \frac{21}{x}$

Solving for x,

$$x = \frac{21 \times 13}{7} = 39$$

∴ The fourth proportional to 7, 13 and 21 is 39.

---

#### 55. Answer: b

##### Explanation:

Given:

The volume of a cube is 5832 cm<sup>3</sup>.

**Formula used:**

Volume of a cube with edge length 'a' =  $a^3$

Total surface area of a cube =  $6a^2$

**Calculation:**

The edge of the given cube =  $(5832)^{\frac{1}{3}} = 18cm$

$\therefore$  The total surface area of the cube is  $6 \times 18^2 = 1944cm^2$ .

---

**56. Answer: b**

**Explanation:**

**Given:**

$$3 \sin A - 4 \sin 3A$$

**Formula used:**

$$\sin 3A = 3 \sin A - 4 \sin^3 A$$

**Calculation:**

One of the identities in trigonometry is  $\sin 3A = 3 \sin A - 4 \sin^3 A$ .

$$\therefore 3 \sin A - 4 \sin^3 A = \sin 3A.$$

---

**57. Answer: d**

**Explanation:**

**Given:**

A grocer wants to mix two different pulses costing ₹75 and ₹90 per kg, to get a mixture costing ₹80 per kg.

**Formula used:**

Price of component A  $\times$  quantity of A + Price of component B  $\times$  quantity of B = Total quantity  $\times$  final price

**Calculation:**

Suppose the grocer take 'x' kg of the pulses costing Rs 75 per kg and 'y' kg of the pulses costing Rs 90 per kg, to make the mixture worth of Rs 80 per kg.

Now, the total weight of the mixture is 'x+y' kg and its total cost is Rs. (x+y)80

Therefore, it can be written that  $75x + 90y = (x + y)80$

$$75x + 90y = 80x + 80y$$

$$5x = 10y$$

This means that  $\frac{x}{y} = \frac{10}{5} = 2$ .

$\therefore$  To get a mixture costing ₹80 per kg, the grocer as to mix the two pulses in the ratio 2 : 1

**58. Answer: a**

**Explanation:**

**Given:**

The expenses of a family on wheat, vegetables and oil are in the ratio 12 : 8 : 5.

The prices of these items increased by 50%, 25% and 40%, respectively.

**Formula used:**

$$\text{Increased price} = \frac{100 + \text{increased percentage}}{100} \times \text{old price}$$

**Calculation:**

Let the expenses on wheat, vegetables and oil be Rs. 12, Rs. 8 and Rs. 5, respectively.

The old expenses is,

$$\Rightarrow 12 + 8 + 5 = \text{Rs. } 25$$

The new price of wheat with 50% increase is,

$$\Rightarrow \frac{150}{100} \times 12 = 18 \text{ rupees.}$$

The new price of vegetables with 25% increase is,

$$\Rightarrow \frac{125}{100} \times 8 = 10 \text{ rupees.}$$

The new price of oil with 25% increase is,

$$\Rightarrow \frac{140}{100} \times 5 = 7 \text{ rupees.}$$

The new total expense is  $18 + 10 + 7 = \text{Rs. } 35$

$\therefore$  The total expenses of the family on these items increased by  $\frac{35-25}{25} \times 100 = 40\%$

---

59. Answer: d

**Explanation:**

**Given:**

A table showing the age-wise distribution of number of people who responded to a survey about their favourite style of dance.

**Formula used:**

$$\text{Percentage of } x \text{ from } y = \frac{x}{y} \times 100$$

**Calculation:**

The total number of respondents below 30 years age, who chose Dandiya is  $7 + 8 = 15$ .

The total number of respondents till the age of 30 years is  $34 + 36 = 70$ .

Therefore, the percentage of the total respondents below 30 years who chose Dandiya as their favourite dance is  $\frac{15}{70} \times 100 = 21.43\%$ .

**60. Answer: c**

**Explanation:**

**Given:**

A shopkeeper gives a 35% discount on the marked price of a bottle with a selling price of ₹1,755.

**Formula used:**

$$\text{Selling price} = \frac{100 - \text{discount}}{100} \times \text{marked price}$$

**Calculation:**

Let the marked price be  $x$ .

$$\text{Then, } 1755 = \frac{100 - 35}{100} \times x$$

Solving for  $x$ ,

$$x = \frac{1755 \times 100}{65} = 2700$$

$\therefore$  The marked price of the bottle is Rs. 2700.

**61. Answer: d**

**Explanation:**

**Given:**

The average age of a group is increased by 6 years when a person,

Whose age is 24 years was replaced by a person whose age is 66.

**Formula used:**

Sum of all observations of a set = average of the set  $\times$  total no. of observations in the set

**Calculation:**

Let the number of people in the group be  $x$  and their previous average be  $y$ .

Then, the previous sum of the ages of the group is ' $xy$ '.

When the person of age 24 years is replaced by a person of age years,

The sum of the ages of the new group is ' $xy - 24 + 66$ '.

Since the new average is ' $y+6$ ',

The sum of the ages of the new group is ' $xy+6x$ '.

Hence,  $xy - 24 + 66 = xy + 6x$

Solving for  $x$ ,

$$x = \frac{42}{6} = 7$$

$\therefore$  The number of people in the given group is 7.

**62. Answer: c****Explanation:****Given:**

A sells an article to B at 10% profit. B sells it to C at 25% profit and C pays ₹6,875 for it.

**Formula used:**

Selling price =  $\frac{100+\text{profit}}{100} \times$  cost price.

**Calculation:**

Let the price at which A bought the article be  $x$ .

Since A sold it at profit of 10%, then B sold it at 25% profit to C for Rs. 6875,

It can be written that  $\frac{125}{100} \times \frac{110}{100} \times x = 6875$ .

Solving for  $x$ ,

$$x = \frac{6875 \times 100 \times 100}{110 \times 125} = 5000$$

$\therefore$  The price at which A bought the article is Rs. 5000.

