

030067

Paper Code No: G01

Question Booklet No. ....

**ENTRANCE EXAMINATION – 2021 - 22****SET – C****SSF JAMIA MILLIA ISLAMIA  
New Delhi**

Signature of Invigilator

Total Marks: 100

Time: 1 Hour 30 Minutes

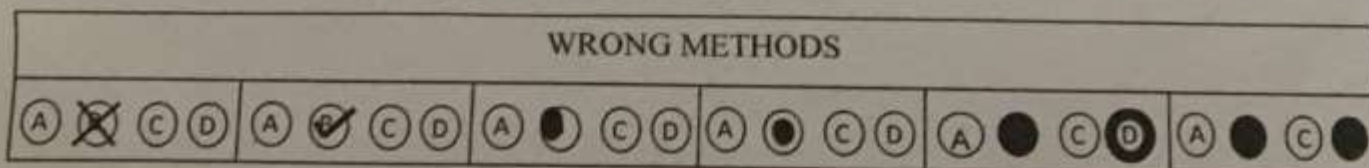
**Instructions to Candidates**

- Do not write your name or put any other mark of identification anywhere in the OMR Response Sheet. IF ANY MARK OF IDENTIFICATIONS IS DISCOVERED ANYWHERE IN OMR RESPONSE SHEET, the OMR sheet will be cancelled, and will not be evaluated.
- This Question Booklet contains the cover page and a total of 100 Multiple Choice Questions of 1 mark each.**
- Space for rough work has been provided at the beginning and end. Available space on each page may also be used for rough work.
- There is negative marking in Multiple Choice Questions. For each wrong answer, 0.25 marks will be deducted.
- USE/POSSESSION OF ELECTRONIC GADGETS LIKE MOBILE PHONE, iPhone, iPad, pager ETC. is strictly PROHIBITED.
- Candidate should check the serial order of questions at the beginning of the test. If any question is found missing in the serial order, it should be immediately brought to the notice of the Invigilator. No pages should be torn out from this question booklet.
- Answers must be marked in the OMR Response sheet which is provided separately. OMR Response sheet must be handed over to the invigilator before you leave the seat.
- The OMR Response sheet should not be folded or wrinkled. The folded or wrinkled OMR/Response Sheet will not be evaluated.
- Write your Roll Number in the appropriate space (above) and on the OMR Response Sheet. Any other details, if asked for, should be written only in the space provided.
- There are four options to each question marked A, B, C and D. Select one of the most appropriate options and fill up the corresponding oval/circle in the OMR Response Sheet provided to you. The correct procedure for filling up the OMR Response Sheet is mentioned below.

CORRECT METHOD



WRONG METHODS



1.  $(1^2 + 2^2 + 3^2 + \dots + 10^2) = ?$

A. 330

B. 345

C. 365

D. 385

2. Which of the following is the highest fraction?

A.  $\frac{5}{6}$

B.  $\frac{3}{4}$

C.  $\frac{2}{3}$

D.  $\frac{7}{8}$

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3. The sum of all the numbers between 1 and 1000, which are divisible by 5 but not by 2 is

A. 101100

B. 50000

C. 50050

D. 10100

4. What least number must be added to 1056, so that the sum is completely divisible by 23?

A. 12

B. 3

C. 18

D. 2

5. The sum of how many terms of the series  $6 + 12 + 18 + 24 + \dots$  is 1800?

A. 16

B. 24

C. 20

D. 18

6. What is the smallest prime factor of 1001?

A. 3

B. 5

C. 7

D. 11

7. The sum of first five multiples of 3 is

A. ✓ 45

B. 55

C. 65

D. 75

3, 6, 9, 12, 15  
45

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8. Which of the following is a prime number?