---

**63. Answer: d****Explanation:****Given:**

A pie chart showing the percentage shares of the total expenditure,

On sports made by a country on various sports during 2019–2020

**Formula used:**

Quantity of the part = percentage  $\times$  the total quantity of the whole.

**Calculation:**

According to the pie chart,

The percentage of the total amount spent on hockey is 15%.

$$15\% \text{ of } 260 = \frac{15}{100} \times 260 = 39.$$

$\therefore$  If the total amount spent on sports during 2019–2020 was ₹260 crores, then the amount spent on hockey is ₹39 crores.

64. Answer: d

**Explanation:**

**Given:**

A principle amount of Rs. 90774 is compounded for 2 years with an interest rate of 23% per annum.

**Formula used:**

$$\text{Present value} = \frac{P}{\left(1 + \frac{r}{100}\right)^n}$$

**Calculation:**

$$\text{Present value} = \frac{90774}{\left(1 + \frac{23}{100}\right)^2} = 60000$$

∴ The present value of ₹90,774 due 2 years hence, when the interest is compounded at 23% per annum is Rs. 60000

---

65. Answer: d

**Explanation:**

**Formula used:**

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

Calculation:

According to the BODMAS rule,

$$178.01 - [86.23 - \{40.22 + (28 - 24)\}]$$

$$\Rightarrow 178.01 - [86.23 - \{40.22 + (4)\}]$$

$$\Rightarrow 178.01 - [86.23 - 44.22]$$

$$\Rightarrow 178.01 - 42.01 = 136$$

$\therefore$  The value of  $178.01 - [86.23 - \{40.22 + (28 - 24)\}]$  is 136

## Your Personal Exams Guide

66. Answer: b

**Explanation:**

**Given:**

The value of a residential flat constructed at a cost of ₹10,00,000 is depreciating at a rate of 10% per annum.

**Formula used:**

$$\text{Present value} = P \left( \frac{100-r}{100} \right)^n ,$$

Where P is the initial value,

R is the rate at which the value is decreasing annually and

n is time in years.

**Calculation:**

Present value,

$$\Rightarrow 1000000 \left( \frac{100-10}{100} \right)^3 = 1000000 (0.9)^3 = 729000$$

$\therefore$  The value of the residential flat after 3 years is Rs. 729000

## 67. Answer: a

**Explanation:**

**Given:**

$$\frac{(777 \times 777 \times 777) + (423 \times 423 \times 423)}{(777 \times 777) - (777 \times 423) + (423 \times 423)} \times \frac{1}{(77-47)}$$

**Formula used:**

$$x^3 + y^3 = (x + y)(x^2 - xy + y^2)$$

**Calculation:**

Using  $x^3 + y^3 = (x + y)(x^2 - xy + y^2)$ ,

$$\frac{(777 \times 777 \times 777) + (423 \times 423 \times 423)}{(777 \times 777) - (777 \times 423) + (423 \times 423)} \times \frac{1}{(77-47)} = \frac{(777+423)((777 \times 777) - (777 \times 423) + (423 \times 423))}{(777 \times 777) - (777 \times 423) + (423 \times 423)} \times \frac{1}{(77-47)} = \frac{1200}{30} = 40$$

$$\therefore \frac{(777 \times 777 \times 777) + (423 \times 423 \times 423)}{(777 \times 777) - (777 \times 423) + (423 \times 423)} \times \frac{1}{(77-47)} = 40$$

## 68. Answer: c

**Explanation:**

**Given:**

The number of kilometres that Sonam drives on a Tuesday is,  
12.5% less than the number of kilometres that she drives on Monday.

The number of kilometres that she drives on Wednesday is,  
20% more than the number of kilometres

That she drives on Tuesday and she drives a total of 336 km on Wednesday.

**Formula used:**

If  $z$  is  $a\%$  of  $y$  and  $y$  is  $b\%$  of  $x$ ,

$$\text{Then } z = \frac{a}{100} \times \frac{b}{100} \times x .$$

**Calculation:**

Here,  $z = 336$ ,  $a = 120$ ,  $b = 100 - 12.5 = 87.5$  and  $x$  is the kilometres Sonam drives on Monday.

Then,

$$\Rightarrow 336 = \frac{120}{100} \times \frac{87.5}{100} \times x$$

Solving for  $x$ ,

$$x = \frac{336 \times 100 \times 100}{120 \times 87.5} = 320$$

$\therefore$  The number of kilometres that Sonam drives on Monday is 320.

**69. Answer: b**

**Explanation:**

**Given:**

$$AL = 8 \text{ cm}$$

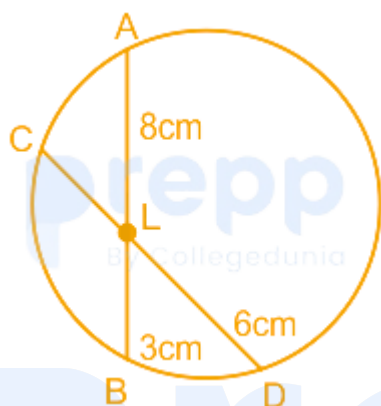
$$BL = 3 \text{ cm}$$

$$DL = 6 \text{ cm}$$

**Concept Used:**

$$CL \times LD = BL \times LA$$

**Calculation:**



⇒ Let the length of CL be  $x$  cm.

⇒ Putting the given values in the formula,

$$\Rightarrow x \times 6 = 8 \times 3$$

$$\Rightarrow x = \frac{24}{6} = 4 \text{ cm}$$

Hence, the length of CL is 4 cm.

**70. Answer: b**

**Explanation:**

**Given:**

Divisor = 81

**Concept Used:**

Divisible Number = Largest Number of that digit ÷ Divisor

**Calculation:**

⇒ Largest six-digit number = 999999

⇒ Divisor = 81

⇒  $\frac{999999}{81}$  gives the remainder of 54

⇒  $999999 - 54 = 999945$

Hence, the largest six-digit number exactly divisible by 81 is 999,945

**71. Answer: a**

**Explanation:**

**Given:**

Parts of water in the liquid = 3

Parts of medicine in the liquid = 7

**Calculation:**

⇒ Let the beaker contains 10 litres of liquid.