A. 33

B. 81

C. 93

D. ✓ 97

9. The difference between the length and breadth of a rectangle is 23 m. If its perimeter is 206 m, then its area is:

A. 2420 m<sup>2</sup>

B. 1520 m<sup>2</sup>

C. 2520 m<sup>2</sup>

D. 2480 m<sup>2</sup>

10. If  $2x + 7 = x^2 - 1/N = 4x - 3$ , what is the value of N?

A. 1/2

B. 1/8

C. 1/4

D. 1/6

11. The value of  $p(1/2)$  for  $p(z) = z^4 - z^2 + 2$  is

A.  $7/16$

B.  $5/16$

C.  $3/16$

D.  $1/16$

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12. A two-digit number is such that the product of the digits is 8. When 18 is added to the number, then the digits are reversed. The number is:

A. 18

B. 24

C. 42

D. 81

13. The slant height of a right circular cone is 10 m and its height is 8 m. Find the area of its curved surface.

A.  $60 \pi \text{ m}^2$

B.  $30 \pi \text{ m}^2$

C.  $80 \pi \text{ m}^2$

D.  $40 \pi \text{ m}^2$

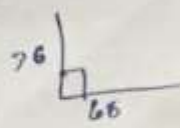
14. A metallic sheet is of rectangular shape with dimensions 48 m x 36 m. From each of its comers, a square is cut off so as to make an open box. If the length of the square is 8 m, the volume of the box (in  $\text{m}^3$ ) is:

A. 4830

B. 5120

C. 6420

D. 8960



15. A rectangular plot has the ratio of 5:3 between length and breath. If the perimeter of the plot is 320 meter. What's the area of the plot?

A. 6000 sq.meter                      B. 12000 sq.meter  
C. 18000 sq.meter                      D. 4500 sq.meter

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16. The distance of a chord of length 16 cm from the centre of the circle of radius 10 cm is



A. ✓ 6 cm                      B. 8 cm  
C. 10 cm                      D. 12 cm

17. The mean of the numbers  $a$ ,  $b$ , 8, 5, 10 is 6 and the variance is 6.80. Then which one of the following gives possible values of  $a$  and  $b$ ?

A.  $a = 0, b = 7$                       B.  $a = 5, b = 2$   
C.  $a = 3, b = 4$                       D.  $a = 2, b = 4$

18. If in a frequently distribution, the mean and median are 21 and 22 respectively, then its mode is approximately

A. 22.0                      B. 20.5  
C. 25.5                      D. 24.0

19. In a box, there are 8 red, 7 blue and 6 green balls. One ball is picked up randomly. What is the probability that it is neither red nor green?

A.  $1/3$  B.  $7/19$   
C.  $8/21$  D.  $3/4$

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20. Three houses are available in a locality. Three persons apply for the houses. Each applies for one house without consulting others. The probability that all the three apply for the same house is

A.  $5/9$  B.  $1/9$   
C.  $8/9$  D.  $4/9$

21. The arithmetic mean (average) of 3, 5, 7 and  $y$  is 100. What is the value of  $y$ ?

A. 85 B. 95 C. 105 D. ✓ 385

$$305 \frac{15+y}{4} = 100$$
  
$$600$$

22. A quiz consists of true and false questions. The ratio of the number of true questions to the number of false questions is 4:3. About what percent of the questions are false?

A. 43% B. 57%  
C. 67% D. 83%

$$\Rightarrow \sqrt{\frac{100}{98}}$$

23. Jack is now 7 times as old as Jill. If 10 years from now, he will be 3 times as old as Jill, how old is Jack now?

A. 14

B. 21

C. 28

D. 35

Jack = 7Jill  
10 years  
Jack = 3Jill  
14 = 2  
24 = 12  
31 = 3  
31 = 3  
28  
35 = 5  
45 = 15

24. If  $2x + 3y = 34$  and  $(x + y)/y = 13/8$ , then  $5y + 7x = ?$

A. 82

B. 75

C. 66

D. None of these

25. If  $\text{Log}_x (1/8) = -3/2$ , then  $x$  is equal to

A. -4

B. 4

C. 114

D. 10

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26. The graphs of the two linear equations  $ax + by = c$  and  $bx - ay = c$ , where  $a$ ,  $b$  and  $c$  are all not equal to zero,

A. are parallel

B. intersect at one point

C. intersect at two points

D. perpendicular

27. The exam scores of all 500 students were recorded and it was determined that these scores were normally distributed. If Jane's score is 0.8 standard deviation above the mean, then how many, to the nearest unit, students scored above Jane?