⇒ Amount of Water = 3 litres, Amount of Medicine = 7 litres

⇒ Let x litres of this liquid be replace with water.

⇒ Now, Water =  $\frac{3x}{10}$  and Medicine =  $\frac{7x}{10}$

⇒ Water before replacement +  $\frac{7x}{10}$  = Medicine before replacement -  $\frac{7x}{10}$

⇒ Medicine before replacement - Water before replacement =  $\frac{7x}{10} + \frac{7x}{10} = \frac{7x}{5}$

⇒  $\frac{7}{10}part - \frac{3}{10}part = \frac{7x}{5}$

⇒  $\frac{2}{5}part = \frac{7x}{5}$

$$\Rightarrow x = \frac{2}{7}$$

Hence, the part of mixture which should be replaced with water is  $\frac{2}{7}$ .

---

## 72. Answer: b

### Explanation:

Given:

Work Efficiency of A = 3 times of B

Time taken by A to complete the work = 32 days lesser than B

Concept Used:

Total Time = Total Work  $\div$  Total Efficiency

Calculation:

$\Rightarrow$  Work efficiency of A and B = 3 : 1

$\Rightarrow$  Time ratio will be 1 : 3 and Ratio difference = 3 - 1 = 2

$\Rightarrow$  Time Difference = 32 days

$\Rightarrow$  So, Ratio of 2 = 32 days, Ratio of 1 = 16 days

$\Rightarrow$  A alone completes the work in 16 days and B completes in  $16 \times 3 = 48$  days.

$\Rightarrow$  LCM of 16 and 48 = 48

$\Rightarrow$  Putting the values in the formula,

$\Rightarrow$  Time in which both can complete the work together =  $\frac{48}{3+1} = \frac{48}{4} = 12$  days

Hence, the number of days in which both A and B can complete the work, working together is 12 days.

---

73. Answer: d

Explanation:

Given

$$1.5x = 0.04y$$

Calculation

$$\Rightarrow 1.5x = 0.04y$$

$$\Rightarrow \frac{x}{y} = \frac{0.04}{1.5} = \frac{4}{150}$$

$$\Rightarrow \frac{x}{y} = \frac{2}{75}$$

$\Rightarrow$  Dividing both numerator and denominator by y in the expression,  $\frac{y-x}{y+x}$

$$\Rightarrow \frac{x-y}{y-x} = \frac{1-\frac{x}{y}}{1+\frac{x}{y}}$$

$$\Rightarrow \frac{1-\frac{x}{y}}{1+\frac{x}{y}} = \frac{1-\frac{2}{75}}{1+\frac{2}{75}}$$

$\Rightarrow$  Upon simplification, it gives

$$\Rightarrow \frac{1-\frac{2}{75}}{1+\frac{2}{75}} = \frac{73}{77}$$

Hence, the value of the given expression is  $\frac{73}{77}$ .

74. Answer: b

Explanation:

Given:

Base Diameter = 20 cm

Height = Two times of the radius

**Concept Used:**

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

**Calculation:**

$$\Rightarrow \text{Diameter} = 2 \times \text{Radius}$$

$$\Rightarrow \text{Radius of the base} = \frac{20}{2} = 10 \text{ cm}$$

$$\Rightarrow \text{Height of a cylinder} = 2 \times 10 = 20 \text{ cm}$$

$\Rightarrow$  Putting the values in the formula,

$$\Rightarrow \text{Volume of cylinder} = \pi \times 10^2 \times 20$$

$$\Rightarrow \text{Volume of cylinder} = 2000\pi \text{ cm}^3$$

Hence, the volume of a cylinder is  $2000\pi \text{ cm}^3$ .

**75. Answer: d**

**Explanation:**

Given **Your Personal Exams Guide**

$$((82 \times 82) - (18 \times 18))^{0.5}$$

**Concept Used**

$$(a + b) * (a - b) = a^2 - b^2$$

**Calculation**

$$\Rightarrow ((82 \times 82) - (18 \times 18))^{0.5} = \sqrt{(82 \times 82) - (18 \times 18)}$$

$\Rightarrow$  Now, making the pairs we get,

$$\Rightarrow \sqrt{(82 \times 82) - (18 \times 18)} = \sqrt{(82 + 18) \times (82 - 18)}$$

$$\Rightarrow \sqrt{(82 + 18) \times (82 - 18)} = \sqrt{100 \times 64} = \sqrt{6400}$$

$$\Rightarrow \sqrt{6400} = 80$$

Hence, the simplified value of the expression is 80

## 76. Answer: b

### Explanation:

The correct answer is Kalamandalam Kalyanikutty Amma.

### ★ Key Points

- **Kalamandalam Kalyanikutty Amma** was an epoch-making Mohiniyattam dance use from Kerala in southern India.
- A native of **Thirunavaya** in the **Malappuram** district of the state, she was instrumental in resurrecting Mohiniyattam from a dismal, near-extinct state into a mainstream Indian classical dance, rendering it formal structure and ornamentation.
- The two books Kalyanikutty Amma has authored, "**Mohiniyattam - History and Dance Structure**" is considered as elaborate and only authentic documentation of Mohiniyattam.
- **Kalyanikutty Amma** passed the art of Mohiniyattam beyond **India**.
- The first Russian dancer, **Mohiniyattam**, was **Milana Severskaya**.
- In 1997, **Kalamandalam Kalyanikutty Amma** blessed her on the continuation of the **Mohiniyattam** tradition.
- **Milana Severskaya** created in St. Petersburg, Russia the first outside India school of education for Mohiniattam.
- She founded the Natya Theater, where you can see the choreography of **Kalamandalam Kalyanikutty Amma** in the play, dedicated to her memory.
- **Milana Siverskaya** has released a film dedicated to the memory of the **guru Kalyanikutty Amma** in which one can see how the guru taught dance in deep old age.