A. 394

B. 250

C. 400

D. 106

28. A school committee consists of 2 teachers and 4 students. The number of different committees that can be formed from 5 teachers and 10 students is

A. 10  
B. 15  
C. 2100  
D. 8

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29. The perpendicular bisector of the line segment joining P (1, 4) and Q (k, 3) has y-intercept - 4. Then a possible value of k is

A. 1  
B. -4  
C. 3  
D. 2

30. In the coordinate plane, triangle ABC has vertices A (0, 0), B (8, 2) and C (8, 10). Point D lies on BC, such that BD: DC = 5: 7. What is the area of triangle ADC?

A. 28  
B. 32  
C. 36  
D. 40

31. The angle between the lines  $2x = 3y = -z$  and  $6x = -y = -4z$  is

A. 0 Degree  
B. 90 Degree  
C. 45 Degree  
D. 30 Degree

32. Which one of the following is not a prime number?

A. 41  
B. 61  
C. 71  
D. 91

33. The average weight of a class of 24 students is 35 kg. If the weight of the teacher be included, the average rises by 400 g. The weight of the teacher is

A. 45 kg

B. 46 kg

C. 47 kg

D. 48 kg

$$\frac{24 \times 35}{25} = 36 \text{ kg}$$

$$36 \text{ kg} + 400 \text{ g} = 36.4 \text{ kg}$$

$$\begin{array}{r} 35 \\ 24 \times 35 \\ \hline 140 \\ 70 \\ \hline 860 \end{array}$$

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34. The largest 4 digit number exactly divisible by 88 is:

A. 9944

B. 9768

C. 9988

D. 8888

35. The diagonal of a rectangle is 41 cm and its area is 20 sq. cm. The perimeter of the rectangle must be:

A. 9 cm

B. 18 cm

C. 20 cm

D. 41 cm



20

36. The difference between a two-digit number and the number obtained by interchanging the positions of its digits is 36. What is the difference between the two digits of that number?

A. 3

B. 4

C. 9

D. None of these

$$\begin{array}{r} 62 \\ 26 \\ \hline 36 \end{array}$$

37. A hall is 15 m long and 12 m broad. If the sum of the areas of the floor and the ceiling is equal to the sum of the areas of four walls, the volume of the hall is:

- A.  $720 \text{ m}^3$  B.  $900 \text{ m}^3$   
C.  $1200 \text{ m}^3$  D.  $1400 \text{ m}^3$

$$\begin{array}{r} 12 \\ 15 \end{array} \quad \begin{array}{r} 15 \\ 12 \\ \hline 30 \\ 15 \\ \hline 45 \end{array} \quad \begin{array}{l} 360 = 4A \\ 90 = A \end{array}$$

38. How many 3-digit numbers can be formed from the digits 2, 3, 5, 6, 7 and 9, which are divisible by 5 and none of the digits is repeated?

- A. 5 B. 10  
C. 15 D. 20

$$\begin{array}{|c|c|c|} \hline 2 & 5 & 0 \\ \hline \end{array}$$

$$5 \times 4 \times 5$$

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39. Find the coordinates of the point equidistant from the points A (1, 2), B (3, -4) and C (5, -6).

- A. (2, 3) B. (-1, -2)  
C. (0, 3) D. (1, 3)



40. Find the value of p for which the point (-1, 3), (2, p) and (5, -1) are collinear.

- A. 4 B. 3  
C. 2 D. 1

$$\begin{array}{l} \frac{p-3}{2-(-1)} = \frac{-1-3}{5-(-1)} \\ \frac{p-3}{3} = \frac{-4}{6} \\ p-3 = -2 \\ p = 1 \end{array}$$

41. What will be the solution of these equations  $ax+by=a-b$ ,  $bx-ay=a+b$

- A.  $x=1, y=2$  B.  $x=2, y=-1$   
C.  $x=-2, y=-2$  D.  $x=1, y=-1$

$$\begin{array}{l} a+b = bx-ay \\ a-b = ax+by \\ \hline a+2b = a-b, b-2a = a+b \\ a-b = a-b \\ b+a = a+b \end{array}$$

42. Construction of a cumulative frequency table is useful in determining the

A. Mean

B. Mode

C. Median

D. All of the above

43. If three coins are tossed simultaneously, then the probability of getting at least two heads, is

$HH, HT, TH, TT$

A.  $1/4$

B.  $3/8$

C.  $1/2$

D.  $1/8$

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44. A cylinder and a cone are of the same base radius and same height. Find the ratio of the volumes of the cylinder of that of the cone.