### ★ Additional Information

- **Dr. Kalamandalam Radhika** is an Indian classical dancer, choreographer, research scholar, teacher, writer, and philanthropist. She was the first non-resident Keralite to win the Kerala Sangeetha Nataka Akademi award for **Mohiniyattam** . She learned Kuchipudi, Bharatanatyam, Kathakali, and other dance forms.
- **Mohiniyattam** is an Indian classical dance form that developed and remained popular in the state of **Kerala** .
- **Thiruvananthapuram** (or Trivandrum) is the capital of the southern Indian state of Kerala.

---

## 77. Answer: d

### Explanation:

The correct answer is 2029.

#### ★ Key Points

- **India** will host the ICC Men's Champions Trophy in **October 2029** .
- India will host **three** ICC events in the **2024–31 cycle** .
- The **BCCI** will host the **2026 T20 World Cup** (with Sri Lanka), **the 2029 Champions Trophy** as well as the **2031 ODI World Cup** (with Bangladesh).
- **Pakistan** will be hosting the **2025 ICC Men's Champions Trophy** .

#### ★ Additional Information

- The **ICC Champions Trophy** is a **One-Day International (ODI)** cricket tournament organised by the **International Cricket Council** .
- The **2013** tournament was intended to be the **final edition** of the Champions Trophy, but it was extended to **2017** due to its widespread popularity.
- In **2018** , the ICC decided to replace the tournament with the **World Twenty20 championship** to be held every two years, and no Champions Trophy was contested in 2021.
- However, as part of the **2021** Future Tour Programme, the event was reinstated for the **2025** cycle onwards.

- In November 2021, the ICC confirmed the tournament would next take place in **2025** in **Pakistan** , with **India** hosting the tournament in **2029** .

---

**78. Answer: b**

**Explanation:**

The correct answer is Wajid Ali Shah.

★ Key Points

- **Malka Jaan** of Agra was one of **Gauhar Jaan's** contemporaries.
- Born in **Azamgarh** , she studied under several ustads of **Agra** .
- Later she became a court musician at the durbar of Nawab **Wajid Ali Shah** in Calcutta.
- **Malka Jaan Agrewali** became popular for developing her new full-throated thumri singing style. She had a wide repertoire that ranged from dhrupad, khayal, and thumri to the so-called light and folk pieces of Hori, chaiti, kajri, tappa, and ghazal.

★ Additional Information

- **Wajid Ali Shah** was the eleventh and last King of Awadh, holding the position for 9 years, from 13 February 1847 to 11 February 1856.
- **Shuja-ud-Daula** was the Subedar and Nawab of Oudh and the Vizier of Delhi from 5 October 1754 to 26 January 1775
- **Asaf-ud-Daula** was the Nawab wazir of Oudh ratified by Shah Alam II, from 26 January 1775 to 21 September 1797, and the son of Shuja-ud-Dowlah.
- Major **Mohammed Ali Shah** is an Indian actor. A former soldier, he is a member of the board of the International Film and Entertainment Festival of Australia gave him an award.

---

**79. Answer: c**

### Explanation:

The correct answer is Chintaman Raghunath Vyas.

#### ★ Key Points

- **Chintaman Raghunath Vyas** , popularly known as C. R. Vyas, was an **Indian classical singer** . He was known for singing **khyal style** .
- He also researched traditional **ragas and bandishes** and composed more than **200 bandishes** in different ragas under the pen-name **Gunijaan** .
- As a tribute to his **Guru Gunidas**, he started the **Gunidas Sangeet Sammelan** in **1977** .
- He has written a book **Raag Sarita** which sums up his work in the field of music.
- The updated edition of the book was recently released in **2019** by his son **Suhas Vyas** .

#### ★ Additional Information

- **Pandit Kumar Gandharva** , originally known as Shivaputra Siddharamaya Komkalimath was an Indian classical singer, well known for his unique vocal style and for his refusal to be bound by the tradition of any gharana.
- **Balasaheb Poonchwale** was a Hindustani classical vocalist and leading figure of the Gwalior gharana. The son and disciple of Raja Bhaiya Poonchwale, he also learned from celebrated musicologists Vishnu Narayan Bhatkhande and S. N. Ratanjankar.
- **Pandit Vishnu Narayan Bhatkhande** was an Indian musicologist who wrote the first modern treatise on Hindustani classical music, an art that had been propagated for centuries mostly through oral traditions.

---

80. Answer: b

### Explanation:

The correct answer is Mumbai and Thane.

### ★ Key Points

- The first train on the Indian sub-continent ran from **Bori Bunder in Mumbai to Thane** at 3.30 pm on **April 16, 1853**.
- The 14-carriage train carried **400 guests** and covered a distance of **34 km**.
- The inaugural journey received a salute of **21 guns**.
- Today, Indian Railways runs around **11,000 trains daily**, of which **7,000** are passenger trains.
- The first Railway Workshop was established at **Jamalpur, near Munger, Bihar, in 1862**.
- It gradually became one of the major industrial units of India, with **iron and steel foundries, rolling mills and more**.

### ★ Additional Information

- **Indian Railways** is a statutory body under the ownership of the Ministry of Railways, Government of India that operates India's national railway system.
- It manages the fourth largest national railway system in the world by size, with a total route length of **67,956 km** as of 31 March 2022.
- **Indian Railways** runs a total of 23,000+ **trains** daily of which 13,000+ are passenger services and 9,200+ services are freight.
- The **Railway Minister of India** currently is Ashwini Vaishnaw. Piyush Goyal was the **minister** before that.

81. Answer: d

### Explanation:

The correct answer is classical singer.

### ★ Key Points

- **Ustad Bade Ghulam Ali Khan** was **born in Kasur, of the erstwhile Punjab Province, British India in 1902**
- Following the partition of India in 1947, Kasur Tehsil was allocated to Pakistan. At the age of five, Bade Ghulam began training in vocal music from his chacha

Kale Khan, and later from his father.

- The most famous stalwart of Hindustani music, Bade Ghulam Ali Khan was **frustrated with a social set-up that found it difficult to honour his gift as a singer** and migrated to India in the early '50s.

#### ★ Additional Information

- The **sarod**, with almost the identical roundish belly of the Seniya rabab, with eight main and two chikari strings, and with a longer body as discussed above, is designed by **Allauddin Khan along with his instrument-maker brother Ayet Ali Khan**.
- **Harmonium**, also called Reed Organ, free-reed keyboard instrument that produces sound when wind sent by foot-operated bellows through a pressure-equalizing air reservoir causes metal reeds screwed over slots in metal frames to vibrate through the frames with close tolerance.
- **A tabla is a pair of twin hand drums from the Indian subcontinent**. Since the 18th century, the tabla has been the principal percussion instrument in Hindustani classical music, where it may be played solo, as an accompaniment with other instruments and vocals, and as a part of larger ensembles.

82. Answer: a

#### Explanation:

The correct answer is The Substance And The Shadow: An Autobiography.

#### ★ Key Points

- **The Substance And The Shadow** An Autobiography is the autobiography of the veteran actor, **Yousuf Khan**, popularly known as **Dilip Kumar**
- Substance and Shadow **refer to the dual meaning of John Leech's "Cartoon, No.1," but also describes the essence of cartoon art, in general,**
- This is an autobiography of **Dilip Kumar**.

#### ★ Additional Information

- In "**Romancing with Life**", the first-ever full-fledged memoir by a leading Bollywood star, **Dev Anand** tells his remarkable life story as only he can.
- **Legendary Indian poet-lyricist-director Gulzar** has come out with his new book titled "**Actually... I Met Them: A Memoir**". In a memoir published by the publishing group Penguin Random House India.
- **An unfinished story was written by O. HENRY a projective technique in which participants are required to complete a story by role play, discussion, or writing.**
- It is intended to reveal information about the participants' concerns.

### 83. Answer: b

#### Explanation:

The correct answer is a Sharankumar Limbale.

#### ★ Key Points

- **Sharankumar Limbale** is a **Marathi language author, poet, and literary critic**.
- He has penned more than 40 books but is best known for his **autobiography Akkarmashi**. **Akkarmashi** is translated in several other Indian languages and in English.
- He wrote novels such as **Akkarmashi, The outercaste, Towards an Aesthetic of Dalit Literature, The Dalit Brahmin and other stories, Hindu: a novel, Bahujan, Dalit Voice: Literature and Revolt**

#### ★ Additional Information

- **Padma Sachdev** was an **Indian poet and novelist**. She was the first modern woman poet of the Dogri language. She also wrote in Hindi. She published several poetry collections, including **Meri Kavita Mere Geet (My Poems, My Songs)**, which won the **Sahitya Akademi Award in 1971**.
- **Amitabha Bagchi** was born in 1974 in Delhi. He is the **author of three novels**. The first, **Above Average**, was a bestseller. His second novel, **The Householder**, was published to critical acclaim and the third, **This Place**, was shortlisted for the **Raymond Crossword Book Award 2014**.

- **Leeladhar Jagudi** is an Indian teacher, journalist, and poet of Hindi literature. He is the author of several poetry anthologies including *Natak Jari Hai* and *Shankha Mukhi Shikharon Par* and is a recipient of the **Sahitya Akademi Award**, for his 1997 anthology, *Anubhav Ke Aakash Mein Chand*.

84. Answer: a

#### Explanation:

The correct answer is 1928.

#### ★ Key Points

- The men's team dominated the prestigious event in the early years, winning six consecutive golds from 1928 to 1956 and added two more since. **The Indian hockey men's team has won eight Olympic gold medals in all, six of them in a row (from 1928–1956) and added two more at Tokyo 1964 and Moscow 1980.**
- The gold medal at the 1928 Amsterdam Games was the first of the Indian hockey team's record six-consecutive Olympic triumphs.

#### ★ Additional Information

- Hockey, outdoor game played by two opposing teams of 11 players each who use sticks curved at the striking end to hit a small, hard ball into their opponent's goal
- Hockey has so much importance in India. **It develops hand-eye coordination, improves the resistance power of their hands, and increases the spontaneous responses and reactions during the game.**It also improves agility.
- Field hockey is played in India, Field hockey in India refers to two teams, the India men's national field hockey team and the India women's national field hockey team.

85. Answer: d

### Explanation:

The correct answer is ₹8,000 crore.

#### ★ Key Points

- Domestic income (NDPFC) is **the net money value of all the final goods and services produced within the domestic territory of a country during a period of one year.**
- **many non-residential companies and foreign banks operate within the domestic (economic) territory of India.**
- Income generated by them is included in India's domestic income. Thus domestic income is a territorial concept since it is defined with reference to the domestic territory.

#### ★ Additional Information

- Income generated by them is included in India's domestic income. Thus domestic income is a territorial concept since it is defined with reference to domestic territory
- It should be understood that sources of domestic income are (i) **income from work (i.e., compensation of employees), (ii) income from property (i.e., operating surplus) and (iii) income from self-employed (i.e., mixed-income).**
- **Income Tax refers to a percentage of your income that you are liable to pay directly to the government.** The money collected by this direct tax route is used by the Government for infrastructural developments and also to pay the employees of central and state government bodies.

---

### 86. Answer: a

### Explanation:

The correct answer is  
tissue-organ

### ★ Key Points

- A **tissue organ** is an organ that lies between tissue and an organ system. Tissues are formed from the same type of cells to act together in a function.
- Tissues of different types combine to form an organ that has a specific function.
- **Characteristics of phylum Platyhelminthes are:**
  - Their body is dorsoventrally flattened.
  - They exhibit bilateral symmetry.
  - Also, they are triploblastic, with three germ layers.
  - They do not have a body cavity and are acoelomate.
  - The body is soft and unsegmented.
  - They are mostly parasitic with a few free-living.