A. 1:3

B. 1:2

C. 3:1

D. 2:1

$$\frac{\pi r^2 h}{3} : \frac{1}{3} \pi r^2 h$$

45. If AB is a chord of length 16 cm, of a circle of radius 10 cm. The tangents at A and B intersect at a point P. Find the length of PA.

A. 4 cm

B. 8 cm

C.  $20/3$  cm

D.  $40/3$  cm



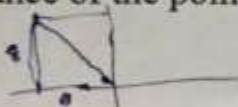
46. Find the distance of the point (-6, 8) from the origin.

A. 8

B. 11

C.  $\sqrt{10}$

D. 9



47. What is the area of a semi-circle of radius 5 cm?

A. 78.57 cm

B. 71.42 cm

C. 63.18 cm

D. 79.86 cm

$$\frac{25\pi}{2}$$



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48. Two ships are sailing in the sea on the two sides of a lighthouse. The angle of elevation of the top of the lighthouse is observed from the ships are 30 degree and 45 degree respectively. If the lighthouse is 100 m high, the distance between the two ships is:

A. 276 meter

B. ✓ 273 meter

C. 270 meter

D. 263 meter



$$x = 100 \cdot \sqrt{3} + 100$$

$$x = 173 + 100$$

$$x = 273$$

49. A man completes a journey in 10 hours. He travels first half of the journey at the rate of 21 km/hr and second half at the rate of 24 km/hr. Find the total journey in km.

A. 220 km

B. 224 km

C. 230 km

D. 234 km

$$\frac{21 \times 5}{10} + \frac{24 \times 5}{10}$$

$$2 \times \frac{105}{2} + \frac{120}{2}$$

$$210 + 60$$

$$270$$

50. A can contains a mixture of two liquids A and B in the ratio 7: 5. When 9 liters of mixture are drawn off and the can is filled with B, the ratio of A and B becomes 7: 9. How many liters of liquid A was contained by the can initially?

A. 10

B. 20

C. 21

D. 25

51. What is the full form of W3C?
- A. World Wide Web Consortium
  - B. World Wide Web Company
  - C. World Wide Web Center
  - D. World Wide Web Command

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52. In Computer world, Trojan Horse refers to
- A. Virus
  - B. Malware
  - C. Worm
  - D. Spyware
53. A collection of program that controls how your computer system runs and processes information is called
- A. Operating System
  - B. Computer
  - C. Office
  - D. Compiler
54. \_\_\_\_\_ is the application of the investigation and analysis techniques to gather and preserve evidence from a particular computing device in a way that is suitable for presentation in a court of law.
- A. Robotics
  - B. Animation
  - C. Simulation
  - D. Computer Forensics

55. One Gigabyte is approximately equal to
- |                           |                       |
|---------------------------|-----------------------|
| A. 1000,000 bytes         | B. 1000,000,000 bytes |
| C. 1000,000,000,000 bytes | D. None of these      |

56. One nibble is equal to how many bits?
- |            |            |
|------------|------------|
| A. 4 bits  | B. 8 bits  |
| C. 12 bits | D. 16 bits |

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57. What is the term used for verification of a login name and password in computer terminology?
- |                  |                   |
|------------------|-------------------|
| A. Configuration | B. Authentication |
| C. Accessibility | D. Logging        |
58. A technique used by codes to convert an analog signal into a digital bit stream is known as
- |                          |                     |
|--------------------------|---------------------|
| A. Pulse code modulation | B. Pulse stretcher  |
| C. Query processing      | D. Queue management |
59. Which of the following is an anti-virus software
- |                |               |
|----------------|---------------|
| A. Dreamweaver | B. Quick heal |
| C. Flash       | D. Oracle     |

60. What is e-commerce?

- A. Buying and selling computer products
- B. Buying and selling products and services not found in stores
- C. Buying and selling international goods
- D. Buying and selling products and services over the Internet

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61. Computer resolution measures?