### ★ Additional Information

- **Protoplasm** is the cytoplasm and nucleus of a cell.
  - The term was first defined in 1835 as the ground substance of living material and, hence, responsible for all living processes.
- An organelle or Cellular
  - it is **a membrane-bound structure found within a cell** Just like cells have membranes to hold everything in, these mini-organs are also bound in a double layer of phospholipids to insulate their little compartments within the larger cells.
- **Cell-Tissue** is a group of cells that have similar structures and that function together as a unit.
  - Primary types of body tissues include epithelial, connective, muscular, and nervous tissues.

---

87. Answer: a

### Explanation:

The correct answer is Alessandro Volta

### ★ Key Points

- **Alessandro Volta** was an Italian physicist, chemist, and lay Catholic who was a pioneer of electricity and power and is credited as the inventor of the electric battery and the discoverer of methane.
- He was an Italian physicist whose invention of the electric battery provided the first source of continuous current.
- Volta invented the battery when trying to understand the work of Luigi Galvani who managed to make frog legs twitch when he touched them with a metal instrument.

★ Additional Information

- **Michael Faraday** was an English scientist who contributed to the study of electromagnetism and electrochemistry. His main discoveries include the principles underlying electromagnetic induction, diamagnetism and electrolysis.
- **Luigi Galvani** Italian physician and physicist who investigated the nature and effects of what he conceived to be electricity in animal tissue.
- **Henri Becquerel's discovery of spontaneous radioactivity** Becquerel was awarded half of the Nobel Prize for Physics in 1903, the other half being given to Pierre and Marie Curie for their study of the Becquerel radiation.

88. Answer: a

**Explanation:**

The correct answer is Sania Mirza.

★ Key Points

- Ace Against Odds is the 2016 biography of the Indian professional tennis player **Sania Mirza**.
- Sania Mirza wrote Ace Against Odds with the help of her father and mentor **Imran Mirza & sports journalist Shivani Gupta**.
- **Indian tennis star** Sania Mirza posted a birthday wish for her husband **Shoaib Malik** on social media, calling her partner "the guy who I can't live with or without."

- If you do or achieve something against (all) the odds/against all odds, you do or achieve it although there were a lot of problems and you were not likely to **succeed**: Against all the odds, he recovered.
- "Ace against Odds" by Sania Mirza is an autobiography written with the help of her **father Imran Mirza** and sports journalist Shivani Gupta. The book is as fascinating as her tennis journey and her life.

#### ★ Additional Information

- Unbreakable is an autobiography, of **Mary Kom**, published by Harper Collins, the book chronicles Mary's relentless struggle and an unflinching passion for boxing. "My story is the same as that of thousands of women in this country."
- **PT Usha – Pilavullakandi Thekkeparambil Usha** to use her full name – is one of India's greatest athletes, often called the country's "queen of track and field"
- Pilavullakandi Thekkeraparambil Usha born **27 June 1964** is a retired Indian track and field athlete. She was born in **Kuttali, Kozhikode, Kerala**.
- Indian weightlifter Karnam Malleswari holds the distinguished honour of being the first woman from India to win a medal at the Olympics. Her career's crowning achievement came at the **Sydney 2000 Olympics**.

89. Answer: b

Explanation:

The correct answer is Alkanes.

#### ★ Key Points

- **Alkanes group was given the name 'paraffin'.**
- Paraffins, also known as alkanes, are saturated compounds that have the general formula  $C_nH_{2n+2}$ , where n is the number of carbon atoms.
- The simplest alkane is methane ( $CH_4$ ), which is also represented as  $C_1$ .
- Alkanes are called paraffin because they have a little affinity towards a general reagent. In other words, alkanes are inert substances.

- Paraffin wax was first produced commercially in 1867, less than 10 years after the first petroleum well was drilled.

### ★ Additional Information

- In organic chemistry, an aldehyde is an organic compound containing a functional group with the structure  $R-CH=O$ .
- The common names of aldehydes are taken from the names of the corresponding carboxylic acids: formaldehyde, acetaldehyde, and so on
- Alcohol is an organic compound with a **hydroxyl (OH)** functional group on an aliphatic carbon atom.
- OH is the functional group of all alcohols, we often represent alcohols by the general formula **ROH**, where R is an alkyl group.
- The word acid is derived from the Latin acidus/acēre, meaning 'sour'.
- There are two basic types of acids organic and inorganic acids. Inorganic acids are sometimes referred to as mineral acids.

90. Answer: d

Explanation:

The correct answer is V V Giri.

### ★ Key Points

- Varahagiri Venkata Giri **10 August 1894 – 24 June 1980** was an Indian politician and activist from Berhampur in Odisha.
- Giri was honoured by the Government of India with the Bharat Ratna in 1975. Giri died **on 24 June 1980**.
- Giri was elected the third vice president of India on **13 May 1967**, a post he held for nearly two years till **3 May 1969**.
- Giri was the first vice president to not complete his full term in office on account of being elevated to the office of the president and was the third vice president to be elected to the presidency.
- The 4th President of India from **24 August 1969 to 24 August 1974** and 3rd vice president of India from **13 May 1967 to 3 May 1969**.

### ★ Additional Information

- John Adams was our nation's first Vice President and helped shape the responsibilities of the office.
- There have been **49 vice presidents** of the United States since the office came into existence **in 1789**.
- Husain, Jamia became closely associated with the Indian freedom movement. He was awarded the Bharat Ratna (India's highest civilian honour) **in 1963**.
- He believed in the total development of children can take place through Basic Education, which is craft centred, creative, productive, and self-supporting. According to him, productive work is an instrument of education.
- Bharat is My Home is an excerpt from the speech of President **Dr. Zakir Hussain**. He delivered this speech **in 1967**, after taking oath as President. He had also been the Governor of Bihar before becoming President.
- Gopal Swarup Pathak (**26 February 1896 – 4 October 1982**) was the fourth vice president of India from **August 1969 to August 1974**. He was the first Indian vice president not to succeed his superior as President.

---

91. Answer: a

### Explanation:

The correct answer is Kathak.

### ★ Key Points

- **Uma Sharma** has been conferred the Padma Bhushan award for enriching Kathak form of **Classical Dances in India**.
- She was also bestowed with the Sangeet Natak Akademi Award and also the **Sahitya Kala Parishad Award**. Sharma has also been honoured with the "Srijan Manishi" title by Akhil Bhartiya Vikram Parishad for her great contribution to Kathak.
- Uma Sharma (**born 1942**) is a Kathak dancer, choreographer, and teacher. She also runs the Bharatiya Sangeet Sadan, Delhi, a classical dance and music academy, situated in New Delhi, founded by her father **in 1946**.

- In 1973 she became the youngest dancer to be conferred with the Padma Shri by the Government of India, and Padma Bhushan 2001.

#### ★ Additional Information

- The world-famous Kathak dancer, Pandit Birju Maharaj is the face of the Kalka-Bindadin Gharana of Lucknow.
- Kathak, a north Indian dance form, is a mixture of dance and drama which is usually performed by both men and women.
- Venkatalakshamma (**29 May 1906 – 1 July 2002**) was a renowned Bharatanatyam dancer. A doyenne of the Mysore Style of Bharatanatyam.
- Savitha Sastry (**born 11 December 1969**) is an Indian dancer and choreographer best known as an exponent of Bharatanatyam.
- Konsam Ibomcha Singh was awarded the Padma Shri in recognition of his distinguished services in Arts, of preserving the century-old dying art of Laiphadabi (doll) making of the Meitei community in Manipur.

92. Answer: c

#### Explanation:

The correct answer is **Padma Bhushan**.

#### ★ Key Points

- Mrinalini Sarabhai is famous for Bharatanatyam.
- Mrinalini's older sister Lakshmi Sehgal was the commander-in-chief of the Rani of the Jhansi regiment which was an all-women combat regiment of the Indian National Army.
- Mrinalini was born to a Tamil Brahmin father and Malayali Nair mother in present-day Kerala on **11 May 1918**. Bharatanatyam is a dance of Tamil Nadu in southern India.
- She trained over **18,000 students** in Bharatanatyam and Kathak.

#### ★ Additional Information

- **Uday Shankar is known as the Father of Modern Dance in India.**
- The Marshal of the Indian Air Force Arjan Singh is the first and the only five-star rank officer in the Indian Air Force. Singh was conferred Padma Vibhushan in 1965.
- It's a known fact that Sachin Tendulkar is the only sportsperson who was conferred with the Bharat Ratna **in 2014.**
- Yoga Guru Swami **Sivananda, Ghulam Nabi Azad** Among Winners.
- Sonu Nigam receives Padma Shri Award, Victor Banerjee conferred with **Padma Bhushan.**

---

**93. Answer: c**

**Explanation:**

The correct answer is Sitar.

★ Key Points

- Ustad Vilayat Khan **(28 August 1928 – 13 March 2004)** was an Indian classical sitar player.
- Along with Imdad Khan, Enayat Khan, and Imrat Khan, he is credited with the creation and development of gayaki ang (an attempt to mimic the sound of the human voice) on the sitar.
- Ustad Enayat Khan **(1894–1938)** also known as Nath Singh was one of India's most influential sitar and surbahar players in the first decades of the 20th century. He was the father of Vilayat Khan, one of the topmost sitariyas (sitar players) of the postwar period.
- Vilayat Khan died on **13 March 2004 in Mumbai, India at age 75.**

★ Additional Information

- **The Hindu God Lord Krishna** is traditionally considered a master of the bamboo flute.
- **Pandit Shankar Ghosh** (10 October 1935 – 22 January 2016). A tabla maestro from the Farukhabad Gharana of Hindustani Classical music, Pandit Shankar Ghosh is noted as one of the greatest artists of all time.

- Distinguished players of the tabla include Alla Rakha Khan and his son Zakir Hussain.
- James Galway is considered by many seasoned and newbie flute players as one of the greatest flute players and the most famous in the world.
- **Hariprasad Chaurasia (1st July 1938) is known internationally as the greatest living master of the bansuri, the North Indian bamboo flute.**

94. Answer: a

**Explanation:**

The correct answer is Srimanta Sankardev.

★ Key Points

- **Srimanta Sankardev invented and perfected India's classical dance form Sattras.**
- It is believed that Bharatnatyam was revealed by Lord Brahma to Bharata, a famous sage who then codified this sacred dance in a Sanskrit text called the **Natya Shastra**.
- Sattriya is a classical Indian dance that originated in its eastern state of Assam.
- There are nine classical dance forms in India, which include **Bharatnatyam, Kathak, Kathakali, Kuchipudi, Manipuri, Mohiniyattam, sattriya, and chhau.**
- Bharatanatyam is the first classical dance practice in India. The dance form was predominant in primeval Tamil Nadu, and numerous records have veiled them such as Natya Shastra.

★ Additional Information

- **K. Uma Rama Rao** born Uma Maheshwari on **4 July 1938 – 27 August 2016** was an Indian Kuchipudi dancer, choreographer, research scholar, author, and dance teacher.
- She was also the Founder & Director of Lasya Priya Dance Academy, established in **1985** in Hyderabad, India.

- **Uday Shankar** was an artist, dancer, and choreographer who popularized Indian dance through his effective use of western theatrical techniques in combination with classical Indian dance.
- Uday Shankar (**8 December 1900 – 26 September 1977**) was an Indian dancer and choreographer.
- Uday Shankar was the first to bring the concept of modern dance to India with his novel approach and works
- **Guru Gopinath** was an exponent of various styles of Indian dances. The illustrious 'Raam Leela' of Delhi, choreographed and directed by him was its glorious proof.

95. Answer: a

Explanation:

The correct answer is Arabian Sea.