- A. Size of screen
- B. Shape of screen
- C. Number of pixels
- D. Number of colours it support

62. In networking terminology UTP means

- A. Ubiquitous Teflon Port
- B. Unshielded Twisted Pair
- C. Uniformly Terminating Port
- D. Unshielded T-connector Port

63. What is a Firewall in Computer Network?

- A. The physical boundary of Network
- B. An operating System of Computer Network
- C. A system designed to prevent unauthorized access.
- D. A web browsing Software

64. Which of the following is the numerical computing software for scientists and mathematicians?

A. EDGE

B. Excel

C. MATLAB

D. Arc

65. A wireless technology built in electronic gadgets used for exchanging data over short distances is?

A. Bluetooth

B. Wifi

C. Modem

D. USB

66. Full form of URL is?

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A. Uniform Resource Locator

B. Uniform Resource Link

C. Uniform Registered Link

D. Unified Resource Link

67. Who is also known as Father of Computer?

A. Vint Cerf

B. Tim Bemer Lee

C. Charles Babbage

D. Steve Jobs

68. What is used to make computer chips?

A. Copper

B. Steel

C. Silicon

D. Iron

69. An electronic path that sends signals from one part of computer to another is?

- |               |                |
|---------------|----------------|
| A. Logic Gate | B. Modem       |
| C. Bus        | D. Serial Port |

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70. Which term is related to database?

- |         |             |
|---------|-------------|
| A. PHP  | B. Oracle   |
| C. Java | D. Assembly |

**Directions (71-73): In the following questions, out of the four alternatives, choose the one which can be substituted for the given words/ sentence.**

71. To take secretly in small quantities

- |                |              |
|----------------|--------------|
| A. Robbery     | B. Theft     |
| C. Defalcation | D. Pilferage |

72. A disease that spreads by contact

- |               |               |
|---------------|---------------|
| A. Incurable  | B. Infectious |
| C. Contagious | D. Fatal      |

73. An emolument over and above fixed income or salary

- |               |                |
|---------------|----------------|
| A. Honorarium | B. Sinecure    |
| C. Perquisite | D. Prerogative |

**Directions (74-75):** In the following questions, groups of four words are given. In each group, one word is correctly spelt. Find the correctly spelt word.

74.

A. parapharnelia

B. parsimonious

C. peccadilo

D. peadiatrics

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75.

A. measurable

B. managable

C. marriageable

D. manoevrable

**Directions (76-77):** In the following questions, out of the four alternatives, choose the one which best expresses the meaning of the given word.

76. FOSTERING

A. Nurturing

B. Safeguarding

C. Guiding

D. Caring

77. DEFER

A. Differ

B. Defy

C. Postpone

D. Indifferent

Directions (78-80): Fill in the blank with the most suitable choice.

78. A light breeze \_\_\_\_\_ the forest fire and made it more dangerous.

- A. extinguished                      B. lit  
C. fanned                              D. blew

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79. As he got older his belief in these principles did not \_\_\_\_\_.

- A. wither                              B. shake  
C. waver                              D. dither

80. Many countries have sent medicine for \_\_\_\_\_ of the latest fighting.

- A. injured                              B. wounded  
C. victims                              D. culprits

81. If LONDON is coded as MPOEPO. What code is needed for DELHI?  
E F V

- A. DEHLI                              B. EFIMJ  
C. HLDEI                              D. EFMIJ

82. In the series 2, 6, 18, 54, 162, 486, 1458, ... what will be the 8th term?

- A. 4370                              B. 4374<sup>✓</sup>  
C. 7443                              D. 7434

83. Look closely at the letter pattern and choose the series from the options given that will correctly fill the blank at the end of the series.

FAG, GAF, HAI, IAH, JA

- |         |        |
|---------|--------|
| A. JAK✓ | B. HAL |
| C. HAK  | D. JAI |

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84. Arrange the words given below in a meaningful sequence.