★ Key Points

- The Arabian Sea is to the northwest and the Andaman Sea is to the northeast.
- The Arabian Sea is the Northwestern part of the Indian Ocean, lying between India and the Arabian Peninsula.
- It has an area of about **1,491,000 sq miles (3,862,000 sq km)** and an average depth of **8,970 feet (2,734 m)**.
- The Arabian Sea is named after the Arabian merchants who dominated the sea from the **9th century** to the late medieval period of history.
- Mumbai is located on the West Coast of India. Bounded by India, the Arabian Sea is a region of the Indian Ocean.

★ Additional Information

- The five countries **Azerbaijan, Kazakhstan, Russia, Turkmenistan, and Iran** share the natural heritage of the Caspian Sea.
- The Caspian Sea is home to a wide range of species and is known for its caviar and oil industries.

- Despite their political and social diversity, the people of the region share a common concern for the Caspian.
- The Caribbean Sea, the suboceanic basin of the western Atlantic Ocean, lying between latitudes **9° and 22° N and longitudes 89° and 60° W.**
- The Mediterranean is an intercontinental sea located between Europe, North Africa, and Western Asia and connected to the Atlantic Ocean through the strait of Gibraltar.

96. Answer: d

### Explanation:

The correct option is Bimal Patel.

#### ★ Key Points

- The ILC was formed on **November 21, 1947**, by the **UNGA**.
- Bimal Patel has been elected to the ILC for a five year term starting January 1, 2023.
- Its headquarter is in **Geneva, Switzerland**.
- ILC is a body of experts that helps in developing and codifying international law.
- ILC will hold its **73rd session** at the UNO in Geneva from **18 April to 3 June and from 4 July to 5 August 2022**.

#### ★ Additional Information

| Main Bodies of the UN          | Headquarter        |
|--------------------------------|--------------------|
| General Assembly               | New York, US       |
| Security Council               | New York, US       |
| Economic and Social Council    | New York, US       |
| Trusteeship Council            | New York, US       |
| International Court of Justice | Hague, Netherlands |
| Secretariat                    | New York, US       |

97. Answer: d

### Explanation:

The correct answer is Reproduce.

- The factor to which the animal's response is reproduce is a biotic factor.
- So, the correct option is **Reproduce**.

### ★ Key Points

- There are two types of factors affecting the ecosystem:
  - **Biotic factors**
  - **Abiotic factors**
- **Biotic factors** are the living parts of an ecosystem that shapes its environment.
- Some common biotic factors are **consumers, producers, herbivores, carnivores, omnivores, and decomposers**.
- **Abiotic factors** are non-living parts of an ecosystem that shapes its environment.
- Five common abiotic factors are **atmosphere, temperature/ sunlight, water, chemical elements, and wind**.

### ★ Additional Information

- An ecosystem is a place where the living and nonliving components 'interact with each other.
- **Type of ecosystems :**
  - **Aquatic Ecosystem:** Freshwater ecosystem, Marine ecosystem
  - **Terrestrial Ecosystem:** Forest ecosystem, Grassland ecosystem, Tundra ecosystem, and Desert ecosystem.
- The largest ecosystem in the world is the aquatic ecosystem. It constitutes 70% of the surface of the earth.

98. Answer: b

### Explanation:

The correct option is Centrosome.

#### ★ Key Points

- **Centrosome** is the major microtubule-organising centre (MTOC) in eukaryotic cells involved in various cellular processes, including sensory reception, locomotion, and embryogenesis.
- MTOC is a structure in eukaryotic cells from which microtubules emerge.
- Some MTOCs are:
  - Centrosomes (in animals)
  - Basal body (in cilium)
  - Spindle pole body (in yeasts)
- Cell is the basic unit of life. there are two types of cells:
  - **Prokaryotic cells** (cells without a nucleus)
  - **Eukaryotic cells** (cells with a nucleus)
- **Robert Hooke** discovered the cell in 1665. Later **Anton Van Leeuwenhoek** noted that the cells are live. In 1883, **Robert Brown** , a Scottish botanist, described the nucleus inside the cell.

#### ★ Additional Information

- **Lysosomes** , also known as the Suicide bags of the cell.
- **Plastid** is a membrane-bound organelle found in plant cells.

- **Vacuoles** , store food, water, and other waste materials in the cell.

99. Answer: b

### Explanation:

The correct option is Chhattisgarh.

#### ★ Key Points

- **Nijaat** campaign is launched by the district police of **Koriya** in the state of **Chhattisgarh** .
- **World Drug day** is celebrated on 26 June.
- **National Anti-Drug day** i s celebrated on 2nd October.
- "**Nasha Mukh Bharat Abhiyan**" is launched by the **Ministry of Social Justice and Empowerment**.
- "Nasha Mukh Bharat Abhiyan was launched in 272 most vulnerable districts science August 2020 to address the problem of Drug Abuse among the youth of India.

#### ★ Additional Information

|                          |             |
|--------------------------|-------------|
| International Yoga Day   | 21st June   |
| World Health Day         | 7th April   |
| International Sports Day | 6th April   |
| World Environment Day    | 5th June    |
| International Youth Day  | 12th August |

100. Answer: b

## Explanation:

The correct option is PV Sindhu.

### ★ Key Points

- PV Sindhu is the only Indian female to win two consecutive Olympics medals.
- She won **silver medal in the 2016 Rio Olympics** and **bronze medal in the 2020 Summer Olympics, Tokyo**.
- She had been awarded by **Padma Bhushan Award** in 2021.
- Other awards won by Sindhu are the **2013 Arjun Award, 2015 Padma Shri, 2016 Major Dhyan Chand Khel Ratna Award, and 2019 BBC Sportswomen of the year.**

### ★ Additional Information

- **Dutee Chand** is the first Indian to win gold in global competition and the third Indian to qualify for women's 100 m in Olympics.
- **Mary Kom** is the first Indian female boxer to qualify for Summer Olympics, Tokyo.
- **Mirabai Chanu** won the first gold in Commonwealth Games 2022.

Your Personal Exams Guide