1. Word 2. Paragraph 3. Sentence 4. Letters 5. Phrase

- |                  |                  |
|------------------|------------------|
| A. 3, 1, 2, 4, 5 | B. 1, 2, 4, 3, 5 |
| C. 5, 4, 3, 2, 1 | D. 4, 1, 5, 3, 2 |

**Direction (85-86): Three of the words will be in the same classification, the remaining one will not be. Your answer will be the one word that does NOT belong in the same classification as the others.**

85. Which word does NOT belong with the others?

- |           |         |
|-----------|---------|
| A. Ghee   | B. Milk |
| C. Butter | D. Curd |

86. Which word does NOT belong with the others?

- |             |           |
|-------------|-----------|
| A. Lungs    | B. Cancer |
| C. Pancreas | D. Heart  |

87. Reptile is to lizard as flower is to

A. petal

B. stem

C. daisy

D. alligator

88. Play is to actor as concert is to

A. symphony

B. Musician

C. piano

D. percussion

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89. Count each 7 which is not immediately preceded by 5 but is immediately followed by either 2 or 3. How many such 7's are there?

5 7 2 6 5 7 3 8 3 7 3 2 5 7 2 7 3 4 8 2 6 7 8

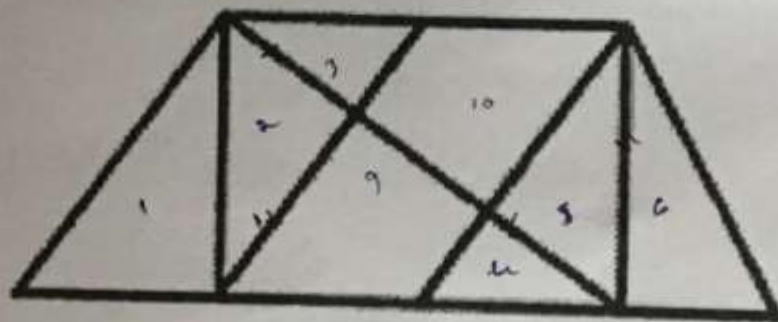
A. 2

B. 3

C. 4

D. 5

90. Find the number of triangles in the given figure.



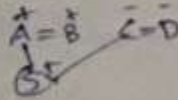
A. 8

B. 10

C. 12

D. 14

91. A and B are brothers. C and D are sisters. A's son is D's brother. How is B related to C?



A. Father

B. Brother

C. Uncle

D. Grandfather

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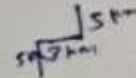
92. A man walks 5 km toward south and then turns to the right. After walking 3 km he turns to the left and walks 5 km. Now in which direction is he from the starting place?

A. West

B. South

C. North-East

D. South-West



93. Sanjeev ranks seventh from the top and twenty eighth from the bottom in a class. How many students are there in the class ?

A. 37

B. 36

C. 35

D. 34

**Direction (94-95): In each of the following questions find out the alternative which will replace the question mark.**

94. Architect : Building :: Sculptor : ?

A. Museum

B. Stone

C. Chisel

D. Statue

95. BCFG :HILM ::NORQ :?

A. TXWU

B. TXUW

C. TUXW

D. TVWX

96. Choose the alternative which is closely resembles the mirror image of the given combination.

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**EFFECTIVE**

**(1) EVITCEFFE**

**(2) EVITCEFFE**

**(3) EFFECTIVE**

**(4) EVITCEFFE**

A. 1

B. 2

C. 3

D. 4

**Direction (97-98): Find the statement that must be true according to the given information.**

97. Sara lives in a large city on the East Coast. Her younger cousin Marlee lives in the Mid- west in a small town with fewer than 1,000 residents. Marlee has visited Sara several times during the past five years. In the same period of time, Sara has visited Marlee only once.

A. Marlee likes Sara better than Sara likes Marlee.

B. Sara thinks small towns are boring.

C. Marlee wants to move to the East Coast.

D. Sara is older than Marlee.

98. Erin is twelve years old. For three years, she has been asking her parents for a dog. Her parents have told her that they believe a dog would not be happy in an apartment, but they have given her permission to have a bird. Erin has not yet decided what kind of bird she would like to have.

- A. Erin's parents like birds better than they like dogs.
- B. Erin does not like birds
- C. Erin and her parents live in an apartment.
- D. Erin and her parents would like to move.

**SSF JAMIA MILLIA ISLAMIA**  
**New Delhi**

99. In a chess tournament each of six players will play every other player exactly once. How many matches will be played during the tournament ?

- A. 12
- B. 15
- C. 30
- D. 36

100. If you write down all the numbers from 1 to 100, then how many times do you write 3 ?

A. 11

B. 18

C. 20

D. 22

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**New Delhi**